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Presidential Documents

Title 3—

The President

Proclamation 5997 of July 6, 1989

To Amend the Generalized System of Preferences

By the President of the United States of America

A Proclamation

1. Pursuant to section 504(a)(1) of the Trade Act of 1974 (the 1974 Act) (19 U.S.C. 2464(a)(1)), the President may withdraw, suspend, or limit the application of the duty-free treatment afforded under the Generalized System of Preferences (GSP) with respect to any article or any country upon consideration of the factors set forth in sections 501 and 502(c) of the 1974 Act (19. U.S.C. 2461 and 2462(c)). Pursuant to section 504(c)(5) of the 1974 Act (19 U.S.C. 2464(c)(5)), a country that has not been treated as a beneficiary developing country with respect to an eligible article may be redesignated with respect to such article if imports of such article from such country did not exceed the limitations in section 504(c)(1) of the 1974 Act (19 U.S.C. 2464(c)(1)) (after application of section 504(c)(2) of the 1974 Act (19 U.S.C. 2464(c)(2))) during the preceding calendar year.

2. Pursuant to section 504(a)(1) of the 1974 Act, after taking into account the factors set forth in section 501 of the 1974 Act, I have determined that it is appropriate to withdraw the duty-free treatment afforded under the GSP to imports from all designated beneficiary developing countries of the cigarette leaf tobacco provided for in subheading 2401.20.40 of the Harmonized Tariff Schedule of the United States (HTS). Further, I have determined, pursuant to section 504(c)(5) of the 1974 Act, that a certain country should be redesignated as a beneficiary developing country with respect to a specific previously designated eligible article. This country had been previously excluded from benefits of the GSP with respect to such eligible article pursuant to section 504(c)(1) of the 1974 Act.

3. Section 201(a) of the United States-Canada Free-Trade Agreement Implementation Act of 1988 (the Implementation Act) (Public Law No. 100–449, 102 Stat. 1851) authorizes the President to proclaim such modifications or continuance of existing duties, such continuance of existing duty-free or excise treatment, and such additional duties, as the President determines are necessary or appropriate to carry out Article 401 of the United States-Canada Free-Trade Agreement (including the schedule of duty reductions with respect to goods originating in the territory of Canada set forth in Annexes 401.2 and 401.7).

4. Pursuant to section 201(a) of the Implementation Act, I have determined that it is necessary to provide for the continued staged reduction in duties on certain tobacco for goods originating in the territory of Canada.

5. Section 604 of the 1974 Act (19 U.S.C. 2483) authorizes the President to embody in the HTS the substance of the provisions of that Act, of other acts affecting import treatment, and of actions taken thereunder.

NOW THEREFORE, I, GEORGE BUSH, President of the United States of America, acting under the authority vested in me by the Constitution and the statutes of the United States, including but not limited to Title V and section 604 of the 1974 Act, and section 201 of the Implementation Act:

(1) In order to withdraw the duty-free treatment afforded under the GSP to certain cigarette leaf tobacco and in order to reflect that a country should no

longer be treated as ineligible for benefits of the GSP with respect to a previously eligible article, the HTS is modified as provided in Annex I to this Proclamation.

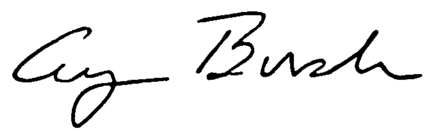
(2) In order to provide for the continued staged reductions on Canadian goods in particular HTS subheadings (as established in Annex I to this Proclamation), effective with respect to goods originating in the territory of Canada which are entered, or withdrawn from warehouse for consumption, on or after the dates specified in Annex II to this Proclamation, the rate of duty in the HTS set forth in the Rates of Duty 1-Special subcolumn followed by the symbol "CA" in parentheses for each of the HTS subheadings enumerated in such Annex II shall be deleted and the rate of duty provided in such Annex inserted in lieu thereof.

(3) Any provisions of previous proclamations and Executive orders inconsistent with the provisions of this Proclamation are hereby superseded to the extent of such inconsistency.

(4) The amendments made by Annex I of this Proclamation shall be effective with respect to articles both: (i) imported on or after January 1, 1976, and (ii) entered, or withdrawn from warehouse for consumption, on or after the date that is 2 days after the publication of this Proclamation in the **Federal Register**.

(5) The amendments made by Annex II of this Proclamation shall be effective with respect to goods originating in the territory of Canada which are entered, or withdrawn from warehouse for consumption, on or after the dates specified in such Annexes.

IN WITNESS WHEREOF I have hereunto set my hand this sixth day of July, in the year of our Lord nineteen hundred and eighty-nine, and of the Independence of the United States of America the two hundred and fourteenth.



[FR Doc. 89-16408
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Editorial note: For the President's remarks of July 7 on signing Proclamation 5997 see the *Weekly Compilation of Presidential Documents* (vol. 25, no. 27).

ANNEX I

Notes

1. Bracketed matter is included to assist in the understanding of proclaimed modifications.

2. The following supersedes matter now in the Harmonized Tariff Schedule of the United States (HTS) The subheadings and superior descriptions are set forth in columnar format, and material in such columns is inserted in the columns of the HTS designated "Heading/Subheading "Article Description" "Rates of Duty 1-General" "Rates of Duty 1-Special and "Rates of Duty 2" respectively

Effective as to articles entered, or withdrawn from warehouse for consumption, on or after the date that is 2 days after the publication of this Proclamation in the Federal Register

Subheading 2401.20 40 is superseded by·

	[Unmanufactured tobacco.] [Tobacco,] [Not threshed.] [Other·] "Not containing wrapper tobacco, or not containing over 35 percent wrapper tobacco:			
2401.20.30	Cigarette leaf.	44 1¢/kg + 92.9¢/kg on wrapper tobacco content	Free (E,IL) 39.6¢/kg + 83.6¢/kg on wrapper tobacco content (CA)	$1.10/kg + $5.35/kg on wrapper tobacco content
2401.20.50	Other including cigar leaf.	44 1¢/kg + 92.9¢/kg on wrapper tobacco content	Free (A,E,IL) 39.6¢/kg 83.6¢/kg on wrapper tobacco content (CA)	$1.10/kg + $5.35/kg on wrapper tobacco content"

Conforming change: General note 3(c)(ii)(D) to the HTS is modified by deleting "2401.20 40 Brazil

Annex II

Effective with respect to good originating in the territory of Canada which are entered, or withdrawn from warehouse for consumption, on or after the dates set forth in the following tabulation.

For each of the following subheadings created by Annex I of this Proclamation, the rate of duty in the Rates of Duty 1-Special subcolumn in the HTS that is followed by the symbol "CA" in parentheses is deleted and the following rates of duty inserted in lieu thereof on the date specified below.

HTS Subheading	.January 1, 1990	.January 1, 1991	.January 1 1992	.January 1 1993	.January 1, 1994	.January 1, 1995	.January 1 1996	.January 1, 1997	.January 1, 1998
2401.20 30	.35.2¢/kg 74 3¢/kg on wrapper tobacco content	.30.8¢/kg 65¢/kg on wrapper tobacco content	.26.4¢/kg 55.7¢/kg on wrapper tobacco content	.22¢/kg + 46.4¢/kg on wrapper tobacco content	17 6¢/kg + 37 1¢/kg on wrapper tobacco content	13.2¢/kg + 27 8¢/kg on wrapper tobacco content	·8.8¢/kg + 18.5¢/kg on wrapper tobacco content	4 4¢/kg + 9.2¢/kg on wrapper tobacco content	.Free
2401.20.50	.35.2¢/kg + 74.3¢/kg on wrapper tobacco content	.30.8¢/kg 65¢/kg on wrapper tobacco content	.26.4¢/kg + 55.7¢/kg on wrapper tobacco content	.22¢/kg 46.4¢/kg on wrapper tobacco content	17.6¢/kg + 37 1¢/kg on wrapper tobacco content	13.2¢/kg + 27 8¢/kg on wrapper tobacco content	·8.8¢/kg + 18.5¢/kg on wrapper tobacco content	·4 4¢/kg + 9.2¢/kg on wrapper tobacco content	.Free

Rules and Regulations

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This section of the FEDERAL REGISTER contains regulatory documents having general applicability and legal effect, most of which are keyed to and codified in the Code of Federal Regulations, which is published under 50 titles pursuant to 44 U.S.C. 1510.
The Code of Federal Regulations is sold by the Superintendent of Documents. Prices of new books are listed in the first FEDERAL REGISTER issue of each week.

DEPARTMENT OF AGRICULTURE

Animal and Plant Health Inspection Service

[Docket No. 89-069]

9 CFR Part 92

Importation of Swine Semen From China

AGENCY: Animal and Plant Health Inspection Service, USDA.

ACTION: Final rule.

SUMMARY: We are adding specific requirements for the importation of porcine semen from China to the regulations concerning importation of animal semen from countries where rinderpest or foot-and-mouth disease (FMD) exists. The requirements concern the respective responsibiltiies of the official veterinary organization of the People's Republic of China and of the United States Department of Agriculture, isolation and handling procedures for donor boars, blood and semen testing requirements for donor boars, and other matters related to importation of porcine semen from China. These amendments are necessary to ensure that porcine semen imported from China does not transmit FMD or other diseases to the United States.

EFFECTIVE DATE: July 5, 1989.

FOR FURTHER INFORMATION CONTACT: Dr. Samuel S. Richeson, Senior Staff Veterinarian, Import-Export Products Staff, Veterinary Services, APHIS, USDA, Room 759, Federal Building, 6505 Belcrest Road, Hyattsville, MD 20782, (301) 436-8144.

SUPPLEMENTARY INFORMATION:

Background

The regulations in 9 CFR Part 92 set forth, among other things, the conditions under which animal semen from countries affected with rinderpest or foot-and-mouth disease (FMD) may be imported into the United States. These requirements are contained in § 92.4(d). Generally, these requirements include importation under a United States Department of Agriculture (USDA) permit; inspection of the donor animals by a USDA veterinarian; determination by a USDA veterinarian that the donor animals have not been exposed to or vaccinated against rinderpest or FMD; isolation of the donor animals at a USDA-approved facility beginning prior to semen collection and continuing until blood tests have been completed with negative results; and supervision by a USDA veterinarian of semen collection, preparation for shipment, and shipment.

On March 28, 1989, we published in the **Federal Register** (54 FR 12639-12642, Docket Number 89-021) a proposal to add to Part 92 certain requirements specifically designed for importation of porcine semen from China.

Our proposal invited the submission of written comments, which were required to be postmarked or received on or before April 12, 1989. We subsequently reopened and extended that comment period to consider comments received by May 1, 1989, in another document published in the **Federal Register** on April 14, 1989 (54 FR 14968, Docket Number 89-058). In response to requests for a public hearing on the proposed rule, we published another document in the **Federal Register** on May 19, 1989 (54 FR 21626-21627 Docket Number 89-090), that announced a public hearing in Cedar Rapids, Iowa, on June 6, 1989, and extended the comment period until June 20, 1989.

Twenty-one persons spoke at the public hearing, and ninteen of these persons also submitted written comments by mail. We received a total of 95 written comments, of which 6 were solely requests for a public hearing or an extension of the comment period.

Of the 91 commenters with substantive comments, 52 supported the proposed rule and 39 either opposed the rule or requested that changes be made before publication of a final rule.

Those commenters supporting the proposed rule generally stated their belief that the requirements in the rule would be effective in preventing the introduction of disease associated with swine semen. Many commenters also stated that the importation of Chinese swine semen would provide benefits in the form of research opportunities and possibilities for improving domestic breeds of swine.

Those commenters opposed to the rule as proposed frequently addressed four issues: The risk of disease spread associated with imported semen; the adequacy of quarantine, testing, and other procedures contained in the proposed rule; the reliability of certifications by the official veterinary organization (OVO) of the People's Republic of China (PRC); and the relationship of Chinese swine semen import requirements to live Chinese swine import requirements.

Comments opposing the proposed rule and comments requesting change to the proposed rule are summarized and italicized below, followed by our response to each. No changes were made to the proposed rule in response to the comments.

The tests specified in the proposed rule may not be adequate to detect diseases in semen, particularly low-level infections. The full range of disease transmission possible through semen is unknown.

The final rule states that aliquots of each ejaculate of semen collected shall be submitted to the Foreign Animal Disease Diagnostic Laboratory (FADDL) for pathogen isolation tests for FMD, brucellosis, swine vesicular disease (SVD), hog cholera, Japanese encephalitis B, and pseudorabies. The test procedures in use at FADDL are recognized by the international scientific community, and extensive assessment of their use at FADDL has found them to be accurate. Some specific shortcomings of *in vitro* semen tests, and the procedures in place to compensate, are discussed below. It should be noted that the final rule contains requirements in addition to testing of the semen itself, i.e. premises and isolation facility requirements and serologic testing of the donor boars for diseases. Because of the possibility that unknown methods of disease transmission may exist, through semen or other means, APHIS import requirements employ a variety of diagnostic tools (clinical examination, serologic test, inoculation and observation of sentinel animals) that reveal disease transmission if it occurs, even if the precise means of transmission is not understood.

Comment: Physical characteristics of swine semen do not permit in vitro semen testing procedures comparable to live animal quarantines.

In addition to testing the semen collected, the donor boars are also subjected to the same serologic tests required for imported live Chinese swine. The semen tests are not primarily *in vitro;* instead, they are based on the inoculation of pigs susceptible to the diseases of concern with raw semen from the donor boars, and observation and testing of the test pigs for signs of disease. The semen tests alone do not replace the quarantine required for live animals; instead, the tests are used in conjunction with quarantine and observation of the donor boars in China, serologic tests, and other requirements to reduce the overall risk of disease transmission through semen to a level comparable to or less than the risk associated with importation of live animals.

Comment: In vitro testing of semen aliquots provided to FADDL would not necessarily detect diseases, due to the cytotoxicity of semen to cell monolayers, the indeterminate number of blind passages necessary to detect pathogens, the reduction of sensitivity of in vitro tests caused by semen pooling, and the presence of natural antiviral activity in some boars' semen. A requirement for in vivo tests should be added, consisting of breeding female swine with the imported semen, quarantining them until they have farrowed normal litters, and subjecting the sows and their litters to physical, serologic, microbiologic, and pathologic evaluations throughout the quarantine.

We agree that swine semen is cytotoxic for cell culture and that the other problems described make the reliability of *in vitro* testing of swine semen questionable. That is why the semen tests conducted at FADDL rely on the more sensitive procedure of inoculating susceptible pigs with raw semen from donor boars, followed by observation of the test animals for clinical signs of disease and serologic, microbiologic, and pathologic evaluations of the test animals. Numerous studies have shown that host animals can become infected and show signs of diseases when infected by an inoculum that was negative by cell culture standards (Blackwell and Hyde, 1976; Blackwell, 1978; Hyde et al. 1975; McKercher et al. 1987· Mebus, unpublished). We believe that this *in vivo* semen test procedure is effective, and that there is no need for *in vivo* tests of impregnated sows and their litters.

Comment: The rule should require serologic testing of donor boars in China for African swine fever (ASF) and Japanese B encephalitis, and serum should be provided to FADDL for confirmatory tests for all tests performed in China.

The final rule does require hemagglutination inhibition tests for Japanese B encephalities to be performed in China, in accordance with § 92.4(d)(7)(iii)(E). Testing for ASF is not required because the PRC has certified China to be free of ASF and there are no reports from any source of ASF occurring in China. We believe that if ASF occurred in China, its existence would quickly become obvious, in view of the nature and virulence of the disease.

The rule requires two rounds of serological testing in China, during and 21 days after the end of semen collection. These tests are performed at laboratories designated by the OVO of the PRC, and use materials provided by FADDL for the FMD types C and Asia tests and the brucellosis and tuberculosis tests. The SVD tests are conducted at FADDL. In views of this testing regime and the other safeguards contained in the rule, we do not believe that a third round of confirmatory testing at FADDL is necessary.

Comment: APHIS cannot effectively monitor quarantine, testing, and certification requirements for the swine in China.

Under the final rule, the isolation and semen collection facility operates under the joint supervision of APHIS and PRC veterinarians, who ensure that the facility is operated in accordance with all requirements of the rule. APHIS and PRC veterinarians also supervise collection of the serum samples used for serologic tests in China and at FADDL, and APHIS veterinarians are responsible for the raw semen aliquots sent to FADDL for tests. The laboratories performing the tests in China were designated by the official veterinary organization of the PRC, the organization responsible for a wide variety of certification and enforcement activities related to export of animals and animal products from China. APHIS monitors foreign governments' veterinary programs in terms of their effectiveness in meeting our import requirements, and at this time we have no reason to doubt the effectiveness of such programs in the PRC.

Comment: The methods for certifying the PRC free of certain diseases (ASF rinderpest, Teschen's) are not clear.

One of the requirements of the final rule is that the OVO of the PRC, the organization responsible for animal disease surveillance and reporting in China, must certify that the PRC is free of ASF rinderpest, and Teschen's disease prior to any importation of Chinese swine semen. The OVO of the PRC has made this certification, based on the records they maintain on the status of animal diseases in China. It is APHIS policy to rely on the certifications of official veterinary organizations of foreign countries regarding the presence of diseases in those countries unless we have evidence or reports to the contrary, or unless the organization has a history of making certifications which are later proven invalid.

Nations have a vital economic interest in ensuring that the certifications provided by their OVOs are valid, because the trust placed in these certifications directly affects the extent to which a nation's animals and animal products will be allowed import into other countries. Based on experience with previous certifications provided by the OVO of the PRC, we believe that the certification regarding ASF rinderpest, and Teschen's disease is reliable. In addition, outbreaks of these diseases are a subject of keen international interest due to the serious nature of the diseases, and are usually reported extensively in government and industry publications. There have been no recent reports of outbreaks of these diseases in China.

Comment: The proposed requirement that the donor board originate from premises free from FMD, SVD and hog cholera for 3 years, seems to rely only on epidemiologic data provided by China and may not reliably ensure disease freedom of the premises. Without an active disease surveillance model and serologic confirmation of signs of disease, these time and distance criteria are meaningless.

The premises of the donor boars have been certified by the OVO of the PRC to meet the requirements of the final rule. Donor boars were selected by a selection team composed of industry officials. Chinese and USDA officials. evaluated herd records and records of the OVO of the PRC, and physically examined the animals on the premises. The same procedures were used to select animals for the recent live Chinese swine importation. These officials found no evidence of infection on the premises within the time limits of the rule, and found no other evidence to contradict the certification of the PRC that the premises met the requirements of the rule.

Comment: If semen imported from China did cause an exotic disease outbreak, the costs would be very high, and therefore the risks of importing semen are not justified.

APHIS recognizes that any importation of swine, swine products, and related articles presents some risk of introducing exotic diseases, and also recognizes that the cost of eradicating outbreaks of certain diseases could be very high. To attempt to eliminate all risks, we would have to ban all imports of swine, swine products, and related articles, and even then some risk would exist due to smuggling and accidents. APHIS policy is to allow imports when the risks associated with the imports are reduced to insignificant levels. We believe the final rule reduces the risks associated with importation of Chinese swine semen to an insignificant level, comparable to the risks associated with a variety of other imports, including live swine from China, allowed under APHIS regulations.

Comment: The project to import live Chinese swine through HSTAIC is safer and will better meet research needs for Chinese swine genetics.

APHIS is authorized to permit or deny importation requests based on assessment of the animal disease risk associated with the importations, not based on assessments of the comparative research values of different importations. We have determined that the importation of swine semen from China would not present a significant risk of introducing disease.

Comment: The proposal should be considered a major rule because of the potential costs of a disease outbreak resulting from infected semen.

A rule is considered a "major rule" in accordance with Executive Order 12291 if the rule is likely to result in an annual effect on the economy of $100 million or more; a major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions, or significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic or export markets. APHIS does not agree that adoption of the proposed rule is likely to result in any of these effects. These effects could only occur if the requirements of the rule failed to prevent the introduction of a serious exotic animal disease, and if that disease became established and spread in the United States. APHIS has carefully designed the requirements of the rule to prevent such an occurrence.

Comment: The rule would benefit only a few commercial interests and would be against the interests of the larger pork production industry.

The rule will allow any importer interested in importing Chinese swine semen to do so if the importation complies with the requirements of Part 92. It is unlikely that there will be many such importations in the near future, due to the difficulty and complexity of making the necessary arrangements in China to comply with the requirements of Part 92. We believe that the availability of Chinese swine germplasm for breeding research, and the possible eventual availability of improved breeds incorporating traits from Chinese swine, are in the interests of the larger pork production industry.

Comment: If the semen is used to impregnate sows in the U.S., the sows and their litters should be subject to quarantine safeguards.

APHIS believes that imported Chinese swine semen that has satisfied all the requirements of Part 92 doesn't present a significant risk of speading animal disease, and therefore we have no grounds for imposing further restrictions on sows impregnated with the semen or their litters.

Comment: Unlike the live swine imported from China, there is no 120-day U.S. quarantine for Chinese swine semen donors or recipients. If 60 days quarantine in China is sufficient for swine semen donors, why quarantine live swine for 60 days in China then 120 days in the U.S.?

Live swine require a longer quarantine period because live swine present more possibilities for becoming infected and spreading disease than semen does. Once semen is collected, there is almost no possibility that it will become infected; if it is infected, there is almost no possibility that it will spread the disease unless it is used for artificial insemination. It is possible that live swine could show no symptoms, but be infected and capable of spreading diseases.

We also note that extreme caution was exercised in setting requirements for the first importation of live Chinese swine, due to the novelty of the project and the disease risks associated with it. It is possible that the total quarantine time required for future importations of live Chinese swine, if any, may be reduced based on evaluation of the experience gained through the first importation project.

Comment: It is premature to import China semen before the potential benefits and costs of Chinese genetics have been evaluated, e.g., by results from research on imported live Chinese swine.

APHIS is authorized to permit or deny importation of animals and animal products based on risk of spreading animal diseases, not based on the potential benefits of cross-breeding projects using imported animals or semen. Research results and the marketplace will ultimately determine the uses to which imported Chinese swine and swine semen will be applied.

Comment: The rule should require inclusion of an antibacterial agent in the semen extender, and lavaging of the prepuce of each donor boar with a broad spectrum antibacterial preparation prior to semen collection.

This comment seems to address prevention of bacterial contamination of the collected semen. We agree that this is a valid concern, and the two recommendations made represent two of the many approaches commonly used by industry during semen collection to minimize the risk of bacterial contamination.

We did not address this issue in the proposed rule because many effective procedures exist to prevent bacterial contamination, and the use of one or several of them is normal practice during semen collection. The collection procedure for the first semen shipment scheduled for import under this rule, for example, utilizes an antibacterial agent in the semen extender and filtration of the semen during collection to exclude particles to which bacterial colonies may adhere.

We do not believe it is necessary to specify particular procedures to avoid bacterial contamination of collected semen, in view of normal industry practices to prevent such contamination, and in view of the fact that the semen test requirements would reveal such contamination if it occurs.

Comment: Semen collection should not be allowed until 14 days after the second dihydrostreptomycin injection to prevent the possible transmission of bacterial diseases, especially Leptospirosis.

If any donor boars are infected with bacterial diseases transmissible through semen, such as Leptospirosis, the *in vivo* semen tests performed at FADDL should reveal the infection. We do not wish to postpone semen collection until after the second dihydrostreptomycin injection because of the possibility that the antibiotics could reduce the level of bacteria in semen to a level that, while still theoretically capable of infecting inseminated animals, might escape detection through the tests at FADDL.

Comment: Prior to implementing the final rule, APHIS should arrange a meeting of animal health experts to form a consensus on the technical requirements necessary to safely import swine semen from China.

USDA animal health experts designed the technical requirements contained in the final rule, which was published for comment. The public hearing also provided a forum for comments on the technical requirements. The views of interested parties, including many technically qualified commenters from outside USDA, have been taken into account in developing this final rule. We do not believe there are significant technical issues that have not been raised during this process, and see no need for a special meeting of animal health experts.

Comment: This rule sets a precedent for importing semen from countries with devastating diseases. What is USDA's objective?

One of the basic legislative mandates of APHIS is to regulate the importation of animals and animal products to prevent the introduction or dissemination of contagious, infectious, or communicable disease of animals into the United States. The objective of APHIS is to prohibit importations that could result in such introduction or dissemination of disease, and to allow importations, in accordance with specified procedures and safeguards, that do not pose a significant risk of introducing animal disease. This is the same basic policy that guides all APHIS activities in the area of animal and animal products importation. When APHIS receives a request to import an animal product from a country, such as swine semen from China, we determine whether and under what conditions the requested importation can be allowed, based on our legislative mandate and assessment of the risks involved. This is the same process that has been followed in the past to allow the safe importation, under appropriate restrictions, of animals and animal products from a number of countries where serious animal diseases occur, e.g., FMD and rinderpest. This rule does not set a precedent for allowing a higher level of risk in importations than was previously accepted.

This rule does mark the first time swine semen has been imported from a country where FMD or rinderpest may occur. However, the basic regulations allowing such importations to occur have existed in 9 CFR Part 92 since 1966. The objective of APHIS now is the same as it was when those regulations were enacted; to allow such importations to proceed if they can be accomplished without significant risk of disease introduction or dissemination.

Comment: APHIS should have informed the Agricultural Research Service (ARS), Iowa State University, and the University of Illinois about the proposed importation of semen earlier, so they could consider whether to commit money and resources to the importation of live swine. Participants in the live swine importation were under the impression that the live swine would be the only source of Chinese swine germplasm for research in the U.S. for at least several years.

In September, 1988, APHIS was first informed by PRC officials that the PRC would cooperate in developing and implementing procedures for the safe importation into the United States of Chinese swine semen. By this date, the major arrangements, protocols, and funding agreements for the importation of live Chinese swine had already been completed. APHIS informed ARS of the possibility of swine semen importation soon after the PRC indicated their willingness to cooperate on such projects. In December, 1988, a company filed with APHIS an application to import Chinese swine semen. On March 28, 1989, after determining that safe importation of Chinese swine semen seemed possible, we published a proposed rule on the subject in the **Federal Register** (54 FR 12639–12642, Docket No. 89–021). This rule provided public notice of our proposed requirements for importation of Chinese swine semen.

Our regulations are established pursuant to animal quarantine and related laws which generally provide authority to take action to prevent the introduction of certain animal diseases. These statutory provisions do not provide authority for establishing prohibitions in order to establish or guarantee access to imported animals or animal products for one group and not another. The position of APHIS has always been that importation of swine or swine products from China could be allowed whenever the importer and the exporting country arranged to meet regulatory requirements to ensure that the importation was safe.

Effective Date

Pursuant to the provisions of 5 U.S.C. 553, we find good cause for making this rule effective less than 30 days after publication in the **Federal Register**. Arrangements for the quarantine of Chinese swine and semen collection have already been completed by the importer, USDA, and the People's Republic of China. Any further delay would be unnecessary and would disrupt research schedules and unnecessarily increase the cost for importers. Therefore, the Administrator of the Animal and Plant Health Inspection Service has determined that this final rule should be effective upon signature.

Executive Order 12291 and Regulatory Flexibility Act

We are issuing this rule in conformance with Executive Order 12291, and we have determined that it is not a "major rule. Based on information compiled by the Department, we have determined that this rule will have an effect on the the economy of less than $100 million; will not cause a major increase in costs or prices for consumers, individual industries, Federal, State or local government agencies, or geographic regions; and will not cause a significant adverse effect on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic or export markets.

International trade in porcine semen is a very small business. During recent years, porcine semen imported into the United States has consisted of the ejaculates of no more than two dozen swine a year. Porcine semen imported from China in accordance with this rule will amount to a considerable percentage of the porcine semen imported in 1989, since the one company currently engaged in importations of this type plans to import ejaculates of approximately 16 Chinese boars. It is anticipated that very few additional Chinese porcine semen importation requests will occur in the near future. The ratio of Chinese swine semen imported to total swine semen imported will vary depending on the number and types of requests received for permits to import swine semen in future years.

The semen imported in accordance with this rule will be used in breeding research projects and will have no effects on the U.S. swine industry in the near future.

Importation of Chinese porcine semen may eventually help to improve United States breeds of swine, by its role in developing breeds with increased litter size and other desirable attributes known to be present in Chinese swine breeds.

Under these circumstances, the Administrator of the Animal and Plant Health Inspection Service has determined that this action would not have a significant economic impact on a substantial number of small entities.

Paperwork Reduction Act

The regulations in this rule contain no information collection or recordkeeping requirements under the Paperwork Reduction Act of 1980 (44 U.S.C. 3501*et seq.*).

Executive Order 12372

This program/activity is listed in the Catalog of Federal Domestic Assistance under No. 10.025 and is subject to Executive Order 12372, which requires intergovernmental consultation with state and local officials. (See 7 CFR Part 3015, Subpart V.)

List of Subjects in 9 CFR Part 92

Animal diseases, Canada, Imports, Livestock and livestock products, Mexico, Poultry and poultry products, Quarantine, Transportation, Wildlife.

PART 92—IMPORTATION OF CERTAIN ANIMALS AND POULTRY AND CERTAIN ANIMAL AND POULTRY PRODUCTS; INSPECTION AND OTHER REQUIREMENTS FOR CERTAIN MEANS OF CONVEYANCE AND SHIPPING CONTAINERS THEREON

Accordingly, 9 CFR Part 92 is amended as follows:

1. The authority citation for Part 92 continues to read as follows:

Authority: 7 U.S.C. 1622; 19 U.S.C. 1306; 21 U.S.C. 102–105, 111, 134a, 134b, 134c, 134d, 134f, and 135; 31 U.S.C. 9701; 7 CFR 2.17 2.51, and 371.2(d).

2. In § 92.4, a new paragraph (d)(7) is added to read as follows:

§ 92.4 [Amended]

(d) *Animal semen from countries where rinderpest or foot-and-mouth disease exists.*

(7) *Porcine semen from the People's Republic of China.* In addition to the other requirements of this part, porcine semen may be imported into the United States from the People's Republic of China (PRC) only after the official veterinary organization (OVO) of the PRC has certified that the PRC is free of African swine fever, rinderpest, and Teschen's disease, and after the following conditions have been fulfilled:

(i) The donor boars must pass a 60-day isolation/collection period in a facility jointly approved by the OVO of the PRC and the USDA as adequate to prevent exposure of the donor boars to infectious diseases. Any other swine at the isolation facility, such as teaser animals, must also meet the requirements of this paragraph. No animals may be added to the group after the start of the 60-day isolation/collection period. The Department will permit collection of semen to be initiated at the beginning of the isolation/collection period. The facility shall be cleaned and disinfected with a 4 percent sodium carbonate solution used in accordance with applicable label instructions in the presence of OVO quarantine personnel prior to the start of the isolation. During the isolation/collection period, personnel handling the animals shall not have contact with other domestic farm livestock (this term does not include pets such as dogs and cats). Raw animal food wastes (garbage) shall not be fed to the donor boars while in isolation. At the start of the isolation/collection period, and again after 14 days of isolation, all animals offered for collection of semen must be given an intramuscular injection of dihydrostreptomycin at a rate of 25 mg/kg dosage as a precautionary treatment for leptospirosis. Feed and bedding used during the isolation/collection period shall not originate from areas infected with epizootic diseases and must meet veterinary hygienic requirements established by the OVO of the PRC concerning freedom of the feed and bedding from contamination that could transmit diseases. During the isolation/collection period the swine at the collection center shall not have direct contact with, or exposure to, any other animals not included in the group at the isolation facility. Exposure consists of contact with yards, pens, or other facilities or vehicles that have been in contact with animals and have not been cleaned and disinfected.

(ii) Donor boars shall be selected from premises which are solely swine breeding operations. These premises must be located at the center of an area with a 16 km radius that was free of foot-and-mouth disease (FMD), swine vesicular disease (SVD), and hog cholera for three years prior to semen collection. Donor boars shall not have been vaccinated against these diseases. There shall have been no cases of these diseases on these premises for five years prior to the collection of semen. There shall have been no animal introduced into these premises from farms affected with these diseases for three years prior to the collection of semen. There shall have been no evidence of brucellosis, tuberculosis, or pseudorabies on these premises or on premises adjacent to these premises for one year prior to the collection of semen.

(iii) During the 60-day isolation/collection period, the boars offered for collection of semen shall be subjected to the following tests,[4] in lieu of the tests required by paragraphs (d)(iv) and (d)(vi) of this section. If test samples from any donor boars are lost, damaged, or destroyed prior to testing, or if test results are inconclusive, the donor boars involved shall be subjected to retesting:

(A) Foot-and-mouth disease:

(*1*) Microtiter virus neutralization (VN) test for types A, O, C, and Asia. (The PRC will test for types A and O, and the United States will test for types C and Asia at the USDA Foreign Animal Disease Diagnostic Laboratory (FADDL)).

(*2*) Agar gel immunodiffusion (AGID) test using virus infection associated antigen (VIAA) in serum. (Animals having responses to the AGID test or reacting to the VN test at 1:10 dilution or greater shall be eliminated as semen donors, and all other swine in contact with them shall be retested within 30 days. If the whole group does not have the above responses and there is no clinical evidence of FMD, the group shall be eligible for collection of semen with respect to FMD. Otherwise, none of the group shall qualify as donors of semen for export.)

(B) Brucellosis: Standard tube test (STT) at less than 30 IU/ml, and card test (antigen and protocol to be supplied by USDA).

(C) Swine vesicular disease: Virus neutralization test at 1:40 dilution (serums to be tested at FADDL).

(D) Hog cholera: Fluorescent antibody neutralization (FAN) test at 1:16 dilution.

(E) Japanese B encephalitis: Hemagglutination inhibition (HI) test, negative according to PRC standards.

(F) Pseudorabies: Virus neutralization at 1:4 dilution.

(G) Tuberculosis: Intradermal test using bovine PPD tuberculin (Positive animals will be necropsied. If there are lesions of TB in the test positive pigs, the whole group will be ineligible as semen donors. If no lesions are found, the rest of the pigs will be eligible as semen donors with respect to tuberculosis.

All samples of the above tests, except as noted for FMD, SVD, and TB, will be submitted to laboratories designated by the OVO of the PRC. At least 21 days after the final collection of semen for exportation, the donor animals will be retested for the diseases listed above, with the exception of tuberculosis and

[4] Technical information on laboratory methods and procedures for these tests may be obtained from the Administrator, c/o Director, National Veterinary Services Laboratories, P.O. Box 844, Ames, IA 50010.

Japanese encephalitis. In addition, aliquots of each ejaculate of semen collected shall be submitted to FADDL for pathogen isolation tests for FMD, brucellosis, swine vesicular disease, hog cholera, Japanese encephalitis, and pseudorabies.

(iv) The semen will not be eligible for release in the United States until all tests in paragraph (d)(7)(iii) of this section have been completed with negative results.

(v) Each semen straw or ampule for export must be identified with the name or identification number of the donor boar and with the date of collection. A USDA veterinarian shall certify that he or she has supervised the collection and processing of the semen and its storage until the time it is shipped to the United States. Each shipment will be accompanied by a USDA veterinarian unless the semen is shipped directly to the port of New York with no stops en route. Shipment to the United States will be in accordance with the terms of a USDA import permit. Semen imported in accordance with this section shall be released by USDA to the importer only after all requirements of this section have been met.

Done in Washington, DC, this 5th day of July 1989.

Larry B. Slagle,

Acting Administrator, Animal and Plant Health Inspection Service.

[FR Doc. 89-16233 Filed 7-10-89; 8:45 am]

BILLING CODE 3410-34-M

NUCLEAR REGULATORY COMMISSION

10 CFR Part 2

RIN 3150-AD22

Manner of Service of Pleadings Upon the Secretary of the Commission; Correction

AGENCY: Nuclear Regulatory Commission.

ACTION: Final rule; correction.

SUMMARY: This document corrects a final rule published on June 26, 1989 (54 FR 26730), that requires all parties in NRC proceedings to file copies of all pleadings filed with any agency adjudicatory tribunal with the Office of the Secretary in the same or equivalent manner in which they were filed with the tribunal. The action is necessary to correct an omission in the mailing address for the Secretary of the Commission, and the telecopier phone number.

FOR FURTHER INFORMATION CONTACT: Michael T. Lesar, Acting Chief, Rules Review Section, Regulatory Publications Branch, Division of Freedom of Information and Publications Services, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Telephone: 301-492-7758.

In the June 26, 1989, edition of the **Federal Register**, on page 26731 make the following corrections:

PART 2—[AMENDED]

1. In § 2.712, paragraphs (d)(4) (i), (ii), and (iii) are correctly added to read as follows:

§ 2.712 Service of papers, methods, proof.

(d)

(4)

(i) First class mail: Office of the Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Docketing and Service Branch.

(ii) Express mail: Office of the Secretary, Sixteenth Floor, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852, Attention: Docketing and Service Branch.

(iii) Telecopier: (301) 492-1672; (301) 492-0275; and (301) 492-1977 (verification).

Dated at Bethesda, Maryland, this 3rd day of July 1989.

For the Nuclear Regulatory Commission.

John D. Philips,

Acting Director, Division of Freedom of Information and Publications Services, Office of Administration.

[FR Doc. 89-16185 Filed 7-10-89; 8:45 am]

BILLING CODE 7590-01-M

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 88-NM 189-AD; Amdt. 39-6260]

Airworthiness Directives; Boeing Model 747 Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive, applicable to certain Boeing Model 747 series airplanes, which requires replacement of the takeoff warning system stabilizer limit switch assembly mounting brackets with new brackets to move the switch operating band outside the stabilizer green band. This amendment is prompted by reports that, even though the stabilizer controls have been set within safe operating limits, air loading on the horizontal stabilizer has caused sufficient movement when trim is set at the end of the "green band" to cause the takeoff warning alarm to sound during takeoff. This condition, if not corrected, could result in unnecessary rejected takeoffs and the consequent high potential for airplane incidents and accidents:

EFFECTIVE DATE: August 14, 1989.

ADDRESS: The applicable service information may be obtained from Boeing Commercial Airplanes, P.O. Box 3707 Seattle, Washington 98124. This information may be examined at the FAA, Northwest Mountain Region, Transport Airplane Directorate, 17900 Pacific Highway South, Seattle, Washington, or the Seattle Aircraft Certification Office, 9010 East Marginal Way South, Seattle, Washington.

FOR FURTHER INFORMATION CONTACT: Mr. Mark J. Perini, Systems and Equipment Branch, ANM-130S; telephone (206) 431-1944. Mailing address: Seattle Aircraft Certification Office, FAA, Northwest Mountain Region, 17900 Pacific Highway South, C-68966, Seattle, Washington 98168.

SUPPLEMENTARY INFORMATION: A proposal to amend Part 39 of the Federal Aviation Regulations to include an airworthiness directive, which requires replacement of the takeoff warning system stabilizer limit switch assembly mounting brackets on Boeing Model 747 series airplanes, was published in the **Federal Register** on January 26, 1989 (54 FR 3782).

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the single comment received.

The Air Transport Association (ATA) of America provided comments from one of its member operators who expressed concern that a reported 72-week delivery period for parts kits will allow only four months to modify a fleet of 30 airplanes. The operator requested that the compliance time be increased to 24 months if the reported delivery schedule is correct. The FAA does not concur. The manufacturer has advised the FAA that kit delivery schedules should not be unduly lengthy and parts can be supplied to operators in a timely manner. In light of this information, the FAA considers the proposed compliance time to be appropriate.

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule as proposed.

There are approximately 330 Model 747 series airplanes of the affected design in the worldwide fleet. It is estimated that 137 Model 747 airplanes of U.S. registry will be affected by this AD, that it will take approximately 17.5 manhours per airplane to accomplish the required actions, and that the average labor cost will be $40 per manhour. The average cost of parts is estimated to be $96 per airplane. Based on these figures, the total cost impact of the AD on U.S. operators is estimated to be $109,052.

The regulations adopted therein will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

For the reasons discussed above, I certify that this action (1) is not a "major rule" under Executive Order 12291; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities, under the criteria of the Regulatory Flexibility Act. A final evaluation has been prepared for this action and is contained in the regulatory docket. A copy of it may be obtained from the Rules Docket.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends 14 CFR Part 39 of the Federal Aviation Regulations as follows:

PART 39—[AMENDED]

1. The authority citation for Part 39 continues to read as follows:

Authority: 49 U.S.C. 1354(a), 1421 and 1423; 49 U.S.C. 106(g) (Revised Pub. L. 97–449, January 12, 1983); and 14 CFR 11.89.

§ 39.13 [AMENDED]

2. Section 39.13 is amended by adding the following new airworthiness directive.

Boeing: Applies to Model 747 series airplanes, as listed in Boeing Service Bulletin 747–27–2228, Revision 1, dated October 26, 1984, certificated in any category. Compliance required within the next 18 months following the effective date of this AD, unless previously accomplished.

To prevent rejected takeoffs as a result of false takeoff warnings, accomplish the following:

A. Replace the stabilizer limit switch assembly mounting brackets, in accordance with Boeing Service Bulletin 747–27–2228, Revision 1, dated October 26, 1984.

B. An alternate means of compliance or adjustment of the compliance time, which provides an acceptable level of safety, may be used when approved by the Manager, Seattle Aircraft Certification Office, FAA, Northwest Mountain Region.

Note: The request should be forwarded through an FAA Principal Maintenance Inspector (PMI), who will either concur or comment and then send it to the Manager, Seattle Aircraft Certification Office.

C. Special flight permits may be issued in accordance with FAR 21.197 and 21.199 to operate airplanes to a base in order to comply with the requirements of this AD.

All persons affected by this directive who have not already received the appropriate service documents from the manufacturer may obtain copies upon request to Boeing Commercial Airplanes, P.O. Box 3707 Seattle, Washington 98124. These documents mav be examined at the FAA, Northwest Mountain Region, Transport Airplane Directorate, 17900 Pacific Highway South, Seattle, Washington, or Seattle Aircraft Certification Office, 9010 East Marginal Way South, Seattle, Washington.

This amendment becomes effective August 14, 1989.

Issued in Seattle, Washington, on June 29, 1989.

Steven B. Wallace,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 89–16212 Filed 7–10–89; 8:45 am]

BILLING CODE 4910-13-M

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14 CFR Part 39

[Docket No. 88-ANE-36; Amdt. 39-6248]

Airworthiness Directives; Garrett Engine Division (Hereinafter Called "Garrett") Allied-Signal Incorporated, Models TFE731-3, -3A, -3AR, and -3R Turbofan Engines.

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This action publishes in the Federal Register and makes effective as to all persons an amendment adopting a new airworthiness directive (AD) which was previously made effective as to all known U.S. owners and operators of certain Garrett Turbofan Engine TFE731-3 models by individual priority letters. AD 88–13–03 requires an inspection of twelve suspect reworked high pressure turbine rotor (HPTR) discs having a reground curvic coupling. The AD was needed to prevent uncontained HPTR disc failures which could occur on engines containing certain suspect reworked discs.

DATES: Effective July 21, 1989, as to all persons except those to whom it was made immediately effective by emergency priority letter AD issued August 30, 1988, which contained this amendment.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of June 21, 1989.

Compliance: As indicated in the body of this AD.

ADDRESSES: The applicable engine manufacturer's service bulletin (SB) may be obtained from Garrett General Aviation Services Division, Distribution Center, 2340 East University, Phoenix, Arizona 85034; telephone (602) 225–2548, or may be examined in the Regional Rules Docket, Room 311, Office of the Assistant Chief Counsel, Federal Aviation Administration, New England Region, 12 New England Executive Part, Burlington, Massachusetts 01803.

FOR FURTHER INFORMATION CONTACT: Joseph Costa, Aerospace Engineer, Propulsion Branch, ANM–140L, Los Angeles Aircraft Certification Office, Transport Airplane Directorate, Aircraft Certification Service, Federal Aviation Administration, 3229 East Spring Street, Long Beach, California 90806–2425; telephone (213) 988–5246.

SUPPLEMENTARY INFORMATION: The FAA determined, during an investigation of a recent uncontained engine failure on a Westwind II airplane, that the failed engine was assembled with an HPTR disc having a reground curvic coupling. Examination of the failed disc and another reground HPTR disc revealed that the curvic coupling tooth root fillet radii were ground below minimum drawing tolerance. The FAA has determined that, if improperly ground discs remain in service, additional uncontained engine failures could occur since the discs' cyclic lives are reduced. This investigation further revealed that there are twelve (12) suspect reworked turbine discs, therefore, AD action was necessary to prevent additional uncontained engine failure. This AD requires the review of engine maintenance records on TFE731-3, -3A, -3AR, and -3R engine models to determine if part numbers 3072316-2 or -3 or 3073110-1 or -2 HPTR discs were installed and to remove suspect serial numbered discs.

Since it was found that immediate corrective action was required, notice and public procedure thereon were impracticable and contrary to public interest, and good cause existed to make the AD effective immediately by individual priority letters issued August 30, 1988, to all known U.S. owners and operators of certain Garrett Turbofan Engine TFE731 models. These conditions still exist, and the AD is hereby published in the **Federal Register** as an amendment to § 39.13 of Part 39 of the Federal Aviation Regulations (FAR) to make it effective as to all persons.

The regulations adopted herein do not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

The FAA has determined that this regulation is an emergency regulation and that it is not considered to be major under Executive Order 12291. It is impracticable for the agency to follow the procedures of Executive Order 12291 with respect to this rule since the rule must be issued immediately to correct an unsafe condition in aircraft. It has been further determined that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). If this action is subsequently determined to involve a significant/major regulation, a final regulatory evaluation or analysis, as appropriate, will be prepared and placed in the regulatory docket (otherwise, an evaluation or analysis is nor required). A copy of it, when filed, may be obtained from the Regional Rules Docket.

List of Subjects in 14 CFR Part 39

Engines, Air transportation, Aircraft, Aviation safety, and Incorporation by reference.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration (FAA) amends Section 39.13 of 14 CFR Part 39 of the Federal Aviation Regulations (FAR) as follows:

PART 39—[AMENDED]

1. The authority citation for Part 39 continues to read as follows:

Authority: 49 U.S.C. 1354(a), 1421, and 1423; 49 U.S.C. 106(g) (Revised, Pub. L. 97-449, January 12, 1983); and 14 CFR 11.89.

§ 39.13 [Amended]

2. Section 39.13 is amended by adding the following new airworthiness directive (AD):

Garrett Engine Division, Allied-Signal, Inc. (formerly Garrett Turbine Engine Company, GTEC): Applies to Garrett TFE731-3 turbofan engine models installed in airplane models as follows:

Garrett Model No.	Airplane Model
TFE31-3-1C	Falcon 50
TFE31-3-1E	731 Jetstar
TFE31-3-1F	Jetstar II
TFE31-3-1G	Westwind 1124
TFE31-3-1H	BAe HS125-Series
TFE31-3-1J	CASA 101
TFE31-3-1K	Jetstar II (Springfield)
TFE31-3A-2B	Learjet 55
TFE31-3A-2B1	Learjet 55
TFE31-3A-200G	Westwind 1125
TFE31-3AR-2B	Learjet 55
TFE31-3AR-2B1	Learjet 55
TFE31-3AR-200G	Westwind 1125
TFE31-3R-1D	Saberliner 65/65A
TFE31-3R-1G	Westwind 1124
TFE31-3R-1H	Bae HS125-Series

Compliance is required as indicated, unless already accomplished.

To prevent uncontained engine failures, accomplish the following within 25 cycles in service, after the effective date of this AD:

(a) Review the engine maintenance records on the above listed engine models to determine if part number 3072316-2 or -3, or 3073110-1 or -2, high pressure turbine rotor (HPTR) disc with one of the following serial numbers is installed. Spare discs must also be checked for applicable part number and serial number.

1-18040-9514	6-12112-938	7-12112-875
4-12112-167	6-12112-954	8-12112-199
4-12112-1536	6-12112-960	9-12112-3862
4-12112-1654	6-12112-1938	9-12112-3878

(b) Inspect and remove from service, if necessary, suspect serial number disc installed in engines in accordance with the accomplishment instructions of Garrett Alert Service Bulletin TFE731-A72-3376, dated August 19, 1988, and replace it with a serviceable HPTR disc.

(c) Inspection of the disc is required per paragraph (b) above, before further flight operation, if a suspect serial number disc is located in a spare engine or as a spare part.

(d) Aircraft may be ferried in accordance with the provisions of FAR 21.197 and 21.199 to a base where the AD can be accomplished.

(e) Upon submission of substantiating data by an owner or operator through an FAA Airworthiness Inspector, the Manager, Los Angeles Aircraft Certification Office, Transport Airplane Directorate, Aircraft Certification Service, Federal Aviation Administration, 3229 East Spring Street, Long Beach, California 90806-2425, may approve an equivalent means of compliance or an adjustment of the compliance schedule which provides an equivalent level of safety.

The HPTR disc inspection shall be done in accordance with Garrett SB TFE731-A72-3376 date August 14, 1986. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies may be obtained from Garrett General Aviation Services Division, Distribution Center, 2340 East University, Phoenix, Arizona 85034; telephone (602) 225-2548. Copies may be inspected at the Regional Rules Docket, Office of the Assistant Chief Counsel, Federal Aviation Administration, New England Region, 12 New England Executive Park, Room 311, Burlington, Massachusetts 01803, or at the Office of the Federal Register, 1100 L Street, Room 8301, Washington, DC 20591.

This amendment becomes effective July 21, 1989, as to all persons except those persons to whom it was made immediately effective by Priority Letter AD 88-18-03, issued August 30, 1988, which contained this amendment.

Issued in Burlington, Massachusetts, on June 9, 1989.

Arthur J. Pidgeon,

Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

[FR Doc. 89-16213 Filed 7-10-89; 8:45 am]

BILLING CODE 4910-13-M

DEPARTMENT OF COMMERCE

Bureau of the Census

15 CFR Part 50

Fee Structure for Age Search and Citizenship Information

ACTION: Final rule.

SUMMARY: The Bureau of the Census is hereby amending Title 15, Code of Federal Regulations, Chapter 1, Part 50 § 50.5, fee structure for age search and citizenship information, to increase the fee for an age search from $15.00 to $25.00. This change is being made to recover the increase in cost to process a request. Title 13, United States Code, requires recovery of the costs. No transcript of any record will be furnished that would violate statutes requiring that information furnished to the Bureau of the Census be held confidential and not used to the detriment of the person to whom it relates.

EFFECTIVE DATE: October 1, 1989.

FOR FURTHER INFORMATION CONTACT: Glen Everhart, Bureau of the Census, Pittsburg, Kansas 66762, (316) 231-7100.

SUPPLEMENTARY INFORMATION: This is not a major rule within the meaning of section 1 of Executive Order 12291. It will not result in: (1) An annual effect on the economy of $100 million or more; (2) a major increase in costs or prices for consumers, individual industries, Federal, state, or local government agencies, or geographic regions; or (3) significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of U.S.-based enterprises to compete with foreign-based enterprises in domestic or export markets.

In accordance with the rulemaking provisions of the Administrative Procedure Act (APA), 5 U.S.C. 553(b)(B), it has been determined that notice and opportunity to comment on this schedule of fees are unnecessary because this is a minor rule, making a technical amendment to adjust the agency's fee structure to recover the actual cost for searching the records and furnishing information therefrom. The actual or estimated cost recovery is required by 13 U.S.C. 8(a). This cost increase is minimal, reflecting the actual increased costs for searching and furnishing the information, and funds for this purpose are not available from any other source. Requests for searches should be directed to the Bureau of the Census, Pittsburg, Kansas 66762.

Since notice and opportunity to comment are not required by the APA or any other law, this rule is not a "rule" within the meaning of the Regulatory Flexibility Act and neither an initial nor final regulatory flexibility analysis will be prepared.

Accordingly, the Department of Commerce's General Counsel has determined and so certified to the Office of Management and Budget that dispensing with notice and opportunity for comment is consistent with the APA and other relevant laws.

This rule does not impose an information collection requirement for purposes of the Paperwork Reduction Act.

The legal authority is Title 13, United States Code.

List of Subjects in 15 CFR Part 50

Census data.

PART 50—[AMENDED]

1. The authority citation for 15 CFR Part 50 continues to read as follows:

Authority: Sec. 349 Stat. 293, as amended; 15 U.S.C. 192A. Interprets or applies sec. 1, 40 Stat. 1256, as amended, sec. 1.49 Stat. 292, sec. 8, 60 Stat. 1013, as amended, 15 U.S.C. 192, 169A. 13 U.S.C. 8, unless otherwise noted.

2. 15 CFR Part 50 is amended by revising § 50.5 to read as follows:

§ 50.5 Fee structure for age search and citizenship information.

Type of service	Fee
Searches of not more than two censuses for one person and one transcript of the more appropriate record	$25.00
Each additional copy of census transcript	2.00
Each full schedule requested	6.00

Note—The $6.00 for each full schedule requested is in addition to the fee increase to $25.00.

Dated: July 5, 1989.

C.L. Kincannon,

Deputy Director, Bureau of the Census.

[FR Doc. 89-16206 Filed 7-10-89; 8:45 am]

BILLING CODE 3510-07-M

Bureau of Export Administration

15 CFR Parts 771, 774, and 786

[Docket No. 81139-9123]

General License G-COCOM

AGENCY: Bureau of Export Administration, Commerce.

ACTION: Final rule.

SUMMARY: The Omnibus Trade and Competitiveness Act (OTCA), signed by the President on August 23, 1988, amended section 5(b)(2) of the Export Administration Act of 1979 (EAA) to allow commodities described in the Advisory Notes for the People's Republic of China to be exported without a license to COCOM participating countries and countries determined to be COCOM comparable. On December 6, 1988, the Bureau of Export Administration published a proposed rule in the **Federal Register** to implement this provision. Having received and considered comments, the Bureau of Export Administration is issuing a final rule creating a new general license designated G-COCOM. General License G-COCOM is designed for exports to COCOM countries and countries determined to have sufficient export control systems to warrant this benefit under section 5(k) of the EAA. Commodities that may be exported under General License G-COCOM are those described in Supplement No. 2 to Part 771, and those commodities eligible for General License G-COM or GFW Supplement No. 2 to Part 771 lists commodities that could have been exported to the People's Republic of China with only notification to other COCOM governments as of the date of enactment of the Trade Act. The list of eligible commodities may be upgraded from time to time to reflect action taken by the Coordinating Committee (COCOM).

Some commodities are ineligible for General License G-COCOM because they are controlled for other than national security reasons or because their export requires more than mere notification to COCOM.

A Swiss Blue Import Certificate will be required for exports to Switzerland under this General License G-COCOM.

EFFECTIVE DATE: This rule is effective July 11, 1989.

FOR FURTHER INFORMATION CONTACT: Patricia Muldonian, Regulations Branch, Office of Technology and Policy Analysis, Bureau of Export Administration, Telephone: (202) 377-2440.

SUPPLEMENTARY INFORMATION:

Background

The Omnibus Trade and Competitiveness Act (OTCA), signed by the President on August 23, 1988, amended section 5(b)(2) of the Export Administration Act of 1979 (EAA), by allowing exports of "Green Zone" commodities to COCOM participating countries and countries determined to be COCOM comparable. Consistent with the OTCA, the Department of Commerce issued a proposed rule on December 6, 1988 (53 FR 49202) with a request for comments on ways to implement the legislative requirements.

The proposed rule created a new General License G-COCOM to allow shipments of additional low level dual use items to COCOM participating countries and countries determined to have sufficient export control systems to warrant the benefit under section 5(k) of the EAA. A proposed new Supplement No. 2 to Part 771 listed commodities that could be exported to the People's Republic of China with only notification to other COCOM governments as of the date of enactment of the Trade Act. In addition, the proposal would not have authorized the use of the general license provision for exports to entities that the exporter knows or has reason to know are controlled-in-fact by Country Groups Q, W, Y, or Z.

The Department received comments from 14 firms and associations. In general, the comments were opposed to the scope and limitation of the proposed General License G-COCOM.

Most commenters felt that creation of yet another general license was confusing, and that it was the intent of

Congress to expand General License G-COM to allow exports of "Green Zone" commodities, not to create a new general license or restrict commodities to the "PRC Green Zone" as of August 23, 1988. Commenters felt that the proposed General License G-COCOM will cause confusion in implementation. The final rule retains the proposed General License G-COCOM structure of listing the eligible "Green Zone" commodities, as of the date of enactment of the Trade Act, in Supplement No. 2 to Part 771. However, the final rule adds four entries to the Supplement that were erroneously omitted in the proposal and raises the maximum bit transfer rate of Disk Drives from 3 Mbytes/sec. to 6 Mbytes/sec.

The proposed rule would not have made the general license provision available when the exporter knows or has reason to know that the recipient is a person or entity controlled-in-fact by governments of Country Groups Q, W, Y, or Z. Many commenters expressed concern that other COCOM countries do not have the same restriction and that these unilateral controls placed an unfair advantage on U.S. competitiveness. This final rule removes the restriction in its entirety.

A number of commenters noted that the restriction to consumption within eligible countries would prevent shipments for inventory, where ultimate use was not yet established. The final rule allows shipment under G-COCOM where the goods might be reexported under other authorization.

Some commenters observed that the Act addressed "goods and technology" while the proposal dealt only with goods. BXA is revising the technical data regulations and will address the Trade Act revisions in that separate document.

In addition, the proposed rule specified Switzerland as the only non-COCOM country eligible to benefit from General License G-COCOM. Many commenters questioned why only Switzerland was included; they believed that Congress intended to include other countries for eligibility. The EAA provided for the exercise of judgment as to whether a country's export controls are comparable in practice to those of COCOM participating countries. The Department of Commerce can also treat a country like a COCOM participating country in some or all respects under the EAR without having determined that the country's export controls are fully comparable in practice to the COCOM system. Because of continued improvement in its export controls, this final rule adds Finland on this discretionary basis as a country to which this General License provision will apply. Possible extension to other countries will be considered.

Export license applications do not generally specify whether the goods are within advisory notes or not. Thus, the Department has no statistical basis for determining how many individual validated license applications will be eliminated as a result of this new general license. However, we expect a sharp decrease in applications because G-COCOM covers a broad range of goods destined to the major markets for U.S. exporters.

Rulemaking Requirements

1. This rule is consistent with Executive Orders 12291 and 12661.

2. This rule does not contain a collection of information subject to the requirements of the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 *et seq.*). As a result of this rule, a reduction of paperwork burden on the public is anticipated. Affected OMB controlled collection actions include 0694-0005, 0694-0007 and 0694-0010.

3. This rule does not contain policies with Federalism implications sufficient to warrant preparation of a Federalism assessment under Executive Order 12612.

4. Because a notice of proposed rulemaking and an opportunity for public comment are not required to be given for this rule by section 553 of the Administrative Procedure Act (5 U.S.C. 553), or by any other law, under sections 603(a) and 604(a) of the Regulatory Flexibility Act (5 U.S.C. 603(a) and 604(a)) no initial or final Regulatory Flexibility Analysis has to be or will be prepared.

5. Section 13(a) of the Export Administration Act of 1979 (EAA), as amended (50 U.S.C. app. 2412(a)), exempts this rule from all requirements of section 553 of the Administrative Procedure Act (APA) (5 U.S.C. 553), including those requiring publication of a notice of proposed rulemaking, an opportunity for public comment, and a delay in effective date. Nevertheless, to help ascertain the economic impact of the regulation upon the general public, the regulation was issued in proposed form and public comment was solicited. Because this rule was originally issued in proposed form it complies with section 13(b) of the Export Administration Act.

List of Subjects in 15 CFR Parts 771, 774, and 786

Exports, Reporting and recordkeeping requirements.

Accordingly, Parts 771, 774, and 786 of the Export Administration Regulations (15 CFR Parts 768-799) are amended as follows:

1. The authority citations for Parts 771 and 786 continue to read as follows:

Authority: Pub. L. 96-72, 93 Stat. 503 (50 U.S.C. app. 2401 et seq.), as amended by Pub. L. 97-145 of December 29, 1981, by Pub. L. 99-64 of July 12, 1985 and by Pub. L. 100-418 of August 23, 1988; E.O. 12525 of July 12, 1985 (50 FR 28757 July 16, 1985); Pub. L. 95-223 of December 28, 1977 (50 U.S.C. 1701 et seq.); E.O. 12532 of September 9, 1985 (50 FR 36861, September 10, 1985) as affected by notice of September 4, 1986 (51 FR 31925, September 8, 1986); Pub. L. 99-440 of October 2, 1986 (22 U.S.C. 5001 et seq.); and E.O. 12571 of October 27 1986 (51 FR 39505, October 29, 1986).

2. The authority citation for 15 CFR Part 774 is revised to read as follows:

Authority: Pub. L. 96-72, 93 Stat. 503 (50 U.S.C. app. 2401 *et seq.*), as amended by Pub. L. 97-145 of December 29, 1981, Pub. L. 99-64 of July 12, 1985, and by Pub. L. 100-418 of August 23, 1988; E.O. 12525 of July 12, 1985 (50 FR 28757 July 16, 1985).

PART 771—[AMENDED]

3. A new § 771.24 is added to read as follows:

§ 771.24 General License G-COCOM: certain shipments to cooperating countries.

(a) *Scope.* A general license designated G-COCOM is established, authorizing exports to COCOM participating countries, Finland and Switzerland, for use or consumption therein, of commodities that the United States may approve for export to controlled countries with only notification to the COCOM governments, as well as commodities within the China "Green Zone" as of August 23, 1988.

(b) *Eligible countries.* The countries that are eligible to receive exports under this general license are Australia, Belgium, Denmark, France, the Federal Republic of Germany, Finland, Greece, Italy, Japan, Luxembourg, the Netherlands, Norway, Portugal, Spain, Switzerland, Turkey, and the United Kingdom. Exports may be made under G-COCOM only when intended for consumption within the importing country, reexport among and consumption within eligible countries, or reexport in accordance with other provisions of the Export Administration Regulations.

(c) *Eligible exports.* The commodities eligible for export under this general license are those also eligible for General License G-COM or GFW and those described in Supplement No. 2 to

Part 771. End-use and quantity restrictions in Supplement No. 2 to Part 771, and in the notes identifying those commodities that may be shipped under General License G-COM or GFW (see § 771.8 and § 771.23), may be disregarded in determining whether G-COCOM may be used. Shipments of eligible commodities are subject to the prohibitions contained in § 771.2(c).

(d) *Special documentation requirements for Switzerland.* Prior to shipment to Switzerland under this General License G-COCOM, the exporter must obtain and retain on file a Swiss Blue Import Certificate.

4. A new Supplement No. 2 to Part 771 is added to read as follows:

Supplement No. 2 to Part 771—Commodities Eligible for General License G-COCOM.

This Supplement provides a list of commodities eligible for General License G-COCOM by Export Control Commodity Number and commodity description. Use of this general license is subject to the conditions of § 774.24.

1091—Numerical control units, numerically controlled machine tools, dimensional inspection machines and specially designed software therefor, and specially designed sub-assemblies therefor, as follows:

(a) Numerical control units having all of the following characteristics:

Note: Numerical control units exported separately from equipment must be for use with and specially configured for equipment permitted by paragraph (b) of this entry.

(1) No more than four contouring interpolating (any mathematical function including linear and circular) axes can be simultaneously coordinated. Units may have:

(i) One or more additional axes in which the rate of movement is not coordinated, varied, or modulated with that of another axis; or

(ii) One additional set of four contouring axes provided that separate feedrate numbers, standard or optional, do not control more than any four contouring axes;

(2) Minimum programmable increment equal to or greater then 0.001 mm;

(3) Interfaces as follows:

(i) No more than one integral interface designed to meet ANSI/IEEE standard 488-1978, IEC publication 625-1, or any equivalent standard; and

(ii) An unlimited number of interfaces meeting EIA standard RS-232-C or any equivalent standard;

(4) On-line (real-time) modification of the tool path, feedrate and spindle data limited to the following:

(i) Cutter diameter compensation normal to the center line path;

(ii) Automatic acceleration and deceleration for starting, cornering and stopping;

(iii) Axis transducer compensation including lead screw pitch compensation (measurements on one axis may not compensate another axis);

(iv) Constant surface speed with or without limits;

(v) Spindle growth compensation;

(vi) Feedrate and spindle speed override;

(vii) Fixed and repetitive cycles, including automatic cut vector generation;

(viii) Tool and fixture offset;

(ix) Part program tape editing, including source program language and centerline location data (CLDATA);

(x) Tool length compensation;

(xi) Part program storage;

(xii) Variable pitch threading;

(xiii) Inch/metric conversion; and

(xiv) Feedrate override based on spark voltage for electrical discharge machines;

(5) Word size equal to or less than 32 bits (excluding parity bits);

(6) "Software" or "firmware" including "software" or "firmware" of any programmable unit or device furnished, not exceeding control unit functions as provided in paragraphs (a)(1) to (a)(5) of this entry, and restricted as follows:

(i) Application programs executable without further compilation, assembly, interpretation or processing, other than control unit parameter initialization, and memory storage loading, and each supplied as an entity rather than in modular form, as follows:

(A) An operating program to allow the unit to perform its normal functions;

(B) One or more diagnostic programs to verify control or machine performance and to permit localization of hardware malfunctions; and

(C) A translator program for programming the control-to-machine interface;

(ii) Documentation for application programs not containing the following:

(A) Listing of program instructions, except that necessary for diagnostics for routine hardware maintenance;

(B) Description of program organization or function beyond that required for program use and for maintenance of exported hardware and "software".

(C) Flow charts, logic diagrams or algorithms employed, except those necessary for use of diagnostics for routine hardware maintenance;

(D) Any reference to specific memory storage locations, except those necessary for diagnostics for routine hardware maintenance; and

(E) Any other information that would assist in the analysis or modification of all or of part of the software;

(b) Machine tools and dimensional inspection machines that, according to the manufacturers' technical specifications, can be equipped with numerical control units covered by paragraph (a) of this entry, as follows:

(1) Boring mills, milling machines and machining centers having all of the following characteristics:

(i) No more than four axes capable of simultaneously coordinated contouring motion, of which no more than three axes shall be linear and no more than one axis shall be rotary;

Note: A secondary contouring axis, parallel with a primary axis, e.g., W-axis on horizontal boring mills, is not counted in the total of four contouring axes. A secondary rotary table with the centerline parallel to the primary rotary table is also not counted in the total of four contouring axes. (Machines may have non-contouring parallel or non-contouring non-parallel rotary axes in addition to the four axes capable of simultaneously coordinated contouring motion.)

(ii) Maximum traverse (X-axis) travel equal to or less than 30,000 mm;

(iii) Maximum vertical (Y-axis) travel equal to or less than 8,000 mm;

(iv) Maximum horizontal (Z-axis) travel equal to or less than 5,000 mm;

(v) Unlimited spindle drive motor power;

(vi) No more than two simultaneously working spindles (the machine may have multiple tool heads or turrets; a spindle capable of driving a multiple drill head is considered as a single spindle);

(vii) Axial and radial axis motions measured at the spindle axis in one revolution of the spindle equal to or greater than $D \times 2\,10^{-5}$ mm TIR (peak-to-peak) where D is the spindle diameter in mm;

(viii) An incremental positioning accuracy equal to or greater (coarser) than + or 0.002 mm in any 200 mm of travel;

(ix) An overall positioning accuracy in the axis equal to or greater (coarser) than:

(A) + or − 0.003 mm for machines with a total length of axis travel equal to or less than 300 mm;

(B) + or − (0.003 + (0.001/300 × (L-300))) mm for machines with a total length of axis travel, L, greater than 300 mm and equal to or less than 3,300 mm;

(C) + or − 0.013 mm for machines with a total length of axis travel greater than 3,300 mm;

(2) Machine tools, other than boring mills, milling machines and machining centers described in sub-paragraph (b)(1) of this entry, and dimensional inspection machines, having all the following characteristics:

(i) No more than four axes capable of simultaneously coordinated contouring motion, of which no more than three axes shall be linear and no more than one axis shall be rotary;

Note: Up to four secondary contouring axes parallel with the primary axis but not simultaneously coordinated with four primary axes may be permitted.

(ii) No more than two simultaneously working spindles (the machine may have multiple tool heads or turrets);

(iii) Radial axis motion measured at the spindle axis equal to or greater than 0.0008 mm TIR (peak-to-peak) in one revolution of the spindle (for lathes, turning machines, contour grinding machines, etc.);

(iv) An incremental positioning accuracy equal to or greater (coarser than + or − 0.002 mm in any 200 mm of travel;

(v) An overall positioning accuracy in any axis equal to or greater (coarser) than:

(A) + or − 0.005 mm for machines with a total length of axis travel equal to or less than 300 mm;

(B) + or − (0.005 + (0.002/300 × (L-300))) mm for machines with a total length of axis travel, L, greater than 300 mm and equal to or less than 3,300 mm;

(C) + or − 0.025 mm for machines with a total length of axis greater than 3,300 mm.

1312—Presses having no controlled thermal environment within the closed cavity and that are used for the manufacture of industrial refractory and ceramic products.

1353—Equipment specially designed for the manufacture of silicon-based optical fiber or cable, provided that it is designed to produce non-militarized silicon-based optical fiber or cable that is optimized to operate at a wavelength of 1,350 mm or less.

1354—Equipment for the manufacture of printed circuit boards, as follows:

(a) Equipment specially designed for the removal of resists or printed circuit board materials by dry (e.g., plasma) methods;

(b) "Stored program controlled" multi-spindle drills and routers with the following characteristics:

(1) Absolute positioning accuracy of + or − 5 micrometers or worse; and

(2) X and Y positioning speeds of 0.210 meter/second or slower for drilling or for routing.

1355—Equipment, as follows, for use in silicon semi-conductor manufacturing:

(a) Equipment for the production of polycrystalline silicon;

(b) Crystal pullers, except those that:

(1) Are rechargeable without replacing the crucible; or

(2) Operate at pressures above 1 atmosphere;

(c) Diffusion furnaces, except those that use computer feedback control operated from an "associated" computer;

Note: "Associated" with equipment or system means:

(a) Can feasibly be either:

(i) Removed from the equipment or systems; or

(ii) Used for other purposes; and

(b) Is not essential to the operation of such equipment or systems.

(c) No paragraph (c) exists for this note.

(d) Vacuum induction-heated zone refining equipment;

(e) Epitaxial reactors, except those that are:

(1) For molecular beam epitaxy; or

(2) Specially designed for organo-metallic deposition or liquid-phase epitaxy;

(f) Magnetically enhanced multiple-wafer sputtering equipment;

(g) Ion implantation, ion-enhanced or photo-enhanced diffusion equipment, except having:

(1) Patterning capability;

(2) An accelerating voltage for more than 200 keV· or

(3) A current greater than 0.5 mA;

(h) "Batch" planar, "batch" reactive ion, barrel or barrel-planar dry etching equipment, except equipment incorporating end-point detection (Note: "Batch" refers to equipment capable of etching two or more wafers simultaneously.)

(i) Low pressure chemical vapor deposition equipment, except equipment capable of metal deposition;

(j) Reserved;

(k) Single-sided lapping and polishing equipment for wafer surfacing finishing;

(l) Hard surface (e.g., chromium, silicon, iron oxide) coated substrates (e.g., glass, quartz, sapphire) for the preparation of masks having dimensions greater than 12.5 cm x 12.5 cm;

(m) Mask fabrication equipment using photo-optical method that was either commercially available before January 1, 1980, or has a performance no better than such equipment;

(n) Manually operated mask inspection equipment;

(o) Photo-optical contact and proximity mask align and exposure equipment defined in paragraph (b)(2)(vi), and projection aligners that can produce pattern sizes no finer than 3 micrometers;

(p) Contact image transfer equipment;

(q) Wafer and chip inspection equipment that was either commercially available before January 1, 1981, or has a performance no better than such equipment;

(r) Equipment for concurrent etching and doping profile analysis employing capacitance-voltage or current-voltage analysis techniques;

(s) "Stored program controlled" wire or die bonders;

(t) "Stored program controlled" wafer probing equipment that does not include associated test equipment or drive circuitry other than those identified in paragraphs (u) or (v) of ECCN 1355A;

(u) Test equipment for:

(1) Television circuit testing;

(2) Operational amplifier testing;

(3) Voltage regulator testing;

(4) Analog-to-digital and digital-to-analog converter testing; or

(5) Discrete semi-conductor testing at frequencies of 18 GHz or less;

(v) "Stored program controlled" equipment for functional testing (truth table) at a pattern rate of 10 MHz or less for micro-circuits or microcircuit assemblies.

1358—The following equipment:

(a) "Automatic" and "semi-automatic" equipment for monitoring, grading, exercising or testing recording media controlled by paragraph (d) of ECCN 1572 or free from export control under paragraph (c)(4) of Exception 3 to ECCN 1572A having the following characteristics:

(1) For digital recording tape, a maximum recording density of less than 3,937 bits per cm; or

(2) For analog recording tape, a coating thickness greater than 2.54 micrometers;

(b) Diskette unit test equipment.

1359—Tooling and fixtures for the manufacture of fiber-optic connectors and couplers controlled for export by ECCN 1526(e), provided that the tooling and fixtures are not specially designed to manufacture fiber-optic connectors and couplers for use with:

(a) Non-silicon-based fiber or cable; or

(b) Fiber-optic bulkhead or hull penetrators in ships or vessels.

1391—The following equipment:

(a) "Robots" controlled for export by sub-paragraph (a) of this entry that are for civil use and not covered by sub-paragraph (a)(2) to (a)(8), (a)(10) or (a)(11);

(b) Electronic controllers covered by sub-paragraph (b) for the control of "robots" eligible for treatment under this entry;

(c) "End effectors covered by sub-paragraph (c) for use with "robots" eligible for treatment under this entry;

(d) Vision systems, limited as follows:

(1) Capable of processing no more than 200,000 pixels using an industrial television camera or a solid-state camera;

(2) Not programmable by the user except:

(i) To input reference images through the system's camera;

(ii) To input valves of fixed parameters, including teach-in parameters; or

(iii) To select pre-programmed sub-routines;

(3) Not capable of continuous reaction or continuously updating the "robot" position while the "robot" is moving;

Note: This limitation precludes the use of vision systems for weld seam tracking during the welding operation but does not preclude straight-line or single-plane weld seam tracking using a single pass.

(4) Capable of no more than one scene analysis every 0.02 second;

(5) The "software" provided for the vision processor shall be in "object code" only and shall not be capable of full three-dimensional mathematical modeling or full three-dimensional scene analysis;

Note: This scene analysis limitation does not preclude approximation of the third dimension by viewing at a given angle, nor limited gray scale interpretation for the perception of depth or texture for the approved tasks (2½ D).

1460—Aircraft and helicopters considered to be of the types that are in bona fide normal civil use, containing equipment controlled for export by ECCNs 1485A or 1501A, provided that:

(a) Any controlled components in such aircraft or helicopters are limited to those normally installed by the manufacture;

(b) Repair and maintenance of controlled inertial navigation systems and complete overhaul of controlled engines will be performed in a non-proscribed country or by representatives of the Western supplier; and

(c) Parts controlled for export will be replaced on a one-for-one basis.

1510—The following equipment:

(a) Acoustic systems or equipment for positioning surface vessels or underwater vehicles, providing that:

(1) They are not capable of processing responses from more than 8 beacons in the calculation of a single point;

(2) They have neither devices nor "software" for correcting automatically velocity-of-propagation errors for point calculation;

(3) They have no coherent signal processing means; and

(4) Transducers, acoustic modules, beacons or hydrophones therefor are not designed to withstand pressure during normal operation at depths greater than 1,000 meters;

(b) Side-scan sub-bottom profile systems, no portion of which is specially designed for operation at depths greater than 1,000 meters.

1519—The following equipment or components and accessories controlled for exports by paragraphs (a) or (b) of this ECCN:

(a) General communication transmission equipment, provided that:

(1) The equipment is to be used in non-strategic applications;

(2) It is to be permanently installed in circuit (radio, coaxial cable, or multimode optical fiber) operated by the civilian authorities of the importing country; and

(3) It is to be used for general commercial traffic with a total digital bit rate at the highest level multiplex point of or less for optical fiber or 140 Mbits per second or less for radio or coaxial cable, as follows:

(i) With a total number of voice channels per each physical bearer of 1,920 or less for radio or coaxial cable; or

(ii) With four monochrome or color television channels with a maximum nominal bandwidth of 6 MHz and associated sound channels in the case of radio or coaxial cable;

(b) Intra-city communication transmission equipment, provided that it is:

(1) Designed for operation at a total digital data signalling rate at the highest level multiplex point of 140 Mbits per second or less;

(2) Installed under the supervision of the seller in a permanent circuit (radio, coaxial cable, multimode optical fiber with, or single mode optical fiber without repeaters/regenerators) between communication switching equipment; and

(3) Intended for general commercial traffic in an intra-city civil communication system;

(c) The minimum set of spare parts;

(d) Test or measurement equipment necessary for the use (i.e., installation, operation and maintenance) of equipment exported under the provision of this entry, provided:

(1) It cannot operate at a data rate exceeding 140 Mbits per second; and

(2) It will be supplied in the minimum quantity required for the transmission equipment eligible for export under this entry.

1519—The following equipment:

Modems and multiplexers controlled for export by subparagraph (a)(2) of this ECCN designed for operation at data signalling rates of 19,200 bps or less.

1520—The following radio relay communication equipment:

(a) Digital microwave radio links for fixed civil installations operating at fixed frequencies not exceeding 19.7 GHz with a capacity of up to 1,920 voice channels of 3.1 kHz or four television channels of 6 MHz maximum nominal bandwidth and associated sound channels;

(b) Ground communication radio equipment for use with temporarily-fixed services operated by the civilian authorities and designed to be used at frequencies not exceeding 20 GHz;

(c) Radio transmission media simulators/channel estimators designed for the testing of equipment covered by (a) or (b) above;

(d) Power amplifiers not exceeding 10 W and 6/4-GHz-transmitters/receivers for communication satellites.

1522—The following equipment:

(a) Tunable pulsed flowing-dye lasers having all of the following characteristics, and specially designed components therefor:

(1) An output wavelength shorter than 0.8 micrometer;

(2) A pulse duration not exceeding 100 ns; and

(3) A peak output power not exceeding 15 MW;

(b) CO_2, CO or CO/CO_2 lasers having an output wavelength in the range from 9 to 11 micrometers and a pulsed output not exceeding 2 joules per pulse and a maximum rated average single- or multi-mode output power not exceeding 5 KW or a continuous wave maximum rated single- or multi-mode output power not exceeding 10 KW;

(c) Equipment specially designed for medical applications incorporating ND:YAG lasers covered by paragraph (a)(vi) of ECCN 1522A;

(d) Laser systems for trimming resisters or thick/thin film electronic circuits;

(e) Equipment incorporating CO_2 lasers with average or continuous wave output power not exceeding 5 kW, not exceeding the parameters of ECCN 1091A, and specially designed for welding, cutting, bonding or drilling metals for civil applications.

1529—The following equipment:

(a) Quartz or rubidium frequency standards not specially designed for military use;

(b) Swept frequency network analyzers or sweep generators for use at frequencies not exceeding 40 GHz and that cannot be controlled remotely;

(c) Swept frequency network analyzers for the automatic measurement of complex equivalent circuit parameters over a range of frequencies where the maximum frequency does not exceed 20 GHz;

(d) Instruments in which the functions can be controlled by the injection of digitally coded electrical signals from an external source where the maximum frequency does not exceed 20 GHz;

(e) Instruments incorporating computing facilities with "user-accessible programability" and an alterable program and data memory of a total of less than 32 Kbytes;

(f) Digital test instruments with "users-accessible programability" controlled for export by sub-paragraph (b)(5) of this ECCN 1529A, required for the use (installation, operation or maintenance) of microcircuits or computers that are exported to the People's Republic of China under Advisory Notes to ECCNs 1564A or 1565A;

(g) Microprocessor and microcomputer development instruments for 8 bit microcircuits, i.e., microcircuits having an operand (data) word length of less than or equal to 8 bit(s) and an arithmetic logic unit (ALU) of less than or equal to 16 bit;

(h) Digital counters with any of the following characteristics:

(1) Not capable of counting successive input signals with less than 1.8 ns time difference without prescaling (digital division) of the input signal;

(2) Employing prescaling of the input signal in which the prescaler is not capable of resolving successive input signals with less than 0.5 ns time difference; or

(3) Not capable of measuring burst frequencies exceeding 250 MHz for a burst duration of less than 2 ms;

(i) Time interval measuring equipment employing digital techniques, not capable of measuring time intervals of less than 1 ns or a single shot basis;

(j) Instruments controlled by sub-paragraph (f) of this entry, not capable of more than 1,000 independent measurements per second;

(k) Transient recorders, not capable of sampling single input signals at successive intervals of less than 20 ns.

(1) PROM programers controlled by subparagraph (b)(6) of this ECCN.

1531—The following and specially designed components and accessories therefor:

(a) "Frequency synthesizers" controlled only by paragraph (a) and not incorporating cesium beam standards;

(b) Instruments "frequency synthesizers" and synthesized signal generators controlled only by paragraphs (b)(1) and (b)(3) and having a maximum output frequency of 18 GHz, provided the "frequency switching time" is 2.0 ms or more;

(c) Instrument "frequency synthesizers" and synthesized signal generators not controlled by paragraph (b)(4) and having a maximum output frequency of 2.6 GHz, provided the "frequency switching time" is 0.3 ms or more;

(d) Conventional synthesizer based, digitally controlled, civil land or marine mobile radio receivers and transmitters, provided:

(1) They operate at frequencies not exceeding 960 MHz;

(2) The power output and frequency resolution parameters specified in paragraph (e)(3)(ii) remain in force;

(3) The equipment has "frequency switching time" of 5 ms or more;

(4) The equipment does not employ either frequency agility or other spread spectrum techniques; and

(5) The synthesizers are embedded in the radio receivers or transmitters;

(e) Radio receivers controlled by paragraph (d)(1) that have 1000 selective channels or fewer.

1533—The following equipment:

(a) Non-programmable signal analyzers including those with a tracking signal generator, provided the display bandwidth is 4.4 GHz or less;

(b) Programmable signal analyzers, including those with a scanning preselector or a tracking signal generator, having both of the following characteristics:

(1) Operating at frequencies of 4.4 GHz or less; and

(2) The overall dynamic range of the display not exceeding 100 dB;

(c) Signal analyzers employing time compression of the input signal of Fast Fourier Transform techniques not capable of;

(1) Analyzing signals with a frequency higher than 100 KHz if the instrument uses time compression, or

(2) Calculating 512 complex lines in less than 50 ms.

1537—Microwave equipment controlled for export by sub-paragraphs (a), (b) or (c) of ECCN 1537A, when designed for use at frequencies not exceeding 40 GHz and when specially designed for use with conventional commercial instruments described in ECCNs 1529A, 1531A or 1533A, provided that the equipment does not in any way extend the frequency range of the basic instrument.

1548—Semi-conductor photodiodes for previously approved and installed Western civil communications equipment with a response time constant of 0.5 ns or more and with a peak sensitivity at a wavelength neither longer than 1,350 nm nor shorter than 300 nm.

Note: The photodiodes will be supplied on a replacement basis with no enhancement of the system.

1555—Electron tubes, as follows:

(a) Image intensifier and image conversion tubes that incorporate fiber optic face-plates or microchannel-plates, except image tubes specially designed for cameras controlled for export by ECCN 1585A;

(b) Television and video camera tubes that incorporate:

(1) Fiber optic face-plates; or

(2) Microchannel-plate electron multipliers not controlled by ECCN 1556A.

Note: Eligibility Note does not apply to electron tubes incorporating a gallium arsenide (or similar semi-conductor) photocathode.

1564—"Assemblies" for printed circuit boards and integrated circuits not specially designed to military standards for radiation hardening or temperature as follows:

(a) "Substrates" for printed circuits, except those exceeding the limits of subparagraph (a)(1)(E) or (a)(2) of this ECCN;

(b) Silicon-based devices exceeding the limits of:

(1) Subparagraphs (d)(2)(D)(a), (b) or (c), except those with more than 28 terminals;

(2) Subparagraphs (d)(2)(D)(g),or (h)

(3) Subparagraphs (d)(2)(D)(k), (1), (m)(4) and (5), (n), (r), (s), or (u); or

(4) Subparagraphs (d)(2)(D)(f) or (g);

(c) Silicon-based 8 bit or less "microcomputer microcircuits" exceeding the limit of subparagraphs (d)(2)(D)(e)(1) to (7);

(d) Silicon-based "microprocessor microcircuits" with an operand length of 16 bits or less and an arithmetic logic unit (ALU) not wider than 32 bit and exceeding the limits of subparagraphs (d)(2)(D)(i)(1) to (6), except:

(1) Those with a total processing data rate exceeding 28 million bits per second;

(2) Bit-slice "microprocessors microcircuits".

(e) Silcon-based memory devices, as follows:

(1) MOS DRAMs with no more than 256 Kbits;

(2) MOS SRAMs with no more than 64 Kbits;

(3) Mask PROMS with no more than 512 Kbits;

(4) UV-EPROMs (except keyed access EPROMs) with no more than 256 Kbits;

(5) EAROMs with no more than 64 Kbits; or

(6) EEROMs with no more than 64 Kbits; [Note: 1 kbit = 1,024 bits.]

(f) Operational amplifiers exceeding the limits of subparagraph (d)(2)(D)(k)(4) that do not have slew rates exceeding 100 volts per microsecond;

(g) Analog-to-digital and digital-to-analog converters exceeding the limits of subparagraphs (d)(2)(D)(m)(1) to (3), except:

(1) Analog-to-digital converters with less than a 500 ns conversion time to a maximum resolution of 12 bits;

(2) Digital-to-analog converters with less than 500 ns settling time for voltage output and a maximum resolution of 12 bits;

(3) Digital-to-analog converters with less than 25 ns settling time for current output and a maximum resolution of 12 bits;

(h) Silicon-based 8-bits or less user-programmable single chip "microcomputer microcircuits" controlled for export by subparagraph (d) of this ECCN;

(i) "Optical integrated circuits".

(1) Controlled for export by subparagraph (d) of this ECCN;

(2) With no more than 2,048 elements; and

(3) Not exceeding the limits of paragraphs (a) and (b) of ECCN 1548A; and

(j) Non-reprogrammable silicon-based integrated circuits specially designed or programed by the manufacturer for business or office use.

1565—"Digital computers" or "related equipment" therefor controlled for export by paragraph (h) of this ECCN 1565A, provided that:

(a) The "digital computers" or "related equipment" therefor:

(1) Are exported as complete systems or enhancements to previously exported systems up to the limits of paragraph (b) below;

(2) Do not fall within the scope of both paragraphs (h)(1)(ii) (A) and (B);

(b) The "digital computers" or "related equipment" therefor do not exceed any of the following limits:

(1) Central processing unit with a "total processing data rate" of 550 million bit/s;

(2) Array transform processors:

(i) "Equivalent multiply rate"—800,000 operations per second;

(ii) Fast Fourier Transform of 1,024 complex points—40 ms;

(c) The "digital computers" or "related equipment" therefor do not have the following characteristics:

(1) Those identified in paragraphs (h)(1)(i) (D) to (H) or (M); or

(2) Those identified in paragraph (h)(1)(i)(b) having an "equivalent multiply rate" of more than 2 million operations per second;

1565—"Digital computer" or "related equipment" therefor in accordance with Advisory Note 5 on the understanding that:

(a) Paragraph (b)(1) of Advisory Note 5 does not apply;

(b) The "total processing data rate" under paragraph (c) of Advisory Note 5 does not exceed 155 million bit/s.

1565—Peripheral equipment and input/output interface or control units therefor as follows:

(a) Cathode ray tube graphic displays that do not exceed:

(l) 1,024 resolvable elements along one axis and 1,280 resolvable elements along the perpendicular axis; or

(2) 256 shades of gray or color (8 bit per pixel);

(b) Plotting equipment and digitalizing equipment that has an accuracy of 0.002% or worse, and an active area of 254 cm × 254 cm or smaller;

(c) Non-impact type printers and laser printers having a resolution not exceeding 120 dots per cm (300 dots per inch);

(d) Optical character recognition (OCR) equipment;

(e) Light gun devices or other manual graphic input devices.

(f) Disk drives having either an unformatted capacity that does not exceed 5.04 giga bytes or a maximum bit transfer rate that does not exceed 6 million bytes/sec.

1565—Spare parts in accordance with Advisory Note 7 (a) and (b) to this ECCN 1565A.

1567—"Data (message) switching" equipment or systems, controlled for export by subparagraph (a) of this entry, provided that:

(a) The equipment or systems are designed to meet the requirements of either:

(1) CCITT Recommendations F.1 to 79 for store-and forward systems (Volume II-Fascicle II.4, VIIth Plenary Assembly, November 10–21, 1980); or

(2) ICAO Recommendations for store-and-forward civil aviation communication networks (Annex 10 to the Convention on International Civil Aviation, including all amendments agreed upon, up to and including December 14, 1981);

(b) The equipment or systems:

(1) Are designed and used for fixed civil "data (message) switching" applications;

(2) Will be used primarily for the specified civil application; and

(3) Will be operated in the importing country by:

(i) The Post, Telegraph and Telephone Authority in order to provide public "data (message) switching" services for:

(A) Domestic civil use; or

(B) International civil use with Western countries;

(ii) A civil authority that is a member of an intergovernmental organization including Western countries (e.g., ITU and ICAO) in order to promote an extension of international "data (message) switching" services in the importing country to fulfill a commitment to the intergovernmental organization; or

(iii) A civil public service organization in order to provide "data (message) switching" services in a densely populated, commercial area for:

(A) Private domestic civil use; or

(B) Private international civil use with Western countries;

(c) Reserved;

(d) The equipment or systems do not contain: digital "computers" or "related equipment" controlled by:

(1) ECCN 1565A(f);

(2) ECCN 1565A(h)(1)(i) (A) to (J), or (L) or (M); or

(3) ECCN 1565A(h)(1)(ii);

(e) The "software" supplied:

(1) Is limited to:

(i) The minimum "specially designed software" necessary for the use (i.e., installation, operation and maintenance) of the equipment or systems; and

(ii) Machine-executable form; and

(2) Does not include "software".

(i) Controlled by ECCN 1572A or paragraph (a)(5) of Supplement No. 3 to Part 779 of Item 11 on the U.S. Department of State's Munitions List (Supplement No. 2 to Part 770); or

(ii) To permit user-modification of generic "software" or its associated documentation;

(f) If the equipment or systems are not designed for installation by the user without support from the supplier, then the "software" necessary for commissioning is:

(1) Exported on a temporary basis only; and

(2) Kept under control of the supplier;

(g) Reserved;

(h) Reserved.

1567—"Stored-program-controlled telephone circuit switching" equipment or systems controlled by sub-paragraph (b) of this entry, provided that:

(a) The equipment or systems are designed for fixed civil use as "space-division digital exchanges" or "time-division digital exchanges" that fulfill the definition of "private automatic branch exchanges" ("PABXs");

(b) The equipment or systems are designed and used for fixed civil "stored-program-controlled telephone circuit switching" applications;

(c) The equipment or systems do not contain "digital computers" or "related equipment" controlled for export by:

(1) ECCN 1565A(f);

(2) ECCN 1565A(h)(1)(i) (a) to (k) or (m); or

(3) ECCN 1565A(h)(1)(ii);

(d) The "PABXs" do not have the following features:

(1) Multi-level call pre-emption, including overriding or seizing of busy subscriber lines, "trunk circuits" or switches;

Note: This limitation does not preclude single level call pre-emption (e.g., executive override).

(2) "Common channel signaling".

(3) Automatic tandem "trunk circuit" switching, including adaptive routing, or algorithms that would permit a search for "trunk circuit" connection paths within a network;

(4) Reserved;

(5) Reserved;

(6) Digital synchronization circuitry for networking two or more exchanges except that permitting slave exchanges to be synchronized by master exchanges;

(7) Reserved;

(8) Centralized maintenance by means of transmission or reception of instructions for the purpose of:

(i) Controlling traffic;

(ii) Directionalizing paths;

(iii) Altering routing tables;

(iv) Connecting or disconnecting subscriber circuits or "trunk circuits". or

(v) Managing the network;

(e) "Communication channels" or "terminal devices" used for administrative and control purposes:

(1) Are fully dedicated to these purposes; and

(2) Do not exceed a "total data signaling rate" of 19,200 bit per second;

(f) "Communication channels" or "terminal devices" used for administrative and control purposes:

(1) Are fully dedicated to these purposes; and

(2) Do not exceed a "total data signaling rate" of 19,200 bit per second;

(g) Reserved;

(h) Reserved;

(i) Reserved;

(j) The "software" supplied:

(1) Is limited to:

(i) The minimum "specially designed software" necessary for the use (i.e., installation, operation and maintenance) of the equipment or systems; and

(ii) Machine-executable form; and

(2) Does not include "software".

(i) Controlled by ECCN 1527A or paragraph (a)(5) of Supplement No. 3 to Part 779 or Item 11 on the U.S. Department of State's Munitions List (Supplement No. 2 to Part 770); or

(ii) To permit user-modification of generic "software" or its associated documentation;

(k) If the equipment or systems are not designed for installation by the user without support from the supplier, then the "software" necessary for commissioning is:

(1) Exported on a temporary basis only; and

(2) Kept under the controls of the supplier;

(l) Reserved.

1567—"Stored-program-controlled circuit switching" equipment or systems controlled for export by sub-paragraph (b) of this ECCN 1567A, provided that:

(a) The equipment or systems are designed for fixed civil use of "stored-program-controlled telegraph circuit switching" for data;

(b) The equipment or systems are designed and used for fixed civil "stored-program-controlled telegraph circuit switching" applications;

(c) The equipment or systems do not contain "digital computers" or "related equipment" controlled by:

(1) ECCN 1565A(f);

(2) ECCN 1565A(h)(1)(i) (a) to (k) or (m); or

(3) ECCN 1565A(h)(1)(ii);

(d) The equipment or systems do not have the following features:

(1) Multi-level call pre-emption including overriding or seizing of busy subscriber lines, "trunk circuits" or switches;

Note: This limitation does not preclude single level call pre-emption (e.g., executive override).

(2) "Common channel signaling".

(e) The maximum internal bit rate per channel does not exceed 19,200 bit per second;

(f) Reserved;

(g) The "software" supplied:

(1) Is limited to:

(i) The minimum "specially designed software" necessary for the use (i.e., installation, operation and maintenance) of the equipment or systems; and

(ii) Machine-executable form; and

(2) Does not include "software".

(i) Controlled by ECCN 1527A or paragraph (a)(5) of Supplement No. 3 to Part 779 or Item 11 on the U.S. Department of State's Munitions List (Supplement No. 2 to Part 770); or

(ii) To permit user-modification of generic "software" or its associated documentation;

(h) Reserved;

(i) If the equipment or systems are not designed for installation by the user without support from the supplier, then the "software" necessary for commissioning is:

(1) Exported on a temporary basis only; and

(2) Kept under the control of the supplier;

(j) Reserved.

1567—"Stored-program-controlled circuit switching" equipment or systems, controlled for export by sub-paragraph (b) of this entry, provided that:

(a) The equipment or systems are designed for fixed civil use as "stored-program-controlled telephone circuit switching" exchanges that fulfill the definitions of either "terminal exchange" or "transit exchange".

(b) Reserved;

(c) The equipment or systems are designed and used for fixed civil "stored-program-controlled telephone circuit switching" applications;

(d) The equipment or systems cannot be adapted to mobile use or security use, as described in ECCN 1565A(f)(1) to (4), (g) or (h)(1)(ii)(a) and (b);

(e) Reserved;

(f) The equipment or systems do not have the following features:

(1) Multi-level call pre-emption including overriding or seizing of busy subscriber lines, "trunk circuits" or switches;

Note: This limitation does not preclude single level call pre-emption (e.g., executive override).

(2) "Common channel signaling".

(3) Adaptive routing or algorithms that would permit a search for "trunk circuit" connection paths within a network;

(4) Reserved;

(5) Reserved;

(6) Digital synchronization circuitry for networking two or more exchanges except that permitting slave exchanges to be synchronized by master exchanges; or

(7) Centralized maintenance by means of transmission or reception of instructions for the purposes of:

(i) Controlling traffic;

(ii) Directionalizing paths;

(iii) Altering routing tables;

(iv) Connecting or disconnecting subscriber circuits or "trunk circuits". or

(v) Managing the network;

(g) "Communication channels" or "terminal devices" used for administrative and control purposes:

(1) Are fully dedicated to these purposes; and

(2) Do not exceed a "total data signalling rate" of 19,200 bit per second;

(h) Reserved;

(i) Reserved;

(j) The "software" supplied:

(1) Is limited to:

(i) The minimum "specially designed software" necessary for the use (i.e., installation, operation and maintenance) of the equipment or systems; and

(ii) Machine-executable form; and

(2) Does not include "software".

(i) Controlled by ECCN 1527A or paragraph (a)(5) of Supplement No. 3 to Part 779 or Item 11 on the U.S. Department of State's Munitions List (Supplement No. 2 to Part 770); or

(ii) To permit user-modification of generic "software" or its associated documentation;

(k) Reserved;

(l) If the equipment or systems are not designed for installation by the user without support from the supplier, then the "software" necessary for commissioning is:

(1) Exported on a temporary basis only; and

(2) Kept under control of the supplier.

1572—Recording and reproducing equipment, as follows:

(a) Graphic instruments capable of continuous direct recording of sine waves at frequencies exceeding 20 KHz, and not containing a cathode ray tube with a fiber optic face-plate;

(b) Analog magnetic tape recorders with all of the following characteristics:

(1) Bandwidth of up to:

(i) 4 MHz per track and having up to 28 tracks; or

(ii) 2 MHz per track and having up to 42 tracks;

(2) Tape speed of 610 cm (240 inches) per second or less;

(3) Not designed for underwater use;

(4) Not ruggedized for military use; and

(5) Recording density not exceeding 6,532 magnetic flux sine waves per cm;

(c) Instrumentation digital recorders having all of the following characteristics:

(1) "Packing density" of 13,125 bits per cm or less;

(2) Maximum of 28 tracks;

(3) Tape speed of 305 cm (120 inches) per second or less;

(4) Not designed for underwater use; and

(5) Not ruggedized for military use;

(d) Magnetic tape appropriate for use with magnetic tape recorders free from control or exportable under this entry, provided that the tape length, "packing density" and "recording density" do not exceed the performance limits of the magnetic tape recorders;

(e) Disks appropriate for use with disk drives free from control or exportable under this entry, provided that the "packing density" and inner and outer diameters do not exceed the performance limits of the disk drives;

(f) Video magnetic tape recorders specially designed for television recording.

1568—Analog-to-digital or digital-to analog converters, as follows:

(a) Analog-to-digital converters with more than a 200 ns conversion time to a maximum resolution of 12 bit;

(b) Digital-to-analog converters with more than 200 ns settling time for voltage output and a maximum resolution of 12 bit;

(c) Digital-to-analog converters with more than 25 ns settling time for current output and a maximum resolution of 12 bit.

1584—Cathode-ray oscilloscope not having any of the following characteristics:

(a) An amplifier bandwidth exceeding 350 MHz;

(b) A horizontal sweep speed faster than 1 ns per cm and an accuracy (linearity) better than 2%;

(c) Using sampling techniques for the analysis of recurring phenomena that increase the effective bandwidth of an oscilloscope or time-domain reflectometer to a frequency greater than 5 GHz;

(d) Digital oscilloscopes with sequential sampling of the input signal at intervals of less than 20 ns;

(e) Ruggedized to meet military specifications; or

(f) Rated for operation over a temperature range of below −25 degrees C to above +55 degrees C.

1585—The following:

(a) Non-ruggedized cinema recording cameras, controlled for export by paragraph (a) of this ECCN, for normal civil purposes;

(b) Mechanical framing cameras controlled for export by paragraph (b) of this entry that are designed for civil purposes (i.e., non-nuclear use) with a framing speed of not more than 2×10^6 frames per second;

(c) Electronic streak and/or framing cameras having all of the following characteristics:

(1) Not ruggedized;

(2) Capable in the framing mode of speeds of no more than 10^6 frames per second;

(3) Capable in the streak mode of writing speeds no more than 10mm per second;

(4) Designed for civil use;

(5) The performance of the camera is not field-upgradable such as through the substitution of electronic plug-ins;

(6) Exported for non-nuclear use; and

(7) Not using an electron tube having a gallium arsenide (GaAs) photocathode.

1587A—The following:

(a) Temperature-compensated crystal oscillators (TCXOs) controlled for export only by sub-paragraph (c)(1) of this ECCN 1587A;

(b) Quartz crystals for use as oscillator elements specially designed for temperature-controlled crystal ovens or for TCXOs covered by sub-paragraph (c) and having an average aging rate of + or − 1×10^{-11} per day or better (less) except stress compensated (SC) cut crystals.

3605A—Nickel powder obtained by the carbonyl process for non-nuclear civil applications.

1757A—Silicon and compounds, as follows:

(a) Monocrystalline silicon N-type, crystal orientation 1-1-1 with a resistivity not exceeding 100 ohm/cm;

(b) Monocrystalline silicon P-type, crystal orientation 1-1-1 with a resistivity not exceeding 5 ohm/cm.

(c) Polycrystalline silicon;

(d) Compounds used in the synthesis of polycrystalline silicon.

1767A—Optical fiber preforms specially designed for the manufacture of silicon-based optical fibers, provided that they are designed to produce non-militarized silicon-based optical fibers that are optimized to operate at a wavelength of 1,350 nm or less.

PART 774—[AMENDED]

§ 774.2 [Amended]

4. Section 774.2(a)(1) is amended by adding the phrase "G-COCOM" immediately after the phrase "G-COM" and before the phrase "GFW"

PART 786—[AMENDED]

5. Section 786.6 is amended by revising paragraph (a)(1)(ii) to read as follows:

§ 786.6 Destination control statements.

(a)

(1)

(ii) General License GLV GTF-US, GTE, GLR, G-COM, G-COCOM or C-CEU.

Dated: July 5, 1989.

James M. LeMunyon,

Deputy Assistant Secretary for Export Administration.

[FR Doc. 89-16106 Filed 7-6-89; 10:47 am]

BILLING CODE 3510-DT-M

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

21 CFR Part 177

[Docket Nos. 87F-0302 and 88F-0140]

Indirect Food Additives; Polymers

AGENCY: Food and Drug Administration.

ACTION: Final rule.

SUMMARY: The Food and Drug Administration (FDA) is amending the food additive regulations to provide for the safe use of a Nylon 6I/6T polymer manufactured by the condensation of hexamethylenediamine, terephthalic acid, and isophthalic acid for contact with all types of food except beverages containing more than 8 percent alcohol. This action responds to two petitions filed by E.I. du Pont de Nemours and Co.

DATES: Effective July 11, 1989; written objections and requests for a hearing by August 10, 1989.

ADDRESS: Written objections to the Dockets Management Branch (HFA-305), Food and Drug Administration, Rm. 4-62, 5600 Fishers Lane, Rockville, MD 20857

FOR FURTHER INFORMATION CONTACT: Edward J. Machuga, Center for Food Safety and Applied Nutrition (HFF-335), Food and Drug Administration, 200 C St. SW Washington, DC 20204, 202-472-5690.

SUPPLEMENTARY INFORMATION: In a notice published in the **Federal Register** of October 7 1987 (52 FR 37524), FDA announced that a food additive petition (FAP 7B4001) had been filed by E.I. du Pont de Nemours and Co., Wilmington DE 19898, proposing that the food additive regulations be amended to provide for the safe use of a polymer manufactured by the condensation of hexamethylenediamine, terephthalic acid, and isopthalic acid (Nylon 6I/6T polymers) for contact with all types of food except beverages contianing more than 8 percent alcohol. These Nylon 6I/6T polymers would have an average thickness that could not exceed 1.5 mils

(0.038 millimeter). However, subsequent to the filing of FAP 7B4001, E.I. du Pont de Nemours and Co. submitted an additional petition that contained data that would support the safe use of Nylon 6I/6T polymers of unlimited thickness in contact with all types of food except alcoholic beverages containing more than 8 percent alcohol. In a notice published in the **Federal Register** of May 24, 1988 (53 FR 18610), FDA announced that this new petition (FAP 8B4078) had been filed.

FDA has evaluated data in the petitions and other relevant material. The agency concludes that the proposed food alternative use is safe, and that the regulations should be amended in 21 CFR 177.1500 as set forth below.

In accordance with § 171.1(h) (21 CFR 171.1(h)), the petitions and the documents that FDA considered and relied upon in reaching its decision to approve the petitions are available for inspection at the Center for Food Safety and Applied Nutrition by appointment with the information contact person listed above. As provided in 21 CFR 171.1(h), the agency will delete from the documents any materials that are not available for public disclosure before making the documents available for inspection.

The agency has carefully considered the potential environmental effects of this action. FDA has concluded that the action will not have a significant impact on the human environment, and that an environmental impact statement is not required. The agency's finding of no significant impact and the evidence supporting that finding, contained in an environmental assessment, may be seen in the Dockets Management Branch (address above) between 9 a.m. and 4 p.m., Monday through Friday.

Any person who will be adversely affected by this regulation may at any time on or before August 10, 1989 file with the Dockets Management Branch (address above) written objections thereto. Each objection shall be separately numbered, and each numbered objection shall specify with particularlity the provisions of the regulation to which objection is made and the grounds for the objection. Each numbered objection on which a hearing is requested shall specifically so state. Failure to request a hearing for any particular objection shall constitute a waiver of the right to a hearing on that objection. Each numbered objection for which a hearing is requested shall include a detailed description and analysis of the specific factual information intended to be presented in support of the objection in the event that a hearing is held. Failure to include such a description and analysis for any particular objection shall constitute a waiver of the right to a hearing on the objection. Three copies of all documents shall be submitted and shall be identified with the docket number found in brackets in the heading of this document. Any objections received in response to the regulation may be seen in the Dockets Management Branch between 9 a.m. and 4 p.m., Monday through Friday.

List of Subjects in 21 CFR Part 177

Food additives, Food packaging.

Therefore, under the Federal Food, Drug, and Cosmetic Act and under authority delegated to the Commissioner of Food and Drugs and redelegated to the Director, Center for Food Safety and applied Nutrition, Part 177 is amended as follows:

PART 177—INDIRECT FOOD ADDITIVES: POLYMERS

1. The authority citation for 21 CFR Part 177 continues to read as follows:

Authority: Secs. 201(s), 409, 72 Stat. 1784–1788 as amended (21 U.S.C. 321(s), 348); 21 CFR 5.10 and 5.61.

2. Section 177.1500 is amended in the table in paragraph (b) by revising item 12 to read as follows:

§ 177.1500 Nylon resins.

(b)

Nylon resins	Specific gravity	Melting point (degrees Fahrenheit)	Solubility in boiling 4.2N HC1	Viscosity number (mL/g)	Maximum extractable fraction in selected solvents (expressed in percent by weight of resin)			
					Water	95 percent ethyl alcohol	Ethyl acetate	Benzene
12. Nylon 6I/6T resins for use in contact with all types of food except alcoholic beverages containing more than 8 percent alcohol.	1.207±0.1	N/A	Insoluble after 1 hour.	....	0.2	1.0	0.1	0.1

Dated: June 27 1989.

Richard J. Ronk,

Deputy Director, Center for Food Safety and Applied Nutrition.

[FR Doc. 89–16168 Filed 7–10–89; 8:45 am]

BILLING CODE 4160-01-M

21 CFR Part 573

[Docket No. 86F–0060]

Selenium; Environmental Impact; Opportunity for Comment

AGENCY: Food and Drug Administration.

ACTION: Opportunity for comments on tentative responses to certain objections to final rule.

SUMMARY: The Food and Drug Administration's (FDA's) Center for Veterinary Medicine (CVM) is providing opportunity for comment on its tentative responses to certain environmentally based objections to the agency's final rule of April 6, 1987 (52 FR 10887), raising the level of selenium permitted in certain animal feeds. This notice and opportunity for comment on this food additive regulation will assist FDA in determining whether to grant a formal evidentiary public hearing on objections received in this formal rulemaking proceeding.

DATE: Written comments by August 10, 1989.

ADDRESSES: Submit written comments to the Dockets Management Branch (HFA–305), Food and Drug Administration, Rm. 4–62, 5600 Fishers Lane, Rockville, MD 20857 identified with the docket number found in brackets in the heading of this document. Copies of the environmental impact analysis report, the finding of no significant impact, the objections, the references cited in this notice, and any comments received are available for public examination at the Dockets

Management Branch (address above) between 9 a.m. and 4 p.m., Monday through Friday.

FOR FURTHER INFORMATION CONTACT: Woodrow M. Knight, Center for Veterinary Medicine (HFV-226), Food and Drug Administration, 5600 Fishers Lane, Rockville, MD 20857 301-443-3390.

SUPPLEMENTARY INFORMATION: In the Federal Register of April 6, 1987 (52 FR 10887) (corrected June 4, 1987; 52 FR 21001), FDA published a food additive regulation amending 21 CFR 573.920 (the 1987 amendments), permitting an increase in the level of selenium (as sodium selenite or sodium selenate) in complete feeds for cattle, sheep, chickens, swine, turkeys, and ducks, and also in salt-mineral mixtures and feed supplements for beef cattle and sheep. The permitted level of supplemental selenium that could be provided was increased from 0.1 or 0.2 part per million (ppm) to 0.3 ppm in complete feed (except for weanling swine, which was already approved at 0.3 ppm), and from 1 milligram (mg) per head per day to 3 mg per head per day from salt-mineral mixtures and feed supplements for beef cattle.

The 1987 amendments were issued in response to a food additive petition (FAP 2201) from the American Feed Industry Association (AFIA), 1701 North Fort Myer Dr., Arlington, VA 22209. In issuing the 1987 amendments, FDA determined, based in part on an environmental impact analysis report (EIAR) submitted by AFIA, that they would not have a significant impact on the human environment. The agency made that determination in a document known as a finding of no significant impact (FONSI).

In April, May, and July 1987 the following organizations filed objections to the 1987 amendments:

National Mixer-Feed Association (NMFA), P.O. Box 9262, Amarillo, TX 79105.
American Council of Independent Laboratories, Inc. (ACIL), 1725 K St. NW Washington, DC 20006.
Micro Tracers, Inc. (MT), 1370 Van Dyke Ave., San Francisco, CA 94124.
Natural Resources Defense Council (NRDC), 122 East 42d St., New York, NY 10168.
State of California Health and Welfare Agency (CHWA), Department of Health Services, 2151 Berkeley Way, Berkeley, CA 94704.

Some of these organizations requested a hearing on their objections, a stay of the 1987 amendments, or both a hearing and a stay.

CVM has nearly completed its analysis of all the objections, which were based on environmental and nonenvironmental concerns, and will soon recommend to the Commissioner of Food and Drugs (see 21 CFR 10.55) whether to grant or deny a hearing, in whole or in part, and whether to stay the 1987 amendments, also in whole or in part. Before making its recommendations, CVM wishes to obtain additional comments on certain environmental issues raised by one or more of the objections in connection with the EIAR or the FONSI. Accordingly, CVM is setting out a summary of, and its tentative responses to, the objections in question and is providing interested persons an opportunity to submit written comments on these responses. CVM emphasizes that its responses are tentative; it has not reached a final conclusion on the merits of any of the objections summarized below.

Summary of the Five Objections and CVM's Tentative Responses

1. NMFA, ACIL, MT, NRDC, and CHWA argue that the environmental impact of the 1987 amendments was not adequately addressed by the EIAR and the FONSI. According to one or more of these organizations, the literature demonstrates that selenium bioconcentrates, bioaccumulates, and biomagnifies and that selenium thereby creates environmental problems, particularly in aquatic ecosystems.

Bioconcentration is a process by which there is a net accumulation of a chemical directly from water into aquatic organisms when uptake is greater than elimination. Bioaccumulation is a general term describing the combined accumulation of a chemical in aquatic organisms from water directly (bioconcentration) and through consumption of food containing the chemical. Biomagnification is the increase in concentration of a bioaccumulated chemical which can result when the chemical passes up through trophic levels of a food chain or web. The bioconcentration factor (BCF) is usually defined for an aquatic organism as the concentration of a chemical in a tissue or whole organism divided by the concentration of the chemical in the water in which the organism lived. Bioaccumulation and, ordinarily, biomagnification of selenium must occur in order for selenium to cause toxic effects in the environment. Bioconcentration, bioaccumulation, and biomagnification do not occur if a compound is not bioavailable.

Environmental introductions of selenium from naturally seleniferous areas and from certain industrial and agricultural activities can threaten the health of fish and wildlife, as NRDC and others point out (Refs. 1-6). Compared to natural sources of selenium, contributions of selenium from industrial activities are small (Ref. 1). Compared to the total contribution of selenium to the environment from industrial activities, the environmental introductions of selenium attributable to the 1987 amendments are small. None of the references or other materials submitted by any of the five organizations identified in this notice discusses as a relevant environmental factor the addition of selenium to animal feeds and its consequent disposal via animal wastes, even though selenium supplementation of animal feeds has occurred since at least 1973.

CVM does not dispute that bioconcentration, bioaccumulation, and biomagnification of some chemical forms of selenium can occur and that under the right circumstances, these forms can cause adverse environmental impacts, including fish mortalities and reproductive failures, waterfowl deaths, and severe deformities of embryos and hatchlings. CVM also does not dispute that introductions of selenium into the environment occur when domestic animals are fed selenium supplements, or that these introductions can occur via runoff from animal farms and from agricultural soils to which manure from animals fed supplemental selenium has been applied. Finally, CVM does not dispute that aquatic ecosystems are more sensitive than terrestrial ecosystems to selenium inputs.

The issue, however, is whether the environmental introductions expected to result from the 1987 amendments will be of adequate quantity and bioavailability to cause significant adverse environmental impacts, particularly in aquatic ecosystems.

The FONSI estimated that, on a local basis, the worst-case increase in concentration (loading) of selenium in agricultural soils amended with manure from animals receiving selenium supplementation would be about 2 parts per billion (ppb) per application (typically once per year). (As discussed in paragraph 3 of this notice, the FONSI's estimated maximum loading of selenium is a grossly exaggerated worst-case estimate.) The FONSI then concluded that selenium loading would not have the potential to cause significant environmental effects on a local scale. The following is a reevaluation of this issue in light of the information submitted by the organizations identified above as well as scientific information that has become available since the FONSI was prepared.

To address this issue, one must first understand the cycling of selenium in the environment.

The Selenium Cycle

Selenium cycles in the environment in what is called a biogeochemical cycle. The amount of selenium added to the cycle, the speed of the cycle, and the balance of biological, chemical, and geological forces that mobilize and immobilize various inorganic and organic forms of selenium, all determine, at a particular locality, the selenium content of the biota, water, air, and soil and whether it is toxic to members of the food web. Bioconcentration factors in the biota must be examined in light of the biogeochemical cycle for selenium for these factors, as applied to selenium, to have any meaning.

Lemly and Smith (Ref. 7) and Hodson (Ref. 8) provide a good overview of selenium biogeochemical cycling in aquatic environments. These reviews support several conclusions or generalizations:

a. The selenium status of an aquatic ecosystem cannot always be readily determined by measuring selenium concentration in water, because the selenium biogeochemical cycle works to minimuze the presence of selenium in solution.

b. The quantities of selenium added to the ecosystem in question and the speed at which selenium is cycling in the ecosystem are probably better predictors than worst-case modeling of the potential for adverse effects to be seen in the biota.

c. The chemical and biochemical processes that reduce the valence state of selenium from +VI (selenate, $SeO_4^=$) to lower valence states +IV (selenite, $SeO_3^=$), O (elemental selenium, $Se^{\circ\circ}$), and −II (selenides, $Se^=$), and the deposition of organic forms of selenium as detritus from dead animals and plants, serve to isolate and reduce the bioavailability of selenium.

d. The chemical and biological processes that oxidize selenium increase the mobility and bioavailability of selenium.

e. Selenium is bioaccumulated more efficiently by fish through the food chain than through direct bioconcentration from water.

f. The role of selenium as an essential micronutrient may play a part in its efficient bioaccumulation in food chains.

g. Shallow, slow-moving bodies of water with large volumes of fine organic sediments, rooted aquatic plants, and active, large, benthic invertebrate populations accumulate selenium most efficiently and, where accumulations reach damaging levels, are probably among the slowest to recover after selenium inputs cease.

In some locations these factors coincide to cause selenium excesses in the food web and toxic effects in higher trophic levels, e.g., predatory fish and waterfowl (Ref. 9). In most locations in the United States, however, these factors, when combined with the constant removal of selenium from the land through harvest of agricultural crops, result in reduced availability of selenium forms in aquatic ecosystems. For example, Lowe, et al. (Ref. 10) determined the trend in average selenium levels of freshwater fish sampled at more than 100 locations all over the continental United States. They found that the geometric mean of selenium levels in fish decreased from 0.6 ppm (wet weight) in 1972, to 0.58 ppm in 1976–77 and 0.46 ppm in 1978–79. Lowe et al., found that this decreasing trend ceased in 1980–81, when the geometric mean of selenium levels in fish reached 0.47 ppm (470 ppb).

Selenium is converted from one chemical form to another in the environment by the action of living organisms and chemical processes and moved throughout the environment by geological forces. Some selenium chemical forms are bioavailable and bioaccumulated by living organisms, some selenium forms are volatile and lost from the ecosystem, and others are not bioavailable and, therefore, are not toxic.

Selenium Geology

Burau (Ref. 11) surveyed the geochemical factors affecting the range of selenium concentrations found in soils. He states that, in most soils, higher concentrations of selenium in parent rocks and low rainfall favor the formation of soils with high selenium contents. Magmatic rocks have the lowest selenium content, ranging from 10 to 50 ppb. Sedimentary rocks are generally higher in selenium. Shales have the highest selenium contents, ranging from 500 to 28,000 ppb. Worldwide, the average selenium concentration in soils is 400 ppb, but there is quite a range of concentrations represented. Some high selenium soils of the Great Plains, derived from Cretaceous-age Pierre Shale, range from 6,000 to 28,000 ppb. Allaway's analysis (Ref. 12) of the selenium biogeochemical cycle concluded that, in acid to neutral soils, the pool of bioavailable selenium will eventually be depleted.

Most cropland in the United States does not have a sufficient pool of bioavailable selenium to grow feed grains containing sufficient selenium for the nutritional needs of domestic animals. This is the situation that created the need for selenium supplementation of feeds in the first place. Without such supplementation, domestic livestock raised in selenium-deficient areas, and which therefore receive selenium-deficient diets, often exhibit nutritional myopathies and reproductive problems that can lead to death.

Selenium Retention and Excretion by Selenium Supplemented Animals

The chemical form in which selenium is excreted by farm animals receiving selenium supplements has much to do with its bioavailability and its mobility in the environment, once that waste is amended into agricultural soils. Selenium bioavailability, retention, and the chemical form of selenium excreted by domestic animals are affected by the nutrient level, the selenium compound fed, the feed matrix, and the age and metabolic status of the animal.

Nonruminants (e.g., poultry, swine, rodents, humans) readily absorb sodium selenate and selenite after consumption. Most of the selenium consumed by nonruminants is excreted in the urine. Studies with rats have shown that, even with increasing levels of selenium supplementation (as sodium selenite), only a small and constant fraction of selenium is excreted fecally and the rest is excreted in the urine (Ref. 13). Chemical analysis of the selenium component of the urine of rats supplemented with sodium selenate found 21 percent excreted as inorganic selenium, 26 percent excreted as trimethylselenonium ion, and 21 percent as an unidentified compound (Ref. 14). Depending on the form of selenium supplementation, 20 to 50 percent of the urinary excretion of selenium is excreted in the form of the trimethylselenonium ion (Ref. 14). Olson and co-workers (Ref. 15) have shown that trimethylselenonium is minimally available for plant uptake, and that which is absorbed is not biologically active. (See also Ref. 12.) They determined, moreover, that FDA's regulation permitting the supplementation of 0.1 ppm selenium in animal diets did not affect the selenium status of selenium deficient and borderline agronomic areas (Ref. 15). This work suggests that selenium supplementation would not be detrimental to borderline toxic areas, in the unlikely event that food producers in such areas chose to provide such supplementation to their livestock. (See paragraph 5 of this notice.)

A large proportion of the selenium in selenium supplemented animals is not excreted but is retained by the growing animal. Young swine supplemented with 0.3 ppm selenium in their diets retained 44 percent of the selenium (Ref. 16). Swine fed 0.3 ppm sodium selenite absorbed 88 percent of the supplemented selenium and retained 50 percent of the absorbed levels (Ref. 17). Due to the anatomy of the bird, retention (digestibility) studies are not routine. In a calculation using the selenium deposited in the muscle, organs, and blood of an adult broiler as indication of overall retention, a very conservative estimate of 18 percent of the supplemented selenium (when selenium was supplemented at 0.3 ppm of the diet) may be interpolated, with values ranging from 78.3 to 13.2 percent retention in diets containing 0, 0.1, 0.2, and 0.4 ppm supplemental selenium (Ref. 18).

Ruminants (e.g., cattle and sheep) metabolize and excrete selenium differently from nonruminants. In contrast with the urinary excretion seen in nonruminants, ruminants excrete the majority of their selenium in the feces (Ref. 19). Experiments with fecal selenium have demonstrated that most of the selenium is not water soluble, and other solubility mediums suggest that the primary excretory product is elemental selenium (Se°) (Ref. 12). That elemental selenium is formed is supported by the fact that the rumen is known to be conducive to reduction of compounds due to its anaerobic and highly reductive environment (Ref. 19).

In a study in which sheep were fed radiolabeled organically bound selenium, more than 50 percent of the selenium dose was excreted in the feces and less than 7 percent of the dose was excreted in the urine (Ref. 20). Of the labeled fecal selenium, only 0.3 percent could be found in forage species grown on feces-amended soils, suggesting that fecally excreted selenium from ruminants is not significantly available to plants (Ref. 20). In a study in which radiolabeled selenium (as selenious acid, Se +IV) was fed to sheep, 51 percent of the dose was found in the feces, and this selenium was mostly unavailable to rye grass (Ref. 21). Studies have shown that elemental selenium has only 7.4 percent of the biological availability of sodium selenite (Se Se +IV) to young chickens (Ref. 22).

In summary, oxidized, bioavailable forms of selenium (selenite and selenate, valence states +IV and +VI, respectively) are used to supplement the diets of domestic livestock. These forms are readily absorbed, partially retained by the growing animal as an essential micronutrient, and partially excreted. Nonruminants excrete a mixture of selenium compounds, a large proportion of which is the organic selenium compound trimethylselenonium. Ruminants excrete reduced forms of selenium, a large portion of which is elemental selenium. These excreted compounds have much reduced bioavailability and, hence, little potential for bioaccumulation and biomagnification, as evidenced by the poor uptake of these compounds by plants.

Introductions of Selenium Into the Environment

The contribution to the total amount of selenium in the environment due to the 1987 amendments is minimal, at best. Nationwide, 46,000 metric tons of selenium are introduced each year from fossil fuel combustion, industrial losses, and municipal wastes (FONSI, p. 3 and references cited there), and 11,000 and 31,000 metric tons per year are introduced from air emissions and solid waste disposal, respectively (id.). By contrast, on a "worst-case basis, selenium introductions due to the 1987 amendments are estimated to reach 22.4 metric tons per year, assuming that all animals are supplemented at the maximum permitted levels (id. at 4.). One expert estimates that no more than 10 metric tons per year of selenium are used in animal feeds and veterinary medicine (Ref. 23). As discussed above, only one-half to two-thirds of this amount would be introduced into the environment from manure from selenium-supplemented animals; the rest would be retained in the tissues of the animals.

It should also be noted that the FONSI's worst-case estimates of selenium loadings from waste applications are extremely conservative (see paragraph 3 of this notice), and that the contribution of selenium to the agricultural system from animal waste will probably be lost in the much larger pool of selenium already naturally present in most soils.

Fate of Excreted Selenium in the Environment

The selenium excreted by farm animals will mostly be incorporated into agricultural soils when the manure from these animals is used as fertilizer for crops. After incorporation into soils, the selenium will be subject to the chemical, biological, and geological forces that convert one form of selenium to another.

Some of the selenium may be released as volatile organic forms of selenium, from plants and through the action of the microbial communities present in the soil and sediment (Ref. 24). The amount of selenium lost through these means will vary with the plant species present and the activity of the soil community.

Some of the selenium will enter the terrestrial-based food chain in herbivorous insects, in birds eating both crops and insects, in grazing animals, and in man.

Some of the selenium will be bioaccumulated by the crops grown on the amended soil, and a portion of this bioaccumulated selenium will be removed at harvest. The quantity bioaccumulated and removed will depend on the forms of selenium introduced, the activities of soil microbial populations, the soil type, the climate, the weather, the ability of the crop plant to accumulate selenium, and the portions of the crop plant harvested.

Some of the selenium will be present in runoff from the amended soil. The amount will depend on the forms of selenium present, the ability of the soil community to convert them to more soluble forms, the quantity and frequency of rainfall, the topography of the land, and the type of ground cover and soil. Selenium present in runoff may be either in solution or absorbed to particulate clays or organic matter.

The forms of selenium excreted by animals are not readily bioavailable to plants, and in acid to neutral soils these forms become progressively more bound into ferric hydroxide selenite and metal selenide complexes, which are also not bioavailable. Although some forms of excreted selenium can be oxidized to selenates in alkaline, well-aerated soils, this process is characterized by Allaway as a slow reaction, and other excreted selenium forms are considered as a "sink, or loss, from the cycle (Ref. 12).

In summary, FDA considered selenium bioconcentration, bioaccumulation, and biomagnification when the FONSI was prepared in 1986. CVM has considered these issues again in light of subsequently available research. The environmental introduction and fate modeling conducted in the FONSI are crude, perhaps, but are also extremely conservative. CVM believes that the modeling is conservative enough to account for the uncertainties and local variations involved in an environmental fate and effects of the selenium introduced into the environment as a result of the 1987 amendments. CVM has tentatively concluded that further environmental assessment of these phenomena is neither required nor necessary here, where the contribution of selenium from animal waste due to the 1987 amendments, compared to the total amount of selenium in the environment, is so small and the selenium contributed is in a form that is not initially bioavailble, and may only slowly become partially bioavailable. Selenium must be in a bioavailable form in order to bioaccumulate.

2. MT argues that the FONSI referred only to bioaccumulation in animals and failed to consider bioaccumulation in plants, insects, and microbiota.

As explained in paragraph 1 of this notice, the FONSI cites pertinent literature concerning selenium bioconcentration, bioaccumulation, and biomagnification. In that context, the term "organisms" includes plants, microbes, and animals, including insects. To the extent that MT's argument is related to the comments summarized in paragraph 1 of this notice, CVM's tentative conclusion there also applies here.

3. NRDC argues that the environmental fate model in the FONSI is unrealistic, and proffers two allegedly improved models. NRDC's models include increases in the watershed area with and without manure stockpiled in that area. As a result of these claimed improvements over the environmental fate model in the FONSI, NRDC calculates that there would be a 5- to 10-fold greater concentration of selenium in the 1-hectare pond featured in that model than the FONSI estimates. NRDC then compares its estimates with background levels of selenium in freshwater lakes and rivers, concludes that the former are equal to or greater than the latter, and argues that this additional burden can contribute to harmful effects of selenium on the biota.

Employing a worst-case analysis and using extremely conservative assumptions, the FONSI (p. 9) estimates that, as a result of the 1987 amendments, there will be an influx of 0.02 to 0.24 ppb/year selenium into the modeled 1-hectare pond, which already contains approximately 0.2 ppb selenium (Ref. 11). On a long-term basis, concentrations of selenium in water ranging from 2 to 5 pb should not be harmful (Refs. 3 and 7); indeed, they should provide protection for all freshwater life, since there is no indication in the literature of any deleterious effects of selenium on any aquatic organism at those concentrations (Ref. 3). Moreover, according to the Environmental Protection Agency (Ref. 25), freshwater aquatic organisms and their uses should not be affected unacceptably if the 4-day average concentration of selenium does not exceed 5 ppb more than once every 3 years and if the 1-hour average concentration does not exceed 20 ppb more than once every 3 years.

CVM has tentatively concluded that, in all likelihood, the influx of selenium into local aquatic environments as a result of the 1987 amendments will not begin to approach even 0.02 ppb/year, even if NRDC's allegedly improved environmental fate models are employed. That is because the unstated assumptions underlying the FONSI are extremely conservative.

The FONSI assumes that none of the supplemented selenium will stay in the tissues of the growing food-producing animals receiving supplemented feeds, i.e., that all the supplemented selenium will be excreted directly into the animals' waste and then onto the soil. In fact, selenium at nutritional levels given to growing animals is readily absorbed and is substantially retained in their tissues, as discussed in paragraph 1 of this notice.

The FONSI also assumes that the excreted selenium will be in a chemical form that is readily soluble in water, i.e., selenate. In fact, selenium excreted by domestic animals is primarily in chemical forms—elemental selenium, selenides, and trimethylselenonium—that have low solubility in water, poor mobility through soils, low bioavailability, and low toxicity, as discussed in paragraph 1 of this notice. (See also Refs. 1, 26, and 27.)

Additionally, the FONSI assumes that maximum amounts of selenium will be used in feeds, mineral mixes, and feed supplements, even though it is unlikely that selenium supplementation will be provided in geographical areas of the country that are selenium sufficient (paragraph 5 of this notice).

Next, the FONSI assumes that up to 10 percent of the selenium in the waste-amended soil will be lost to runoff from a single, large rainfall event. But soil-incorporated pesticides show losses to runoff of no more than 0.5 to 1.5 percent (FONSI, p. 9 and reference cited there), and selenium incorporated into the top 6 inches of the soil should not show greater losses to runoff, given the relatively insoluble chemical forms of selenium excreted by supplemented animals.

Finally, the FONSI assumes that the runoff from the large rainfall event will constitute 20 percent of all the water in the pond. That figure is high as a proportion of the water one would expect to find in the 1-hectare farm pond and, to an even greater extent, as a proportion of the higher volumes of water normally present in rivers and lakes.

NRDC does not dispute these conservative assumptions. Instead, it replaces the 10-hectare watershed used in the environmental fate model in the FONSI with runoff from a 50-hectare watershed and with runoff from a 50-hectare watershed augmented by an equivalent amount of runoff from manure piles and other unsecured waste stored in that watershed. According to NRDC, use of its environmental fate model would result in 5- and 10-fold increases, respectively, in the concentrations of selenium one would expect in the 1-hectare pond after receiving this runoff.

CVM believes that NRDC's models contain mathematical errors (Ref. 28) and are based on unrealistic assumptions. It also believes that even if the assumptions are regarded as true (with or without the mathematical errors corrected), the models would not result in concentrations of selenium of environmental concern.

Use of NRDC's model employing runoff from a 50-hectare watershed results in a 2.75-fold increase over the FONSI's maximum estimate of 0.24 ppb/year influx of selenium into local aquatic environments, to a maximum of 0.67 ppb; use of NRDC's model employing runoff from a 50-hectare watershed augmented by an equivalent amount of runoff from unsecured manure piles results in a 5.5-fold increase, to a maximum of 1.3 ppb (Ref. 28). Taking NRDC's calculations for the latter model as true results in 10-fold increase, to a maximum of 2.4 ppb.

Only the last of these concentrations (2.4 ppb) of selenium would exceed the concentrations of selenium at which there is any evidence of deleterious effects on aquatic organisms. And that concentration is based on a mathematical error (Ref. 28) and is derived from the FONSI's maximum estimate (0.24 ppb), which incorporates a series of extremely conservative assumptions. Moreover, the assumptions underlying NRDC's environmental fate models are wholly unrealistic. They assume, for example, that all 50 hectares of the watershed are in plowed farmland, that all of them are amended with the maximum amount of poultry waste, and that all the runoff from the entire watershed drains into the 1-hectare pond. NRDC's second model assumes, in addition, that an equal amount of poultry waste, piled up and otherwise unsecured, will be located on the same farmland and that the rainfall event will similarly leach the selenium from such storage areas into the pond. Such "double counting" is especially unrealistic with respect to poultry waste. The vast majority of poultry are raised in covered buildings or enclosures that do not allow much, if any, of the poultry waste to be touched by rainfall; poultry waste is often not removed from the buildings for up to 2 years; and poultry waste is a valuable soil conditioner and, as such, is spread over and incorporated into agricultural lands.

4. NRDC argues that the FONSI fails to assess the potential effects of the 1987 amendments on wildlife living near acquatic environments, and claims that it should have taken into account food-chain BCF's. NRDC cites a range of BCF's from 460 to 32,000, on the ground that they may vary for various acquatic species. It then applies 3 BCF's (500, 5,000 and 30,000) to the environmental fate models discussed in paragraph 3 of this notice. Using the various BCF's and models, NRDC estimates that aquatic species may accumulate 120 to 72,000 ppb selenium. NRDC suggests that dietary selenium levels above 5,000 ppb may be harmful to migratory birds.

As discussed in paragraph 1 of this notice, bioconcentration and biomagnification must be considered within the context of the selenium biogeochemical cycle, including the loading or quantity of selenium introduced into the system and the factors that mobilize and immobilize selenium in the environment. CVM has re-examined the model used in the FONSI, which attempts to evaluate selenium inputs and the potential environmental effects on a pond receiving runoff from land amended with wastes from animals receiving selenium supplementation. If one assumes that the worst-case losses of selenium from the amended agricultural soils are in the form of water soluble, bioavailable selenate, then the addition of less than 10 grams of selenate to a shallow, 1-hectare pond all at once could result in an undesirable level of food chain biomagnification and adverse effects due to selenium toxicity on the top trophic levels. As discussed in paragraph 1 of this notice, however, animals do not excrete selenium in the form of selenate, but, rather, in reduced forms with limited or no bioavailability, low toxicity, and very limited mobility through soil. Furthermore, where environmental conditions favor the transformation of some of the excreted forms into selenates, this can occur only slowly (Ref. 12).

CVM now believes that the FONSI grossly overestimates the potential mobility and bioavailability, and, therefore, the potential for environmental impact, of selenium entering the environment as a consequence of the 1987 amendments.

5. MT argues that environmental problems caused by selenium are not limited to California, but are widespread in the United States.

As the FONSI (pp. 11–12) acknowledges, a few sites in the United States have been contaminated with high concentrations of selenium and some fish and wildlife from those sites have been adversely affected. These sites include, in addition to the Kesterson Reservoir, sites contaminated in North Carolina and Texas due to coal-fired power plants. Kesterson is the first documented problem area created by a combination of high levels of naturally occurring selenium in the soil and the leaching of high levels of selenium by irrigation return water by agricultural practices (Ref. 29). That problem area, however, does not extend very far. The Volta Wildlife Area, which is only 6 miles from Kesterson and which is used as the control site for most chemical and biological comparison with Kesterson, is not affected (Ref. 30). And fish sampled from a variety of locations in the nearby San Joaquin River had concentrations of selenium within the range around the national average (approximately 0.5 ppm wet weight (Ref. 10)) to 5 ppm dry weight (equivalent to some 1 ppm wet weight) (Ref. 31)). More to the point, CVM is unaware of any evidence that more than a handful of aquatic environments in the United States are contaminated with high concentrations of selenium, and CVM does not believe that food producers in those areas will choose to provide supplemental selenium to their livestock. (The 1987 amendments, after all, permit but do not require, selenium supplementation.) Such supplementation is not inexpensive. Food producers are unlikely to provide it unless the animals are in selenium-deficient areas.

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The following references, together with the other documents cited in this notice, and any comments received have been placed on display in the Dockets Management Branch (address above) and may be seen by interested persons between 9 a.m. and 4 p.m. Monday through Friday.

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Interested persons may, on or before August 10, 1989 submit to the Dockets Management Branch (address above) written comments regarding this notice. Two copies of any comments are to be submitted, except that individuals may submit one copy. Comments are to be identified with the docket number found in brackets in the heading of this document.

List of Subjects in 21 CFR Part 573

Animal feeds, Food additives.

Dated: June 30, 1989.

Gerald B. Guest,

Director, Center for Veterinary Medicine.

[FR Doc. 89-16072 Filed 7-10-89; 8:45 am]

BILLING CODE 4160-01-M

PENSION BENEFIT GUARANTY CORPORATION

29 CFR Parts 2670 and 2675

Powers and Duties of Plan Sponsor of Plan Terminated by Mass Withdrawal

AGENCY: Pension Benefit Guaranty Corporation.

ACTION: Final rule.

SUMMARY: This regulation provides rules for the administration of multiemployer pension plans that have terminated by mass withdrawal, including rules for determining the sufficiency of plan assets, distributing plan assets and reporting to the Pension Benefit Guaranty Corporation. This regulation is necessary because the Employee Retirement Income Security Act, as amended, establishes certain requirements for plans terminated by mass withdrawal and requires the PBGC to prescribe regulations governing the plan sponsor's powers and duties when a mass-withdrawal-terminated plan is insolvent. The Act also authorizes the PBGC to prescribe rules and standards for the administration of such plans in order to protect the interests of plan participants and beneficiaries and to prevent unreasonable loss to the multiemployer insurance program. The regulation is intended to establish rules that encourage the efficient administration of mass-withdrawal-terminated plans in order to preserve plan assets and thus protect the interests of plan participants and beneficiaries and the insurance program. The regulation provides explicit rules for plan sponsors to follow in handling a variety of recurring and non-recurring situations.

EFFECTIVE DATE: August 10, 1989.

FOR FURTHER INFORMATION CONTACT: J. Ronald Goldstein, Senior Counsel, Office of the General Counsel, Pension Benefit Guaranty Corporation, 2020 K Street NW Washington, DC 20006; (202) 778-8850, (202) 778-8859 for TTY and TDD). [These are not toll-free numbers.]

SUPPLEMENTARY INFORMATION:

Background

Under section 4041A(a) of the Employee Retirement Income Security Act of 1974, as amended (ERISA or "the Act"), a multiemployer plan is terminated in one of two ways: (1) A plan amendment may be adopted that provides that participants will receive no credit for any purpose under the plan for service with any employer after a specified date, or that causes the plan to become a defined contribution plan ("termination by plan amendment"); or (2) every employer either withdraws from the plan or ceases to have an obligation to contribute to the plan ("termination by mass withdrawal").

In the case of a mass withdrawal termination, there is no continuing obligation to fund the plan. If a mass-withdrawal-terminated plan has sufficient assets and is closed out by purchasing annuities or making other permitted forms of distributions that provide all nonforfeitable benefits upon the termination, or if it becomes sufficient to close out based on its collection of withdrawal liability after the termination and does so, plan participants and the multiemployer insurance program will not be harmed. If, however, the plan experiences financial difficulties, such as losses in the value of plan assets, adverse mortality, or inability to collect the full amount of withdrawal liability owed the plan, the interests of plan participants and the insurance program may be adversely affected.

Because a mass-withdrawal-terminated plan cannot look to employers for continued contributions or for additional withdrawal liability (beyond that assessed pursuant to ERISA section 4219(c)(1)(D) and 29 CFR Part 2648 as a result of the mass withdrawal), the Act imposes certain rules and obligations on the sponsor of a plan that has terminated by mass withdrawal and gives the Pension Benefit Guaranty Corporation (PBGC) authority to prescribe others. These rules require a plan sponsor to monitor the financial condition of the plan and, depending on the condition of the plan, reduce or suspend benefits and apply to the PBGC for financial assistance. The Act also restricts the types of payments that may be made by a plan that is not closing out, regardless of its financial condition.

The Proposed Regulation and Comments

On July 7 1986 (51 FR 24536), the PBGC published a proposed regulation on Powers and Duties of Plan Sponsor of Plan Terminated by Mass Withdrawal. The proposed regulation contained rules for the administration of multiemployer plans that terminated by mass withdrawal, including rules for determining the sufficiency of plan assets, distributing plan assets and reporting to the PBGC.

The PBGC received comments on the proposed regulation from one interested party. The PBGC has reviewed the comments and made several changes in the regulation as a result of them. The PBGC has also made several editorial changes in the regulation.

The commenter noted that proposed § 2675.12(c) reflected the limitation in ERISA section 4041A(c)(1) that a mass-withdrawal-terminated plan not pay benefits in excess of the amount that is nonforfeitable under the plan as of the termination date. The proposed regulation did not, however, contain a provision restating the PBGC's authority under section 4041A(f)(1) to permit payments in excess of nonforfeitable benefits if the PBGC determines that such payments are not adverse to the interests of the plan's participants and beneficiaries generally and do not unreasonably increase the PBGC's risk of loss with respect to the plan. (The same standard applies to PBGC approval to pay benefits valued at more than $1,750 in a form other than as an annuity.) The commenter urged that this authority be specifically included in the regulation, and the PBGC believes this point is well taken. Therefore, the PBGC has added a new § 2675.17 to the final regulation, which essentially restates section 4041A(f)(1).

On a related point, the commenter questioned whether the limitation in § 2675.12(c) was intended to cover the payment of qualified pre-retirement survivor annuities (QPSA's) where the participant had not died prior to the date of the plan termination. The commenter noted that pursuant to the definition of "nonforfeitable benefit" in ERISA section 4001(a)(8), the PBGC has always taken the position that pre-retirement death benefits are not nonforfeitable if the participant is still alive at plan termination. The commenter went on to suggest that it was Congress' intent that QPSA's be payable under terminated plans, even though the participant had not died before termination. The commenter cited as evidence the amendment to ERISA section 4022, which applies only to single-employer plans, contained in the Single-Employer Pension Plan Amendments Act of 1986 (SEPPAA). Under that amendment, a QPSA under a terminated plan is not to be treated as forfeitable under section 4022 solely because the participant has not died as of the plan termination date (section 4022(d), subsequently redesignated section 4022(e)). Given this expression of Congressional intent, the commenter concluded, the PBGC should not interpret Title IV's multiemployer plan provisions so as to reach a contrary result.

The PBGC agrees with the commenter that the Congress, through the enactment of the Retirement Equity Act of 1984 (REA) and the subsequent amendment to ERISA section 4022, has demonstrated a clear intent that pension plans, both ongoing and terminated, provide and pay qualified pre-retirement survivor annuities. However, in effecting this intent under Title IV Congress did not change the Title IV definition of "nonforfeitable benefit" Under that definition the PBGC has taken the position described by the commenter: that QPSA's and other pre-retirement death benefits are not nonforfeitable if the participant is still alive at plan termination. Thus, it would be permissible for a terminated multiemployer plan to pay QPSA's only if the plan obtained the PBGC's approval to do so pursuant to ERISA section 4041A(f)(1).

After carefully reviewing this matter, the PBGC has concluded that it should grant a blanket approval under section 4041A(f)(1) permitting all terminated plans to pay QPSA's to the extent otherwise permitted by Subtitle E of Title IV This approval is set forth in an amended paragraph (c) of § 2675.12.

This decision is based on the PBGC's determination under section 4041A(f)(1) that the payment of QPSA's by terminated plans would not in any case be adverse to the interests of plan participants and beneficiaries generally, nor unreasonably increase the PBGC's risk of loss with respect to a terminated plan. The Congress has, in essence, already determined that the payment of QPSA's is beneficial to plan participants and beneficiaries. The PBGC does not find that the slight risk of a plan's becoming underfunded for nonforfeitable benefits or insolvent as a result of paying subsidized QPSA's supports a finding that the payment of QPSA's is adverse to the interests of plan participants and beneficiaries generally. (In fact, in plans that pay unsubsidized QPSA's, even this slight risk disappears.) The PBGC also notes in this regard that if a plan became insufficient for nonforfeitable benefits, it would be required to stop paying and eliminate from the plan QPSA's (and any other non-guaranteeable benefits), to the extent necessary to ensure that plan assets are sufficient to pay when due all nonforfeitable benefits under the plan (ERISA section 4281(c)).

Similarly, the PBGC finds that because QPSA s are not guaranteed benefits and because the value of QPSA subsidies is small, their payment cannot unreasonably increase the PBGC's risk of loss with respect to a terminated plan.

Finally, it is emphasized that because QPSA's are not nonforfeitable benefits, they remain subject to reduction or elimination under ERISA section 4281. This authorization for terminated plans to pay QPSA's in no way alters the section 4281 rules pertaining to benefit reductions and suspensions in financially trouble terminated plans.

Section 2675.14(a) of the proposed regulation required plan sponsors to determine the value of plan assets and nonforfeitable benefits not later than 150 days after the end of each plan year. The commenter objected to this, asserting that this deadline is much shorter than that provided in the regulation on Redetermination of Withdrawal Liability Upon Mass Withdrawal, § 2648.2, for computing the amount of withdrawal liability to be reallocated to employers after a mass withdrawal termination. The PBGC finds this argument unpersuasive.

The relatively long time frame for calculating reallocation liability under Part 2648 is not intended to permit plans to delay the actuarial valuation for the plan year in which the mass withdrawal termination occurred. Rather, it is intended to give the plan sponsor adequate time to determine the uncollectible amounts of outstanding withdrawal liability assessments (including those arising from the mass withdrawal), an integral part of the calculation of reallocation liability. Thus, the liberal time limit of § 2648.2(b)(3) should normally provide enough time for the resolution of most withdrawal liability disputes prior to the deadline for calculating reallocation liability.

The time limit for performing the annual plan valuation required of all mass-withdrawal-terminated plans (section 4281(b)(1)) is a separate issue. One purpose of the valuation is to enable the plan sponsor to determine whether the plan must be amended to reduce or eliminate any nonguaranteeable benefits provided under the plan pursuant to section 4281(c). (Nonguaranteeable benefits must be reduced or eliminated whenever the annual valuation shows that the value of the plan's nonforfeitable benefits exceeds the value of plan assets.) Since any such amendment must be effective no later than six months after the end of the plan year, it follows that the valuation must be performed less than six months after the end of the plan year. For that reason, the final regulation provides that the annual valuation must be completed within 150 days after the close of a plan year. The PBGC believes that 150 days is fully adequate for performing valuations of mass-withdrawal-terminated plans.

With respect to the benefit reductions required by section 4281(c), § 2675.21 of the proposed regulation contained the following sentence:

Benefit reductions required to be made under this subpart shall apply only to *accrued* benefits under plans or plan amendments adopted after March 26, 1980, or under collective bargaining agreements entered into after March 26, 1980. (Emphasis added).

The commenter noted that this sentence could be read to permit reductions only with respect to accrued benefits. This was not the PBGC's intent. Rather, this provision was meant to protect benefits accrued under pre-March 27 1980, plans, plan amendments or collective bargaining agreements. The final rule has, therefore, been revised to clarify this point.

The commenter raised two issues relating to the rules in Subpart E for closing out mass-withdrawal-terminated plans. First, the commenter suggested that § 2675.42 of the proposed regulation could be read as requiring plan sponsors of sufficient plans to pay out all benefits in all cases. The commenter recommended that plans be allowed to apply for a waiver of this requirement and also suggested that a provision be added to the final regulation authorizing the PBGC to waive any of the requirements in the regulation.

Section 2675.42, which addresses the method of distributing plan assets, is applicable only when the plan sponsor chooses to close out a sufficient plan. Section 2675.41 does not require the closeout of a sufficient plan. Rather, it provides merely that the plan sponsor of such a plan *may* close out the plan in accordance with the rules in Subpart E of the regulation. Read in context, it is thus clear that § 2675.42 does not require the plan sponsor of a sufficient plan to distribute plan assets in full satisfaction of plan liabilities, unless it chooses to do so. There is, therefore, no need to permit plans to apply for a waiver of the requirements of § 2675.42 to protect plans from having to close out when that is not in the best interests of plan participants. Further, since the commenter offered no other examples of situations in which waivers of the regulation's requirements might be appropriate, the PBGC is not persuaded that a broader waiver provision should be added to the regulation.

The commenter also addressed § 2675.43(b)(1) of the proposed regulation, which (pursuant to ERISA section 4041A(f)(1)) permitted a plan sponsor that was closing out a plan to pay benefits attributable to employer contributions in a form other than an annuity if the present value of the participant's entire nonforfeitable benefit did not exceed $1,750. The commenter noted that REA increased the non-consensual cashout limit for ongoing plans to $3,500 and suggested that the regulation be changed to incorporate this higher cashout limit. The commenter also suggested that the regulation clarify whether plans must use select and ultimate interests rates in determining the present value of a participant's nonforfeitable benefit for this purpose.

As alluded to previously the PBGC is authorized under section 4041A(f)(1) to permit the payment in a lump sum of benefits that exceed $1,750. In order to approve these higher cashouts, the PBGC must find that they are not adverse to the interests of the plan's participants and beneficiaries generally and do not unreasonably increase the PBGC's risk of loss with respect to the plan. When a plan is being closed out under Subpart 4, a higher cashout limit would not be adverse to the interests of the plan's participants and beneficiaries, since their nonforfeitable benefits must be fully satisfied as part of the closeout. This fact also ensures that the higher cashout limit will not unreasonably increase the PBGC's risk of loss with respect to the plan. Therefore, the PBGC has amended § 2675.43(b)(1) in the final regulation to increase to $3,500 the cashout limit for mass-withdrawal-terminated plans that are closing out. Such plans may, of course, apply to the PBGC for permission to pay lump sum benefits greater than $3,500 (§ 2675.17).

The select and ultimate interest rates referred to by the commenter are part of the PBGC's regulation on Valuation of Plan Assets and Plan Benefits Following Mass Withdrawal (29 CFR Part 2676). Proposed § 2675.43(b)(1) required that benefits be valued in accordance with that regulation for purposes of determining whether a benefit could be paid as a lump sum. The PBGC has since concluded that this is not the best approach.

Section 1139 of the Tax Reform Act of 1986 (TRA), which applies to both single-employer and multiemployer plans, provides that plans must calculate the present value of benefits to be paid as a lump sum using "the interest rate which would be used (as of the date of the distribution) by the Pension Benefit Guaranty Corporation for determining the present value of a lump sum distribution on plan termination. The only situation in which the PBGC determines the present value of a lump sum distribution in a terminated plan is under terminated single-employer plans trusteed by the PBGC. Thus, the reference in TRA section 1139 is to the interest rates prescribed under 29 CFR Part 2619, Subpart C. These are the interest rates that ongoing multiemployer plans are required to use for calculating sump sum benefits, and the PBGC believes that no valid purpose would be served by requiring these plans to use a different interest assumption for these calculations after plan termination. (The PBGC also notes that, for some plans, the Part 2619, Subpart C interest assumption may be easier to use for calculating lump sum than the Part 2676 interest assumption.) Accordingly, the PBGC has modified § 2675.43(b)(1) to provide that the present value of the benefit is to be determined using the interest assumption under Subpart C of Part 2619.

(The PBGC reminds plan sponsors that they may not use the Part 2619, Subpart C mortality assumption for calculating lump sum benefits. Rather, the plan must employ a unisex mortality assumption for this purpose. The mortality assumption used must be, in conjunction with the Part 2619, Subpart C interest assumption, reasonable in the aggregate.)

Finally, the PBGC, at its own initiative, has made one minor change in § 2675.43(c), deleting the requirement that the notice of election for alternative forms of distribution contain a statement that the PBGC does not guarantee the alternative form. This language was misleading in possibly suggesting that the PBGC's guarantee of multiemployer plan benefits extends beyond the obligation to provide financial assistance to insolvent plans (*see* PBGC Opinion Letter 85-24).

E.O. 12291 and Regulatory Flexibility Act

The Pension Benefit Guaranty Corporation has determined that this regulation is not a "major rule" for the purposes of Executive Order 12291 because the rule will not have an annual effect on the economy of $100 million or more; or create a major increase in costs or prices for consumers, individual industries, or geographic regions; or have significant adverse effects on competition, employment, investment, innovation or the ability of United States-based enterprises to compete with foreign-based enterprises in domestic or import markets. ERISA establishes requirements and standards for the administration of multiemployer plans that have terminated by mass withdrawal; this regulation implements those requirements and standards.

Under section 605(b) of the Regulatory Flexibility Act, the PBGC certifies that this rule will not have a significant economic impact on a substantial number of small entities. Pension plans with fewer than 100 participants have traditionally been treated as small plans. The proposed regulation affects only multiemployer plans covered by the PBGC under Title IV of ERISA. If "small" plans are defined as those with fewer than 100 participants, the PBGC's coverage of small plans extends to less than 14 percent of all multiemployer plans covered by the PBGC (346 out of 2,485 plans). Further, small multiemployer plans represent only 0.4 percent of all small plans covered by the PBGC (346 out of 84,288 plans). Based on the PBGC's experience to date, it is estimated that no more than 10 multiemployer plans will be terminated by mass withdrawal in any given year. Thus, the PBGC expects there to be few plans that may need to be administered under these rules. Therefore, compliance with sections 603 and 604 of the Regulatory Flexibility Act is waived.

List of Subjects

29 CFR Part 2670

Employee benefit plans, Pension insurance.

29 CFR Part 2675

Employee benefit plans, Pensions and reporting requirements.

In consideration of the foregoing, Subchapter H of Chapter XXVI of Title 29, Code of Federal Regulations is amended as follows:

PART 2670—DEFINITIONS

1. The authority for Part 2670 is revised to read as follows:

Authority: 29 U.S.C. 1302.

2. Part 2670 is amended by revising § 2670.4 to read as follows:

§ 2670.4 Plans terminated by mass withdrawal and other insolvent plans.

For purposes of Parts 2674 and 2675—

"Actuarial valuation" means a report submitted to the plan in connection with a valuation of plan assets and liabilities, which, in the case of a plan covered by Part 2675, shall be performed in accordance with Part 2676 of this chapter.

"Available resources" means, for a plan year, the plan's cash, marketable assets, contributions, withdrawal liability payments and earnings, less reasonable administrative expenses and amounts owed for the plan year to the PBGC under section 4261(b)(2) of the Act.

"Benefits subject to reduction" means those benefits accrued under plan amendments (or plans) adopted after March 26, 1980, or under collective bargaining agreements entered into after March 26, 1980, that are not eligible for the PBGC's guarantee under section 4022A(b) of the Act.

"Financial assistance" means financial assistance from the PBGC under section 4261 of the Act.

"Insolvency benefit level" means the greater of the resource benefit level or the benefit level guaranteed by the PBGC for each participant and beneficiary in pay status.

"Insolvency year" means a plan year in which the plan is insolvent.

"Insolvent" means that a plan is unable to pay benefits when due during the plan year. A plan terminated by mass withdrawal is not insolvent unless it has been amended to eliminate all benefits that are subject to reduction under section 4281(c), or, in the absence of an amendment, no benefits under the plan are subject to reduction under section 4281(c).

"Insurer" means a company authorized to do business as an insurance carrier under the laws of a State or the District of Columbia.

"Nonguaranteed benefits" means those benefits that are eligible for the PBGC's guarantee under section 4022A(b) of the Act, but exceed the guarantee limits under section 4022A(c).

"Participants and beneficiaries reasonably expected to enter pay status" means plan participants and beneficiaries (other than participants and beneficiaries in pay status), who, according to plan records, are disabled, have applied for benefits, or have reached or will reach during the applicable period the normal retirement age under the plan, and any others whom it is reasonable for the plan sponsor to expect to enter pay status during the applicable period.

"Plan" means a plan terminated under section 4041A(a)(2) of the Act.

"Pro rata" means that the required benefit reduction or payment shall be allocated among affected participants in the same proportion that each such participant's nonforfeitable benefits under the plan bear to all nonforfeitable benefits of those participants under the plan.

"Reorganization" means reorganization under section 4241(a) of the Act.

"Resource benefit level" means the highest level of monthly benefits that the plan sponsor determines can be paid for a plan year out of the plan's available resources.

"Valuation date" means the last day of the plan year in which the plan terminates and the last day of each plan year thereafter.

3. Part 2675 is revised to read as follows:

PART 2675—POWERS AND DUTIES OF PLAN SPONSOR OF PLAN TERMINATED BY MASS WITHDRAWAL

Subpart A—General Provisions

Sec.
2675.1 Purpose and scope.
2675.2 Submission of documents.
2675.3 Collection of information.

Subpart B—Plan Sponsor Duties

2675.11 General rule.
2675.12 Payment of benefits.
2675.13 Imposition and collection of withdrawal liability.
2675.14 Annual plan valuations and monitoring.
2675.15 Periodic determinations of plan solvency.
2675.16 Financial assistance.
2675.17 PBGC approval to pay benefits not otherwise permitted.

Subpart C—Benefit Reductions

2675.21 Purpose and scope.
2675.22 Plan amendment.
2675.23 Notices of benefit reductions.
2675.24 Restoration of benefits.

Subpart D—Benefit Suspensions

2675.31 Purpose and scope.
2675.32 Benefit suspensions.
2675.33 Retroactive payments.
2675.34 Notices of insolvency and annual updates.
2675.35 Contents of notices of insolvency and annual updates.
2675.36 Notices of insolvency benefit level.
2675.37 Contents of notices of insolvency benefit level.
2675.38 Application for financial assistance.

Subpart E—Closeout of Sufficient Plans

2675.41 General rule.
2675.42 Method of distribution.
2675.43 Benefit forms.
2675.44 Cessation of withdrawal liability.

Authority: 29 U.S.C. 1302(b)(3), 1341a and 1441.

Subpart A—General Provisions

§ 2675.1 Purpose and scope.

(a) *Purpose.* The purpose of this part is to establish rules for the administration of multiemployer plans that have terminated by the withdrawal of every employer or the cessation of all employers' obligations to contribute to the plan ("termination by mass withdrawal"). Sections 4041A and 4281 of the Act establish certain requirements for mass-withdrawal-terminated plans and authorize the PBGC to prescribe additional rules and standards for the administration of such plans. This regulation prescribes the duties of plan sponsors of mass-withdrawal-terminated plans and provides rules for administering benefit reductions that are required under section 4281(c) of the Act and benefit suspensions required under section 4281(d). This part also contains procedures for closing out sufficient plans and applying to the PBGC for financial assistance under section 4261 of the Act.

(b) *Scope.* This part applies to multiemployer plans covered by section 4021(a) of the Act and not excluded by section 4021(b) that have terminated by mass withdrawal under section 4041A(a)(2) of the Act (including a plan created by a partition pursuant to section 4233 of the Act).

§ 2675.2 Submission of documents.

(a) *Filing date.* Any notice, document or information required to be filed with the PBGC under this part shall be considered filed on the date of the United States postmark stamped on the cover in which the document or information is mailed, provided that the postmark was made by the United States Postal Service and the document was mailed postage prepaid, properly packaged and addressed to the PBGC. If these conditions are not met, the document shall be considered filed on the date on which it was received by the PBGC.

(b) *Address.* All notices, documents and information required to be filed with the PBGC under this part shall be addressed to the Case Classification and Control Division (25400), Insurance Operations Department, Pension Benefit Guaranty Corporation, 2020 K Street NW., Washington, DC 20006.

§ 2675.3 Collection of information.

The collection of information requirements contained in this part have been approved by the Office of Management and Budget under control number 1212–0032.

Subpart B—Plan Sponsor Duties

§ 2675.11 General rule.

The plan sponsor shall continue to administer the plan in accordance with applicable statutory provisions, regulations and plan provisions until a trustee is appointed under section 4042 of the Act or until plan assets are distributed in accordance with Subpart E of this part. In addition, the plan sponsor shall be responsible for the specific duties described in this subpart.

§ 2675.12 Payment of benefits.

(a) Except as provided in paragraph (b), the plan sponsor shall pay benefits attributable to employer contributions, other than death benefits, only in the form of an annuity.

(b) The plan sponsor may pay benefits in a form other than an annuity if—

(1) The plan distributes plan assets in accordance with Subpart E of this part;

(2) The PBGC approves the payment of benefits in an alternative form pursuant to § 2675.17· or

(3) The value of the entire nonforfeitable benefit does not exceed $1,750.

(c) Except to the extent provided in the next sentence, the plan sponsor shall not pay benefits in excess of the amount that is nonforfeitable under the plan as of the date of plan termination, unless authorized to do so by the PBGC pursuant to § 2675.17 Subject to the restriction stated in paragraph (d) of this section, however, the plan sponsor may pay a qualified preretirement survivor annuity with respect to a participant who died after the termination date.

(d) The payment of benefits subject to reduction shall be discontinued to the extent provided in § 2675.22 if the plan sponsor determines, in accordance with § 2675.14, that the plan's assets are insufficient to provide all nonforfeitable benefits.

(e) The plan sponsor shall, to the extent provided in § 2675.32, suspend the payment of nonguaranteed benefits if the plan sponsor determines, in accordance with § 2675.15, that the plan is insolvent.

(f) The plan sponsor shall, to the extent required by § 2675.33, make retroactive payments of suspended benefits if it determines under that section that the level of the plan's available resources requires such payments.

§ 2675.13 Imposition and collection of withdrawal liability.

Until plan assets are distributed in accordance with Subpart E of this part, or until the end of the plan year as of which the PBGC determines that plan assets (exclusive of claims for withdrawal liability) are sufficient to satisfy all nonforfeitable benefits under the plan, the plan sponsor shall be responsible for determining, imposing and collecting withdrawal liability (including the liability arising as a result of the mass withdrawal), in accordance with Part 2644 of the PBGC's regulations and sections 4201–4225 of the Act.

§ 2675.14 Annual plan valuations and monitoring.

(a) *Annual valuation.* Not later than 150 days after the end of the plan year, the plan sponsor shall determine or cause to be determined in writing the value of nonforfeitable benefits under the plan and the value of the plan's assets, in accordance with 29 CFR Part 2676. This valuation shall be done as of the end of the plan year in which the plan terminates and each plan year thereafter (exclusive of plan year for which the plan receives financial assistance from the PBGC under section 4261 of the Act) up to but not including the plan year in which the plan is closed out in accordance with Subpart E.

(b) *Plan monitoring.* Upon receipt of the annual valuation described in paragraph (a) of this section, the plan sponsor shall determine whether the value of nonforfeitable benefits exceeds the value of the plan's assets, including claims for withdrawal liability owed to the plan. When benefits do exceed assets, the plan sponsor shall—

(1) If the plan provides benefits subject to reduction, amend the plan to reduce those benefits in accordance with the procedures in Subpart C of this part to the extent necessary to ensure that the plan's assets are sufficient to discharge when due all of the plan's obligations with respect to nonforfeitable benefits; or

(2) If the plan provides no benefits subject to reduction, make periodic determinations of plan solvency in accordance with § 2675.15.

(c) *Notices of benefit reductions.* The plan sponsor of a plan that has been amended to reduce benefits shall provide participants and beneficiaries and the PBGC notice of the benefit reduction in accordance with § 2675.23.

§ 2675.15 Periodic determinations of plan solvency.

(a) *Annual insolvency determination.* The plan sponsor of a plan that has been amended to eliminate all benefits that are subject to reduction under section 4281(c) of the Act shall determine in writing whether the plan is expected to be insolvent for the first plan year beginning after the effective date of the amendment and for each plan year thereafter. In the event that a plan adopts more than one amendment reducing benefits under section 4281(c) of the Act, the initial determination shall be made for the first plan year beginning after the effective date of the amendment that effects the elimination of all such benefits, and a determination shall be made for each plan year thereafter. The plan sponsor of a plan under which no benefits are subject to reduction under section 4281(c) of the Act as of the date the plan terminated shall determine in writing whether the plan is expected to be insolvent. The initial determination shall be made for the second plan year beginning after the first plan year for which it is determined under section 4281(b) of the Act that the value of nonforfeitable benefits under the plan exceeds the value of the plan's assets. The plan sponsor shall also make a solvency determination for each plan year thereafter. A determination required under this paragraph shall be made no later than six months before the beginning of the plan year to which it applies.

(b) *Other determination of insolvency.* Whether or not a prior determination of plan solvency has been made under paragraph (a) of this section (or under section 4245 of the Act), a plan sponsor that has reason to believe, taking into account the plan's recent and anticipated financial experience, that the plan is or may be insolvent for the current or next plan year shall determine in writing whether the plan is expected to be insolvent for that plan year.

(c) *Benefit suspensions.* If the plan sponsor determines that the plan is, or is expected to be, insolvent for a plan year, it shall suspend benefits in accordance with § 2675.32.

(d) *Insolvency notices.* If the plan sponsor determines that the plan is, or is expected to be, insolvent for a plan year, it shall issue notices of insolvency or annual updates and notices of insolvency benefit level of the PBGC and to plan participants and beneficiaries in accordance with Subpart D.

§ 2675.16 Financial assistance.

A plan sponsor that determines a resource benefit level under section 4245(b)(2) of the Act that is below the level of guaranteed benefits or that determines that the plan will be unable to pay guaranteed benefits for any month during an insolvency year shall apply for financial assistance from the PBGC in accordance with § 2675.38.

§ 2675.17 PBGC approval to pay benefits not otherwise permitted.

Upon written application by the plan sponsor, the PBGC may authorize the plan to pay benefits other than nonforfeitable benefits or to pay benefits valued at more than $1,750 in a form other than an annuity. The PBGC will approve such payments if it determines that the plan sponsor has demonstrated that the payments are not adverse to the interests of the plan's participants and beneficiaries generally and do not unreasonably increase the PBGC's risk of loss with respect to the plan.

Subpart C—Benefit Reductions

§ 2675.21 Purpose and scope.

This subpart sets forth procedures under which the sponsor of a terminated plan shall amend the plan to reduce benefits subject to reduction in accordance with section 4281(c) of the Act and § 2675.14(b) of this part. This subpart applies to a plan for which the annual valuation required by § 2675.14(a) indicates that the value of nonforfeitable benefits under the plan exceeds the value of the plan's assets including claims for withdrawal liability, if, at the end of the plan year for which that valuation was done, the plan provided any benefits subject to reduction. Benefit reductions required to be made under this subpart shall not apply to accrued benefits under plans or plan amendments adopted on or before March 26, 1980, or under collective bargaining agreements entered into on or before March 26, 1980.

§ 2675.22 Plan amendment.

The plan sponsor of a plan described in § 2675.21 shall amend the plan to eliminate those benefits subject to reduction in excess of the value of benefits that can be provided by plan assets. Such reductions shall be effected by a *pro rata* reduction of all benefits subject to reduction or by elimination or *pro rata* reduction of any category of benefit. Benefit reductions required by this section shall apply only prospectively. An amendment required under this section shall take effect no later than six months after the end of the plan year for which it is determined that the value of nonforfeitable benefits exceeds the value of the plan's assets.

§ 2675.23 Notices of benefit reductions.

(a) *Requirement of notices.* A plan sponsor of a multiemployer plan under which a plan amendment reducing benefits is adopted pursuant to section 4281(c) of the Act, shall so notify the PBGC and plan participants and beneficiaries whose benefits are reduced by the amendment. The notices shall be delivered in the manner and within the time prescribed and shall contain the information described in this section. The notice required in this section shall be filed in lieu of the notice described in section 4244A(b)(2) of the Act.

(b) *When delivered.* The plan sponsor shall mail or otherwise deliver the notices of benefit reduction no later than the earlier of—

(1) 45 days after the amendment reducing benefits is adopted; or

(2) The date of the first reduced benefit payment.

(c) *Method of delivery.* The notices of benefit reductions shall be delivered by mail or by hand to the PBGC and to plan participants and beneficiaries who are in pay status when the notice is required to be delivered or who are reasonably expected to enter pay status before the end of the plan year after the plan year in which the amendment is adopted. The notice to other participants and beneficiaries whose benefit is reduced by the amendment shall be provided in any manner reasonably calculated to reach those participants and beneficiaries. Reasonable methods of notification include, but are not limited to, posting the notice at participants' worksites or publishing the notice in a union newsletter or newspaper of general circulation in the area or areas where participants reside. Notice to a participant shall be deemed notice to the participant's beneficiary or beneficiaries.

(d) *Contents of notice to the PBGC.* A notice of benefit reduction required to be filed with the PBGC pursuant to paragraph (a) of this section shall contain the following information:

(1) The name of the plan.

(2) The name, address, and telephone number of the plan sponsor and of the plan sponsor's duly authorized representative, if any.

(3) The nine-digit Employer Identification Number (EIN) assigned by the Internal Revenue Service to the plan sponsor and the three-digit Plan Identification Number (PIN) assigned by the plan sponsor to the plan, and, if different, the EIN or PIN last filed with the PBGC. If no EIN or PIN has been assigned, the notice shall so state.

(4) The case number assigned by the PBGC to the filing of the plan's notice of termination pursuant to Part 2673 of this chapter.

(5) A statement that a plan amendment reducing benefits has been adopted, listing the date of adoption and the effective date of the amendment.

(6) A certification, signed by the plan sponsor or its duly authorized representive, that notice of the benefit reductions has been given to all participants and beneficiaries whose benefits are reduced by the plan amendment, in accordance with the requirements of this section.

(e) *Contents of notice to participants and beneficiaries.* A notice of benefit reductions required under paragraph (a) of this section to be given to plan participants and beneficiaries whose benefits are reduced by the amendment shall contain the following information:

(1) The name of the plan.

(2) A statement that a plan amendment reducing benefits has been adopted, listing the date of adoption and the effective date of the amendment.

(3) A summary of the amendment, including a description of the effect of the amendment on the benefits to which it applies.

(4) The name, address, and telephone number of the plan administrator or other person designated by the plan sponsor to answer inquiries concerning benefits.

§ 2675.24 Restoration of benefits.

(a) *General.* The plan sponsor of a plan that has been amended to reduce benefits under this subpart shall amend the plan to restore those benefits before adopting any amendment increasing benefits under the plan. A plan is not required to make retroactive benefit payments with respect to any benefit that was reduced and subsequently restored in accordance with this section.

(b) *Notice to the PBGC.* The plan sponsor shall notify the PBGC in writing of any restoration under this section. The notice shall include the information specified in § 2675.23 (d)(1)–(d)(4); a statement that a plan amendment restoring benefits has been adopted, the date of adoption, and the effective date of the amendment; and a certification, signed by the plan sponsor or its duly authorized representative, that the amendment has been adopted in accordance with this section.

Subpart D—Benefit Suspensions

§ 2675.31 Purpose and scope.

This subpart sets forth the procedures under which the plan sponsor of an insolvent plan must suspend benefit payments and issue insolvency notices in accordance with section 4281(d) of the Act and § 2675.15 (c) and (d). This subpart applies to a plan that has been amended under section 4281(c) of the Act and Subpart C of this part to eliminate all benefits subject to reduction and to a plan that provided no benefits subject to reduction as of the date on which the plan terminated.

§ 2675.32 Benefit suspensions.

If the sponsor determines that the plan is or is expected to be insolvent for a plan year, it shall suspend benefits to the extent necessary to reduce the benefits to the greater of the resource benefit level or the level of guaranteed benefits.

§ 2675.33 Retroactive payments.

(a) *Erroneous resource benefit level.* If, by the end of a year in which benefits were suspended under § 2675.32, the plan sponsor determines in writing that the plan's available resources in that year could have supported benefit payments above the resource benefit level determined for that year, the plan sponsor may distribute the excess resources to each affected participant and beneficiary who received benefit payments that year on a *pro rata* basis. Distributions under this paragraph per participant may not exceed the amount that, when added to benefit payments already made, brings the total benefit for the plan year up to the total benefit provided under the plan.

(b) *Benefits paid below resource benefit level.* If, by the end of a plan year in which benefits were suspended under § 2675.32, any benefit has not been paid at the resource benefit level, amounts up to the resource benefit level that were unpaid shall be distributed to each affected participant and beneficiary on a *pro rata* basis to the extent possible, taking into account the plan's total available resources in that year.

§ 2675.34 Notices of insolvency and annual updates.

(a) *Requirement of notices of insolvency.* A plan sponsor that determines that the plan is, or is expected to be, insolvent for a plan year shall issue notices of insolvency to the PBGC and to plan participants and beneficiaries. Once notices of insolvency have been issued to the PBGC and to plan participants and beneficiaries, no notice of insolvency needs to be issued for subsequent insolvency years. Notices shall be delivered in the manner and within the time prescribed in this section and shall contain the information described in § 2675.35.

(b) *Requirement of annual updates.* A plan sponsor that has issued notices of insolvency to the PBGC and to plan participants and beneficiaries shall thereafter issue annual updates to the PBGC and participants and beneficiaries for each plan year beginning after the plan year for which the notice of insolvency was issued. However, the plan sponsor need not issue an annual update to plan participants and beneficiaries who are issued notices of insolvency benefit level in accordance with § 2675.36 for the same insolvency year. A plan sponsor that, after issuing annual updates for a plan year, determines under § 2675.15(b) that the plan is or may be insolvent for that plan year need not issue revised annual updates. Annual updates shall be delivered in the manner and within the time prescribed in this section and shall contain the information described in § 2675.35.

(c) *Notices of insolvency—when delivered.* Except as provided in the next sentence, the plan sponsor shall mail or otherwise deliver the notices of insolvency no later than 30 days after the plan sponsor determines that the plan is or may be insolvent. However, the notice to plan participants and beneficiaries in pay status may be delivered concurrently with the first benefit payment made after the determination of insolvency.

(d) *Annual updates—when delivered.* Except as provided in the next sentence, the plan sponsor shall mail or otherwise deliver annual updates no later than 60 days before the beginning of the plan year for which the annual update is issued. A plan sponsor that determines under § 2675.15(b) that the plan is or may be insolvent for a plan year and that has not at that time issued annual updates for that year, shall mail or otherwise deliver the annual updates by the later of 60 days before the beginning of the plan year or 30 days after the date of the plan sponsor's determination under § 2675.15(b).

(e) *Notices of insolvency—method of delivery.* The notices of insolvency shall be delivered by mail or by hand to the PBGC and to plan participants and beneficiaries in pay status when the notice is required to be delivered. Notice to participants and beneficiaries not in pay status shall be provided in any manner reasonably calculated to reach those participants and beneficiaries. Reasonable methods of notification include, but are not limited to, posting the notice at participants' worksites or publishing the notice in a union newsletter or newspaper of general circulation in the area or areas where participants reside. Notice to a participant shall be deemed notice to that participant's beneficiary or beneficiaries.

(f) *Annual updates—method of delivery.* Each annual update shall be delivered by mail or by hand to the PBGC. Each annual update to plan participants and beneficiaries shall be provided in any manner reasonably calculated to reach participants and beneficiaries. Reasonable methods of notification include, but are not limited to, posting the notice at participants' worksites and publishing the notice in a union newsletter of general circulation in the area or areas where participants reside. Notice to a participant shall be deemed notice to that participant's beneficiary or beneficiaries.

§ 2675.35 Contents of notices insolvency and annual updates.

(a) *Notice of insolvency to the PBGC.* A notice of insolvency required under § 2675.34(a) to be filed with the PBGC shall contain the following information:

(1) The name of the plan.

(2) The name, address, and telephone number of the plan sponsor and of the plan sponsor's duly authorized representative, if any.

(3) The nine-digit Employer Identification Number (EIN) assigned by the Internal Revenue Service to the plan sponsor and the three-digit Plan Identification Number (PIN) assigned by the plan sponsor to the plan, and, if different, the EIN or PIN last filed with the PBGC. If no EIN or PIN has been assigned, the notice shall so state.

(4) The IRS Key District that has jurisdiction over determination letters with respect to the plan.

(5) The case number assigned by the PBGC to the filing of the plan's notice of termination pursuant to Part 2673 of this chapter.

(6) The plan year for which the plan sponsor has determined that the plan is or may be insolvent.

(7) A copy of the plan document currently in effect, *i.e.*, a copy of the last restatement of the plan and all subsequent amendments. However, if a copy of the plan document was submitted to the PBGC with a previous filing, only subsequent plan amendments need be submitted, and the notice shall state when the copy of the plan document was filed.

(8) A copy of the most recent actuarial valuation for the plan. If the actuarial valuation was previously submitted to the PBGC, it may be omitted and the notice shall state the date on which the document was filed and that the information is still accurate and complete.

(9) The estimated amount of annual benefit payments under the plan (determined without regard to the insolvency) for the insolvency year.

(10) The estimated amount of the plan's available resources for the insolvency year.

(11) The estimated amount of the annual benefits guaranteed by the PBGC for the insolvency year.

(12) A statement indicating whether the notice of insolvency is the result of an insolvency determination under § 2675.15(a) or (b).

(13) A certification, signed by the plan sponsor or its duly authorized representative, that notices of insolvency have been given to all plan participants and beneficiaries in accordance with this part.

(b) *Notice of insolvency to participants and beneficiaries.* A notice of insolvency required under § 2675.34(a) to be issued to plan participants and beneficiaries shall contain the following information:

(1) The name of the plan.

(2) A statement of the plan year for which the plan sponsor has determined that the plan is or may be insolvent.

(3) A statement that benefits above the amount that can be paid from available resources or the level guaranteed by the PBGC, whichever is greater, will be suspended during the insolvency year, with a brief explanation of which benefits are guaranteed by the PBGC.

(4) The name, address, and telephone number of the plan administrator or other person designated by the plan sponsor to answer inquiries concerning benefits.

(c) *Annual update to the PBGC.* Each annual update required by § 2675.34(b) to be filed with the PBGC shall contain the following information:

(1) The case number assigned by the PBGC to the filing of the plan's notice of termination pursuant to Part 2673 of this chapter.

(2) A copy of the annual update to plan participants and beneficiaries, as described in paragraph (d) of this section, for the plan year.

(3) A statement indicating whether the annual update is the result of an insolvency determination under § 2675.15 (a) or (b).

(4) A certification, signed by the plan sponsor or a duly authorized representative, that the annual update has been given to all plan participants and beneficiaries in accordance with this part.

(d) *Annual updates to participants and beneficiaries.* Each annual update required by § 2675.34(b) to be issued to plan participants and beneficiaries shall contain the following information:

(1) The name of the plan.

(2) The date the notice of insolvency was issued and the insolvency year identified in the notice.

(3) The plan year to which the annual update pertains and the plan sponsor's determination whether the plan may be insolvent in that year.

(4) If the plan may be insolvent for the plan year, a statement that benefits above the amount that can be paid from available resources or the level guaranteed by the PBGC, whichever is greater, will be suspended during the insolvency year, with a brief explanation of which benefits are guaranteed by the PBGC.

(5) If the plan will not be insolvent for the plan year, a statement that full nonforfeitable benefits under the plan will be paid.

(6) The name, address, and telephone number of the plan administrator or other person designated by the plan sponsor to answer inquiries concerning benefits.

§ 2675.36 Notices of insolvency benefit level.

(a) *Requirement of notices.* For each insolvency year, the plan sponsor shall issue a notice of insolvency benefit level to the PBGC and to plan participants and beneficiaries in pay status or reasonably expected to enter pay status during the insolvency year. The notices shall be delivered in the manner and within the time prescribed in this section and shall contain the information described in § 2675.37

(b) *When delivered.* The plan sponsor shall mail or otherwise deliver the notices of insolvency benefit level no later than 60 days before the beginning of the insolvency year. A plan sponsor that determines under § 2675.15(b) that the plan is or may be insolvent for a plan year shall mail or otherwise deliver the notices of insolvency benefit level by the later of 60 days before the beginning of the insolvency year or 60 days after the date of the plan sponsor s determination under § 2675.15(b).

(c) *Method of delivery.* The notices of insolvency benefit level shall be delivered by mail or by hand to the PBGC and to plan participants and beneficiaries in pay status or reasonably expected to enter pay status during the insolvency year.

§ 2675.37 Contents of notices of insolvency benefit level.

(a) *Notice to the PBGC.* A notice of insolvency benefit level required by § 2675.36(a) to be filed with the PBGC shall contain the following information:

(1) The name of the plan.

(2) The name, address, and telephone number of the plan sponsor and of the plan sponsor's duly authorized representative, if any.

(3) The nine-digit Employer Identification Number (EIN) assigned by the Internal Revenue Service to the plan sponsor and the three-digit Plan Identification Number (PIN) assigned by the plan sponsor to the plan, and, if different, the EIN or PIN last filed with the PBGC. If no EIN or PIN has been assigned, the notice shall so state.

(4) The IRS Key District that has jurisdiction over determination letters with respect to the plan.

(5) The case number assigned by the PBGC to the filing of the plan's notice of

termination pursuant to Part 2673 of this chapter.

(6) The insolvency year for which the notice is being filed.

(7) A copy of the plan document currently in effect, *i.e.*, a copy of the last restatement of the plan and all subsequent amendments. However, if a copy of the plan was submitted to the PBGC with a previous notice of insolvency or notice of insolvency benefit level, only subsequent plan amendments need by submitted, and the notice shall state when the copy of the plan was submitted.

(8) A copy of the most recent actuarial valuation for the plan. If the actuarial valuation was previously submitted to the PBGC, it may be omitted from the notice, and the notice shall state the date on which the document was filed and that the information is still accurate and complete.

(9) The estimated amount of annual benefit payments under the plan (determined without regard to the insolvency) for the insolvency year.

(10) The estimated amount of the plan's available resources for the insolvency year.

(11) The estimated amount of the annual benefits guaranteed by the PBGC for the insolvency year.

(12) The amount of financial assistance, if any, requested from the PBGC. (When financial assistance is requested, the plan sponsor shall submit an application in accordance with § 2675.38.)

(13) A statement indicating whether the notice of insolvency benefit level is the result of an insolvency determination under § 2675.15(a) or (b).

(14) A certification, signed by the plan sponsor or its duly authorized representative, that a notice of insolvency benefit level has been sent to all plan participants and beneficiaries in pay status or reasonably expected to enter pay status during the insolvency year, in accordance with this part.

(b) *Notice to participants in or entering pay status.* A notice of insolvency benefit level required by § 2675.36(a) to be delivered to plan participants and beneficiaries in pay status or reasonably expected to enter pay status during the insolvency year for which the notice is given, shall contain the following information:

(1) The name of the plan.

(2) The insolvency year for which the notice is being sent.

(3) The monthly benefit that the participant or beneficiary may expect to receive during the insolvency year.

(4) A statement that in subsequent plan years, depending on the plan's available resources, this benefit level may be increased or decreased but not below the level guaranteed by the PBGC, and that the participant or beneficiary will be notified in advance of the new benefit level if it is less than the participant's full nonforfeitable benefit under the plan.

(5) The amount of the participant's or beneficiary's monthly nonforfeitable benefit under the plan.

(6) The amount of the participant's or beneficiary's monthly benefit that is guaranteed by the PBGC.

(7) The name, address, and telephone number of the plan administrator or other person designated by the plan sponsor to answer inquiries concerning benefits.

§ 2675.38 Application for financial assistance.

(a) *General.* If the plan sponsor determines that the plan's resource benefit level for an insolvency year is below the level of benefits guaranteed by PBGC or that the plan will be unable to pay guaranteed benefits when due for any month during the year, the plan sponsor shall apply to the PBGC for financial assistance pursuant to section 4261 of the Act. The application shall be filed within the time prescribed in paragraph (b) of this section. When the resource benefit level is below the guarantee level, the application shall contain the information set forth in paragraph (c) of this section. When the plan is unable to pay guaranteed benefits for any month, the application shall contain the information set forth in paragraph (d) of this section.

(b) *When to apply.* When the plan sponsor determines a resource benefit level that is less than guaranteed benefits, it shall apply for financial assistance at the same time that it submits its notice of insolvency benefit level pursuant to § 2675.36. When the plan sponsor determines an inability to pay guaranteed benefits for any month, it shall apply for financial assistance within 15 days after making that determination.

(c) *Contents of application—resource benefit level below level of guaranteed benefits.* A plan sponsor applying for financial assistance because the plan's resource benefit level is below the level of guaranteed benefits shall file an application that includes the following information:

(1) The name of the plan.

(2) The name, address and telephone number of the plan sponsor and of the plan sponsor's duly authorized representative, if any.

(3) The nine-digit Employer Identification Number (EIN) assigned to the plan sponsor by the Internal Revenue Service and the three-digit Plan Identification Number (PIN) assigned to the plan by the plan sponsor. If different, the sponsor shall also include the EIN or PIN last filed with the PBGC. If no EIN or PIN has been assigned, the application shall so state.

(4) The IRS Key District that has jurisdiction over determination letters with respect to the plan.

(5) The case number assigned by the PBGC to the filing of the plan's notice of termination pursuant to Part 2673 of this chapter.

(6) The insolvency year for which the application is being filed.

(7) A participant data schedule showing each participant and beneficiary in pay status or reasonably expected to enter pay status during the year for which financial assistance is requested, listing for each—

(i) Name;

(ii) Sex;

(iii) Date of birth;

(iv) Credited service;

(v) Vested accrued monthly benefit;

(vi) Monthly benefit guaranteed by PBGC;

(vii) Benefit commencement date; and

(viii) Type of benefit.

(d) *Contents of application—unable to pay guaranteed benefits for any month.* A plan sponsor applying for financial assistance because the plan is unable to pay guaranteed benefits for any month shall file an application that includes the data described in paragraphs (c)(1)–(c)(5) of this section, the month for which financial assistance is requested, and the plan's available resources and guaranteed benefits payable in that month. The participant data schedule described in paragraph (c)(7) shall be submitted upon the request of the PBGC.

(e) *Additional information.* The PBGC may request any additional information that it needs to calculate or verify the amount of financial assistance necessary as part of the conditions of granting financial assistance pursuant to section 4261 of the Act.

Subpart E—Closeout of Sufficient Plans

§ 2675.41 General rule.

If a plan's assets, excluding any claim of the plan for unpaid withdrawal liability, are sufficient to satisfy all obligations for nonforfeitable benefits provided under the plan, the plan sponsor may close out the plan in accordance with this subpart by distributing plan assets in full satisfaction of all nonforfeitable benefits under the plan.

§ 2675.42 Method of distribution.

The plan sponsor shall distribute plan assets by purchasing from an insurer contracts to provide all benefits required by § 2675.43 to be provided in annuity form and by paying in a lump sum (or other alternative elected by the participant) all other benefits.

§ 2675.43 Benefit forms.

(a) *General rule.* Except as provided in paragraph (b) of this section, the sponsor of a plan that is closed out shall provide for the payment of benefits attributable to employer contributions only in the form of an annuity.

(b) *Exceptions.* The plan sponsor may pay benefits attributable to employer contributions in a form other than an annuity under any of the following circumstances:

(1) The present value of the participant's entire nonforfeitable benefit, determined using the interest assumption under Subpart C of Part 2619, does not exceed $3,500.

(2) The payment is for death benefits provided under the plan.

(3) The participant elects an alternative form of distribution under paragraph (c) of this section.

(c) *Alternative forms of distribution.* The plan sponsor may allow participants to elect alternative forms of distribution in accordance with this paragraph. When a form of distribution is offered as an alternative to the normal form, the plan sponsor shall notify each participant, in writing, of the form and estimated amount of the participant's normal form of distribution. The notification shall also describe any risks attendant to the alternative form. Participants' elections of alternative forms shall be in writing.

§ 2675.44 Cessation of withdrawal liability.

The obligation of an employer to make payments of initial withdrawal liability and mass withdrawal liability shall cease on the date on which the plan's assets are distributed in full satisfaction of all nonforfeitable benefits provided by the plan.

Issued at Washington, DC on this 18th day of March, 1989.

Elizabeth Dole,

Chairman, Board of Directors, Pension Benefit Guaranty Corporation.

Issued pursuant to a resolution of the Board of Directors approving this final regulation and authorizing its chairman to issue same.

Carol Connor Flowe,

Secretary, Board of Directors, Pension Benefit Guaranty Corporation.

[FR Doc. 89-16170 Filed 7-10-89; 8:45 am]

BILLING CODE 7708-01-M

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 228

[FRL-3613-4]

Ocean Dumping; Designation of Site

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: EPA today designates a dredged material disposal site located in the Gulf of Mexico offshore of Port Aransas, Texas for the continued disposal of material dredged from the Corpus Christi Ship Channel. This action is necessary to provide an environmentally acceptable ocean dumping site alternative for the current and future disposal of this material. This final site designation is for an indefinite period of time and is subject to future site management and monitoring to insure that unacceptable adverse impacts do not occur.

DATE: This designation shall become effective on August 10, 1989.

ADDRESSES: Information supporting this designation is available for public inspection at the following locations: EPA, Region 6 (6E-FF), 1445 Ross Avenue, 9th Floor, Dallas, Texas 75202. Corps of Engineers, Galveston District, 444 Barracuda Avenue, Galveston, Texas 77550.

FOR FURTHER INFORMATION CONTACT: Norm Thomas, 214/655-2260 or FTS/ 255-2260.

SUPPLEMENTARY INFORMATION:

A. Background

Section 102(c) of the Marine Protection, Research, and Sanctuaries Act of 1972, as amended, 33 U.S.C. 1401 et seq. ("the Act"), gives the Administrator of EPA the authority to designate sites where ocean dumping may be permitted. On December 23, 1986, the Administrator delegated the authority to designate ocean dumping sites to the Regional Administrator of the Region in which the site is located. This site designation is being made pursuant to that authority.

The EPA Ocean Dumping Regulations (40 CFR Chapter I, Subchapter H, § 228.4) state that ocean dumping sites will be designated by publication in Part 228. A list of Approved Interim and Final Ocean Dumping Sites" was published on January 11, 1977 (42 FR 2461 *et seq.*). That list established the Corpus Christi Ship Channel site as an interim site for the disposal of material dredged from the entrance channel. In January 1980, the interim status of the site was extended indefinitely.

B. EIS Development

Section 102(2)(c) of the National Environmental Policy Act of 1969, 42 U.S.C. 4321 *et seq.*, ("NEPA") requires that Federal agencies prepare Environmental Impact Statements (EISs) on proposals for major Federal actions significantly affecting the quality of the human environment. While NEPA does not apply to EPA activities of this type, EPA has voluntarily committed to prepare EISs in connection with its ocean dumping site designations (30 FR 16186, May 7 1974).

In September 1988, EPA distributed a Draft Environmental Impact Statement entitled "Environmental Impact Statement (EIS) for the Corpus Christi Ship Channel Ocean Dredged Material Disposal Site Designation, to interested agencies and the public for a 45-day review and comment period. Seven comment letters were received on the Draft EIS. The Agency responded to these comments in the Final EIS. Editorial or factual corrections required by the comments were incorporated in the text and noted in the Agency's response. Comments which could not be appropriately treated as text changes were addressed point by point in the Final EIS. On April 21, 1989, a Notice of Availability of the Final EIS for public review and comment was published in the **Federal Register**. The public comment period on the Final EIS closed on May 22, 1989.

One comment letter was received on the Final EIS from the National Marine Fisheries Service (NMFS). The NMFS stated that EPA s site designation did not give adequate consideration to deepwater and upland disposal alternatives since these options were eliminated early in the review process due to costs. NMFS also requested additional information regarding EPA s preference of nearshore disposal to offshore or upland disposal. In response to NMFS's comments, EPA recognizes that some federal agencies do evaluate an environmental quality ("EQ") alternative irrespective of costs. Nevertheless, consideration of costs is a necessary factor in EPA s evaluation of "reasonable" ocean disposal site alternatives. Site designation in itself does not preclude the consideration of other disposal options. However, once an alternative is determined to be economically infeasible or unimplementable, it becomes fruitless to continue to evaluate any additional or more specific environmental merits.

The federal action discussed in the EISs is designation of an ocean disposal site for dredged material. The purpose of the site designation is to provide an environmentally acceptable ocean disposal alternative for dredged material. The appropriateness of ocean disposal is determined on a case-by-case basis.

The EIS discussed the need for the action and examined ocean disposal sites and alternatives. Land based disposal alternatives were examined in a previously published EIS prepared by the Corps of Engineers and the analysis was updated in the draft EIS. The nearest available land disposal area was 48 acres in size and located 4 miles away from the seaward end of the project. Because of the high costs of transport as well as the limited capacity of the area, this alternative was not feasible. Also, since the surrounding land areas are wetlands or shallow bay habitats, development and use of a suitably sized replacement area would result in a significant loss of quality wetlands or bay bottoms.

Four ocean disposal alternatives—two nearshore sites, a mid-shelf site and a deepwater site—were evaluated. Both the mid-shelf and deepwater sites involved limited feasibility for monitoring, increased transportation costs and increased safety risks. Because of safety and economic disadvantages, monitoring limits and the lack of environmental benefit, the mid-shelf site and the deepwater site were eliminated from further consideration. Those portions of the interim-designated site located within the navigational buffer zone, the jetty buffer zone and the beach buffer zone were eliminated from consideration. The disposal site includes much of the area of historical impact but excludes these three buffer zones.

In accordance with the requirements of the Endangered Species Act, EPA completed a biological assessment and determined that no adverse impacts on listed endangered or threatened species would result from site designation. The National Marine Fisheries Service concurred with this determination.

This final rulemaking notice serves the same purpose as the Record of Decision required under regulations promulgated by the Council on Environmental Quality for federal actions subject to NEPA.

C. Site Designation

On November 4, 1988, EPA proposed designation of the Corpus Christi Ship Channel disposal site for the continued disposal of materials dredged from the Corpus Christi Ship Channel. The public comment period on this proposed rule closed on December 19, 1988. No comments were received on the proposed rule.

The disposal site is located approximately 1.5 miles from the coast at its closest point. The water depths at the proposed site range from 35 to 50 feet. The coordinates of the site are as follows: 27°49'10" N, 97°01'09" W· 27°48'42" N, 97°00'21" W; 27°48'06" N, 97°00'48" W· 27°48'33" N, 97°01'36" W.

D. Regulatory Requirements

Five general criteria are used in the selection and approval of ocean disposal sites for continuing use. Sites are selected so as to minimize interference with other marine activities, to keep any temporary perturbations from the dumping from causing impacts outside the disposal site, and to permit effective monitoring to detect any adverse impacts at an early stage. Where feasible, locations off the Continental Shelf are chosen. If disposal operations at a site cause unacceptable adverse impacts, further use of the site may be terminated or limitations placed on the use of the site to reduce the impacts to acceptable levels. The general criteria are given in § 228.5 of the EPA Ocean Dumping Regulations; § 228.6 lists eleven specific criteria used in evaluating a proposed disposal site to assure that the general criteria are met.

EPA has determined, based on information presented in the Draft and Final EISs, that the disposal site is acceptable under the five general criteria. The Continental Shelf location is not feasible and no environmental benefit would be obtained by selecting such a site. Historical use of the site has not resulted in substantial adverse effects to living resources of the ocean or to other uses of the marine environment. The characteristics of the site are presented below in terms of the eleven specific criteria.

1. *Geographical position, depth of water, bottom topography and distance from coast.* [40 CFR 228.6(a)(1).]

Geographical position, average water depth, and distance from the coast for the disposal site are given in paragraph C above. Bottom topography is flat with no unique features or relief.

2. *Location in relation to breeding, spawning, nursery, feeding, or passage areas of living resources in adult or juvenile phases.* [40 CFR 228.6(a)(2).]

Living resources' breeding, spawning, nursery and passage areas in the project area were identified as excluded areas during the siting feasibility process and eliminated from consideration. Approximately 3.5 miles to the southeast and 8 miles to the east southeast of the preferred site, there are fish havens which are excluded, including one mile buffer zones. The pass between the jetties serves as a migratory route for white shrimp, brown shrimp, blue crab, drum, sheepshead and southern flounder. This area, including a one-mile buffer zone, was excluded as a migratory passage. Also excluded were lighted platforms and non-submerged shipwrecks which improve fishing.

3. *Location in relation to beaches and other amenity areas.* [40 CFR 228.6(a)(3).]

The site is approximately 1.5 miles from Mustang Island and San Jose Island beaches or other amenity areas; e.g., Mustang Island State Park and Caldwell Pier.

4. *Types and quantities of wastes proposed to be disposed of, and proposed methods of release, including methods of packing the wastes, if any.* [40 CFR 228.6(a)(4).]

Only maintenance material from the Corpus Christi Ship Channel that conforms to EPA's Ocean Dumping Regulations [40 CFR Part 227] will be disposed of at the site. Historically, an average of 955,000 cubic yards per year has been dredged from the channel at roughly 18-month intervals. This material has historically been transported by hopper dredges but could be transported by pipeline.

5. *Feasibility of surveillance and monitoring.* [40 CFR 228.6(a)(5).]

The disposal site is amenable to surveillance and monitoring. Based on historic data, an intense monitoring program is not warranted. However, a site management plan consisting of water, sediment and elutriate chemistry; bioassays; bioaccumulation studies; and benthic infaunal analyses, will be developed for the Corpus Christi Ship Channel site by EPA and the COE.

6. *Dispersal, horizontal transport and vertical mixing characteristics of the area, including prevailing current direction and velocity, if any.* [40 CFR 228.6(a)(6).]

Physical oceanographic parameters including dispersal, horizontal transport and vertical mixing characteristics were used: (1) To develop the necessary buffer zones for the sitting feasibility analysis; and (2) to determine the minimum size of the disposal site. Predominant longshore currents, and thus predominant longshore transport, is to the southwest. Long-term mounding has not historically occurred. Steady longshore transport and occasional storms, including hurricanes, remove the disposed material from the site.

7 *Existence and effects of current and previous discharges and dumping in the*

area (including cumulative effects). [40 CFR 228.6(a)(7).]

Based on the results of chemical and bioassay testing of past maintenance material and material from the existing disposal site plus chemical analyses of water from the area, there are no indications of water or sediment quality problems. Testing of past maintenance material indicated that it was acceptable for ocean disposal under 40 CFR Part 227 Studies of the benthos at the interim-designated site and nearby areas indicated that the composition of the benthos was different from that in nearby "natural bottom" areas. This was because the substrate at the interim-designated site was almost pure sand versus the mixed grain size of the "natural bottom" The disposal site was placed as near shore as possible to take advantage of the nearshore substrate which was sandier than the substrate further offshore.

8. *Interference with shipping, fishing, recreation, mineral extraction, desalination, fish and shellfish culture, areas of special scientific importance and other legitimate uses of the ocean.* [40 CFR 228.6(a)(8).]

Impacts on shipping, mineral extraction, commercial and recreational fishing, recreational areas and historic sites were evaluated for the Corpus Christi Ship Channel site designation. The disposal site was determined not to interfere with other legitimate uses of the ocean based on the siting feasibility process and because disposal operations in the past have not interfered with other uses.

9. *The existing water quality and ecology of the site as determined by available data or by trend assessment or baseline surveys.* [40 CFR 228.6(a)(9).]

Monitoring studies demonstrated only short-term water-column perturbations of turbidity, and some increased chemical oxygen demand (COD), resulted from disposal operations. No short-term sediment quality perturbation, except grain size, have been directly related to disposal operations. In general, the water and sediment quality was good throughout the disposal area and there have been no long-term adverse impacts on water and sediment quality from disposal operations. However, there has been a long-term impact on the grain size, and thus, on the benthos at the interim-designated site.

10. *Potentiality for the development or recruitment of nuisance species in the disposal site.* [40 CFR 228.6(a)(10).]

Past disposal of dredged material has not resulted in the development or recruitment of nuisance species. Continued disposal of maintenance material at the site should not attract nor promote the development or recruitment of nuisance species.

11. *Existence at or in close proximity to the site of any significant natural or cultural features of historical importance.* [40 CFR 228.6(a)(11).]

Areas and features of historical importance were evaluated during the siting feasibility process. The nearest site of historical importance was located within the buffer zone surrounding the jetties. Use of the site would not adversely impact any known historical or cultural sites.

E. Action

Based on the completed EIS process and available data, EPA concludes that the Corus Christi Ship Channel ocean dredged material disposal site may appropriately be designated for use. The site is compatible with the five general and eleven specific criteria used for site evaluation. The designation of the Corpus Christi Ship Channel Site as an EPA approved ocean dumping site for disposal of dreded material is being published as a final rulemaking. Before ocean dumping of dredged material at the site may occur, the Corps of Engineers must evaluate a permit application according to EPA's ocean dumping criteria. While the Corps does not administratively issue itself a permit, the requirements that must be met before dredged material derived from Federal projects can be discharged into ocean waters at the same as where a permit would be required. EPA has the authority to approve or to disapprove or to propose conditions upon dredged material permits for ocean dumping.

F Regulatory Assessments

Under the Regulatory Flexibility Act, EPA is required to perform a Regulatory Flexibility Analysis for all rules which may have a significant impact on a substantial number of small entities. EPA has determined that this action will not have a significant impact on small entities since the site designation will only have the effect of providing a disposal option for dredged material. Consequently, this rule does not necessitate preparation of a Regulatory Flexibility Analysis.

Under Executive Order 12291, EPA must judge whether a regulation is "major" and therefore subject to the requirement of a Regulatory Impact Analysis. This action will not result in an annual effect on the economy of $100 million or more or cause any of the other effects which would result in its being classified by the Executive Order as a "major" rule. Consequently, this rule does not necessitate preparation of a Regulatory Impact Analysis.

This Final Rule does not contain any information collection requirements subject to the Office of Management and Budget review under the paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq.*

List of Subjects in 40 CFR Part 228

Water pollution control.

Date: June 28, 1989.

Philip Charles,

Acting Regional Administrator, Region 6.

In consideration of the foregoing, Subchapter H of Chapter I of Title 40 is amended as set forth below.

PART 228—[AMENDED]

1. The authority citation for Part 228 continues to read as follows:

Authority: 33 U.S.C. 1412 and 1418.

2. Section 228.12 is amended by removing from paragraph (a)(3) under "Dredged Material Sites" the entry for Corpus Christi Ship Channel and adding paragraph (b)(39) to read as follows:

§ 228.12 Delegation of management authority for ocean dumping sites.

(b)

(39) Corpus Christi Ship Channel, Texas—Region 6 Location: 27° 49′ 10″ N., 97° 01′ 09″ W 27° 48′ 42″ N., 97° 00′ 21″ W 27° 48′ 06″ N., 97° 00′ 48″ W 27° 48′ 33″ N., 97° 01′ 36″ W

Size: 0.63 square nautical miles.

Depth: Ranges from 35–50 feet.

Primary Use: Dredged material.

Period of Use: Indefinite period of time.

Restriction: Disposal shall be limited to dredged material from the Corpus Christi Ship Channel, Texas.

[FR Doc. 89–16209 Filed 7–10–89; 8:45 am]

BILLING CODE 6560-50-M

FEDERAL MARITIME COMMISSION

46 CFR Part 502

[Docket No. 88-19]

Rule on Effective Date of Tariff Changes

AGENCY: Federal Maritime Commission.

ACTION: Stay of Final Rule.

SUMMARY: The effective date of the Final Rule in Docket No. 88–19 concerning the effective date of tariff changes is stayed pending decision on a recently filed petition for reconsideration.

DATE: Effective July 10, 1989.

FOR FURTHER INFORMATION CONTACT: Joseph C. Polking, Secretary, Federal Maritime Commission, 1100 L Street NW Washington, DC 20573, (202) 523-5725.

SUPPLEMENTARY INFORMATION: The Commission published a Final Rule in this proceeding in the **Federal Register** on May 10, 1989 (54 FR 20127) with an effective date of July 10, 1989. A petition for reconsideration of the Final Rule has now been filed. Several replies in support of the petition have also been filed. At least two conferences and one carrier have further requested a stay of the effective date to allow sufficient time for the Commission to make a final decision on the petition for reconsideration.

The Commission has determined to grant the requested stay of the Final Rule in Docket No. 88-19, pending a decision on the petition for reconsideration.

By the Commission.

Joseph C. Polking,

Secretary.

[FR Doc. 89-16165 Filed 7-10-89; 8:45 am]

BILLING CODE 6730-01-M

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 1

[FCC 89-167]

Administrative Practice and Procedure; Ex Parte Presentations

AGENCY: Federal Communications Commission.

ACTION: Final Rule.

SUMMARY: This order adopts minor changes and clarifications to the Commission's *ex parte* rules, 47 CFR 1.1200-1.1216, and certain other related rules of practice and procedure. This action is being taken to expedite the processing of *ex parte* filings and other documents in non-restricted proceedings.

EFFECTIVE DATE: September 25, 1989. This rule is subject to OMB approval. If approval is not received, FCC will publish a change to the effective date in the **Federal Register**.

ADDRESS: Federal Communications Commission, 1919 M Street, NW Washington, DC 20554.

FOR FURTHER INFORMATION CONTACT: Donna Viert, Office of General Counsel, (202) 632-6990.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Order, FCC 89-167 adopted May 26, 1989 and released June 9, 1989.

The complete text of this decision is available for public inspection and copying in Room 616, FCC, 1919 M Street, NW., Washington, DC. A copy may also be purchased from the Commission's copy contractor, International Transcription Service, (202) 857-3800, 2100 M Street, NW Suite 140, Washington, DC 20037

Public reporting burden for this collection of information is estimated to average one hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to the Federal Communications Commission, Office of Managing Director, Washington, DC 20554, and to the Office of Management and Budget, Washington, DC 20503.

Summary of *Order*

1. In this order, the Commission adopts minor changes and clarifications to its *ex parte* rules, 47 CFR 1.1200—1.1216, and certain other related rules of practice and procedure. In order to expedite the processing of *ex parte* filings and other documents in non-restricted proceedings, the Commission is amending §§ 1.419(b) and 1.1206(a) to require that all written *ex parte* presentations, memoranda summarizing oral ex parte presentations, and informal comments be filed with the Commission in duplicate. In addition, §§ 1.51 and 1.419 are amended regarding the number of copies to be filed in rulemaking proceedings and the internal distribution of these copies. Other minor changes and clarifications to the *ex parte* rules have also been made as shown below.

2. Accordingly, it is ordered that the Rules and Regulations of the Federal Communications Commission are amended in the manner indicated below to become effective September 25, 1989, subject to approval by the Office of Management and Budget.

List of Subjects in 47 CFR Part 1

Administrative practice and procedure.

Federal Communications Commission.

Donna R. Searcy,

Secretary.

Rule Changes

Part 1 (Practice and Procedure) of Chapter 1 of Title 47 of the Code of Federal Regulations is amended as follows:

PART 1—[AMENDED]

1. The authority citation for Part 1 continues to read:

Authority: Sections 4, 303, 48 Stat. 1066, 1082, as amended; 47 U.S.C. 154, 303.

2. Section 1.51 is amended by revising paragraph (b) to read as follows:

§ 1.51 Number of copies of pleadings, briefs and other papers.

(b) In rulemaking proceedings which have not been designated for hearing, see section 1.419 of this Chapter.

3. Section 1.419 is amened by revising paragraph (b) to read as follows:

§ 1.419 Form of comments and replies; number of copies.

(b) An original and 4 copies of all comments, briefs and other documents filed in a rulemaking proceeding shall be furnished the Commission. The distribution of such copies shall be as follows:

Secretary (original and 1)	2
Bureau	2
Information office	1
Total	5

Participants filing the required 5 copies who also wish each Commissioner to have a personal copy of the comments may file an additional 5 copies. The distribution of such copies shall be as follows:

Commissioners	5
Secretary	2
Bureau	2
Information office	1
Total	10

However, members of the general public who wish to express their interest by participating informally in a rulemaking proceeding may do so by submitting an original and one copy of their comments, without regard to form, provided only that the Docket Number is specified in the heading. Informal comments filed after close of the reply comment period, or, if on reconsideration, the reconsideration reply comment period, should be labeled "ex parte" pursuant to section 1.1206(a) of this Chapter. Letters submitted to Commissioners or Commission staff will be treated in the same way as informal comments, as set forth above. Also such informal participants who wish the responsible members of the staff and the Commissioners to have personal copies may file an additional 7 copies. The distribution of such copies shall be as follows:

Commissioners	5
Secretary	2
Bureau	2
Total	9

4. Section 1.1202 is amended by revising the concluding text of paragraph (b) as follows:

§ 1.1202 Definitions.

(b)

Comments and reply comments (including informal comments) filed prior to the expiration of the reply comment period, or, if the matter is on reconsideration, the reconsideration reply comment period, in informal rulemaking proceedings pursuant to §§ 1.415 and 1.419, but not in channel allotment rulemaking proceedings pursuant to § 1.420, are not considered ex parte presentations even if they are not served on other parties.

§ 1.1203 [Amended]

5. Section 1.1203(b) is amended by adding a new second sentence, "The disclosure requirement set forth in § 1.1204(b)(7) Note will apply. immediately following the word "agreements.

§ 1.1204 [Amended]

6. Section 1.1204(b)(5) is amended by removing the words "staff of" following the phrase "to or from" adding the words "or branch" following the word "agency" in both places that it appears and adding the phrase "or its staff" following the word Government.

§ 1.1206 [Amended]

7 Section 1.1206 is amended by revising paragraphs (a)(1), (a)(2), and the Note immediately following (a)(3), adding a new Note below the Note immediately following (a)(3), and by adding two new Notes immediately following (a)(4), to read as follows:

§ 1.1206 Non-restricted proceedings; ex parte presentations generally permissible but subject to disclosure

(a)

(1) *Written ex parte presentations made by persons outside the Commission.* Any person who makes or submits a written ex parte presentation shall provide on the same day it is submitted two copies of same under separate cover to the Commission's Secretary for inclusion in the public record. The presentation (as well as any transmittal letter) must clearly indicate on its face the docket number of the particular proceeding(s) to which it relates and the fact that two copies of it have been submitted to the Secretary, and must be labeled or captioned as an ex parte presentation.

(2) *Oral ex parte presentations made by persons outside the Commission.* Any person who in making an oral ex parte presentation presents data or arguments not already reflected in that person's written comments, memoranda, or other previous filings in that proceeding shall provide on the day of the oral presentation an original and one copy of a written memorandum to the Secretary (with a copy to the Commissioner or staff member involved) which summarizes the data and arguments. The memorandum (as well as any transmittal letter) must clearly indicate on its face the docket number of the particular proceeding and the fact that an original and one copy of it have been submitted to the Secretary, and must be labeled or captioned as an ex parte presentation.

(3)

Note 1: Unless otherwise exempted under Section 1.1204, presentations from members of Congress or their staff or from other agencies or branches of the Federal Government or their staff that are of substantial significance and clearly intended to affect the ultimate decision shall be treated as ex parte presentations and placed (if oral, a written summary of the presentation shall be prepared and placed) in the record of the proceeding by Commission staff or in accordance with the procedures set forth in Section 1.1206(a)(1)-(3).

Note 2: Where a written ex parte presentation (or memorandum summarizing an oral ex parte presentation) relates to more than one proceeding, two copies (or an original and one copy) shall be filed for each separate proceeding.

(4)

Note 1: Interested persons should be aware that some ex parte filings, for example, those not filed in accordance with the requirements of ths subsection, might not be placed on the referenced public notice. All ex parte presentations and memoranda filed under this section will be available for public inspection in the public file or record of the proceeding, and parties wishing to ensure awareness of all filings should review the public file or record.

Note 2: As a matter of convenience, the Secretary may also list on the referenced public notices materials, even if not ex parte presentations, that are filed after the close of the reply comment period or, if the matter is on reconsideration, the reconsideration reply comment period.

[FR Doc. 89-15971 Filed 7-10-89; 8:45 am]

BILLING CODE 6712-01-M

47 CFR Part 73

[BC Docket No. 81-742]

Broadcast Services; Comparative Renewal and Abuse of the Renewal Process

AGENCY: Federal Communications Commission.

ACTION: Final rule; correction.

SUMMARY: This action corrects Paragraph 1 of the **SUPPLEMENTARY INFORMATION** section of the **Federal Register** Preamble of the *First Report and Order* in this proceeding (FCC 89-108, 54 FR 22595, May 25, 1989). Paragraph 1 contained estimates of information collection and reporting burdens on persons seeking Commission approval for the dismissal of competing applications and petitions to deny filed in license renewal proceedings. This action corrects these burden estimates. In addition, this action adds a burden estimate for persons required to amend their applications pursuant to the Commission's elimination of the *Cameron* doctrine in the *First Report and Order*. This burden estimate was inadvertently omitted. The *Cameron* doctrine was a policy which permitted competing applicants to assume that an incumbent's transmitter site would be available in the event the competing applicant prevailed in a license renewal proceeding. Elimination of that policy requires that competing applicants demonstrate reasonable assurance of site availability, including appropriate engineering studies. To implement these corrections, the first two sentences of Paragraph 1 should be deleted and replaced with the following:

The information collection and reporting burden on all parties seeking Commission approval for the dismissal of pre-Initial Decision competing applications is estimated to average one hour per response. The information collection and reporting burden on parties seeking approval for the dismissal of post-Initial Decision competing applications is estimated to average eight hours per response for the competing applicant seeking the dismissal, and one hour per response for the remaining parties required to file affidavits. The information collection and reporting burden on persons seeking approval of the dismissal of petitions to deny, including citizens agreements, is estimated to average two hours per response

for the petitioner seeking dismissal and one hour per response for the remaining parties required to file affidavits. The information collection and reporting on burden on those applicants that are required to amend their applications to conform to the Commission's revised requirement for assuring transmitter site availability due to the elimination of the *Cameron* doctrine is estimated to average 80 hours per response.

EFFECTIVE DATE: July 11, 1989.

ADDRESS: Federal Communications Commission, Washington, DC 20554.

FOR FURTHER INFORMATION CONTACT: Marilyn Mohrman-Gillis, Mass Media Bureau, Policy and Rules Division at (202) 632-7792.

SUPPLEMENTARY INFORMATION:

List of Subjects in 47 CFR Part 73

Radio broadcasting, Television broadcasting.

Federal Communications Commission.

Donna R. Searcy,

Secretary.

[FR Doc. 89-16136 Filed 7-10-89; 8:45 am]

BILLING CODE 6712-01-M

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47 CFR Part 74

[MM Docket No. 83-523; FCC 89-179]

Amendment of Part 74 of the Commission's Rules and Regulations in Regard to the Instructional Television Fixed Service.

AGENCY: Federal Communications Commission (FCC).

ACTION: Final rule.

SUMMARY: This action adopts a procedure for breaking ties among mutually exclusive competing applications in the Instructional Television Fixed Service which may remain after the primary comparative criteria are applied. This Order provides that the tied applicant with the greater student enrollment will receive the authorization.

EFFECTIVE DATE: August 14, 1989.

ADDRESS: Federal Communications Commission, Washington, DC 20554.

FOR FURTHER INFORMATION CONTACT: Bruce Romano, tele: (202) 632-9356.

SUPPLEMENTARY INFORMATION: Public reporting burden for this collection of information is estimated to average one hour per response, including the time for review instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to the Federal Communications Commission, Office of the Managing Director, Washington, DC 20554, and to the Office of Management and Budget, Paperwork Reduction Project, Washington, DC 20503.

This is a summary of the Commission's *Third Report and Order* in MM Docket No. 83-523, FCC 89-179, Adopted May 31, 1989, and Released June 13, 1989.

1. The full text of this Commission decision is available for inspection and copying during normal business hours in the FCC Dockets Branch (Room 230), 1919 M Street NW Washington, DC. The complete text of this decision may also be purchased from the Commission's copy contractor, International Transcription Service, (202) 857-3800, 2100 M Street NW Suite 140, Washington, DC 20037

2. In this *Third Report and Order,* the Commission modifies its procedure for comparative consideration of mutually exclusive competing applications in the Instructional Television Fixed Service ("ITFS"). Competing applicants get points based on various characteristics of the applicant and its application; *i.e.,* whether it is local, is accredited, has other channels, is vacating MDS channels, and the amount of ITFS programming it is proposing to provide. If the application of these criteria results in a tie for the highest point total, the contested authorization will be awarded to the tied applicant with the greatest student enrollment. For these purposes, all full- and part-time students formally enrolled in courses for credit towards an academic degree or diploma, or a legally required certification or license, and receiving their instruction at locations listed as receive site, will be counted. For current and recent applications, the date for counting enrollment will be the last date for filing competing applications. For applications filed before July 28, 1986, enrollment will be the most recent available up to sixty days from the effective date of this Order, and only students at those receive sites on file as of that date will be included. In the case of applicants not serving their own students, students at a receive site will be counted only if that receive site has adequately expressed its intention to participate in the proposed ITFS service as prescribed in § 74.932 of the Commission's rules (47 CFR 74.932).

3. This tie-breaking criterion had been proposed by the Commission in its *Order and Second Further Notice of Proposed Rulemaking* in MM Docket No. 83-523, 3 FCC Rcd 4564 (1988), 53 FR 29493 (8/5/88). In adopting this criterion, the Commission rejected the proposal of one group of commenters that the contested authorization be awarded based on the applicants' experience and existing facilities and staff.

4. Pursuant to the Regulatory Flexibility Act of 1980, 5 U.S.C. 605(b) it is certified that the final rule does not have a significant economic impact on a substantial number of small entities because only a few comparative selection cases each year result in a tie which would require application of criterion adopted.

5. The rule contained herein has been analyzed with respect to the Paperwork Reduction Act of 1980 (44 U.S.C. 3501-3520) and found to impose a new information requirement on the public. Implementation of this new requirement will be subject to approval by the Office of Management and Budget as prescribed by the Act.

6. Accordingly, *It is ordered,* That Part 74 of the Commission's Rules and Regulations is amended as set forth below, upon approval by the Office of Management and Budget, effective August 14, 1989, pursuant to 5 U.S.C. 553(d)(1), under authority contained in 47 U.S.C. 2, 4(i), and 303.

7 *It is further ordered,* That the Office of the Managing Director shall send to the Chief Counsel for Advocacy of the Small Business Administration the certification that the rules adopted will have no significant impact on a substantial number of small entities.

List of Subjects in 47 CFR Part 74

Experimental, Auxiliary and special broadcast, and other program distributional services, Television broadcasting.

Rule Changes

Part 74 of Title 47 of the Code of Federal Regulations is amended to read as follows:

1. The authority citation for Part 74 continues to read as follows:

Authority: 47 C.F.R. Secs. 4, 303 48 Stat. 1066, as amended, 1082, as amended, 47 U.S.C. 154, 303, unless otherwise noted. Interpret or apply Secs. 301, 303, 307 48 Stat. 1081, 1082, as amended, 1083, as amended; 47 U.S.C. 301, 303, 307

2. Section 74.913 is amended by revising paragraph (d) and adding note 4 to read as follows:

§ 74.913 Selection procedure for mutually exclusive ITFS applications.

(d) The tie-breaker will operate as follows: each of the tied applicants will be directed to submit to the Commission a statement of the number of students at its proposed receive locations who are formally enrolled in classes for credit toward an academic degree or diploma, or a legally required certification or license. It must also demonstrate that this claim of students who would benefit from the proposed system is supported by the educational programs proposed in its application. Each applicant will serve it submission(s) on the other tied competing applicant(s), who will have an opportunity to respond to any aspect of the enrollment submissions. If any applicant's system would reach less than 80% as many students as another applicant's would reach, the application which would result in service to the fewer number of students will be denied. The application(s) of any remaining applicant(s) will be granted. If more than one application is to be granted under this procedure, the channels or channel capacity will be divided evenly among the remaining applicants. At any time during this process, the applicants may advise the Commission that they are negotiating or have reached settlement for disposition of the contested facilities, and the Commission will withhold further comparative processing upon such notification.

(1) Enrollment will be considered as of the final date for filing of the competing applications at issue. Enrollment figures should be the latest available from a regular term or session prior to that filing date, and must be taken from a statement or submission of data made by the subject school for some other official purpose or function, such as a mid-year or year-end fiscal report, or a budget proposal, and they must represent actual, not projected, student population. Each applicant must identify the source(s) from which its submitted enrollment figures are drawn.

(2) All full- and part-time students formally enrolled in classes for credit toward an academic degree or diploma, or a legally required certification or license, at any school, campus, or other locations listed in the application as a receive site may be counted, except if an applicant's system would serve only students in a particular discipline (or disciplines) or at a particular grade level (or levels), only students in classes and programs within that discipline(s) or grade level(s) may be counted.

(3) For off-campus sites, only students who can be shown to be recipients of formal ITFS educational material may be counted.

(4) Applicants serving students other than their own count only students at schools, campuses, and other receive sites which have submitted a letter indicating their intention to use the proposed service. The validity of such expressions of intention will be judged pursuant to § 74.932 of these rules. If several schools from the same school system are listed as receive sites, a single letter from an appropriate person representing the school board or system will be sufficient to demonstrate the intention to use the proposed service at each of these receive sites if each receive site's participation is specifically acknowledged.

Note 4.—For applications pending as of August 14, 1989, the enrollment which will be counted will be the most recent available up to August 22, 1989, for which receive sites are on file by that date.

Donna R. Searcy,

Federal Communications Commission Secretary.

[FR Doc. 89-16138 Filed 7-10-89; 8:45 am]

BILLING CODE 6712-01-M

FCC 89-193

47 CFR Part 80

Maritime Services; Amendment of the Maritime Services Rules to Permit Operation of Frequencies Offset From Assigned AMTS Channels

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: The Commission has decided to permit Automated Maritime Telecommunications System (AMTS) licensees to operate on frequencies offset from channels assigned to the AMTS. This action was taken in response to a Request for Rule Waiver to Permit Operation on Offset Frequencies submitted by Waterway Communications System, Inc. (Watercom). The effect of this Commission decision is to allow licensees in the AMTS service to operate on frequencies offset from assigned channels. This will promote spectrum efficiency without causing additional interference potential.

EFFECTIVE DATE: July 11, 1989.

ADDRESS: Federal Communications Commission, 1919 M Street NW Washington, DC 20554.

FOR FURTHER INFORMATION CONTACT: George R. Dillon or Eric J. Malinen, Federal Communications Commission, Private Radio Bureau, Washington, DC 20554, (202) 632-7175.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Order FCC 89-193, adopted June 1, 1989, and released June 28, 1989.

1. The full text of this Commission decision, including the rule amendment, is available for inspection and copying during normal business hours in the FCC Dockets Branch (Room 230), 1919 M Street NW Washington, DC. The complete text of this decision may also be purchased from the Commission's copy contractor, International Transcription Services, Inc., (202) 857-3800, 2100 M Street NW Suite 140, Washington, DC 20037

Summary of Order

2. The Commission has decided to amend the rules to allow offset frequency use on all frequencies assigned to the AMTS. Allowing the use of offset frequencies will increase the number of channels available to this service and will alleviate congestion on channels currently licensed in the AMTS service.

3. This rule amendment contained herein has been analyzed with respect to the Paperwork Reduction Act of 1980, 44 U.S.C. 3501-3520, and found to contain no new or modified form, information collection or record keeping, labeling, disclosure, or record retention requirements; and will not increase or decrease burden hours imposed on the public.

4. This rule amendment provides AMTS licensees technical flexibility in the use of spectrum exclusively assigned to them in specified service areas. The only existing AMTS licensee requested this capability and a commenter supported the approach taken herein. This action benefits the public and adds no additional burdens. The change is thus noncontroversial and therefore constitutes a minor amendment to our Rules in which the public is not likely to be interested. Therefore, we find for good cause that compliance with the notice and comment procedure of the Administrative Procedure Act is unnecessary. *See* 5 U.S.C. 553(b)(B).

5. We certify that Section 605(b) of the Regulatory Flexibility Act of 1980 (Pub. L. 96-354) does not apply to this rule making proceeding because it will not have a significant economic impact on a substantial number of small entities. The amendment provides optional technical flexibility and will not cause a significant economic impact on any entity.

6. Because only one licensee will be immediately affected by this amendment and because that licensee already is operating on offset frequencies within Groups A and B under a special temporary authority, we find good cause to allow AMTS licensees to operate on frequencies

offset from AMTS channels effective immediately. Therefore, this rule amendment will be effective upon publication in the **Federal Register**. *See* 5 U.S.C. 533(d).

Ordering Clause

7 *It Is Ordered* that under the authority contained in Sections 4(i) and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i) and 303(r), § 80.385 of the Commission's Rules, 47 CFR 80.385, IS AMENDED as shown at the end of this document effective as indicated in the "**EFFECTIVE DATE**" paragraph of this document.

List of Subjects in 47 CFR Part 80

Maritime services, Maritime mobile stations.

Federal Communications Commission.

Donna R. Searcy,

Secretary.

Amended Rules

Part 80 of Chapter I of Title 47 of the Code of Federal Regulations is amended as follows:

PART 80—STATIONS IN THE MARITIME SERVICES

1. The authority citation for Part 80 continues to read as follows:

Authority: Secs. 4, 303, 48 Stat. 1066, 1082, as amended; 47 U.S.C. 154, 303, unless otherwise noted. Interpret or apply 48 Stat. 1064–1068, 1081–1105, as amended; 47 U.S.C. 151–155, 301–609; 3 UST 3450, 3 UST 4726, 12 UST 2377 unless otherwise noted.

2. Section 80.385 is amended by redesignating the existing paragraph "(b)" to paragraph "(c)" and by adding a new paragraph "(b)" to read:

§ 80.385 Frequencies for automated systems.

(b) *Narrowband operations in AMTS.* AMTS licensees may operate on frequencies offset from the assignable channels specified in paragraph (a)(2) of this section provided such licensees are also licensed for channels on each side of the offset frequency. Licensees using offset frequencies must conform with all other conditions of operation.

[FR Doc. 89–16257 Filed 7–10–89; 2:20 am]

BILLING CODE 6712-01-M

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

49 CFR Part 571

[Docket No. 85–08; Notice 4]

RIN 2127–AB71

Federal Motor Vehicle Safety Standards; Occupant Crash Protection

AGENCY: National Highway Traffic Safety Administration (NHTSA), DOT.

ACTION: Response to petition for reconsideration; final rule.

SUMMARY: The requirements for safety belt systems in trucks, buses and multipurpose passenger vehicles with a gross vehicles weight rating of more than 10,000 pounds were recently expanded to include special provisions to make those safety belt systems more convenient to use. In its proposal, NHTSA indicated that these special provisions would apply to safety belt systems installed at *front* outboard seating positions. However, NHTSA inadvertently omitted the word "front" in the final rule, so that the special provisions for safety belt systems apply to all outboard seating positions, both front and rear. This corrects this inadvertent omission so that the special provisions for safety belt systems apply only to those installed at *front* outboard seating positions, as was proposed.

DATES: *Effective date:* The changes made in this rule become effective January 8, 1990. Vehicles manufactured on or after September 1, 1990 must be certified as complying with these changes.

Petitions for reconsideration: Any petitions for reconsideration of this rule must be received by NHTSA not later than August 10, 1989.

ADDRESS: Petitions for reconsideration of this rule should refer to Docket No. 85–08; Notice 4 and be submitted to: Administrator, NHTSA, 400 Seventh Street SW Washington, DC 20590. Please submit 10 copies of any petition.

FOR FURTHER INFORMATION CONTACT: Dr. Richard Strombotne, Chief, Crashworthiness Division, NRM–12, Room 5320, NHTSA, 400 Seventh Street, S.W Washington, DC 20590 (202–366–2264).

SUPPLEMENTARY INFORMATION: Since January 1, 1972, Federal Motor Vehicle Safety Standard No. 208, *Occupant Crash Protection* (49 CFR 571.208) has required vehicle manufacturers to install safety belt systems in heavy vehicles (i.e., trucks, buses, and multipurpose passenger vehicles [MPV's] with a gross vehicle weight rating of more than 10,000 pounds). The safety belts required in those vehicles have had to meet all of the strength requirements set for belt systems in passenger cars and light trucks, buses, and MPV's (those with a gross vehicle weight rating of 10,000 pounds or less). However, the safety belts required in heavy vehicles have not had to meet several requirements for lighter vehicle safety belt systems that make the safety belts more comfortable to wear and easier to use.

The agency proposed several changes to the requirements for belt systems in heavy vehicles to make such belt systems more comfortable to wear and easier to use. The proposed changes were set forth in a notice of proposed rulemaking (NPRM) published on May 30, 1985 (50 FR 23041). That notice proposed that these changes would apply to safety belt systems installed at all *front* outboard seating positions in heavy trucks and MPV's and to the safety belt system installed at the driver's seat in heavy buses.

A final rule adopting new requirements for heavy vehicle safety belt systems was published on July 6, 1988 (53 FR 25337). No commenters suggested that the proposed changes should be extended to apply to seating positions other than front outboard ones, nor did the preamble to this final rule suggest that NHTSA intended to extend the proposed changes to apply to both front and rear outboard seating positions. However, the specific regulatory change adopted in Standard No. 208 inadvertently omitted the word "front" in referring to outboard seating positions in heavy trucks and MPV's, and instead referred simply to outboard seating positions in those vehicles as the seating positions subject to these changed requirements.

The Recreation Vehicle Industry Association (RVIA) filed a petition for reconsideration of the final rule, arguing that the agency's purpose could be achieved without imposing additional requirements on rear outboard seating positions in motor homes. NHTSA did not intend the final rule to impose any additional requirements on safety belt systems at seating positions other than front outboard seating positions. This notice corrects the omission from the final rule, and adopts the proposed approach of applying additional requirements to *front* outboard seating positions in heavy vehicles.

The regulatory language at the end of this rule simply inserts the word "front" in the appropriate places of the regulatory language published in the

July 6, 1988 final rule on this subject. Today's rule should not be misinterpreted as a reaffirmation of the July 6, 1988, rule's approach of considering only the workings of the retractor to evaluate whether the safety belt system complies with some of the comfort requirements. A proposal to expand that approach to evaluate the workings of the entire belt system appears elsewhere in today's edition of the **Federal Register.**

NHTSA has considered the effects of this corrected rule and determined that it is neither "major" within the meaning of Executive Order 12291 nor "significant" within the meaning of the Department of Transportation's regulatory policies and procedures. This correction simply implements the agency's intent as expressed in the proposal and addressed by the commenters. Accordingly, the agency has determined that the economic and other impacts of this correction are so minimal that a full regulatory evaluation is not required.

NHTSA has also considered the effects of this corrected rule under the Regulatory Flexibility Act. I hereby certify that this correction will not have a significant economic impact on a substantial number of small entities. As explained above, this correction is simply implementing the approach that was proposed by the agency and addressed by the commenters.

The agency has also analyzed this correction for the purposes of the National Environmental Policy Act and determined that it would not have any significant impact on the quality of the human environment.

Finally, NHTSA has considered the federalism implications of this correction, as required by Executive Order 12612, and determined that it does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

List of Subjects in 49 CFR Part 571

Imports, Motor vehicle safety, Motor vehicles.

In consideration of the foregoing, 49 CFR Part 571 is amended as follows:

PART 571—FEDERAL MOTOR VEHICLE SAFETY STANDARDS

1. The authority citation for Part 571 continues to read as follows:

Authority: 15 U.S.C. 1392, 1401, 1403, 1407· delegation of authority at 49 CFR 1.50.

2. S4.3.2.2 of § 571.208 is revised to read as follows:

§ 571.208 Standard No. 208; Occupant crash protection.

S4.3.2.2 *Second option—belt system.* The vehicle shall, at each designated seating position, have either a Type 1 or a Type 2 seat belt assembly that conforms to § 571.209 of this part and S7.2 of this Standard. A Type 1 belt assembly or the pelvic portion of a dual retractor Type 2 belt assembly installed at a front outboard seating position shall include either an emergency locking retractor or an automatic locking retractor. An automatic locking retractor provided for one of these belt assemblies at a front outboard seating position shall not retract webbing to the next locking position until at least ¾ inch of webbing has moved into the retractor. In determining whether an automatic locking retractor complies with this requirement, the webbing is extended to 75 percent of its length and the retractor is locked after the initial adjustment. An automatic locking retractor that is used at a front outboard seating position that has some type of suspension system for the seat shall be attached to the seat structure that moves as the suspension system functions.

Issued on July 5, 1989.

Jeffrey R. Miller,

Acting Administrator.

[FR Doc. 89-16224 Filed 7-10-89; 8:45 am]

BILLING CODE 4910-59-M

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49 CFR Part 571

[Docket No. 88-16; Notice 2]

RIN: 2127-AC-54

Federal Motor Vehicle Safety Standards; Transmission Shift Lever Sequence, Starter Interlock, and Transmission Braking Effect

AGENCY: National Highway Traffic Safety Administration (NHTSA), Department of Transportation.

ACTION: Final rule.

SUMMARY: Standard No. 102 has long required the "identification of shift lever positions of automatic transmissions" to be "permanently displayed in view of the driver. This notice amends the standard for automatic transmission vehicles which have a shift lever position which puts the transmission in park. For these vehicles, the requirement for "permanent display" is replaced with a requirement that identification of automatic transmission shift lever positions be displayed in view of the driver whenever any of the following conditions exist: (a) The ignition is in a position where the transmission can be shifted; (b) the transmission is not in park. The new requirements will facilitate the use of electronic displays, while ensuring that the information in question is displayed at all times when it may be needed for safety.

DATES: The amendments made by this rule are effective August 10, 1989. Petitions for reconsideration must be received by August 10, 1989.

ADDRESS: Petitions for reconsideration should be submitted to: Administrator, National Highway Traffic Safety Administration, 400 Seventh Street SW Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Mr. Kenneth Rutland, Office of Vehicle Safety Standards, National Highway Traffic Safety Administration, 400 Seventh Street SW Washington DC, (202-366-5267).

SUPPLEMENTARY INFORMATION: One of the stated purposes of Standard No. 102, *Transmission Shift Lever Sequence, Starter Interlock, and Transmission Braking Effect,* is to reduce the likelihood of shifting errors. Since 1967 section S3.2 of the standard has required "identification of shift lever positions of automatic transmissions" to be "permanently displayed in view of the driver. NHTSA has interpreted the term "positions" to include both the position actually selected. NHTSA has interpreted the requirement that identification be "permanently displayed in view of the driver" to require a display whenever there is a driver in the driver's seating position, even if the ignition is not turned on.

On August 25, 1988, NHTSA published in the **Federal Register** (53 FR 32409) a notice of proposed rulemaking (NPRM) to amend Standard No. 102. As discussed in the NPRM, Chrysler and GM had submitted petitions for rulemaking requesting that section S3.2 of the standard be amended to "permit" or "more clearly allow" the use of electronic displays of automatic transmission shift lever positions. (These displays are often called PRNDL displays, the acronym PRNDL referring to the following gear positions: *p*ark, *r*everse, *n*eutral, *d*rive, and *l*ow.) Chrysler argued that the requirement for permanent display of the PRNDL was design restrictive and prevented the use of electronics. That company stated that since an electronic display requires electrical current for activation, a permanent and constantly activated display would drain the vehicle's battery in a short period of time. Chrysler stated that fifteen minutes is the maximum amount of time that it can allow an electronic display to draw energy from the battery of a parked vehicle.

Both Chrysler and GM argued that the use of electronic PRNDL displays can offer several benefits, as compared to conventional mechanical displays. These include more precise indication of the selected gear, visibility which does not depend on ambient light and/or headlamp activation, designs with improved human factors characteristics, and improved customer satisfaction through product distinction and innovation.

In light of Chrysler's and GM's petitions for rulemaking and changed technology since the requirement for "permanent display" was promulgated, NHTSA reexamined the issue of whether permanent display of PRNDL information is necessary for safety. The agency explained in the NPRM that it had tentatively determined that a less stringent requirement could maintain the safety aspects of section S3.2 while facilitating the use of electronic technology.

As indicated above, the stated purpose of the requirement for permanent display of PRNDL information is to reduce the likelihood of shifting errors. NHTSA stated in the NPRM that, with respect to a driver making a mistake in shifting gears, it believed that this purpose could be accomplished by requiring PRNDL information to be displayed whenever the ignition is in a position where it is possible for the driver to shift the transmission. Another safety concern about shifting errors is the possibility that a driver will leave a vehicle believing that it is in park when it is not. The agency stated in the NPRM that, with respect to the contribution that a PRNDL display can make to reducing the likelihood of such an occurrence, it believed that purpose could be accomplished by requiring PRNDL information to be displayed whenever the transmission is not in park.

NHTSA therefore proposed to amend Standard No. 102 by replacing section S3.2's requirement for "permanent display" with a requirement that identification of shift lever positions of automatic transmissions, including both the position of the gears in relation to each other and the position selected, be displayed in view of the driver when either of the following conditions exist: (A) the ignition is in a position where the transmission can be shifted, or (B) the transmission is not in park. Under the proposal, however, such display would not be required when the ignition is in a position that is used only to start the vehicle. The only time the ignition is in that position is momentarily during the starting of the vehicle, and full battery power may be needed at that time to start the vehicle. NHTSA noted that the proposed requirements focused on the vehicle conditions where the agency believed there is a safety need for PRNDL information to be displayed to the driver.

NHTSA explained that, as a practical matter, manufacturers choosing to avail themselves of the increased flexibility offered by the proposed requirements would likely use an electronic PRNDL display coupled with a transmission shift interlock system. The interlock system could be designed to prevent the transmission from being shifted when the vehicle is parked, i.e., when the transmission is in park and the ignition is in the lock position. The PRNDL information would not be required to be displayed in this situation, since the transmission would be in park and the ignition would be in a position where the transmission could not be shifted. There would thus not be a problem of the vehicle's battery being drained as a result of a driver's leaving the vehicle with the PRNDL display illuminated.

NHTSA also noted that the use of transmission shift interlock systems could result in safety benefits unrelated to the display of PRNDL information. In a separate rulemaking concerning Standard No. 114, the agency has proposed requirements that would have the effect of requiring transmission shift interlock systems for automatic transmission vehicles (i.e., the ignition key-locking system shall not permit removal of the key except when the transmission lever is in the park position). See 53 FR 11105, April 5, 1988. That proposal was issued in light of a safety concern about the rolling away of some automatic transmission vehicles when they are parked on slanted surfaces with the ignition key removed and the parking brake not applied. The rollaway accidents occur because the ignition key can be removed, but the gear shift lever can be left in neutral or in gear, or it can be inappropriately or indavertently shifted out of park by another occupant, typically an unattended child.

NHTSA received seven comments on the NPRM concerning Standard No. 102. Both of the petitioners supported the proposal, although GM's support was limited to vehicles other than heavy duty vehicles. GM stated that it supports the agency's view that the proposed requirements would preserve the safety benefits of section S3.2 while facilitating the use of electronic technology. That company expressed concern, however, that the proposed amendments would not provide the same flexibility for heavy duty trucks. GM stated that the increased flexibility is only available when the electronic PRNDL is used in conjunction with a transmission interlock system which precludes shifting the transmission whenever it is in the park position and the ignition is in the lock or accessory position. According to GM, however, its heavy duty trucks with GVWR is excess of 10,000 pounds do not have a park position or transmission interlock system. That company recommended a different amendment for heavy duty vehicles. Chrysler stated that while the proposed requirements were somewhat different than it had recommended in its petition, the proposal would achieve the desired objective.

Like GM, Ford expressed support for the proposal, while recommending different requirements for medium and heavy duty trucks. Ford stated that automatic transmission-equipped medium and heavy duty trucks do not have a shift lever park position and urged that a provision be made for these vehicles to provide the same flexibility for use of electronic display of shift lever positions as in vehicles with a shift lever park position. The Motor Vehicle Manufacturers Association (MVMA) and Navistar International also recommended that different requirements be established for medium and heavy duty vehicles.

Two manufacturers, Volkswagen and Austin Rover, supported the intent of the proposal to permit additional design flexibility but argued that the proposal did not go far enough. Volkswagen expressed concern that the proposed requirements could increase the potential for unwanted battery drain. That company noted that the NPRM had cited the possibility of battery drain occurring if the key remains in the ignition and the vehicle is not in park. Volkswagen argued that existing NHTSA requirements along with a shift interlock would adequately protect against this type of problem without increasing the potential for unwanted battery drain and urged the agency to modify its proposal to accommodate such systems. That company explained its position as follows:

> If a driver leaves a vehicle without removing the key from the ignition, FMVSS 114 S4.5 requires that a warning be provided to the driver. This warning is intended to attract the driver's attention to the fact that the key is left in the ignition. A driver who responds to this warning, who has not placed the transmission in park, will not be able to remove the key if the vehicle is equipped with a shift interlock. Hence, the driver's attention will be attracted to the factor prohibiting removal of the key and the

transmission will be placed in park in order to remove the key. In addition, FMVSS 102 S3.1.3 requires that the engine starter be inoperative when the transmission shift lever is in a forward or reverse drive position. Therefore a driver who ignores the signal and returns later to start the vehicle will not be able to do so unless the transmission is in park or neutral. A driver who left the vehicle in park or neutral will see the electronic PRNDL display just before and immediately after safely starting the vehicle. A driver who left the vehicle in drive or reverse will see the display when an attempt is made to start the vehicle and it will not respond.

Volkswagen also stated that all of its currently produced Audi vehicles, with automatic transmissions, are equipped with an audible warning to the driver if the transmission is left in a position other than park. That company requested that the agency allow this design alternative. Austin Rover argued that there are alternative systems to the "General Motors system" described in the NPRM which could be used without any reduction in the level of safety offered by the present standard and recommended requirements that would permit such systems. That company suggested that complete PRNDL information is needed only when the vehicle is capable of powered motion, and that in situations where the vehicle is not capable of powered motion, the driver only needs to be able to determine whether the park position has been selected.

After carefully considering the comments, NHTSA has decided to issue a final rule along the lines of the proposal for automatic transmission vehicles which have a shift lever park position. The agency has concluded that the amended requirements will maintain the safety aspects of section S3.2 while facilitating the use of electronic technology for passenger cars and other light vehicles.

NHTSA recognizes the concerns expressed by several commenters that the amended requirements may not facilitate the use of electronic technology in medium and heavy duty vehicles, since those vehicles do not have a shift lever park position. However, the requirements recommended by those commenters are significantly different than those proposed in the NPRM. The agency therefore plans to address the issue in a separate rulemaking. NHTSA notes that Volkswagen suggested in its comment that Standard No. 102 be amended to provide greater flexibility for manual transmission pattern displays as well as for automatic transmission shift lever position displays. The agency plans to address that issue in the separate rulemaking. For now, NHTSA is maintaining the existing requirements both for automatic transmission vehicles which do not have a park position and for manual transmission vehicles. However, the agency is amending the language requiring that information be "permanently displayed in view of the driver" to reflect its past interpretations that display is required whenever there is a driver in the driver's seating position.

As discussed above, in developing its August 1988 proposal, NHTSA focused on the vehicle conditions where it believes three is a safety need for PRNDL information, i.e., whenever it is possible for the driver to shift the transmission and whenever the transmission is not in park. The agency does not believe that Volkswagen or Austin Rover demonstrated either a need for further flexibility for purposes of facilitating electronic technology or that their suggested alternative amendments would ensure that PRNDL information is always available when needed.

With respect to Volkswagen's comment concerning possible battery drain, NHTSA notes that the NPRM specifically requested comment on this issue. Only two commenters directly addressed the issue, Volkswagen and Chrysler. While Volkswagen expressed concern that the proposed requirements could increase the potential for unwanted battery drain, Chrysler stated the following:

> We do not believe that a problem will be created for motorists if the PRNDL display is activated when the ignition switch is in the "off" position. In fact, it should encourage drivers to place the transmission in "park" and turn the ignition switch to the lock position in order to avoid battery rundown. Since the agency's proposal allows the PRNDL display to be off when the transmission is in "park" and the ignition switch is in the "lock" position, leaving the key in the ignition switch for an extended period, as often happens in parking lots and garages, poses no problem

While GM and Ford did not directly address the issue of possible battery drain, NHTSA believes that their general support of the proposal and statements that the proposal will facilitate the use of electronic technology indicate that they do not consider the issue to present a significant problem for their customers.

In the NPRM, NHTSA noted that the possibility of battery drain occurring when the key remains in the ignition and the vehicle is not in park is not unlike other situations, such as leaving headlamps or a radio on for extended periods. The agency also noted that manufacturers could provide warnings to the driver before the battery is drained to the point that it could no longer start the vehicle. In the absence of evidence indicating that battery drain would be a significant actual problem for drivers, as opposed to a theoretical possibility, NHTSA does not believe that further flexibility should be provided at the expense of ensuring that PRNDL information is available when needed. The agency also believes that the chances of this problem occurring would be much lower than for a driver leaving lights on. That problem typically occurs when a driver forgets to turn off lights when parking during daylight or under brightly lit conditions. However, while a driver typically needs to turn off a vehicle's lights separately, that would not be true for PRNDL displays. The potential problem of battery drain occurring from the PRNDL display would be limited to the rare situation where the driver parks the vehicle not only leaving the key in the ignition but also with the vehicle not in park.

Volkswagen suggested that a driver who responds to an audible warning that the key is left in the ignition would not be able to remove the key if the vehicle is equipped with a shift interlock, and thereby would have his or her attention attracted to the factor prohibiting removal of the key. That company stated that the transmission would be placed in park in order to remove the key. NHTSA believes, however, that some drivers who choose to ignore the audible warning about the key might wish to check the PRNDL display as to whether the vehicle is in park, as part of ensuring that the vehicle is securely parked, or simply notice the PRNDL display. Also, in the situation posited by Volkswagen, the PRNDL display might assist the driver in comprehending what factor was preventing removal of the key, thereby making it more likely that the driver would place the vehicle in park.

Volkswagen also suggested that manufacturers should be permitted the alternative of providing an audible warning to the driver if the transmission is left in a position other than park. While manufacturers are free to provide such warnings, NHTSA does not believe that the warning should be a substitute for a PRNDL display that advises the driver that the vehicle is not in park. Drivers may not understand the meaning of the audible warning and are likely to check the PRNDL display if they are in doubt as to whether the vehicle is in park.

As indicated above, Austin Rover suggested that complete PRNDL information is needed only when the vehicle is capable of powered motion, and that in situations where the vehicle is not capable of powered motion, the driver only needs to be able to determine whether the park position has been selected. NHTSA disagrees. First, whenever a vehicle is not already in park, the agency believes that a driver needs complete PRNDL information in order to be able to easily shift the vehicle to park. The issue of whether the vehicle is then capable of powered motion or not is irrelevant to that point. Second, a driver might choose to shift gears and move a vehicle for short distances without the engine on. In this situation, where the vehicle is not capable of powered motion, the agency believes that the driver needs full PRNDL information in order to safely move the vehicle.

Volkswagen stated that the proposal presented one aspect of ambiguity, whether the functions of two PRNDL displays can be used together to demonstrate compliance with the standard. That company asked whether an electronic display on the instrument panel could be used to show the gear position selected and an embossed display on the floor console be used to show the position of the gears in relation to each other.

Section S3.2's current requirement that "(i)dentification of shift lever positions of automatic transmissions be permanently displayed in view of the driver" does not expressly require the specified information to be provided in a single display. However, NHTSA believes that requirement was written with the assumption that the specified information would be provided in a single display, and that current vehicle designs reflect that assumption. The agency is concerned that if the information is not provided in a single display, the standard may be less effective in achieving its purpose of reducing the likelihood of shifting errors. NHTSA plans to address this issue in the separate rulemaking cited above.

Since the amendments adopted today impose no new requirements but instead increase manufacturer flexibility, NHTSA has determined that an effective date of 30 days after publication in the **Federal Register** is in the public interest.

The agency has analyzed these amendments and determined that they are neither "major" within the meaning of Executive Order 12291 nor "significant" within the meaning of the Department of Transportation regulatory policies and procedures. The agency has determined that the economic effects of these amendments are so minimal that a full regulatory evaluation is not required. Since the PRNDL amendment imposes no new requirements but simply permits additional flexibility in meeting Standard No. 102's requirements for display of automatic transmission gear positions, any cost impacts would be in the nature of slight, nonquantifiable cost savings.

In accordance with the Regulatory Flexibility Act, NHTSA has evaluated the effects of this action on small entities. Based upon this evaluation, I certify that these amendments will not have a significant economic impact on a substantial number of small entities. Small businesses, small organizations, and small governmental units are affected by the amendments only to the extent that they purchase motor vehicles. For the reasons discussed above, the amendments will not significantly affect vehicle price. Accordingly, no regulatory flexibility analysis has been prepared.

The agency has also analyzed this rule for the purposes of the National Environmental Policy Act, and determined that it will not have any significant impact on the quality of the human environment.

Finally, this rule has been analyzed in accordance with the principles and criteria contained in Executive Order 12612, and it has been determined that the rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

List of Subjects in 49 CFR Part 571

Imports, Motor vehicle safety, Motor vehicles, Rubber and rubber products, Tires.

PART 571—[AMENDED]

In consideration of the foregoing, 49 CFR Part 571 is amended as follows:

1. The authority citation for Part 571 continues to read as follows:

Authority: 15 U.S.C. 1392, 1401, 1403, 1407· delegation of authority at 49 CFR 1.50.

§ 571.102 [Amended]

2. SS3.1.4, 3.1.4.1, 3.1.4.2, 3.1.4.3 are added to § 571.102 to read as follows:

S3.1.4 *Identification of shift lever positions.*

S3.1.4.1 Except as specified in S3.1.4.3, if the transmission shift lever sequence includes a park position, identification of shift lever positions, including the positions in relation to each other and the position selected, shall be displayed in view of the driver whenever any of the following conditions exist:

(a) The ignition is in a position where the transmission can be shifted.

(b) The transmission is not in park.

S3.1.4.2 Except as specified in S3.1.4.3, if the transmission shift lever sequence does not include a park position, identification of shift lever positions, including the positions in relation to each other and the position selected, shall be displayed in view of the driver at all times when a driver is present in the driver's seating position.

S3.1.4.3 Such information need not be displayed when the ignition is in a position that is used only to start the vehicle.

3. S3.2 is revised to read as follows:

S3.2 *Manual transmissions.* Identification of the shift lever pattern of manual transmissions, except three forward speed manual transmissions having the standard "H" pattern, shall be displayed in view of the driver at all times when a driver is present in the driver's seating position.

Issued on July 5, 1989.

Jeffrey R. Miller,

Acting Administrator.

[FR Doc. 89-16227 Filed 7-10-89; 8:45 am]

BILLING CODE 4910-59-M

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49 CFR Part 571

[Docket No. 74-14; Notice 61]

RIN 2127-AC 49

Occupant Crash Protection

AGENCY: National Highway Traffic Safety Administration (NHTSA), DOT.

ACTION: Final rule.

SUMMARY: This final rule makes two relatively minor amendments to Standard No. 208, *Occupant Crash Protection.* The first amendment extends existing requirements for safety belt systems that incorporate tension-relieving devices to manual belt assemblies installed in conjunction with air bags. This amendment will ensure that the effectiveness of the belts in a crash situation is not reduced by misuse of the tension-relieving devices. This amendment will apply to cars manufactured on or after September 1, 1990.

The second amendment specifies that adjustable anchorages for belt assemblies shall be set at the vehicle manufacturer's nominal design position for a 50th percentile adult male. Adjustable anchorages permit the occupant of a seating position to move one of the belt system's anchorages within a limited range, to optimize the fit of the belt for the occupant. Standard No. 208 does not currently specify the adjustment position at which adjustable

anchorages will be set during compliance testing. To avoid any difficulties or confusion that might result if the agency were to select an adjustment position other than the one selected by a vehicle's manufacturer, this rule specifies that vehicles with adjustable anchorages will be tested at the position appropriate for the size of the dummy used in compliance testing, the 50th percentile adult male. This amendment will apply to cars manufactured on or after September 1, 1989.

DATES: The amendments made by this rule to the Code of Federal Regulations are effective on September 1, 1989. The provisions for vehicles with adjustable anchorages will apply to vehicles manufactured on or after September 1, 1989, and the provision for vehicles with tension-relieving devices at seating positions also equipped with air bags will apply to vehicles manufactured on or after September 1, 1990.

Any petitions for reconsideration of this rule must be received by NHTSA not later than August 10, 1989. Any petitions received after that date will be treated as petitions for rulemaking, in accordance with 49 CFR 553.35.

ADDRESS: Any petitions for reconsideration should refer to the docket and notice numbers set forth at the beginning of this notice and be submitted to: Administrator, NHTSA, Room 5220, 400 Seventh Street, SW Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Dr. Richard Strombotne, Chief, Crashworthiness Division, NRM-12, Room 5320, NHTSA, 400 Seventh Street SW Washington, DC 20590 (202-366-2264).

SUPPLEMENTARY INFORMATION: On July 6, 1988 (53 FR 25354), NHTSA proposed to make the two relatively minor amendments to Standard No. 208, *Occupant Crash Protection* (49 CFR 571.208) that are the subject of this final rule. The first amendment proposed in that notice was to extend the existing provisions for safety belts at the front outboard seating positions to belt systems installed at those seating positions in conjunction with air bags.

Tension-relieving devices on safety belts are intended to relieve shoulder belt pressure and increase the comfort of the belt, thereby increasing the likelihood that the belt will be used to protect the occupant. However, if these tension-relieving devices are misused so as to introduce excessive slack in the belt webbing, the tension-relieving devices may reduce the effectiveness of the belt in a crash situation. To strike an appropriate balance between the need to increase belt use and the need to avoid belt misuse, section 7.4.2 of Standard No. 208 specifies additional requirements for some front outboard safety belts that incorporate tension-relieving devices. These additional requirements currently apply to automatic belts with tension-relieving devices installed at front outboard seating positions in passenger cars. These additional requirements are:

1. The vehicle owner's manual must include an explanation of how the tension-relieving device works and recommend a maximum amount of slack that should be introduced into the belt under normal circumstances;
2. The vehicle must comply with the injury criteria specified in § 5.1 of Standard No. 208 with the shoulder belt webbing adjusted to introduce the maximum amount of slack recommended by the manufacturer; and
3. The vehicle must have an automatic means to cancel any shoulder belt slack introduced into the belt system by a tension-relieving device.

NHTSA tentatively concluded that the same factors that had led it to apply the requirements of § 7.4.2 to automatic safety belts (the balancing of the need to encourage belt use with the need to minimize belt misuse) were equally applicable to manual belts installed in conjunction with air bags. Accordingly, the notice proposed to extend the requirements of § 7.4.2 to manual belts installed in conjunction with an air bag at a front outboard seating position.

The second change proposed in the notice addressed adjustable anchorages on belt systems. Adjustable anchorages allow the occupant of a seating position to move the anchorage location within a limited range, so as to optimize the fit of the belt for the individual occupant. Some current vehicles already incorporate adjustable upper anchorages.

Standard No. 208 does not presently specify any positioning requirements for adjustable anchorages during compliance testing. Absent some guidance in the standard for positioning an adjustable feature, considerable difficulties could arise. The positioning of an anchorage for a belt system can affect the performance of the belt system during a crash. However, absent any positioning for adjustable anchorages in Standard No. 208, the various manufacturers of vehicles with adjustable anchorages might all select different anchorage adjustment positions to certify the vehicles' compliance with Standard No. 208. NHTSA, in turn, might select an anchorage adjustment position different from that chosen by any of the manufacturers for its compliance testing. The different anchorage adjustment positions could lead to unreasonable and unnecessary difficulties for both the agency and the manufacturers.

To avoid any difficulties, the notice proposed that adjustable anchorages be set to the vehicle manufacturer's nominal design position for a 50th percentile adult male occupant, which is the size of the test dummy used in NHTSA's compliance testing. This would ensure that compliance testing was conducted under realistic and representative conditions for adjustable anchorages. The notice also asked for comments on the appropriateness of requiring that vehicles that use adjustable anchorages comply with the requirements of Standard No. 208 with the anchorages in any adjustment position. Such an approach would ensure that adjustable anchorages afforded adequate protection even when they were not properly adjusted.

Eight parties responded to the request for comments on the proposal. All of these comments were considered in developing this final rule, and the most significant comments are discussed below.

Four of the commenters addressed the proposal to extend the existing requirements for belts equipped with tension-relieving devices to manual belts with tension-relieving devices installed in conjunction with air bags at a seating position. Chrysler supported the proposal for the reasons stated in the proposal. The Insurance Institute for Highway Safety (IIHS) opposed the proposal, asserting that tension-relieving devices are detrimental to occupant protection in crashes. Based on this assertion, IIHS urged the agency to initiate rulemaking to prohibit the installation of tension-relieving devices on any belt systems.

Contrary to the assertion by IIHS, NHTSA is unaware of any data showing that occupants of cars equipped with tension-relieving devices suffer a higher level of injuries in crashes. In fact, a recent examination of this subject by the National Transportation Safety Board concluded that "the cases as a whole do not demonstrate that occupants of window shade-equipped cars are injured more often or more seriously than occupants of nonwindow shade equipped cars. *Performance of Lap/Shoulder Belts in 167 Vehicle Crashes,* NTSB/SS-88/02. Because of the absence of any such data, NHTSA has repeatedly declined to adopt suggestions that tension-relieving devices be prohibited on belt systems. NHTSA believes that the possibility of misuse is not a sufficient justification for prohibiting devices that have the potential to increase safety belt use, particularly when there is no evidence that the public is misusing tension-relieving devices to any significant extent. Instead, the agency believes the more appropriate course of action is to take steps to minimize the likelihood of misuse, and has done so by means of the requirements in § 7.4.2. IIHS has provided no additional information or data that would cause the agency to reexamine its previous decisions.

Ford questioned whether there was a safety need to extend the requirements for belts with tension-relieving devices to such belts installed in conjunction with air bags. According to Ford, excessive slack in a shoulder belt during a frontal crash would result in the occupant's head and chest being stopped primarily or solely by the air bag, a condition that would not pose any added safety risks to the occupant. Thus, Ford seemed to be asserting that since there are no adverse safety consequences associated with misuse of tension-relieving devices on belt systems installed in conjunction with air bags, there is no safety need for the agency to take regulatory steps to minimize the likelihood of misuse of tension-relieving devices on such belt systems.

NHTSA disagrees with this assertion. If excessive slack is introduced into the shoulder belt, the protection offered by the shoulder belt would be substantially reduced or even eliminated. Ford's assertion is correct that the absence of full protection from the shoulder belt might not result in lesser occupant protection in crashes similar to the dynamic test specified in Standard No. 208, because the air bag would protect the occupant's head and chest during the crash. However, many other types of real-world crashes (e.g., side impacts and rollovers) do *not* result in air bag deployment, and thus require effective restraint by the shoulder belt for maximum protection of the occupant. The agency recognizes that, under Standard No. 208, lap/shoulder belts are "optional" for seating positions equipped with air bags (only lap belts are required). Nevertheless, NHTSA has strongly encouraged manufacturers to provide the additional protection of lap/shoulder belts. When lap/shoulder belts are provided, NHTSA believes it is reasonable, appropriate, and valuable from a safety perspective to minimize the likelihood that the shoulder-belt portion of the belt might be misused so as to substantially reduce its effectiveness. Those concerns apply to cars that are equipped with air bags as well as those that are not. This extension of the requirements for tension-relieving devices will help assure that all motor vehicle safety belt systems are effective systems, and minimize the likelihood that those belt systems will be misused.

Additionally, the agency believes that an extension of the requirements for tension-relieving devices will help induce use of lap/shoulder belt systems installed in conjunction with air bags. Specifically, if the requirements for automatic cancellation of slack do not apply to those belt systems, a belt user might inadvertently introduce excessive slack into the shoulder belt, especially when exiting the vehicle. If the owner's manual for this vehicle does not include an explanation of how the tension-relieving device works (another existing requirement for tension-relieving devices), the belt user might not realize how to cancel the excessive slack. This would result in a shoulder belt that could loosely dangle in front of the occupant. NHTSA believes that a lap/shoulder belt system in which the shoulder belt portion dangles in front of an occupant could actually discourage use of the belt system, by conveying to the occupant the idea that the belt system may not afford adequate crash protection. A belt system that discourages use will result in lesser occupant crash protection. Hence, NHTSA disagrees with Ford's assertion that there are no potential adverse safety consequences associated with the misuse of tension-relieving devices on safety belt systems installed in conjunction with air bags.

General Motors (GM) also questioned the agency's tentative determination that there is a safety need to extend the requirements of S7.4.2 to safety belt systems installed in conjunction with air bags. GM stated that it supported the extension of requirements to include a recommendation about the maximum amount of slack in the owner's manual and to test the vehicle with the recommended maximum amount of slack introduced into the belt systems. However, GM objected to the requirements for automatic tension-relief cancellation, on the grounds that this automatic cancellation is primarily a convenience feature. GM asserted that this convenience feature is unnecessary in this case, because the occupant entering the vehicle is, in many cases, the same person who left the vehicle from that position. When it is a different occupant, GM asserted that the excessive slack should be obvious to the occupant and that the occupant can remove the excessive slack by a slight adjustment to the shoulder belt.

NHTSA was not persuaded by this argument. The purpose of S7.4.2, including the requirement for automatic cancellation of any slack, is to minimize the likelihood that tension-relieving devices will be misused. As explained above in response to Ford's comments, NHTSA believes the need to minimize the likelihood of misuse could be as important for belt systems installed in conjunction with air bags as it is for those belt systems to which the requirements of S7.4.2 already apply. The automatic cancellation feature serves this purpose by ensuring that a new occupant entering a vehicle will encounter a belt system without any slack and will then make adjustments to that belt system that are appropriate for that occupant. NHTSA concludes that avoiding misuse of belts equipped with tension-relieving devices is a legitimate safety need and that the requirement for automatic slack cancellation is a reasonable and necessary means of achieving this end.

GM also argued that the proposed requirement was not as minor as NHTSA had suggested. According to GM's comments, the retractors for most belt systems that incorporate tension-relieving devices are mounted on either the door pillar or the rocker panel of the car body. For these retractors, vehicle manufacturers design the retractor to automatically retract webbing whenever the adjacent door is opened or the belt is unbuckled. The reason for this design is to prevent the belt webbing from being damaged by being closed in the door. This design feature fully complies with the automatic slack cancellation requirement in S7.4.2 of Standard No. 208. Hence, no design or production changes would be needed on vehicles equipped with these retractors that will be equipped with air bags.

However, some of GM's two door models are equipped with roof mounted retractors. These retractors are not, according to GM's comments, already designed to automatically retract webbing when the adjacent door is opened, because shoulder belt webbing extended from roof mounted retractors is not "subject to damage from an adjacent door closure. GM stated that it would need at least 18 months leadtime to make the necessary design and production changes to the vehicles on which it plans to introduce driver's side air bags that are equipped with roof mounted retractors.

NHTSA has reexamined its proposed requirement in light of this comment. The agency statements that this proposal was a minor change was based on the assumption that manufacturers of vehicles subject to the proposed requirement already complied voluntarily with the requirements of S7.4.2. Based on this assumption, the agency believed that a requirement for the manufacturers to follow a practice they already followed voluntarily would not require any design or manufacturing changes, and that any burdens associated with such a requirement would be minimal.

However, GM's comments indicate that this assumption by the agency was erroneous with respect to that manufacturer. Since GM was not voluntarily complying with the requirements of S7.4.2 for all of its cars equipped with tension-relieving devices, it would be required to make production and design changes to some of its vehicles to comply with this requirement. The agency agrees that some additional leadtime is necessary to permit GM to make these design and production changes. Therefore, this requirement will apply to cars manufactured on or after September 1, 1990.

The second proposed change was to specify that belt systems with adjustable anchorages would have those anchorages set to the manufacturer's nominal design position for a 50th percentile adult male for the purposes of Standard No. 208 compliance testing. This proposal was supported by Mitsubishi, Volkswagen, Chrysler, Toyota, Range Rover, GM, and Ford. Ford stated that it has been reluctant to offer adjustable anchorages because of its uncertainty about the adjustment position NHTSA would select in Standard No. 208 compliance testing, and that the proposed adjustment position would encourage manufacturers to provide adjustable anchorages on their vehicles.

These same commenters indicated that a requirement to test adjustable anchorages at any adjustment position should not be adopted. Mitsubishi, Chrysler, and Volkswagen commented that testing at the manufacturer's nominal design position would be more representative of real world crashes, since most 50th percentile adult males would adjust their anchorage properly to enhance belt fit and comfort. Volkswagen, Range Rover, and Ford argued that manufacturers would be obliged to conduct a number of repetitive crash tests before certifying that a vehicle with adjustable anchorages complied with Standard No. 208 with the anchorages adjusted to any position, and that the cost of these repetitive tests would discourage manufacturers from offering adjustable anchorages. Toyota argued that the effect of requiring compliance at any adjustment position would be to narrow the range of adjustment positions offered for anchorages. While this narrow range would ensure that the vehicle would comply with the anchorage in any adjustment position, it would also make the adjustable anchorage superfluous, since they would not adjust sufficiently to enhance belt fit and comfort for occupants who were not close to the size of a 50th percentile adult male.

The agency is persuaded by these comments. Adjustable anchorages allow occupants to adjust the belt fit to be more comfortable than is the case with fixed anchorages. This adjustment feature is particularly desirable for short adults and children, as well as tall adults. NHTSA has no reason for imposing a requirement that might discourage manufacturers from installing adjustable anchorages. Therefore, this final rule adopts the proposed requirement that adjustable anchorages will be adjusted to the manfacturer's nominal design position for a 50th percentile adult male prior to Standard No. 208 compliance testing.

Ford commented that the agency should also amend the provisions of S7.1 (relating to belt adjustment) and S7.4.4 (relating to latchplate access) to specify that adjustable anchorages will be adjusted to the manufacturer's nominal design position for a 50th percentile adult male occupant to determine compliance with those provisions of Standard No. 208. NHTSA agrees with this comment and this final rule makes the requested changes.

This rule becomes effective September 1, 1989. For those manufacturers that choose to equip their vehicles with adjustable anchorages, this rule will remove the existing uncertainties about the proper adjustment position for such anchorages during compliance testing. Removing these uncertainties is an advantage for those manufacturers, the agency, and the public. For those manufacturers whose vehicles are not equipped with adjustable anchorages, this rule will not impose any additional obligations. Since no party is adversely affected by this rule and some parties will be positively affected, the agency has concluded that there is good cause for specifying an effective date sooner than 180 days after publication of this rule.

The agency has analyzed the impacts of this final rule and determined that it is neither "major" within the meaning of Executive Order 12291 nor "significant" within the meaning of the Department of Transportation's regulatory policies and procedures. The extension of the existing requirements for cars with tension-relieving devices on safety belts to safety belts installed in conjunction with air bags will impose costs on only one manufacturer, General Motors. With the additional leadtime specified in this rule for achieving compliance, the agency estimates that those costs will be well below the threshold of $100 million for classifying a rule as either major or significant.

The requirement specifying the position to which adjustable anchorages will be adjusted to determine compliance with Standard No. 208 will not impose any additional costs. It will simply ensure that the manufacturers and other interested members of the public know how the agency will conduct compliance testing of vehicles equipped with adjustable anchorages. Because of these minimal impacts, the agency has not prepared a full regulatory evaluation of this rule.

NHTSA has also analyzed the effects of this rule on small entities, in accordance with the Regulatory Flexibility Act. Based on that analysis, I hereby certify that this rule will not have a significant economic impact on a substantial number of small entities. NHTSA believes that the only entity that will experience any economic impact as a result of this rule is GM, which does not qualify as a small entity. Even if GM were a small entity, the impacts would not be significant, as explained above. This rule will not significantly affect the manufacturing process of any safety belt manufacturers that are small entities or the retail price of vehicles purchased by any small organizations or small governmental units.

The agency has also analyzed this rule under the National Environmental Policy Act and determined that it will not have a significant impact on the human environment. After analyzing the rule in accordance with the principles and criteria set forth in Executive Order 12612, NHTSA has determined that the rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

The requirement in this rule to provide information in the owner's manual about the maximum amount of slack that should be introduced into safety belts installed in conjunction with air bags is an information collection requirement, as that term is defined in 5 CFR Part 1320. Pursuant to the requirements of the Paperwork Reduction Act (44 U.S.C.

3501 *et seq.*), this information collection requirement was submitted to and approved by the Office of Management and Budget. These requirements were assigned OMB #2127-0541 and approved through March 31, 1992.

List of Subjects in 49 CFR Part 571

Imports, Motor vehicle safety, Motor vehicles.

In consideration of the foregoing, 49 CFR Part 571 is amended as follows:

PART 571—[AMENDED]

1. The authority citation for Part 571 continues to read as follows:

Authority: 15 U.S.C. 1392, 1401, 1403, 1407; delegation of authority at 49 CFR 1.50.

§ 571.208 [Amended]

2. S7.1.1 of § 571.208 is revised to read as follows:

S7.1.1 Except as specified in S7.1.1.1 and S7.1.1.2, the lap belt of any seat belt assembly furnished in accordance with S4.1.2 shall adjust by means of any emergency-locking or automatic-locking retractor that conforms to § 571.209 to fit persons whose dimensions range from those of a 50th percentile 6-year-old child to those of a 95th percentile adult male and the upper torso restraint shall adjust by means of an emergency-locking retractor or a manual adjusting device that conforms to § 571.209 to fit persons whose dimensions range from those of a 5th percentile adult female to those of a 95th percentile adult male, with the seat in any position, the seat back in the manufacturer's nominal design riding position, and any adjustable anchorages adjusted to the manufacturer's nominal design position for a 50th percentile adult male occupant. However, an upper torso restraint furnished in accordance with S4.1.2.3.1(a) shall adjust by means of an emergency-locking retractor that conforms to § 571.209.

§ 571.208 [Amended]

3. S7.4.2 of §571.208 is amended by revising the introductory text to read as follows:

S7.4.2 *Webbing tension-relieving device.* Each vehicle with an automatic seat belt assembly or with a Type 2 manual seat belt assembly that must comply with S4.6 of this standard and each vehicle manufactured on or after September 1, 1990, with a manual seat belt assembly installed to comply with S4.1.2.1(c)(2) of this standard, which has such a seat belt assembly installed at a front outboard designated seating position and equipped with either manual or automatic tension-relieving devices permitting the introduction of slack in the webbing of the shoulder belt (e.g., "comfort clips" or "window-shade" devices), shall:

§ 571.208 [Amended]

4. S7.4.4 of $571.208 is revised to read as follows:

S7.4.4 *Latchplate access.* Any seat belt assembly latchplate that is located outboard of a front outboard seating position in accordance with S4.1.2 shall also be located within the outboard reach envelope of either the outboard arm or the inboard arm described in S10.6 of this standard and, in the case of a Part 572 Subpart B test dummy, Figure 3A of this standard, or, in the case of a Part 572 Subpart E test dummy, Figure 3B of this standard, when the latchplate is in its normal stowed position and any adjustable anchorages are adjusted to the manufacturer's nominal design position for a 50th percentile male occupant. There shall be sufficient clearance between the vehicle seat and the side of the vehicle interior to allow the test block defined in Figure 4 unhindered transit to the latchplate or buckle.

5. S8.1.3 of § 571.208 is revised to read as follows:

S8.1.3 Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer. Place any adjustable anchorages at the manufacturer's nominal design position for a 50th percentile adult male occupant. Place each adjustable head restraint in its highest adjustment position. Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position.

Issued on July 5, 1989.

Jeffrey R. Miller,

Acting Administrator.

[FR Doc. 89-16226 Filed 7-10-89; 8:45 am]

BILLING CODE 4910-59-M

Proposed Rules

Federal Register
Vol. 54, No. 131
Tuesday, July 11, 1989

This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

DEPARTMENT OF JUSTICE

Immigration and Naturalization Service

[INS Number: 1219-89]

8 CFR Part 242

Apprehension, Custody, and Detention; Clarification of Force and Effect of Service Detainers (Form I-247)

AGENCY: Immigration and Naturalization Service, Justice.

ACTION: Proposed rule.

SUMMARY: This proposed rule will serve to clarify the effect of placing a Service detainer (Form I-247) with a correctional institution. This clarification is necessary so that it is clear that Service detainers are not meant to affect, among other things, the security level of confinement, quarters assignment and offender classification, furloughs or work release of the institution. These matters are determined at the discretion of the correctional institution. Accordingly, the detainer will serve to place a "hold" only at the time the alien is actually released from confinement.

DATE: Comments must be received no later than August 10, 1989.

ADDRESS: Submit written comments, in triplicate, to Director, Policy Directives and Instructions, Immigration and Naturalization Service, Room 2011, 425 I Street NW Washington, DC 20536.

FOR FURTHER INFORMATION CONTACT: Ira L. Frank, Senior Special Agent, Investigations Division, Immigration & Naturalization Service, 425 I Street NW Room 7240, Washington, DC 20536, Telephone: (202) 633-3098.

SUPPLEMENTARY INFORMATION: This proposed rule will clarify the force and effect of Service detainers (Form I-247) and make clear that a Service detainer has no effect upon the alien or correctional institution until the alien has been released from the custody of the correctional institution. The detainer (Form I-247) merely serves to notify the correctional institution that the Service wishes to assume custody of the alien upon the alien's release from confinement. The correctional institution has full discretion in such concerns as security level of confinement, quarters assignment and offender classification, furloughs and work release. These matters can be accomplished without any concurrence from the Service. 8 U.S.C. 1251(h) prohibits an alien sentenced to imprisonment to be deported until such imprisonment has been terminated by the release of the alien from confinement.

In accordance with 5 U.S.C. 605(b), the Commissioner certifies that this rule will not have a significant economic impact on a substantial number of small entities. This is not a major rule within the meaning of section 1(b) of E.O. 12291, nor does this rule have federalism implications warranting the preparation of a Federal Assessment in accordance with E.O. 12612.

List of Subjects in 8 CFR Part 242

Administrative practice and procedure, Aliens, Deportation.

Accordingly, Part 242 of Chapter I of Title 8 of the Code of Federal Regulations is amended as follows:

PART 242—PROCEEDINGS TO DETERMINE DEPORTABILITY OF ALIENS IN THE UNITED STATES: APPREHENSION, CUSTODY, HEARING, AND APPEAL

1. The authority citation for Part 242 is revised to read as follows:

Authority: 8 U.S.C. 1103, 1182, 1186a, 1251, 1252, 1254, 1362, 8 CFR 2.

2. In § 242.2, paragraph (a)(1) is revised to read as follows:

§ 242.2 Apprehension, custody, and detention.

(a) *Detainers in general.* (1) Only an immigration officer as defined in section 101(a)(18) of the Act, or § 103.1(q) of this chapter is authorized to issue a detainer (Form I-247). Detainers may only be issued in the case of an alien who is amenable to exclusion or deportation proceedings under any provision of the law. A Service detainer should not be construed by a correctional institution as a demand that the alien's security level of confinement, quarters assignment and offender classification, furloughs, work release and related matters be affected. Such matters are within the discretion of the correctional institution in accordance with its own individual policies and procedures and do not require the concurrence of the Service. A detainer merely serves to notify the correctional institution that the Service wishes to assume custody of the alien upon the alien's release from confinement. The detainer will serve to place a "hold" on the alien only upon the alien's actual release from confinement. No detainer shall be issued in the case of an alien who is in the United States without legal authority and is eligible to apply, or has applied, for legalization or special agricultural worker status under the provisions of section 245A or 210 of the Act, unless the Service has denied, or has issued a notice of intent to deny, the benefit for which applied.

Dated June 27 1989.

Clarence M. Coster,

Associate Commissioner, Enforcement Immigration and Naturalization Service.

[FR Doc. 89-16235 Filed 7-10-89; 8:45 am]

BILLING CODE 4410-10-M

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 89-NM-78-AD]

Airworthiness Directives; Airbus Industrie Model A300 Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This notice proposes a new airworthiness directive (AD), applicable to certain Airbus Industrie Model A300 series airplanes, which would require inspection for cracks of stringers 22 to 28 run-outs at fuselage frame 47 and repair, if necessary. This proposal is prompted by fatigue testing by the manufacturer, which revealed cracks on the run-outs of stringers 22 to 28 at the forward and rear internal side of the left-hand and right-hand frame 47 This condition, if not corrected, could lead to reduced structural capability of the

fuselage and subsequent decompression of the airplane.

DATES: Comments must be received no later than August 28, 1989.

ADDRESSES: Send comments on the proposal in duplicate to the Federal Aviation Administration, Northwest Mountain Region, Transport Airplane Directorate, ANM-103, Attention: Airworthiness Rules Docket No. 89-NM-78-AD, 17900 Pacific Highway South, C-68966, Seattle, Washington 98168. The applicable service information may be obtained from Airbus Industrie, Airbus Support Division, Avenue Didier Daurat, 31700 Blagnac, France. This information may be examined at the FAA, Transport Airplane Directorate, Northwest Mountain Region, 17900 Pacific Highway South, Seattle, Washington, or the Standardization Branch, 9010 East Marginal Way South, Seattle, Washington.

FOR FURTHER INFORMATION CONTACT: Mr. Greg Holt, Standardization Branch, ANM-113; telephone (206) 431-1918. Mailing address: FAA, Northwest Mountain Region, 17900 Pacific Highway South, C-68966, Seattle, Washington 98168.

SUPPLEMENTARY INFORMATION: Interested persons are invited to participate in the making of the proposed rule by submitting such written data, views, or arguments as they may desire. Communications should identify the regulatory docket number and be submitted in duplicate to the address specified above. All communications received on or before the closing date for comments specified above will be considered by the Administrator before taking action on the proposed rule. The proposals contained in this Notice may be changed in light of the comments received.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the proposed rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report summarizing each FAA/public contact, concerned with the substance of this proposal, will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this Notice must submit a self-addressed, stamped post card on which the following statement is made: "Comments to Docket Number 89-NM-78-AD. The post card will be date/time stamped and returned to the commenter.

Discussion

The Direction Genrale de L Aviation Civile (DGAC), which is the airworthiness authority of France, in accordance with the provisions of an existing bilateral airworthiness agreement, has notified the FAA of an unsafe condition that exists on Airbus Industrie Model A300 series airplanes. The manufacturer reported that, during full-scale fatigue tests, cracks developed in the run-outs of stringers 22 to 28 at the forward and rear internal side of left-hand and right-hand fuselage frame 47 This condition, if not corrected, could lead to reduced structural capability of the fuselage and subsequent decompression of the airplane.

Airbus Industrie has issued Service Bulletin A300-53-237 dated January 18, 1989, which describes procedures for inspection for cracks of stringers 22 to 28 run-outs at fuselage frame 47 and repair, if necessary. The DGAC has classified this service bulletin as mandatory.

This airplane model is manufactured in France and type certificated in the United States under the provisions of § 21.29 of the Federal Aviation Regulations and the applicable bilateral airworthiness agreement.

Since this condition is likely to exist or develop on airplanes of this model registered in the United States, an AD is proposed that would require inspection for cracks of stringers 22 to 28 run-outs at the fuselage frame 47 and repair, if necessary, in accordance with the service bulletin previously described.

It is estimated that 66 airplanes of U.S. registry would be affected by this AD, that it would take approximately 8 manhours per airplane to accomplish the required actions, and that the average labor cost would be $40 per manhour. Based on these figures, the total cost impact of this AD to U.S. operators is estimated to be $21,120.

The regulations proposed herein would not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this proposal would not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

For the reasons discussed above, I certify that this proposed regulation (1) is not a "major rule" under Executive Order 12291; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) if promulgated, will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A copy of the draft evaluation prepared for this action is contained in the regulatory docket. A copy of it may be obtained from the Rules Docket.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

The Proposed Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration proposes to amend 14 CFR Part 39 of the Federal Aviation Regulations (14 CFR 39.13) as follows:

PART 39—[AMENDED]

1. The authority citation for Part 39 continues to read as follows:

Authority: 49 U.S.C. 1354(a), 1421 and 1423; 49 U.S.C. 106(g) (Revised Pub. L. 97-449, January 12, 1983); and 14 CFR 11.89.

§ 39.13 [Amended]

2. Section 39.13 is amended by adding the following new airworthiness directive.

Airbus Industrie: Applies to Model A300 series airplanes, as listed in Airbus Industrie Service Bulletin A300-53-237 dated January 18, 1989. Compliance is required as indicated, unless previously accomplished.

To prevent reduced structural capability of the fuselage and subsequent decompression of the airplane, accomplish the following:

A. Prior to the accumulation of the number of landings indicated below or within 750 landings after the effective date of this AD, whichever occurs later, and thereafter at intervals indicated below, perform either a detailed visual or eddy current inspection of stringers 22 to 28 run-outs at fuselage frame 47 in accordance with Airbus Industrie Service Bulletin A300-53-237 dated January 18, 1989.

1. For airplanes identified as Configuration 1 in the service bulletin, the initial inspection must be performed prior to the accumulation of 20,500 landings.

a. If the immediately preceding inspection was performed using the detailed visual method, the next inspection must be performed within 9,200 landings.

b. If the immediately preceding inspection was performed using the eddy current method, the next inspection must be performed within 18,400 landings.

2. For airplanes identified as Configuration 3 in the service bulletin, the initial inspection must be performed prior to the accumulation of 17,500 landings.

a. If the immediately preceding inspection was performed using the detailed visual method, the next inspection must be performed within 7,900 landings.

b. If the immediately preceding inspection was performed using the eddy current method, the next inspection must be performed within 15,800 landings.

3. For airplanes identified as Configuration 5 in the service bulletin, the initial inspection must be performed prior to the accumulation of 13,800 landings.

a. If the immediately preceding inspection was performed using the detailed visual method, the next inspection must be performed within 6,200 landings.

b. If the immediately preceding inspection was performed using the eddy current method, the next inspection must be performed within 12,400 landings.

4. For airplanes identified as Configuration 6 in the service bulletin, the initial inspection must be performed prior to the accumulation of 22,200 landings.

a. If the immediately preceding inspection was performed using the detailed visual method, the next inspection must be performed within 10,000 landings.

b. If the immediately preceding inspection was performed using the eddy current method, the next inspection must be performed within 20,100 landings.

B. If cracks found are less than or equal to 1 mm (.039 inch), repair prior to further flight and perform an eddy current inspection to ensure that the crack has been eliminated, in accordance with Airbus Industrie Service Bulletin A300-53-237, dated January 18, 1989. Repeat inspections at intervals indicated in paragraph A., above.

C. If cracks are greater than 1 mm (.039 inch), repair prior to further flight, in a manner approved by the Manager, Standardization Branch, ANM-113, Northwest Mountain Region. Repeat the inspections at intervals indicated in paragraph A., above.

D. If no cracks are found, perform repetitive inspections at intervals shown in paragraph A., above.

E. An alternate means of compliance or adjustment of the compliance time, which provides an acceptable level of safety, may be used when approved by the Manager, Standardization Branch, ANM-113, FAA, Northwest Mountain Region.

Note: The request should be forwarded through an FAA Principal Maintenance Inspector (PMI), who will either concur or comment and then send it to the Manager, Standardization Branch, ANM-113.

F Special flight permits may be issued in accordance with FAR 21.197 and 21.199 to operate airplanes to a base for the accomplishment of the requirements of this AD.

All persons affected by this directive who have not already received the appropriate service documents from the manufacturer may obtain copies upon request to Airbus Industrie, Airbus Support Division, Avenue Didier Daurat, 31700 Blagnac, France. These documents may be examined at the FAA, Northwest Mountain Region, Transport Airplane Directorate, 17900 Pacific Highway South, Seattle, Washington, or at the Seattle Aircraft Certification Office, 9010 East Marginal Way South Seattle, Washington.

Issued in Seattle, Washington, on June 28, 1989.

Steven B. Wallace,

Acting Manager, Transport Airplane Directorate Aircraft Certification Service.

[FR Doc. 89-16214 Filed 7-10-89; 8:45am]

BILLING CODE 4910-13-M

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14 CFR Part 39

[Docket No. 89-NM-92-AD]

Airworthiness Directives; Airbus Industrie Model A300, A310, A300-600 Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of Proposed Rulemaking (NPRM).

SUMMARY: This notice proposes to adopt a new airworthiness directive (AD), applicable to certain Airbus Industrie Model A300, A310, and A300-600 series airplanes, which would require inspection of the pitch trim electrical circuit for defective trim switches, and replacement of faulty switches, if necessary. This proposal is prompted by reports of electrical trim malfunction due to faulty trim switches. This condition, if not corrected, could result in pitch trim runaway.

DATE: Comments must be received no later than August 28, 1989.

ADDRESSES: Send comments on the proposal in duplicate to the Federal Aviation Administration, Northwest Mountain Region, Transport Airplane Directorate, ANM-103, Attention: Airworthiness Rules Docket No. 89-NM-92-AD, 17900 Pacific Highway South, C-68966, Seattle, Washington 98168. The applicable service information may be obtained from Airbus Industrie, Airbus Support Division, Avenue Didier Daurat, 31700 Blagnac, France. This information may be examined at the FAA, Northwest Mountain Region, Transport Airplane Directorate, 17900 Pacific Highway South, Seattle, Washington, or the Standardization Branch, 9010 East Marginal Way South, Seattle, Washington.

FOR FURTHER INFORMATION CONTACT: Mr. Greg Holt, Standardization Branch, ANM-113; telephone (206) 431-1918. Mailing address: FAA, Northwest Mountain Region, 17900 Pacific Highway South, C-68966, Seattle, Washington 98168.

SUPPLEMENTARY INFORMATION: Interested persons are invited to participate in the making of the proposed rule by submitting such written data, views, or arguments as they may desire. Communications should identify the regulatory docket number and be submitted in duplicate to the address specified above. All communications received on or before the closing date for comments specified above will be considered by the Administrator before taking action on the proposed rule. The proposals contained in this Notice may be changed in light of the comments received.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the proposed rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report summarizing each FAA/public contact, concerned with the substance of this proposal, will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this Notice must submit a self-addressed, stamped post card on which the following statement is made: "Comments to Docket Number 89-NM-92-AD." The post card will be date/time stamped and returned to the commenter.

Discussion

The Direction Generale de L Aviation Civile (DGAC), which is the airworthiness authority of France, in accordance with existing provisions of a bilateral airworthiness agreement, has notified the FAA of an unsafe condition which may exist on certain Airbus Industrie Model A300, A310, and A300-600 series airplanes. The manufacturer has identified certain electrical switches that control the normal pitch trim function, which may have been improperly produced and may malfunction. This condition, if not corrected, could lead to pitch trim runaway.

Airbus Industrie has issued All Operators Telex, (AOT) 22/88/01, dated November 23, 1988 which describes procedures for inspection of the pitch trim electrical circuit for defective trim switches, Part Number BP 20-455, serial numbers 110 to 923, inclusive, and replacement, if necessary, with a serviceable switch having a serial number of 924 or higher. For details on removal and installation of the pitch trim control switch, the AOT references Airplane Maintenance Manual (AMM) 22-27-12 for the Model A310 and A300-600 series airplanes, and AMM 27-11-11 for the Model A300 series airplanes. The

DGAC has issued French Airworthiness Directive 89-063-(AB) addressing this subject

This airplane model is manufactured in France and type certificated in the United States under the provisions of § 21.29 of the Federal Aviation Regulations and the applicable bilateral airworthiness agreement.

Since this condition is likely to exist or develop on other airplanes of the same type design registered in the United States, an AD is proposed which would require inspection and replacement, if necessary, of certain trim switches, in accordance with the AOT previously described.

It is estimated that 103 airplanes of U.S. registry would be affected by this AD, that it would take approximately 6 manhours per airplane to accomplish the required actions, and that the average labor cost would be $40 per manhour. Based on these figures, the total cost impact of the AD on U.S. operators is estimated to be $24,720.

The regulations proposed herein would not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this proposal would not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

For the reasons discussed above, I certify that this proposed regulation (1) is not a "major rule" under Executive Order 12291; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) if promulgated, will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A copy of the draft evaluation prepared for this action is contained in the regulatory docket. A copy of it may be obtained from the Rules Docket.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

The Proposed Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration proposes to amend 14 CFR Part 39 of the Federal Aviation Regulations as follows:

PART 39—[AMENDED]

1. The authority citation for Part 39 continues to read as follows:

Authority: 49 U.S.C. 1354(a), 1421 and 1423; 49 U.S.C. 106(g) (Revised Pub. L. 97-449, January 12, 1983); and 14 CFR 11.89.

§ 39.13 [Amended]

2. Section 39.13 is amended by adding the following new airworthiness directive:

Airbus Industrie Applies to Models A300, A310, and A300-600 series airplanes, certificated in any category. Compliance is required within 30 days after the effective date of this AD, unless previously accomplished.

To prevent pitch trim runaway, accomplish the following:

A. Perform an inspection to determine if SAMM trim switches, Part Number BP 20-455, serial numbers 110 to 923, inclusive, are fitted on the normal pitch trim electrical circuit, in accordance with All Operators Telex (AOT) 22/88/01, dated November 23, 1988. If any trim switch is determined to have any of these serial numbers, prior to further flight, replace the switch with a serviceable trim switch having a serial number 924 or higher, in accordance with Airplane Maintenance Manual (AMM) 22-27-12 (for Model A310 and A300-600 series airplanes) or AMM 27-11-11 (for Model A300 series airplanes), as appropriate.

B. An alternate means of compliance or adjustment of the compliance time, which provides an acceptable level of safety, may be used when approved by the Manager, Standardization Branch, ANM-113, FAA, Northwest Mountain Region.

Note: The request should be forwarded through an FAA Principal Maintenance Inspector (PMI), who will either concur or comment and then send it to the Manager, Standardization Branch, ANM-113.

C. Special flight permits may be issued in accordance with FAR 21.197 and 21.199 to operate airplanes to a base in order to comply with the requirements of this AD.

All persons affected by this directive who have not already received the appropriate service documents from the manufacturer may obtain copies upon request to Airbus Industrie, Airbus Support Division, Avenue Didier Daurat, 31700 Blagnac, France. These documents may be examined at the FAA, Northwest Mountain Region, Transport Airplane Directorate, 17900 Pacific Highway South, Seattle, Washington, or the Standardization Branch, 9010 East Marginal Way South, Seattle, Washington.

Issued in Seattle, Washington, on June 28, 1989.

Steven B. Wallace,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 89-16215 Filed 7-10-89; 8:45 am]

BILLING CODE 4910-13-M

14 CFR Part 39

[Docket No. 89-NM-93-AD]

Airworthiness Directives; Airbus Industrie Model A300 Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This notice proposes to adopt a new airworthiness directive (AD), applicable to Airbus Industrie Model A300 series airplanes, which would require a one-time inspection of certain main landing gear (MLG) uplock control bellcrank support bearings, and replacement, if necessary. This proposal is prompted by one report that both MLG's did not extend in a free-fall mode due to a jam caused by defective bearings. This condition, if not corrected, could result in the inability to extend the MLG in the free-fall mode following a failure of the normal extend mode.

DATE: Comments must be received no later than August 28, 1989.

ADDRESSES: Send comments on the proposal in duplicate to the Federal Aviation Administration, Northwest Mountain Region, Transport Airplane Directorate, ANM-103, Attention: Airworthiness Rules Docket No. 89-NM-93-AD, 17900 Pacific Highway South, C-68966, Seattle, Washington 98168. The applicable service information may be obtained from Airbus Industrie, Airbus Support Division, Avenue Didier Daurat, 31700 Blagnac, France. This information may be examined at the FAA, Northwest Mountain Region, Transport Airplane Directorate, 17900 Pacific Highway South, Seattle, Washington, or the Standardization Branch, 9010 East Marginal Way South, Seattle, Washington.

FOR FURTHER INFORMATION CONTACT: Mr. Greg Holt, Standardization Branch, ANM-113; telephone (206) 431-1918. Mailing address: FAA, Northwest Mountain Region, 17900 Pacific Highway South, C-68966, Seattle, Washington 98168.

SUPPLEMENTARY INFORMATION: Interested persons are invited to participate in the making of the proposed rule by submitting such written data, views, or arguments as they may desire. Communications should indentify the regulatory docket number and be submitted in duplicate to the address specified above. All communications received on or before the closing date for comments specified above will be considered by the

Administrator before taking action on the proposed rule. The proposals contained in this Notice may be changed in light of the comments received.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the proposed rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report summarizing each FAA/public contact, concerned with the substance of this proposal, will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submited in response to this Notice must submit a self-addressed, stamped post card on which the following statement is made: "Comments to Docket Number 89-NM-93-AD." The post card will be date/time stamped and returned to the commenter.

Discussion

The Direction Generale de L Aviation Civile (DGAC), which is the airworthiness authority of France, in accordance with existing provisions of a bilateral airworthiness agreement, has notified the FAA of an unsafe condition which may exist on Airbus Model A300 series airplanes. There has been one report of non-extension of both main landing gears in the free-fall mode. Further investigation revealed that bearings, Part Number NSA 8116-16, installed on the right MLG uplock control bellcrank support, were jammed; this prevented any movement of the control rods and resulted in the failure of the MLG to extend. This condition, if not corrected, could result in the inability to extend the MLG following a failure of the normal extend mode.

Airbus Industrie has issued All Operator Telex (AOT) 32/88/02, Issue 2, dated December 14, 1988, which describes procedures for a one-time inspection of the right and left main landing gears (MLG) for defective bearings, and replacement of the bearings, if necessary. The DGAC has classified the All Operators Telex (AOT) as mandatory, and has issued French Airworthiness Directive 89-040-091(B) addressing this subject.

This airplane model is manufactured in France and type certificated in the United States under the provisions of Section 21.29 of the Federal Aviation Regulations and the applicable bilateral airworthiness agreement.

Since this condition is likely to exist or develop on other airplanes of the same type design registered in the United States, this action proposes to require a one-time inspection of the MLG for defective bearings, and replacement of the bearings, if necessary, in accordance with the AOT previously described.

It is estimated that 66 airplanes of U.S. registry would be affected by this AD, that it would take approximately 5 manhours per airplane to accomplish the required actions, and that the average labor cost would be $40 per manhour. Based on these figures, the total cost impact of the AD on U.S. operators is estimated to be $13,200.

The regulations proposed herein would not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this proposal would not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

For the reasons discussed above, I certify that this proposed regulation (1) is not a "major rule" under Executive Order 12291; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) if promulgated, will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A copy of the draft evaluation prepared for this action is contained in the regulatory docket. A copy of it may be obtained from the Rules Docket.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation, Aviation safety, Safety.

The Proposed Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration proposes to amend 14 CFR Part 39 of the Federal Aviation Regulations as follows:

PART 39—[AMENDED]

1. The authority citation for Part 39 continues to read as follows:

Authority: 49 U.S.C. 1354(a), 1421 and 1423; 49 U.S.C. 106(g) (Revised Pub. L. 97-449, January 12, 1983); and 14 CFR 11.89.

§ 39.13 [Amended]

2. Section 39.13 is amended by adding the following new airworthiness directive:

Airbus Industrie: Applies to Model A300 series airplanes, serial numbers up to and including 253, certificated in any category. Compliance is required within 100 landings after the effective date of this AD, unless previously accomplished.

To prevent malfunction of the main landing gear in the free fall mode, accomplish the following:

A. Inspect both main landing gears for defective uplock control bellcrank support bearings, P/N NSA 8116-16, in accordance with All Operators Telex (AOT) 32/88/02, dated December 14, 1988. If a defective bearing is found, replace it with a serviceable bearing prior to further flight.

B. An alternate means of compliance or adjustment of the compliance time, which provides an acceptable level of safety, may be used when approved by the Manager, Standardization Branch, ANM-113, FAA, Northwest Mountain Region.

Note: The request should be forwarded through an FAA Principal Maintenance Inspector (PMI), who will either concur or comment and then send it to the Manager, Standardization Branch, ANM-113.

C. Special flight permits may be issued in accordance with FAR 21.197 and 21.199 to operate airplanes to a base in order to comply with the requirements of this AD.

All persons affected by this directive who have not already received the appropriate service documents from the manufacturer may obtain copies upon request to Airbus Industrie, Airbus Support Division, Avenue Didier Daurat, 31700 Blagnac, France. These documents may be examined at the FAA, Northwest Mountain Region, Transport Airplane Directorate, 17900 Pacific Highway South, Seattle, Washington, or the Standardization Branch, 9010 East Marginal Way South, Seattle, Washington.

Isued in Seattle, Washington, on June 28, 1989.

Steven B. Wallace,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 89-16216 Filed 7-10-89; 8:45 am]

BILLING CODE 4910-13-M

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14 CFR Part 39

[Docket No. 89-NM-10-AD]

Airworthiness Directives; Boeing Model 727 Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Supplemental notice of proposed rulemaking (NPRM); reopening of comment period.

SUMMARY: This notice proposes to revise an earlier proposed airworthiness directive (AD), applicable to all Boeing Model 727 series airplanes, which would

have required inspection of the number 1 and 3 engine aft mount support fittings, and repair or replacement, if necessary. That action was prompted by reports of cracks in the aft engine mount support fittings. This condition, if not corrected, could result in an engine separating from the airplane. This action revises the proposed rule by reducing the initial compliance threshold for airplanes with support fittings made of 7079–T6 material.

DATE: Comments must be received no later than August 14, 1989.

ADDRESSES: Send comments on the proposal in duplicate to the Federal Aviation Administration, Northwest Mountain Region, Transport Airplane Directorate, ANM-103, Attention: Airworthiness Rules Docket No. 89-NM-10-AD, 17900 Pacific Highway South, C-68966, Seattle, Washington 98168. The applicable service information may be obtained from Boeing Commercial Airplanes, P.O. Box 3707 Seattle, Washington 98124. This information may be examined at the FAA, Northwest Mountain Region, 17900 Pacific Highway South, Seattle, Washington, or the Seattle Aircraft Certification Office, FAA, Northwest Mountain Region, 9010 East Marginal Way South, Seattle, Washington.

FOR FURTHER INFORMATION CONTACT: Ms. Kathi N. Ishimaru, Airframe Branch, ANM-120S; telephone (206) 431-1525. Mailing address: FAA, Northwest Mountain Region, 17900 Pacific Highway South, C-68966, Seattle, Washington 98168.

SUPPLEMENTARY INFORMATION: Interested persons are invited to participate in the making of the proposed rule by submitting such written data, views, or arguments as they may desire. Communications should identify the regulatory docket number and be submitted in duplicate to the address specified above. All communications received on or before the closing date for comments specified above will be considered by the Administrator before taking action on the proposed rule. The proposals contained in this Notice may be changed in light of the comments received.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the proposed rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report summarizing each FAA/public contact concerned with the substance of this proposal will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this Notice must submit a self-addressed, stamped post card on which the following statement is made: "Comments to Docket Number 89-NM-10-AD." The post card will be date/time stamped and returned to the commenter.

Discussion

A proposal to amend Part 39 of the Federal Aviation Regulations to include an airworthiness directive (AD), applicable to all Boeing Model 727 series airplanes, which would have required inspection of the number 1 and number 3 engine aft mount support fittings, and repair or replacement, if necessary, was published in the **Federal Register** on March 20, 1989 (54 FR 11381). That action was prompted by reports of cracks in the number 1 and 3 engine aft mount support fittings which, if undetected, can result in separation of the engine from the airplane.

Since issuance of that proposal, an operator has reported cracks in both the numbers 1 and 3 engine aft mount support fittings made of 7079–T6 material on an airplane with 21,500 flight cycles, which is below the previously proposed threshold of 25,000 flight cycles.

The FAA has determined that this NPRM must be revised to delete the threshold for the initial compliance for airplanes with support fittings made of 7079–T6 material. To ensure that cracking is detected in a timely manner, the FAA has revised paragraph A.1. of the NPRM to require the initial inspection be performed within 1,000 flight cycles or one year, whichever occurs first.

There are approximately 1,710 Model 727 series airplanes of the affected design in the worldwide fleet. It is estimated that 1,143 airplanes of U.S. registry would be affected by this AD, that it would take approximately 12 manhours per airplane to accomplish the required inspections, and that the average labor cost would be $40 per manhour. Based on these figures, the total cost impact of the AD on U.S. operators is estimated to be $548,640.

The regulations proposed herein would not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this proposal would not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

For the reasons discussed above, I certify that this proposed regulation (1) is not a "major rule" under Executive Order 12291; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) if promulgated will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A copy of the draft evaluation prepared for this action is contained in the regulatory docket.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

The Proposed Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration proposes to amend 14 CFR Part 39 of the Federal Aviation Regulations as follows:

PART 39—[AMENDED]

1. The authority citation for Part 39 continues to read as follows:

Authority: 49 U.S.C. 1354(a), 1421 and 1423; 49 U.S.C 106(g) (Revised Pub. L. 97-449, January 12, 1983); and 14 CFR 11.89.

§ 39.13 [AMENDED]

2. Section 39.13 is amended by revising paragraph A.1. of the Notice of Proposed Rulemaking, Docket 89-NM-10-AD, which was published in the **Federal Register** on March 20, 1989 (54 FR 11381), FR Doc. 89-6404, as follows:

Boeing: Applies to all Model 727 series airplanes certificated in any category. Compliance is required as indicated, unless previously accomplished.

To detect cracking in the number 1 or 3 engine aft mount support fitting, accomplish the following:

A. Conduct a detailed visual inspection for cracks of the number 1 and number 3 engine aft mount support fittings, in accordance with section III.D and Figure 1 of Boeing Service Bulletin 727-54-0017 dated December 22, 1988, in accordance with the following schedule:

1. For airplanes with engine aft mount support fittings made of 7079–T6 material: within the next 1,000 flight cycles or 1 year, after the effective date of this AD, whichever occurs first, unless previously accomplished within the last 2,000 flight cycles.

Note: 7079–T6 material is used in the aft support fitting on the number 1 engine strut on airplanes line numbers 001 through 883, and the number 3 engine strut on airplanes line numbers 001 through 880.

2. For airplanes with engine aft support fittings made of 7075–T73 material: prior to the accumulation of 40,000 flight cycles, or within the next 1,000 flight cycles after the effective date of this AD, whichever occurs

later, unless previously accomplished within the last 2,000 flight cycles.

Note: 7075–T73 material is used in the aft support fitting on the number 1 engine strut on airplanes line number 884 and all later airplanes, and the number 3 engine strut on airplanes line number 881 and all later airplanes.

B. For the initial inspection required in paragraph A., above, as an option to the detailed visual inspection, perform an eddy current inspection of the support fittings outboard of the body skins, and a detailed visual inspection of the support fittings inboard of the body skins, in accordance with Section III.A and Figure 1 of Boeing Service Bulletin 727–54–0017 dated December 22, 1988.

C. Repeat the detailed visual inspection required in paragraph A., above, at intervals not to exceed 3,000 flight cycles.

D. If cracked fittings are found as a result of the inspections required by this AD, prior to further flight, repair or replace in accordance with a procedure approved by the Manager, Seattle Aircraft Certification Office, FAA, Northwest Mountain Region.

E. An alternate means of compliance or adjustment of the compliance time, which provides an acceptable level of safety, may be used when approved by the Manager, Seattle Aircraft Certification Office, FAA, Northwest Mountain Region.

Note: The request should be forwarded through an FAA Principal Maintenance Inspector (PMI), who may add any comments and then send it to the Manager, Seattle Aircraft Certification Office.

F Special flight permits may be issued in accordance with FAR 21.197 and 21.199 to operate airplanes to a base in order to comply with the requirements of this AD.

All persons affected by this directive who have not already received the appropriate service documents from the manufacturer may obtain copies upon request to Boeing Commercial Airplanes, P.O. Box 3707 Seattle, Washington 98124. These documents may be examined at the FAA, Northwest Mountain Region, 17900 Pacific Highway South, Seattle, Washington, or Seattle Aircraft Certification Office, FAA, Northwest Mountain Region, 9010 East Marginal Way South, Seattle, Washington.

Issued in Seattle, Washington, on June 29, 1989.

Steven B. Wallace,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 89–16217 Filed 7–10–89; 8:45 am]

BILLING CODE 4910–13–M

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14 CFR Part 39

[Docket No. 89–NM–100–AD]

Airworthiness Directives; Boeing Model 757 and 767 Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This notice proposes to adopt a new airworthiness directive (AD), applicable to certain Boeing Model 757 and 767 series airplanes, which would require the inspection and replacement of the Ram Air Turbine (RAT) Ground Checkout Module (GCM) and possible replacement of the RAT hydraulic pump. This proposal is prompted by reports of four RAT hydraulic pumps which may have been damaged by fragments from a filter screen in the GCM. This condition, if not corrected, could result in an inoperable RAT hydraulic pump and complete loss of RAT hydraulic power should a dual engine loss occur.

DATE: Comments must be received no later than August 28, 1989.

ADDRESSES: Send comments on the proposal in duplicate the Federal Aviation Administration, Northwest Mountain Region, Transport Airplane Directorate, ANM–103, Attention: Airworthiness Rules Docket No. 89–NM–100–AD, 17900 Pacific Highway South, C–68966, Seattle, Washington 98168. The applicable service information may be obtained from Boeing Commerical Airplanes, P.O. Box 3707 Seattle, Washington 98124. This information may be examined at the FAA, Northwest Mountain Region, Transport Airplane Directorate, 17900 Pacific Highway South, Seattle, Washington, or Seattle Aircraft Certification Office, 9010 East Marginal Way South, Seattle, Washington.

FOR FURTHER INFORMATION CONTACT: Mr. David M. Herron, Systems and Equipment Branch, ANM–130S; telephone (206) 431–1949. Mailing address: FAA Northwest Mountain Region, 17900 Pacific Highway South, C–68966, Seattle, Washington 98168.

SUPPLEMENTARY INFORMATION: Interested persons are invited to participate in the making of the proposed rule by submitting such written data, views, or arguments as they may desire. Communications should identify the regulatory docket number and be submitted in duplicate to the address specified above. All communications received on or before the closing date for comments specified above will be considered by the Administrator before taking action on the proposed rule. The proposals contained in this Notice may be changed in light of the comments received.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the proposed rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report summarizing each FAA/public contact, concerned with the substance of this proposal, will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this Notice must submit a self-addressed, stamped post card on which the following statement is made: "Comments to Docket Number 89–NM–100–AD. The post card will be date/time stamped and returned to the commenter.

Discussion

One operator, while incorporating the content of a service bulletin on its Model 767 airplanes, noted that the majority of Ram Air Turbine (RAT) Ground Checkout Modules (GCM) removed were missing portions of or the entire downstream filter screen. This screen is part of the orifice plug in the GCM. Two operators have reported four RAT hydraulic pumps that were inoperable, possibly due to ingestion of filter screen fragments. In these four cases, the RAT GCM's were missing or had an eroded downstream filter screen. In the event of a dual engine loss, an inoperable RAT hydraulic pump could result in the complete loss of hydraulic power.

The same part is used in the GCM of both Model 757 and 767 series airplanes. The manufacturer has determined that the downstream filter screen in the orifice plug is unnecessary.

The FAA has reviewed and approved Boeing Alert Service Bulletins 757–29A0037 Revision 1 (for Model 757 airplanes), and 767–29A0035, Revision 1 (for Model 767 airplanes), both dated November 23, 1988, which describe the replacement of RAT GCM and hydraulic pumps. Those service bulletins also reference Sundstrand Service Bulletin 734933–29–2, which describes the modification of the Ground Checkout Modules.

Since this condition is likely to exist or develop on other airplanes of these same type designs, an AD is proposed which would require the inspection and replacement of the RAT Ground Checkout Module with a different or reworked GCM and replacement of the RAT hydraulic pump, if necessary, in accordance with the service bulletins previously described.

There are approximately 400 Model 757 and 767 series airplanes of the affected design in the worldwide fleet. It is estimated that 215 airplanes of U.S. registry would be affected by this AD, that it would take approximately 8 manhours per airplane to accomplish the required actions, and that the average labor cost would be $40 per manhour. Based on these figures, the total cost impact of the AD on U.S. operators is estimated to be $68,800.

The regulations proposed herein would not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this proposal would not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

For the reasons discussed above, I certify that this proposed regulation (1) is not a "major rule" under Executive Order 12291; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) if promulgated, will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A copy of the draft evaluation prepared for this action is contained in the regulatory docket. A copy of it may be obtained from the Rules Docket.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

The Proposed Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration proposes to amend 14 CFR Part 39 of the Federal Aviation Regulations as follows:

PART 39—[AMENDED]

1. The authority citation for Part 39 continues to read as follows:

Authority: 49 U.S.C. 1354(a), 1421 and 1423; 49 U.S.C. 106(g) (Revised Pub. L. 97–449, January 12, 1983); and 14 CFR 11.89.

§ 39.13 [Amended]

2. Section 39.13 is amended by adding the following new airworthiness directive:

Boeing: Applies to Model 757 and 767-series airplanes, as listed in Boeing Alert Service Bulletins 757–29A0037, Revision 1, and 767–29A0035, Revision 1, both dated November 23, 1988, certificated in any category. Compliance required within the next 6,000 hours time-in-service after the effective date of this AD, unless previously accomplished.

To prevent the possible complete loss of hydraulic power, accomplish the following:

A. Remove and rework or replace the Ram Air Turbine (RAT) Ground Checkout Module (GCM) in accordance with Boeing Service Bulletin 757–29A0037 Revision 1 (for Model 757 airplanes), or 767–29A0035, Revision 1 (for Model 767 airplanes), both dated November 23, 1988, as appropriate. Prior to returning the airplane to service, inspect the downstream filter screen. If the screen is damaged or missing, prior to flight, replace the RAT hydraulic pump in accordance with the service bulletin.

B. An alternate means of compliance or adjustment of the compliance time, which provides an acceptable level of safety, may be used when approved by the Manager, Seattle Aircraft Certification Office, FAA, Northwest Mountain Region.

Note: The request should be forwarded through an FAA Principal Maintenance Inspector (PMI), who will either concur or comment and then send it to the Manager, Seattle Aircraft Certification Office.

C. Special flight permits may be issued in accordance with FAR 21.197 and 21.199 to operate airplanes to a base in order to comply with the requirements of this AD.

All persons affected by this directive who have not already received the appropriate service documents from the manufacturer may obtain copies upon request to Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124. These documents may be examined at the FAA, Northwest Mountain Region, Transport Airplane Directorate, 17900 Pacific Highway South, Seattle, Washington, or Seattle Aircraft Certification Office, 9010 East Marginal Way South, Seattle, Washington.

Issued in Seattle, Washington, on June 28, 1989.

Steven B. Wallace,

Acting Manager, Transport Airplane Directorate Aircraft Certification Service.

[FR Doc. 89–16218 Filed 7–10–89; 8:45 am]

BILLING CODE 4910–13–M

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14 CFR Part 71

[Airspace Docket No. 89–ASW–15]

Proposed Revision of Control Zone; Midland, TX

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking.

SUMMARY: This notice proposes to revise the control zone located at Midland, TX. The existing legal description is carrying the old name of the airport, that being Midland Regional Air Terminal. The correct name is the Midland International Airport. Additionally, the coordinates of the airport have been revised slightly. The need to correct the name of the airport, as well as revise its coordinates, has made this proposal necessary. The current layout of the Midland, TX, Control Zone will be not be altered. The intended effect of this proposal is to only change the legal description of the Midland, TX, Control Zone by correcting the name of the airport and revising its coordinates.

DATES: Comments must be received on or before August 7 1989.

ADDRESSES: Send comments on the proposal in triplicate to: Manager, Airspace and Procedures Branch, Air Traffic Division, Southwest Region, Docket No. 89–ASW–15, Department of Transportation, Federal Aviation Administration, Fort Worth, TX 76193–0530.

The official docket may be examined in the Office of the Regional Counsel, Southwest Region, Federal Aviation Administration, 4400 Blue Mound Road, Fort Worth, TX.

FOR FURTHER INFORMATION CONTACT: Bruce C. Beard, Airspace and Procedures Branch, Department of Transportation, Federal Aviation Administration, Fort Worth, TX 76193–0530; telephone: (817) 624–5561.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested parties are invited to participate in this proposed rulemaking by submitting such written data, views, or arguments as they may desire. Comments that provide the factual basis supporting the views and suggestions presented are particularly helpful in developing reasoned regulatory decisions on the proposal. Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the proposal. Communications should identify the airspace docket and be submitted in triplicate to the address listed above. Commenters wishing the FAA to acknowledge receipt of their comments on this notice must submit with those comments a self-addressed, stamped postcard on which the following statement is made: "Comments to Airspace Docket No. 89–ASW–15." The postcard will be date/time stamped and returned to the commenter. All communications received before the specified closing date for comments will be considered before taking action on the proposal rule. The proposal contained in this notice may be changed in the light of comments received. All comments submitted will be available for examination in the Office of the Regional Counsel, 4400 Blue Mound Road, Fort Worth, TX, both before and after the closing date for comments. A report summarizing each substantive public contact with FAA personnel concerned with this rulemaking will be filed in the docket.

Availability of NPRM'S

Any person may obtain a copy of this notice of proposed rulemaking (NPRM) by submitting a request to the Manager, Airspace and Procedures Branch, Department of Transportation, Federal Aviation Administration, Fort Worth, TX 76193–0530. Communications must identify the notice number of this NPRM. Persons interested in being placed on a mailing list for future NPRM's should also request a copy of Advisory Circular No. 11–2A which describes the application procedure.

The Proposal

The FAA is considering an amendment to § 71.171 of the Federal Aviation Regulations (14 CFR Part 71) by revising the control zone located at Midland, TX. The current legal description of the Midland, TX, Control Zone states that the control zone is built around the Midland Regional Air Terminal. The name of the airport has been changed to the Midland International Airport, and the legal description must be changed to reflect this. Also, the coordinates of the airport have been slightly revised and should also be changed. Both of these required corrections have necessitated this proposed revision. The present layout of the control zone will not be altered. The intended effect of this proposal is to revise the legal description of the Midland, TX, Control Zone to reflect the correct name of the airport and its coordinates, not to change the control zone itself. Section 71.171 of Part 71 of the Federal Aviation Regulations was republished in Handbook 7400.6E dated January 3, 1989.

The FAA has determined that this regulation only involves an established body of technical regulations for which frequent and routine amendments are necessary to keep them operationally current. It, therefore—(1) Is not a "major rule" under executive Order 12291; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) does not warrant preparation of a regulatory evaluation as the anticipated impact is so minimal. Since this is a routine matter that will only affect air traffic procedures and air navigation, it is certified that this rule, when promulgated, will not have a significant impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 71

Aviation safety Control zones.

The Proposed Amendment

Accordingly, pursuant to the authority delegated to me, the FAA proposes to amend Part 71 of the Federal Aviation Regulations (14 CFR Part 71) as follows:

PART 71—DESIGNATION OF FEDERAL AIRWAYS, AREA LOW ROUTES, CONTROLLED AIRSPACE, AND REPORTING POINTS

1. The authority citation for Part 71 continues to read as follows:

Authority: 49 U.S.C. 1348(a), 1354(a), 1510; Executive Order 10854; 49 U.S.C. 106(g) (Revised Pub. L. 97–449, January 12, 1983); 14 CFR 11.69.

§ 71.171 [Amended]

2. Section 71.171 is amended as follows:

Midland, TX [Revised]

Within a 5-mile radius of the Midland International Airport (latitude 31°56'33"N., longitude 102°12'06"W.), and within 2 miles each side of the Midland ILS localizer NW course, extending from the 5-mile radius area to 7 miles northwest of the airport.

Issued in Fort Worth, TX, on June 19, 1989.

Larry L. Craig,

Manager, Air Traffic Division, Southwest Region.

[FR Doc. 89–16219 Filed 7–10–89; 8:45 am]

BILLING CODE 4910-13-M

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14 CFR Part 71

[Airspace Docket No. 89-ASW-18]

Proposed Removal of Transition Area; Farmerville, LA

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking.

SUMMARY: This notice proposes to remove the transition area located at Farmerville, LA. The cancellation of the VOR/DME–A standard instrument approach procedure (SIAP) to the Farmerville Airport, which utilizes the Monroe Very High Frequency Omnidirectional Radio Range/Tactical Air Navigation (VORTAC), has made this proposed action necessary. The intended effect of this proposal is to return that controlled airspace no longer required due to the cancellation of the VOR/DME–A SIAP Coincident with this action will be the changing of the status of the Farmerville Airport from instrument flight rules (IFR) to visual flight rules (VFR).

DATES: Comments must be received on or before August 7 1989.

ADDRESSES: Send comments on the proposal in triplicate to: Manager, Airspace and Procedures Branch, Air Traffic Division, Southwest Region, Docket No. 89–ASW–18, Department of Transportation, Federal Aviation Administration, Fort Worth, TX 76193–0530.

The official docket may be examined in the Office of the Regional Counsel, Southwest Region, Federal Aviation Administration, 4400 Blue Mound Road, Fort Worth, TX.

FOR FURTHER INFORMATION CONTACT: Bruce C. Beard, Airspace and Procedures Branch, Department of Transportation, Federal Aviation Administration, Fort Worth, TX 76193–0530; telephone: (817) 624–5561.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested parties are invited to participate in this proposed rulemaking by submitting such written data, views, or arguments as they may desire. Comments that provide the factual basis supporting the views and suggestions presented are particularly helpful in developing reasoned regulatory decisions on the proposal. Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the proposal. Communications should identify the airspace docket and be submitted in triplicate to the address listed above. Commenters wishing the FAA to acknowledge receipt of their comments on this notice must submit with those comments a self-addressed, stamped postcard on which the following statement is made: "Comments to Airspace Docket No. 89–ASW–18. The postcard will be date/time stamped and returned to the commenter. All communications received before the specified closing date for comments will be considered before taking action on the proposed rule. The proposal contained in this notice may be changed in the light of comments received. All comments submitted will be available for examination in the Office of the Regional Counsel, 4400 Blue Mound Road, Fort Worth, TX, both before and after the closing date for comments. A report summarizing each substantive public contact with FAA personnel concerned with this rulemaking will be filed in the docket.

Availability of NPRM's

Any person may obtain a copy of this notice of proposed rulemaking (NPRM) by submitting a request to the Manager, Airspace and Procedures Branch, Department of Transportation, Federal Aviation Administration, Fort Worth, TX 76193–0530. Communications must identify the notice number of this NPRM. Persons interested in being placed on a mailing list for future NPRM's should also request a copy of Advisory Circular No. 11–2A which describes the application procedure.

The Proposal

The FAA is considering an amendment to § 71.181 of the Federal Aviation Regulations (14 CFR Part 71) to remove the transition area located at Farmerville, LA. The cancellation of the VOR/DME–A SIAP serving the Farmerville Airport, which utilizes the Monroe VORTAC, has necessitated this proposal removal. The VOR/DME–A SIAP is the only instrument approach serving the Farmerville Airport. The intended effect of this proposal is to return that controlled airspace no longer required due to the cancellation of the VOR/DME–A SIAP Coincident with this action will be the changing of the status of the Farmerville Airport from IFR to VFR. Section 71.181 of Part 71 of the Federal Aviation Regulations was republished in Handbook 7400.6E dated January 3, 1989.

The FAA has determined that this regulation only involves an established body of technical regulations for which frequent and routine amendments are necessary to keep them operationally current. It, therefore—(1) Is not a "major rule" under Executive Order 12291; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) does not warrant preparation of a regulatory evaluation as the anticipated impact is so minimal. Since this is a routine matter that will only affect air traffic procedures and air navigation, it is certified that this rule, when promulgated, will not have a significant impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 71

Aviation Safety, Transition areas.

The Proposed Amendment

Accordingly, pursuant to the authority delegated to me, the FAA proposes to amend Part 71 of the Federal Aviation Regulations (14 CFR Part 71) as follows:

PART 71—DESIGNATION OF FEDERAL AIRWAYS, AREA LOW ROUTES, CONTROLLED AIRSPACE, AND REPORTING POINTS

1. The authority citation for Part 71 continues to read as follows:

Authority: 49 U.S.C. 1348(a), 1354(a), 1510; Executive Order 10854; 49 U.S.C. 106(g) (Revised Pub. L. 97–449, January 12, 1983); 14 CFR 11.69.

§ 71.181 [Amended]

2. Section 71.181 is amended as follows:

Farmerville, LA [Removed]

Issued in Fort Worth, TX, on June 19, 1989.

Larry L. Craig,

Manager, Air Traffic Division, Southwest Region.

[FR Doc. 89–16220 Filed 7–10–89; 8:45 am]

BILLING CODE 4910–13–M

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14 CFR Part 71

[Airspace Docket No. 89–ASW–09]

Proposed Revision of Transition Area: Killeen, TX

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking.

SUMMARY: This notice proposes to revise the transition area located at Killeen, TX. The development of a new VOR/DME RWY 15 standard instrument approach procedure (SIAP) to the Robert Gray Army Airfield (AAF), utilizing the Gray Very High Frequency Omindirectional Range (VOR), has made this proposed revision necessary. The intended effect of this proposal is to provide adequate controlled airspace for aircraft executing this new SIAP

DATES: Comments must be received on or before August 7 1989.

ADDRESSES: Send comments on the proposal in triplicate to: Manager, Airspace and Procedures Branch, Air Traffic Division, Southwest Region, Docket No. 89–ASW–09, Department of Transportation, Federal Aviation Administration, Fort Worth, TX 76193–0530.

The official docket may be examined in the Office of the Regional Counsel, Southwest Region, Federal Aviation Administration, 4400 Blue Mound Road, Fort Worth, TX.

FOR FURTHER INFORMATION CONTACT: Bruce C. Beard, Airspace and Procedures Branch, Department of Transportation, Federal Aviation Administration, Fort Worth, TX 76193–0530; telephone: (817) 624–5561.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested parties are invited to participate in this proposed rulemaking by submitting such written data, views, or arguments as they may desire. Comments that provide the factual basis supporting the views and suggestions presented are particularly helpful in developing reasoned regulatory decisions on the proposal. Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the proposal. Communications should identify the airspace docket and be submitted in triplicate to the address listed above. Commenters wishing the FAA to acknowledge receipt of their comments on this notice must submit with those comments a self-addressed, stamped postcard on which the following statement is made: "Comments to Airspace Docket No. 89–ASW–09. The postcard will be date/time stamped and returned to the commenter. All communications received before the specified closing date for comments will be considered before taking action on the proposed rule. The proposal contained in this notice may be changed in the light of comments received. All comments submitted will be available for examination in the Office of the Regional Counsel, 4400 Blue Mound Road, Fort Worth, TX, both before and after the closing date for comments. A report summarizing each substantive public contact with FAA personnel concerned with this rulemaking will be filed in the docket.

Availability of NPRM'S

Any person may obtain a copy of this notice of proposed rulemaking (NPRM) by submitting a request to the Manager, Airspace and Procedures Branch, Department of Transportation, Federal Aviation Administration, Fort Worth, TX 76193–0530. Communications must identify the notice number of this NPRM. Persons interested in being placed on a mailing list for future NPRM's should also request a copy of Advisory Circular No. 11–2A which describes the application procedure.

The Proposal

The FAA is considering an amendment to Section 71.181 of the Federal Aviation Regulations (14 CFR Part 71) by revising the transition area located at Killeen, TX. The development of a new VOR/DME RWY 15 SIAP to the Robert Gray AAF has necessitated this proposed revision. This proposed revision would add a 5-mile long, 4-mile wide arrival extension to the north of the airport. The existing 6.5-mile transition area around the Robert Gray AFF will remain unchanged. The intended effect of this proposed revision is to provide adequate controlled airspace for executing the new SIAP

Section 71.181 of Part 71 of the Federal Aviation Regulations was republished in Handbok 7400.6E dated January 3, 1989.

The FAA has determined that this regulation only involves an established body of technical regulations for which frequent and routine amendments are necessary to keep them operationally current. It, therefore—(1) Is not a "major rule" under Executive Order 12291; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) does not warrant preparation of a regulatory evaluation as the anticipated impact is so minimal. Since this is a routine matter that will only affect air traffic procedures and air navigation, it is certified that this rule, when promulgated, will not have a significant impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 71

Aviation safety, Transition areas.

The Proposed Amendment

PART 71—[AMENDED]

Accordingly, pursuant to the authority delegated to me, the FAA proposes to amend Part 71 of the Federal Aviation Regulations (14 CFR Part 71) as follows:

PART 71—DESIGNATION OF FEDERAL AIRWAYS, AREA LOW ROUTES, CONTROLLED AIRSPACE, AND REPORTING POINTS

1. The authority citation for Part 71 continues to read as follows:

Authority: 49 U.S.C. 1348(a), 1354(a), 1510; Executive Order 10854; 49 U.S.C. 106(g) (Revised Pub. L. 97–449, January 12, 1983); 14 CFR 11.69.

§ 71.181 [Amended]

2. Section 71.181 is amended as follows:

Killeen, TX [Amended]

By adding to the end of the legal description: "and within 2 miles each side of the 339° radial of the Gray VOR (latitude 31°01'58"N., longitude 97°48'49"W.), extending from the 6.5-mile radius area to 11.5 miles north of the Robert Gray AAF "

Issued in Fort Worth, TX on June 19, 1989.

Larry L. Craig,

Manager, Air Traffic Division, Southwest Region.

[FR Doc. 89–16221 Filed 7–10–89; 8:45 am]

BILLING CODE 4910–13–M

Federal Highway Administration

23 CFR Part 658

[FHWA Docket No. 86-5, Notice No. 3]

RIN 2125—AB48

Truck Size and Weight; Specialized Equipment

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Withdrawal of advance notice of proposed rulemaking..

SUMMARY: The FHWA is withdrawing an advance notice of proposed rulemaking (ANPRM) concerning the designation of the maxi-cube design, a particular combination of vehicles, as specialized equipment under Section 411(d) of the Surface Transportation Assistance Act (STAA) of 1982. This action is being taken based on comments received and legislative changes discussed below.

EFFECTIVE DATE: This withdrawal is effective on July 11, 1989.

FOR FURTHER INFORMATION CONTACT: Mr. Max Pieper, Office of Motor Carrier Information Management and Analysis (202) 366–4029, or Mr. David C. Oliver, Office of the Chief Counsel (202) 366–1356, Federal Highway Administration, 400 Seventh Street, SW Washington, DC 20590. Office hours are from 7:45 a.m. to 4:15 p.m., ET, Monday through Friday, except legal holidays.

SUPPLEMENTARY INFORMATION: A manufacturer, LHT Industries, has petitioned the FHWA to designate either of two proposed alternate vehicle combinations, called maxi-cube, as specialized equipment under section 11(d) of the STAA of 1982 (Pub. L. 97–424, 96 Stat. 2097 2160). This section permits the Secretary of Transportation to establish length and width rules for the operation of specialized equipment on the National Network of highways, thereby preempting State dimensional rules for such vehicles.

On December 27 1985 (50 FR 52940), the FHWA published an advance notice of proposed rulemaking (ANPRM) requesting comments from the public on the proposed designation of the petitioner's maxi-cube vehicle as specialized equipment. It consisted of a three-axle shortcab truck designed to carry a removable 24-foot, 2-inch cargo box and tow a 28-foot, 5-inch or 33-foot, 5-inch tandem axle semitrailer connected by a drawbar and single pintle hook hitch. The cargo box can be raised by means of jacks at each corner, enabling the power unit to drive out from under it. The comment period (FHWA Docket No. 86–5) closed on February 10, 1986..

On February 28, 1986 (51 FR 7085) the FHWA published a supplemental ANPRM requesting comments on an alternate design for the maxi-cube combination. It differs principally in that a two-axle truck (truck tractor) is utilized rather than a three-axle power unit and the front cargo box (semitrailer) is equipped with a single axle rather than no axles. The cargo unit is mounted on the power unit in such a manner that its axle appears to be in tandem with the rear axle of the power unit. They are connected by a kingpin and fifth wheel assembly in front and by coupling pins in the rear but there is no articulation. The intent of this design is for the power unit to be able to leave both cargo units much the same as a typical truck tractor leaves a semitrailer. The comment period (Docket No. 86–5, Notice No. 2) closed on March 17 1996.

In response to these ANPRMs, thirty-seven commenters supported and 22 opposed the designation of the maxi-cube vehicle combination as specialized equipment.

Federal Legislation

Section 302(1) of the Act Making Continuing Appropriations for the Fiscal Year 1987 (Pub. L. 99–591, 100 Stat. 3341–308) incorporated by reference Section 324 of HR 5205 and purported to amend the STAA of 1982 to authorize the maxi-cube vehicle to operate on the National Network in the same way as other vehicles authorized by the STAA.

Section 324 of HR 5205 defined the vehicle as a truck-tractor combined with a semitrailer and a separable cargo unit designed to be loaded and unloaded through the semitrailer. The entire combination is not to exceed 65 feet in length. The section further states that the separable cargo unit is not to exceed 34 feet in length.

Determination

As Section 324 of HR 5205 describes a maxi-cube vehicle by name that is significantly different from either alternate design submitted by the petitioner, we are withdrawing this ANPRM. At such future time as a clarifying statute may be enacted, the FHWA may reconsider and establish implementing regulations.

A regulatory information number (RIN) is assigned to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. The RIN number contained in the heading of this document can be used to cross reference this action with the Unified Agenda. (Catalog of Federal Domestic Assistance Program Number 20.205, Highway Planning and Construction). The regulations implementing Executive Order 12372 regarding intergovernmental consultations on Federal programs and activities apply to this program.

Authority: 23 U.S.C. 315; 49 U.S.C. 2311(d); 49 CFR 1.48

List of Subjects in 23 CFR Part 658

Grant programs—transportation, Highway and roads, Motor carriers—size and weight.

Issued on: June 30, 1989.

R.D. Morgan,

Executive Director.

[FR Doc. 89-16259 Filed 7-10-89; 8:45 am]

BILLING CODE 4910-11-M

DEPARTMENT OF THE TREASURY

Internal Revenue Service

26 CFR Part 1

[PS-217-84]

RIN 1545-AH49

Golden Parachute Payments; correction

AGENCY: Internal Revenue Service, Treasury.

ACTION: Correction to notice of proposed rulemaking.

SUMMARY: This document contains a correction to the **Federal Register** publication for Friday, May 5, 1989, at 54 FR 19390 of the notice of proposed rulemaking. The proposed rules relate to golden parachute payments.

FOR FURTHER INFORMATION CONTACT: Stuart Wessler, (202) 566-6016, or Robert Misner, (202) 566-4752 (not toll-free numbers).

SUPPLEMENTARY INFORMATION:

Background

The notice of proposed rulemaking that is the subject of this correction contains proposed amendments to the Income Tax Regulations (26 CFR Part 1) under section 280G of the Internal Revenue Code of 1986.

Need for Correction

As published, the notice of proposed rulemaking contains an error which may prove to be misleading and is in need of correction.

Correction

Accordingly, the publication of the proposed rule which was the subject of FR Doc. 89-10603, is corrected as follows:

PART 1—[AMENDED]

Paragraph 1. In § 1.280G-1, A-32, page 19403, third column, line eleven, the language "determined. See Q/As 24 and 35. is removed and the language "determined. See Q/As 24 and 31. is added in its place.

Dale D. Goode,

Chief, Regulations Unit, Assistant Chief Counsel, (Corporate).

[FR Doc. 89-16256 Filed 7-10-89; 12:53 pm]

BILLING CODE 4830-01-M

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

Approval and Promulgation of Implementation Plans; California State Implementation Plan Revision Kern County Air Pollution Control District

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of proposed rulemaking.

SUMMARY: The Environmental Protection Agency (EPA) is proposing to disapprove a volatile organic compound (VOC) rule submitted on October 14, 1988, by the California Air Resources Board (CARB) as a revision to the California State Implementation Plan (SIP). The rule regulates polystyrene foam manufacturing in the Kern County Air Pollution Control Disrict (APCD).

Section 110(a)(2)(A) and 172(a)(1) of the CAA, 40 CFR 51.110, and EPA policy require that SIPs provide for the attainment of the National Ambient Air Quality Standards (NAAQS) "as expeditiously as practicable. Section 110(a)(3)(B) of the CAA, 40 CFR 51.104 extend the SIP requirements in section 110 and 40 CFR Part 51 to SIP revisions. The revision to Kern County Rule 414.4 represents a weakening of SIP requirements in that it will permit increased VOC emissions by extending the compliance date. The State has failed to demonstrate that this SIP revision will provide for the attainment and maintenance of NAAQS as expeditiously as practicable.

In addition to not meeting the CAA requirements listed above, amended Kern County Rule 414.4 is inconsistent with EPA policy. The rule lacks a test method, the compliance period is not specified, and there are no recordkeeping requirements. The incorporation of non-specific guidelines for the design of the collection system is also inconsistent with EPA policy. As a result of this disapproval, the original version of Rule 414.4 will remain a part of the Federally approved SIP

EFFECTIVE DATE: Comments will be considered by EPA if they are submitted on or before August 10, 1989.

ADDRESSES: Please address any comments to: Colleen McKaughan, Environmental Protection Agency, Region 9, 215 Fremont Street, San Francisco, CA 94105. Attn: State Implementation Plan Section (A-2-3), Air and Toxics Division.

Copies of EPA's Technical Evaluation Report and the submitted revision are available for public inspection during normal business hours at the EPA Region 9 office. The submitted revision can also be reviewed at the California Air Resources Board and the appropriate Air Pollution Control Districts listed below.

EPA Library, Public Information References Unit, Environmental Protection Agency, 401 M Street, SW Washington, DC 20460

California Air Resources Board, Stationary Source Division, Industrial Section, 1025 P Street, Room 210, Sacramento, CA 95812

Kern County Air Pollution Control Agency, 2700 M Street, Suite 275, Bakersfield, CA 93301

FOR FURTHER INFORMATION CONTACT: Ginger Vagenas, State Implementation Plan Section (A-2-3), Air and Toxics Division, Environmental Protection Agency, 215 Fremont Street, San Francisco, CA 94105, (415) 974-8066; FTS 454-8066.

SUPPLEMENTARY INFORMATION:

A. Background

1. Kern County Ozone SIP

EPA has proposed to disapprove Kern County's Ozone Plan (52 FR 26428) since it failed to provide for attainment of the ozone NAAQS by December 31, 1987 or a fixed near-term date thereafter. As a nonattainment area, Kern County is subject to the requirements of Part D of the CAA and EPA policy that pertains to post-87 nonattainment areas. The following is a summary of the history of Kern County's ozone SIP For a more complete background, see 52 FR 26428, July 14, 1987

On March 3, 1978, EPA promulgated a list of nonattainment areas that included Kern County as a nonattainment area for the ozone NAAQS (43 FR 8962). On October 12, 1979, CARB submitted to

EPA an ozone control plan for Kern County that purported to show attainment of the ozone standard by December 31, 1982, and to satisfy the requirements of Part D of the CAA.

On August 21, 1981, EPA published a notice of final rulemaking conditionally approving the 1979 Kern County Ozone Plan, with the stipulation that the emissions inventory and emission reduction estimates be corrected and that a revised control strategy reflecting the corrections be submitted to EPA by October 1, 1981 (46 FR 42450). CARB did not meet this deadline.

Kern County did not attain the ozone standard by the statutory date of December 31, 1982. Subsequently, EPA supplemented the conditions described above with a notice of SIP deficiency under section 110(a)(2)(H), and thereby issued a call for a SIP revision. The State was required to submit a revised ozone attainment demonstration to EPA, showing attainment of the ozone standard by the statutory deadline of December 31, 1987

On July 14, 1987 (52 FR 26428), EPA published a notice proposing disapproval of the attainment and RFP (reasonable further progress) demonstration portion of the 1979 SIP because it failed to provide for attainment of the ozone NAAQS by December 31, 1987 or a fixed near-term date thereafter. In doing so, EPA also proposed to rescind its prior conditional finding that the 1979 Plan satisfied Part D of the CAA. This action was taken because the condition of approval on the 1979 Kern County Ozone Plan, regarding the attainment demonstration, had not been met.

Kern County again failed to attain the standard by the statutory deadline on May 26, 1988. EPA issued a finding that the SIP is substantially inadequate to attain or maintain the NAAQS. In addition, the State failed to fulfill certain conditions in the SIP Under these circumstances, EPA does not consider Kern County to have an approved ozone plan (see 53 FR 45104, November 8, 1988).

2. Kern County Rule 414.4

CARB first submitted Kern County Rule 414.4 Polystyrene Foam Manufacturing, to EPA on July 30, 1981. EPA approved this version for inclusion in the California SIP on October 11, 1983 (48 FR 46046). The rule requires that any person operating any equipment for the storage and extrusion of recycled polystyrene foam or the storage of blowing agents containing VOCs, either reduce emissions by at least 95% by weight, use a non-VOC compound, or control emissions by a method equivalent in emissions control to the first two options.

On November 18, 1985, the Kern County Air Pollution Control Board rescinded Rule 414.4. The Board then transmitted its action to CARB as a proposed revision to the SIP CARB determined that the rescission of Rule 414.4 would constitute a relaxation of the SIP and informed Kern County's Air Pollution Control Officer (APCO) on May 15, 1986, that it would not be submitting the rescission of Rule 414.4 to EPA as a SIP revision.

On July 11, 1988, the Kern County Air Pollution Control Board adopted a new version on Rule 414.4. CARB forwarded it to EPA as a SIP revision on October 14, 1988. EPA requested additional information from the Kern County APCD through CARB. On February 13, 1989, EPA deemed the submittal complete and began evaluation of the proposed SIP revision. Because the November 18, 1985, rescission was not forwarded to EPA, the original version of Rule 414.4 remains part of the federally approved SIP The submittal of the revised version of 414.4 is therefore being evaluated as a rule revision, rather than a new rule submittal.

B. EPA Evaluation

The revision of Rule 414.4 incorporates several changes to the original version, some of which are inconsistent with the Clean Air Act and EPA policy. These changes, and other deficiencies that EPA has identified, are divided into three categories and discussed below.

1. Compliance Date Extension

Among the proposed revisions to Rule 414.4 is a change in the compliance date from December 31, 1982, to December 31, 1988. This revision, if approved by EPA, would effectively grant the source a six year extension on the compliance deadline. EPA has a policy of approving compliance date extensions, but only under certain circumstances. A detailed discussion of EPA policy regarding compliance date extensions is found in Appendix A of 53 FR 45103 (November 8, 1988). Appendix A provides:

> A SIP revision seeking a compliance date extension amounts to a relaxation of the SIP requirements because the company would be permitted to emit greater amounts of pollutants for a longer period. EPA may approve the SIP revision only if the state shows the greater amounts of pollution will not interfere with attainment and maintenance of the NAAQS by the required date, and with RFP [1] in the interim. The State cannot make this showing if it has not submitted an approvable attainment demonstration identifying the attainment date and the RFP line. Accordingly, EPA cannot approve a compliance date extension in an area locking an approved attainment demonstration.

In summary, when extending a compliance date, the State must demonstrate that the action does not or did not interfere with the attainment and maintenance of the NAAQS as expeditiously as practicable, but in no case later than the statutory attainment date (December 31, 1987). The compliance date in this case (December 31, 1988), goes beyond the statutory deadline. In addition, Kern County lacks an approved attainment demonstration which precludes EPA's approval of a compliance date extension.

2. Technical Deficiencies

The revised version of Rule 414.4 adds an exemption for stationary tanks, reservoirs and containers that hold or store VOC blowing agents and have a capacity of 200 gallons or less. This change weakens the SIP by relaxing the requirements of the rule and could result in increased emissions. Adequate technical information that would justify the relaxation of control requirements has not been submitted to the EPA.

3. Enforceability/Legal Sufficiency Issues

In addition to relaxing the federally approved version of Kern County Rule 414.4 as discussed above, the amended version does not comply with EPA policy. EPA has identified certain key provisions (enforceability criteria) that are required in SIPs to ensure enforceability and legal sufficiency. See "Review of SIPs and Revisions for Enforceability and Legal Sufficiency" policy memorandum, Michael S. Alushin, Associate Enforcement Counsel for Air Enforcement, *et al.*, to Regional Offices, September 23, 1987 In addition, in Appendix D of "State Implementation Plans; Approval of Post-1987 Ozone and Carbon Monoxide Plan Revisions for Areas Not Attaining the National Ambient Air Quality Standards" (52 FR 45044, November 24, 1987), EPA affirmed the importance of enforceability criteria to rule effectiveness and summarized common inconsistencies and discrepancies from EPA policy found in current SIPs. Finally, on May 25, 1988,

[1] "Reasonable further progress" (RFP) is defined (in the Clean Air Act) as—annual incremental reductions in emissions of the applicable air pollutant (including substantial reductions in the early years following approval or promulgation of plan provisions and regular reductions thereafter) which are sufficient in the judgment of the Administrator, to provide for attainment of the applicable national ambient air quality standard by the date required 42 U.S.C. 7501(1).

EPA's Office of Air Quality Planning and Standards issued "Issues Relating to VOC Regulation Cutpoints, Deficiencies, and Deviations." This document provided additional clarification to the deficiencies cited in Appendix D (52 FR 45044).

Kern County Rule 414.4 contains some of the deficiencies noted in the documents cited above. The rule does not specify a test method or compliance period, and it lacks recordkeeping requirements. Without these provisions, it is impossible to determine if the source is in compliance with the rule. Both EPA and CARB noted these deficiencies in comments provided to the Kern County APCD during the rule development stage.

It is EPA's policy that "regulation(s) must be sufficiently specific so that a source is fairly on notice as to the standard it must meet" (see the September 23, 1987 policy memo cited above). Revised Rule 414.4 requires that the collection system must be "designed to meet American Conference of Industrial Hygienists Guidelines and Sheet Metal and Air Conditioning Contractors National Association Guidelines." The Sheet Metal and Air Conditioning National Association has published several sets of guidelines, some of which have multiple editions. The American Conference of Industrial Hygienists has published twenty editions of their industrial ventilation manual. It is unclear which of these guidelines must be followed. The inclusion of these ill-defined standards in Rule 414.4 is inconsistent with EPA policy.

EPA Proposed Action

Under section 110 and Part D of the CAA, EPA is proposing to disapprove amended Kern County Rule 414.4 because it weakens the existing California SIP and is inconsistent with the CAA, 40 CFR Part 51, and EPA policy.

Regulatory Process

Under 5 U.S.C. 605(b), I certify that this SIP revision will not have a significant economic impact on a substantial number of small entities. (See 46 FR 8709.) This action does not subject the source to a new rule. It retains a 1983 EPA approved rule in its entirety.

This action has been classified as a Table 2 action by the Regional Administrator under procedures published in the **Federal Register** on January 19, 1989 (54 FR 2214–2225). On January 6, 1989, the Office of Management and Budget waived Table 2 and Table 3 SIP revisions (52 FR 2222) from the requirements of Section 3 of Executive order 12291 for a period of two years.

List of Subjects in 40 CFR Part 52

Air pollution control, Hydrocarbons, Incorporation by reference, Intergovernmental relations, Ozone.

Authority: 42 U.S.C. 7401–7642.

Date: June 22, 1989.

Daniel W. McGovern,

Regional Administrator.

[FR Doc. 89-16210 Filed 7-10-89; 8:45 am]

BILLING CODE 6560-50-M

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40 CFR Part 52

[FRL-3613-3]

Approval and Promulgation of Implementation Plans; Illinois, Indiana, and Wisconsin

AGENCY: United States Environmental Protection Agency (USEPA).

ACTION: Advance notice of proposed rulemaking.

SUMMARY: USEPA is today giving advance notice of the first three elements in a Federal implementation plan (FIP) which USEPA is currently developing. This plan is being designed to assure the attainment and maintenance of the National Ambient Air Quality Standard (NAAQS) for ozone in the Chicago area. This planning area covers portions of northeastern Illinois, northwestern Indiana, and southeastern Wisconsin.

This notice solicits comment on: (1) The emissions inventory for the area, (2) the Empirical Kinetics Modeling Approach (EKMA) dispersion modeling analysis, and (3) the required degree of emission reduction. The inventory, modeling, and percent emission reduction are the only elements in the development of this plan that are presently being published for comment; the control measures that would be implemented under the FIP will be proposed in a future **Federal Register** notice.

DATE: Comments on the three elements described in this notice for use in the Chicago FIP must be received by August 10, 1989.

ADDRESS: Comments on the three elements should be addressed to: (Please submit an original and three copies, if possible.) Gary Gulezian, Chief, Regulatory Analysis Section, Air and Radiation Branch (5AR-26), U.S. Environmental Protection Agency, Region V 230 South Dearborn Street, Chicago, Illinois 60604.

Docket: Docket No. 5A-89-1, containing the complete documentation supporting the emissions inventories and dispersion modeling results, is available for public inspection and copying at the following addresses. (It is recommended that you telephone Randolph O. Cano at (312) 886-6036 before visiting the Region V office.) A reasonable fee may be charged for copies.

U.S. Environmental Protection Agency, Region V Air and Radiation Branch, 230 South Dearborn Street, Chicago, Illinois 60604.

U.S. Environmental Protection Agency, Docket No. 5A-89-1, Air Docket (LE-131), Room M1500, Waterside Mall, 401 M Street, SW Washington, DC 20460.

A file on the emissions inventories, dispersion modeling and the results can be seen at the following locations:

Illinois Environmental Protection Agency, Division of Air Pollution Control, 2200 Churchill Road, Springfield, Illinois 62706.

Office of Air Management, Indiana Department of Environmental Management, 105 South Meridian Street, P.O. Box 6015, Indianapolis, Indiana 46206-6015.

Wisconsin Department of Natural Resources, Bureau of Air Management, 101 South Webster, Madison, Wisconsin 53707

FOR FURTHER INFORMATION CONTACT: Randolph O. Cano, Air and Radiation Branch (5AR-26), U.S. Environmental Protection Agency, Region V 230 South Dearborn Street, Chicago, Illinois 60604, (312) 886-6036.

SUPPLEMENTARY INFORMATION:

Background

The Clean Air Act (Act), 42 U.S.C. 7401 et seq., establishes in Section 110 the State Implementation Plan (SIP) as the mechanism for attaining and maintaining the various National Ambient Air Quality Standards (NAAQS). Section 110(a)(1) directs each State to submit a SIP within 9 months after an applicable NAAQS is promulgated. When Congress amended the Act in 1977 it created a new Part D, which required a new planning process to revise the SIPs for areas that were exceeding the NAAQS.

Congress enacted Section 110(c) in 1970 as the sole means of ensuring that its goal of clean air was not frustrated in the event a State defaulted on its planning obligations. If a State fails to submit a SIP which meets (or is determined by the Administrator to not be in accordance with) the requirements of Section 110, then Section 110(c)(1) provides that the USEPA Administrator may prepare, propose, and promulgate regulations setting forth an implementation plan. Congress included new sanctions when it enacted Part D in 1977 which included a ban on the construction or modification of major stationary emission sources in nonattainment areas for which a Part D plan has not been approved. The intent was clearly to induce State and local governments to fulfill their obligation to develop plans assuring the attainment and maintenance of the NAAQS, and, thus, minimize the Federal role in the attainment planning process.

Chicago Area Part D Ozone Plans

Under Section 107 of the Act, USEPA designated certain areas in Illinois and Indiana as not attaining the NAAQS (nonattainment area) for ozone. See 43 FR 8962 (March 3, 1978), and 43 FR 45993 (October 5, 1978). For these areas, Part D of the Act required that each of these States revise its SIP to provide for attaining the primary NAAQS by December 31, 1982. However, for ozone, if a State determined that it could not attain the NAAQS by that date, despite the adoption of all reasonably available measures, the State could request and USEPA could approve an extension of this attainment date of up to December 31, 1987 Under these circumstances, each State was required to submit by July 1, 1982, a plan (1982 ozone plan) which assured the attainment and maintenance of the ozone NAAQS by no later than December 31, 1987 [1] Illinois and Indiana submitted extension requests for Northeast Illinois and Northwest Indiana, respectively, and, thus, were required to submit 1982 ozone plans for these areas.

Illinois submitted a draft 1982 ozone plan on June 30, 1982. On February 3, 1983, (48 FR 5110), USEPA proposed to disapprove the State's plan. In response to USEPA's proposed disapproval, the State submitted numerous corrections to its draft plan intending to remedy the draft plan's deficiencies identified by USEPA. On July 14, 1987 USEPA again proposed to disapprove the Illinois plan. By this time it had become apparent that all controls required by the Clean Air Act would not be adopted and implemented in time to attain the ozone NAAQS by the December 31, 1987 statutory deadline or shortly thereafter, and that the Chicago area would not attain the ozone NAAQS by the same date. On October 17 1988 (53 FR 40415), USEPA disapproved Illinois' most recent 1982 ozone plan for the Chicago area.

A similar sequence of events occurred in Indiana. Indiana submitted a deficient draft 1982 ozone plan on September 2, 1982, followed by numerous revisions intended to remove the deficiencies. USEPA proposed action on these plans several times and ultimately disapproved Indiana's most recent 1982 ozone plan on November 18, 1988, (53 FR 46608).

Wisconsin v Reilly

In April 1987 the State of Wisconsin filed a suit under Section 304 of the Act in the United States District Court for the Eastern District of Wisconsin against Lee M. Thomas, then USEPA Administrator (Civil Action No. 87-C-395).[2] Two counts of the complaint alleged that USEPA had failed to perform a non-discretionary duty to approve or disapprove the greater Chicago area ozone SIPs of Illinois and Indiana. Two other counts requested the Court to order USEPA to develop a FIP for the northeastern Illinois and northwestern Indiana portions of the Chicago-Gary-Lake County (IL), IL-IN-WI Consolidated Metropolitan Statistical Area (CMSA) within 6 months. The complaint also sought an injunction compelling USEPA to impose and enforce a moratorium on the construction and modification of major stationary sources in the Illinois and Indiana portions of the CMSA. While the litigation was in progress, USEPA published final disapprovals of the ozone SIP for Illinois on October 17 1988, and for Indiana on November 18, 1988.

The court, on January 18, 1989, ordered USEPA to develop a FIP within 14 months. Thus, USEPA is preparing a FIP on a schedule to meet the court's deadline, March 18, 1990. The first two significant steps in this effort are the development of an emission inventory for the area and the modeling of the area to determine the level of emission reductions needed to achieve the ozone NAAQS.

Emissions Inventory and Modeling

In preparing an up-to-date emissions inventory for the Chicago area, and in performing the ozone modeling analyses, USEPA has generally followed the Agency's proposed post-1987 policy for attainment of the ozone NAAQS and related guidance documents. (See the November 24, 1987 **Federal Register** [52 FR 45044]). Although most of this proposed policy addresses the requirements that SIPs must satisfy in order to lead to expeditious attainment of the standards, much of the guidance for developing acceptable SIPs also applies equally well to the development of a FIP Due to the court ordered 14-month schedule, the Agency was not able to wait until it issued a final post-1987 ozone policy before proceeding with the Chicago area FIP Reliance on the proposed guidance here to develop the technical data bases for the Chicago FIP does not affect USEPA's determination as to what may be included in the final post-1987 ozone policy.

One way in which USEPA has relied upon the proposed post-1987 ozone policy is in the geographic scope of the area for which emission inventories were gathered and the EKMA modeling conducted. Immediately following the enactment of Part D in 1977 States typically were required to tabulate such information only for areas that were designated nonattainment. In the post-1987 policy proposal, however, USEPA recognized the shortcomings of this approach. The proposal noted that a CMSA or MSA (Metropolitan Statistical Area) by definition contains a large urban center together with adjacent communities that have a high degree of social and economic integration. Since many people live in the surrounding communities and commute into the urban core by automobile, suburban vehicles generally are responsible for significant ozone precursor emissions. Thus, the Agency proposed that where an ozone SIP was deficient, it would require all counties within the MSA or CMSA to be included in the planning area (52 FR 45055).

The Chicago-Gary-Lake County (IL), IL-IN-WI CMSA contains the following counties: Cook DuPage, Grundy, Kane, Kendall, Lake, McHenry, and Will Counties in Illinois [3] Lake and Porter

[1] The requirements for an approvable SIP are described in a "General Preamble" for Part D rulemaking published at 44 FR 20372 (April 4, 1979), and four additional notices: 44 FR 38583 (July 2, 1979), 44 FR 50371 (August 28, 1979), 44 FR 53761 (September 17, 1979), and 44 FR 67182 (November 23, 1979). Guidance on 1982 ozone SIPs was given at 46 FR 7182 (January 22, 1981).

[2] Subsequent to William K. Reilly assuming the duties of Administrator of the USEPA, William K. Reilly was substituted as named defendant for Lee Thomas.

[3] When USEPA notified the Governor of Illinois on Mary 26, 1988 that the State's ozone SIP was substantially inadequate to attain the standard, it noted that the finding of SIP inadequacy applied to the SIP for all these counties. Similarly, when USEPA proposed to redesignate certain areas as nonattainment pursuant to the Mitchell-Conte Amendment of December 22, 1987 (contained in the Budget Reconciliation Act of 1987, Pub. L. 100-202), it proposed to redesignate all these Illinois counties as nonattainment for ozone (53 FR 20727, 20729, June 6, 1988).

Counties in Indiana; and Kenosha County in Wisconsin. Thus, emission inventories have been gathered in and EKMA modeling conducted for all these eleven counties.[4] In addition, USEPA has included Racine County, Wisconsin for these purposes, because it is downwind from the CMSA and USEPA believes that ozone precursor emissions from the counties in the CMSA contribute to the ozone nonattainment problem in Racine County.

Emissions Inventory

In order for an effective ozone control strategy to be developed, accurate information must be compiled on the significant sources of ozone precursor emissions in and near the nonattainment area. The emissions inventory is used for several functions: (a) As input data for the modeling, (b) in conjunction with the model output to quantify the emission level needed to attain the NAAQS, (c) in the control strategy evaluation and development, and (d) as a basis for tracking progress toward attainment. The proposed control strategy will be set forth in a future rulemaking notice. However, USEPA hopes that these critical uses of the inventory will prompt careful public review and comment. The benefits of an accurate inventory include enhanced confidence in the data, better representation of model input data, and more reliable control measure evaluations and emissions tracking.

USEPA has developed inventories of volatile organic compounds (VOC)[5] oxides of nitrogen (NO_x), and carbon monoxide (CO) emissions from point, area, and Racine County, WI, which is adjacent to and predominantly downwind of the CMSA and has been experiencing exceedances of the ozone NAAQS. CO is included in the emission inventory because recent smog chamber studies indicate that CO plays a small, but quantifiable, role in ozone formation chemistry. Procedures outlined in the proposed post-1987 ozone policy and in the document, *Emission Inventory Requirements for Post-1987 Ozone State Implementation Plans*, EPA-450/4-88-019, December 1988, were followed to the extent possible under the time constraints of the schedule. The baseline emissions inventory was prepared for a base year of 1988. Projected future year inventories have also been developed.

Point sources have been defined in the inventory to include facilities with actual emissions of 10 tons per year (TPY) or greater of VOC, or 100 TPY or greater of NO_x or CO. In addition, major stationary sources that emit 100 TPY or greater of any of these three pollutants and are located outside, but within 25 miles, of the demonstration area boundary have been included in the inventory. (This border area does not extend north of Racine County to avoid including another Primary Metropolitan Statistical Area, Milwaukee.) Data for the point source base year inventory were provided to USEPA by each State air agency, and consist generally of information that the States have been collecting for their own control program and SIP purposes. The States updated their existing information in early 1989 through survey questionnaires sent to facilities and through recent site inspection reports. USEPA, with contractor assistance, took the States' data and performed detailed consistency and quality assurance work, as part of the development of a single data base.

All significant emission sources, other than mobile sources, that emit less than the threshold for point sources are grouped together by category and included in the area source inventory. This inventory concentrates primarily on small combustion sources, such as boilers and furnaces; evaporative loss sources, including service stations, dry cleaners, road marking paints, and use of VOC-containing products in the home; and on certain types of other operations that have been unaccounted for in most previous inventories. These new categories include hazardous waste treatment, storage, and disposal facilities (TSDFs), publicly owned waste water treatment works (POTWs), and municipal solid waste landfills. Data for these categories have been collected directly from the State agencies where available, as well as from local planning agencies, reports of county business patterns, census figures, and other specific statistical and summary reports.

Emissions of VOC, NO_x and CO from mobile sources are a very significant part of the total emissions in the Chicago area. USEPA's MOBILE4 model was used to calculate emission factors for eight individual vehicle types: gasoline light-duty vehicles (LDVs), light-duty trucks up to 6000 pounds (LDT1s), light-duty trucks between 6000–8500 pounds (LDT2s), heavy-duty vehicles (HDVs), and motorcycles; and diesel LDVs, LDTs, and HDVs.

MOBILE4 incorporates several advanced features and new test data that differ from previous generations of MOBILE models, including consideration of running evaporative losses, refueling (Stage II) emissions, and effects of variable fuel volatility (RVP). The output from this model consists of emission factors in units of grams per mile for each of the vehicle types. These emission factors were combined with estimates of vehicle miles traveled (VMT) by vehicle type throughout the Chicago area in order to produce the final mobile source inventory.

The emissions inventory has been summarized and is presented in Table 1 for each county in the Chicago demonstration area. The table shows that total VOC emissions are 2666 tons per day (TPD), NO_x emissions are 1948 TPD, and CO emissions are 7249 TPD. The table illustrates the importance of mobile sources to the overall emission totals, with motor vehicles accounting for approximately 44 percent of the VOC, 22 percent of the NO_x, and 78 percent of the CO emissions throughout the area.

A report presenting the proposed inventory, including the complete methodology used to create the inventory, is available for review in the rulemaking docket. The docket also contains the data from which the final inventory figures were derived. USEPA solicits any additional or revised emissions data. Commentors are encouraged to provide any available emissions data with their comments.

In addition, emissions from major stationary sources that emit specified amounts of ozone precursors and are located generally within 25 miles of the CMSA have also been included. See discussion, *infra*.

For the purposes of the Chicago area FIP, the term "volatile organic compound" (VOC) means any organic compound which participates in atmospheric photochemical reactions. This includes any organic compound other than the following compounds: Methane, ethane, methyl chloroform (1,1,1-trichloroethane), CFC–113 (trichlorotrifluoroethane), methylene chloride (dichloromethane), CFC–11 (trichlorofluoromethane), CFC–12 (dichlorodifluoromethane), CFC–22 (chlorodifluoromethane), FC–23 (trifluoromethane), CFC–114 (dichlorotetrafluoroethane), CFR–115 (chloropentafluoroethane), HCFC–123 (dichlorotrifluoroethane), HFC–134a (tetrafluoroethane), HCFC–14b (dichlorofluoroethane) and HCFC–142B (chlorodifluorethane). These compounds have been determined to have negligible photochemical reactivity. For purposes of determining compliance with emission, limits, VOC will be measured by the approved test methods (40 CFR Part 60, Appendix A, Methods 25 and 26). Where such method also inadvertently measures compounds with negligible photochemical reactivity, an owner or operator may exclude these negligibly reactive compounds when determining compliance with an emissions standard.

TABLE 1.—STATE AND COUNTY TOTALS FOR POINT, AREA AND MOBILE EMISSIONS SOURCES OF VOCs, MO_x and CO Within the Twelve-County Area [5]

State and County	Point sources (TPD)			Area sources (TPD)			Mobile sources (TPD)		
	VOC	NO_x	CO	VOC	NO_x	CO	VOC	NO_x	CO
Illinois:									
Cook	255	135	182	358	244	481	690	242	3,270
DuPage	12	5	1	46	32	58	131	44	635
Grundy	106	27	6	12	3	8	10	4	51
Kane	19	2	1	27	16	29	51	16	278
Kendall	3	11	1	4	3	8	8	2	45
Lake	69	89	3	42	21	10	105	33	523
McHenry	6	2	0	13	10	23	32	9	178
Will	49	207	24	40	12	29	58	20	301
Subtotal	568	490	221	542	341	646	1,086	369	5,280
Indiana:									
Lake	240	187	421	52	88	64	27	17	111
Porter	46	168	202	10	37	25	28	18	114
Subtotal	288	503	627	63	125	89	55	35	225
Wisconsin:									
Kenosha	5	55	5	8	5	17	15	7	51
Racine	5	3	2	12	7	24	17	7	62
Subtotal	11	58	7	20	11	42	32	15	113
Total FIP area	866	1,052	855	625	477	776	1,174	419	5,618

Subtotal and total emission values also contain emissions from major stationary sources that emit 100 TPY or greater of any of these three pollutants and are located outside, but within 25 miles, of the demonstration area boundary. (This border area does not extend north of Racine County to avoid including another Primary Metropolitan Statistical Area, Milwaukee.)

Modeling Analysis

A computer air dispersion modeling analysis has been performed for the development of this FIP The modeling estimated ground level ozone concentrations by simulating photochemical reactions, and predicted the precursor emission reductions needed to bring the peak concentrations to the ambient standard. These modeled predictions are an integral part of the development of a control strategy for the Chicago area.

The model being used for the FIP is EKMA, which is an accepted model in USEPA's "Guideline on Air Quality Models (Revised)" July 1987 and in the proposed post-1987 policy for urban-scale demonstrations of attainment. The EKMA modeling was conducted in accordance with USEPA's proposed *Guideline for Use of City-Specific EKMA in Preparing Post-1987 Ozone SIP's.* The *Guideline* breaks down the modeling procedure into five basic steps. These are:

(1) Selecting the observed ozone cases to model,

(2) Formulating the model inputs,

(3) Predicting peak ozone,

(4) Computing VOC emission reductions, and

(5) Selecting VOC emission reduction targets.

In performing the modeling analysis, the five highest daily maximum ozone concentrations at each monitor site in the area were selected as candidates for modeling. As recommended by the *Guideline,* these five highest values were obtained from the most recent 3 years of quality assured data available during which measurements were made at a site, which were 1986, 1987 and 1988. The sites whose fourth highest value was not an exceedance of the standard were eliminated from those to be modeled.

To best accomplish the objectives of the modeling, the model inputs were based on either the day-specific data or the median of the highest concentration days for which complete data were available. However, in some instances, insufficient or inadequate data did not allow such determinations, so approximations or default values were used.

Peak predictions were then compared to observed ozone peaks. In cases where the relative deviation was found to be within ±30 percent, then agreement was judged to be sufficient to proceed with control estimate calculations. In cases where the deviation was greater than ±30 percent, model inputs were reviewed and adjusted as directed by the *Guideline* to obtain agreement within ±30 percent. The EKMA option in OZIPM4 was used to predict the VOC emission reductions needed to reduce the peak ozone concentration to the ambient standard of 0.12 parts per million (ppm). This was calculated on a day-specific and site-specific basis.

A complete report of the modeling methodology and results is contained in the docket and is available for public review. Also available are copies of the guidance documents used in the analysis.

Emission Reduction Target

The ozone NAAQS allow one exceedance per year per site. Therefore, the emission reduction target is the fourth highest value from the 3 years of monitor data. (If a site had only 1 year of data, then the second highest emission reduction is the target value.) Emission reduction targets for all sites studied were determined in this manner. The highest VOC emission reduction target for any one site was selected as the overall reduction target. This target is a VOC emission reduction of 72 percent. USEPA is proposing a single emission reduction target for the Chicago area. USEPA wishes to emphasize that the actual geographic boundaries, over which this target applies, have not yet been determined. Although this issue will be covered in future proposed rulemaking on the control strategy, USEPA invites advance comment on the boundaries of the emission reduction target area.

Public Participation

USEPA is concerned that the public and affected industries be fully informed about this planning process and that they have the opportunity for input and comment. Due to the effect that control measures instituted under a FIP could have on a large cross-section of society, the Agency is encouraging active involvement of those groups and individuals who wish to participate in the rulemaking effort. Comments on today's notice (and on the supporting information in the docket) are being sought and will be considered in promulgating this plan. USEPA will also publish a future Federal Register notice that will propose and solicit comment on USEPA s overall strategy for assuring the attainment and maintenance of the ozone NAAQS in the Chicago area, including any new emission control regulations and measures. USEPA is providing a 30-day comment period on this portion (i.e., the emission inventory and the modeling analyses) of the Chicago area FIP for ozone. The public is requested to comment on the modeling, inventory, and necessary emission reduction in the Chicago FIP as early in the process as possible, due to the very tight schedule for rulemaking. USEPA believes that 30 days is ample time for the public to review and comment on today's advanced notice of proposed rulemaking. If requested, a public hearing will be held on these matters in the future.

List of Subjects in 40 CFR Part 52

Air pollution control, Carbon monoxide, Environmental Protection Agency, Hydrocarbons, Incorporation by reference, Intergovernmental relations, Nitrogen dioxide, Ozone.

Authority: 42 U.S.C. 7401–7642.

Dated: June 16, 1989.

Frank M. Covington,

Regional Administrator.

[FR Doc. 89-16129 Filed 7-10-89; 8:45 am]

BILLING CODE 6560-50-M

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 73

[MM Docket No. 89-15, DA 89-725]

Broadcast Service; License Lotteries

AGENCY: Federal Communications Commission.

ACTION: Proposed rule; extension of comment period.

SUMMARY: This action exends the period for filing reply comments in this proceeding from June 30, 1989, to July 17 1989. The Federal Communications Bar Association requested the extension due to the heavy volume of comments to be reviewed in this proceeding, and to allow its new Executive Committee, which begins a new term on July 1, 1989, an opportunity to consider the issues raised in the proceeding. Because numerous and extensive comments have already been filed in this proceeding, the Commission determined that it would serve the public interest to grant the limited extension of time that had been requested.

DATE: Reply comments are now due on July 17 1989.

ADDRESS: Federal Communications Commission, Washington, DC 20554.

FOR FURTHER INFORMATION CONTACT: Andrew J. Rhodes, Policy and Rules Division, Mass Media Bureau, (202) 632-7792.

Order Granting Motion for Extension of Time for Filing Reply Comments

Adopted: June 27 1989.

Released: June 28, 1989.

By the Chief, Mass Media Bureau:

In the matter of amendment of the Commission's rules to allow the selection from among competing applicants for new AM, FM, and television stations by random selection (lottery).

1. On January 30, 1989, the Commission adopted a *Notice of Proposed Rule Making* ("*Notice*") in the above-captioned proceeding,[1] regarding whether it would serve the public interest to utilize lotteries rather than comparative hearings for selecting among competing applicants for new AM, FM, and television stations. Comments were due on June 8, 1989, and reply comments are currently due on June 30, 1989, pursuant to an *Order* extending the filing deadlines in this proceeding.

2. On June 22, 1989, a motion for extension of time to file reply comments was submitted by the Federal Communications Bar Association ("FCBA"). The motion requests that the deadline for filing reply comments be extended to July 17 1989.

3. The FCBA contends that the requested extension of time is necessary because of the volume of comments filed in this proceeding and the limited time available to review the comments, draft an appropriate pleading, and have such pleading approved by its Executive Committee. In addition, the FCBA states that the terms for new officers and Executive Committee members begins on July 1, 1989, and that the extension would enable its new Executive Committee to consider the important issues raised by this proceeding. Finally, the FCBA contends that the extension should not affect the Commission's consideration of this proceeding since it already has a substantial set of comments to review.

4. As set forth in § 1.46 of the Commission's Rules, it is the policy of the Commission that extensions of time shall not be routinely granted. However, because numerous and extensive comments have already been filed in this proceeding, we believe that it would serve the public interest to grant the limited extension of time requested by the FCBA. We believe that such an extension will not only benefit institutional organizations like the FCBA, which must coordinate the preparation of their reply comments among various committees, but also will give all commenters additional time in which to review the record in this proceeding and to respond to the issues raised. At the same time, because this constitutes the second extension of time granted in this proceeding and parties have already been afforded additional time for the filing of comments and replies, we do not anticipate entertaining any additional time extension requests in this proceeding.

5. Accordingly, *it is ordered* That the motion for extension of time filed by the Federal Communications Bar Association is granted.

6. *It is further ordered* That the time for the filing of reply comments in MM Docket No. 89-15 is hereby extended to July 17 1989.

7 This action is taken pursuant to authority found in sections 4(i), 4(j), and 303(r) of the Communications Act of 1934, as amended, and §§ 0.204(b), 0.283, and 1.45-46 of the Commission's Rules.

Federal Communications Commission.

Alex D. Felker,

Chief, Mass Media Bureau.

[FR Doc. 89-16164 Filed 7-10-89; 8:45 am]

BILLING CODE 6712-01-M

[1] 4 FCC Rcd 2256 (1989), *summarized* at 54 FR 11416 (March 20, 1989).

[2] 4 FCC Rcd 3944 (1989); 54 FR 19578 (May 8, 1989). The *Notice* originally provided that comments and reply comments were due on May 8, 1989, and June 22, 1989, respectively.

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

49 CFR Part 571

Federal Motor Vehicle Safety Standards; Response to Petition for Rulemaking

AGENCY: National Highway Traffic Safety Administration (NHTSA), DOT.

ACTION: Response to petition for rulemaking.

SUMMARY: NHTSA received two petitions for rulemaking requesting issuance of standards for brake linings, one from the American Trucking Associations (ATA) and the other from a private individual, Mr. Ralph Grabowsky. In March 1989, NHTSA granted the ATA petition and partially granted and partially denied Mr. Grabowsky's petition. This notice sets forth the reasons for the partial denial of that petition.

FOR FURTHER INFORMATION CONTACT: Mr. Vernon Bloom, Office of Vehicle Safety Standards, National Highway

Traffic Safety Administration, 400 Seventh Street, SW Washington, DC 20590 (202-366-5277).

SUPPLEMENTARY INFORMATION: NHTSA received two petitions for rulemaking requesting issuance of standards for brake linings. The American Trucking Associations (ATA) petitioned for a standard that would require rating the effectiveness (coefficient of friction) of all heavy truck brake linings, and to have that rating permanently marked on the lining. ATA argued that a standard is needed to enable users to replace brake linings with linings that perform the same as the original linings. ATA stated that the current Society of Automotive Engineers (SAE) rating procedure, which has been adopted in some State laws, rates some lining materials as identical when in fact they exhibit more than a 280-percent difference in brake torque on the same brake assembly under the same test conditions.

The other petition was submitted by a private individual, Mr. Ralph Grabowsky, who petitioned for rulemaking to establish a brake lining standard for motor vehicles and equipment, covering stability, friction, fade, proper identification and wear. (NHTSA understands Mr. Grabowsky's references to "friction" and "proper identification" to correspond to ATA's references to effectiveness rating (coefficient of friction) and permanent marking.) The petitioner stated that NHTSA has had this rulemaking on the back-burner for many years and that it is now time to act. Mr. Grabowsky stated that the results of an aftermarket brake investigation by NHTSA's Office of Defects Investigation activities by SAE indicate an acute need for such a standard. Mr. Grabowsky did not provide any other information to support his petition.

In March 1989, NHTSA granted the ATA petition. The agency indicated that it was planning research investigations in the subject area and that information derived from those investigations would be used to help determine whether a notice of proposed rulemaking would be issued.

NHTSA also granted that portion of Mr. Grabowsky's petition that related to the marking and identification of heavy truck brake linings. The agency stated that it was denying all other portions of the petition, and that a Federal Register notice would be issued setting forth the reasons for the denial. The purpose of this notice is to set forth those reasons.

With respect to Mr. Grabowsky's assertion that the agency has had this rulemaking on the "back-burner" for many years, NHTSA notes that it has considered establishing brake lining requirements in the past. For example, the agency issued an advance notice of proposed rulemaking (ANPRM) in October 1967 which addressed, among other things, performance requirements for brake linings. 32 FR 14278, October 14, 1967 Also, NHTSA's 1978 five-year plan included an entry on aftermarket brake shoes and pads in its section on "Exploratory Rulemakings. However, NHTSA has not had brake lining requirements as part of its rulemaking agenda during the past decade.

NHTSA recognizes that brake lining performance is a critical part of overall brake performance, which in turn is one of the most important aspects of a vehicle's crash avoidance capability. The agency has addressed brake performance in several safety standards, including Standard No. 105, *Hydraulic Brake Systems*, Standard No. 122, *Motorcycle Brake Systems*, and Standard No. 121, *Air Brake Systems*. These standards cover, for new vehicles, a number of the aspects of performance cited by the petitioner. However, the standards do not apply directly to motor vehicle equipment, and thus do not apply to, for example, replacement linings.

NHTSA notes that since particular brake systems are designed to use particular types of brake linings, a lining that is good for one brake system may not be good for another. For example, if a brake system is designed for a lining with a relatively low coefficient of friction, installation in that system of a lining with a relatively high coefficient of friction could lead to premature wheel lockup.

In order to maintain the braking capability designed into the vehicle by the manufacturer, it is thus important that drivers be able to replace brake linings with ones that have similar performance to the original linings. In granting ATA's petition concerning the rating and marking of heavy truck brake linings, and partially granting Mr. Grabowsky's petition, the agency intended to focus on requirements for heavy trucks that would help ensure that proper replacement linings could more easily be obtained.

The same general safety concern applies to replacement linings for other vehicles. As discussed below, however, NHTSA does not believe that it would be appropriate to extend the rulemaking to other vehicles at this time.

The agency notes first that the issues involved in such rulemaking and their specific resolution would vary significantly from one vehicle type to another. For example, one likely part of the development of a test procedure to rate brake linings is the selection of referee materials (drums, brake shoes, etc.) which are representative of those used on vehicles. Since brake systems vary significantly from one vehicle type to another, the referee materials would need to vary as well.

NHTSA also notes that SAE has been working on a new rating procedure for heavy truck brake linings for several years, and its work is relatively well advanced. The agency is evaluating SAE's work and is also conducting its own research on heavy truck brake linings. In the case of light vehicles, there is not a rating procedure that is as well developed as the new SAE procedure for heavy truck brake linings. Also, there is a much wider variety of types of brake systems, and sizes and shapes of brake linings, for passenger cars and other light vehicles, which could make the development of a rating procedure more difficult for these vehicles.

In initiating rulemaking with respect to heavy truck brake linings, NHTSA has not yet developed sufficient information to determine whether an NPRM will be issued. At a time when the agency is in the relatively early and difficult stages of evaluating this complex issue for a single vehicle type, it does not wish to commit the resources necessary to study the broader issues that would be involved if the rulemaking were extended to other vehicle types. Since work on a heavy truck brake lining rating procedure is well advanced and appears to involve fewer issues than light vehicle brake linings, NHTSA believes that it is appropriate to initially devote its resources to determining whether a standard can be developed for heavy truck linings. Later, depending in part on the agency's experience with heavy truck brake linings, the agency may decide to consider rating procedures for light vehicle brake linings.

In addition to being broader than ATA's petition with respect to vehicle type, Mr. Grabowsky's petition was also broader with respect to performance requirements. In addition to friction and marking, the petitioner cited stability, fade and wear.

With respect to stability, the petitioner may be referring to either vehicle stability or stability of a lining's friction characteristics during use. NHTSA notes that vehicle stability is, to some extent, addressed in the agency's vehicle braking regulations. Moreover, as part of its rulemaking for an internationally harmonized passenger car brake standard, the agency has proposed new requirements to help ensure vehicle stability. See 52 FR 1474, January 14, 1987

NHTSA recognizes that lining stability and fade are related to safety. The agency notes that the friction characteristics of all linings change during use, including mild use and more severe use such as conditions that result in fade. However, excessive changes could result in vehicle brake imbalance or reduced stopping capability.

While these factors are related to safety, NHTSA does not believe that rulemaking should be initiated at this time. These issues involve a high level of technical difficulty, and addressing them in rulemaking would require significant expenditure of agency resources. The petitioner did not present any approach for addressing these issues, and the agency is unaware of any existing test procedures which could be considered for purposes of a standard. A major resource effort would be required in order to attempt to develop requirements covering these aspects of performance. Finally, the petitioner did not provide, and the agency is unaware of, any data or arguments demonstrating a magnitude of safety need in these areas sufficient to cause NHTSA to divert significant resources from other agency programs in order to address these issues.

NHTSA believes that the relationship between brake wear and safety is further removed, and that premature brake wear usually has a minimal impact on safety. The main consequence of premature brake wear is increased maintenance costs, and the issue is primarily one of customer satisfaction. NHTSA notes that the petitioner did not provide any arguments or data to support the argument that there is a safety need for brake wear requirements.

While NHTSA denied several portions of Mr. Grabowsky's petition for rulemaking, the agency has a continuing interest in many of the areas cited by the petitioner. As resources permit, the agency may examine those issues further in the context of research and/or rulemaking. (15 U.S.C. 1392, 1407 1410a; delegations of authority at 49 CFR 1.50 and 501.8.)

Issued on July 5, 1989.

Barry Felrice,

Associate Administrator for Rulemaking.

[FR Doc. 89-16230 Filed 7-10-89; 8:45 am]

BILLING CODE 4910-59-M

49 CFR Part 571

[Docket No. 85-08; Notice 3]

RIN 2127-AC86

Federal Motor Vehicle Safety Standards; Occupant Crash Protection

AGENCY: National Highway Traffic Safety Administration (NHTSA), DOT.

ACTION: Response to petitions for reconsideration; notice of proposed rulemaking.

SUMMARY: The requirements for safety belt systems in trucks, buses and multipurpose passenger vehicles with a gross vehicle weight rating of more than 10,000 pounds manufactured on or after September 1, 1990, currently include special provisions to make those safety belt systems more convenient to use. One of these requirements is that any automatic locking retractors (ALRs) installed on such safety belt systems must meet certain additional performance requirements, to ensure that belt systems equipped with ALRs will not progressively tighten around the occupant. The additional requirements for belt systems equipped with ALR's focus on the working of the retractor mechanism itself as the means of ensuring comfort for users of these belt systems.

Two petitioners for reconsideration of this rule suggested that the agency could achieve its goal of ensuring comfort for users of belt systems equipped with ALRs in a less restrictive manner, by applying the additional performance requirements to the entire belt system instead of the retractor mechanism alone. NHTSA has tentatively determined that the approach suggested in these petitions would be a more appropriate means of achieving the agency's goal of ensuring comfort for belt users. This notice invites public comments on this approach and on the method developed by the agency for measuring performance of the belt system as a whole, instead of the performance of the ALR alone.

DATES: Comments must be received by the agency no later than August 25, 1989. If adopted as a final rule, the proposed amendments would become effective September 1, 1990.

ADDRESS: Comments should refer to Docket No. 85-08; Notice 3 and be submitted to NHTSA Docket Section, Room 5109, 400 Seventh Street, SW Washington, DC 20590 (Docket hours are 8:00 am to 4:00 pm Monday through Friday).

FOR FURTHER INFORMATION CONTACT: Dr. Richard Strombotne, Chief, Crashworthiness Division, NRM-12, Room 5320, NHTSA, 400 Seventh Street, SW Washington, DC 20590 (202-366-2264).

SUPPLEMENTARY INFORMATION: Since January 1, 1972, Federal Motor Vehicle Safety Standard No. 208, *Occupant Crash Protection* (49 CFR § 571.208) has required vehicle manufacturers to install safety belt systems in heavy vehicles (i.e. trucks, buses, and multipurpose passenger vehicles [MPVs] with a gross vehicle weight rating of more than 10,000 pounds). The safety belts required in those vehicles have had to meet all of the strength requirements set for belt systems in passenger cars and light trucks, buses, and MPVs (those with a gross vehicle weight rating of 10,000 pounds or less). However, the safety belts required in heavy vehicles have not had to meet several requirements for lighter vehicle safety belt systems that make the safety belts more comfortable to wear and easier to use.

The agency proposed several changes to the requirements for belt systems in heavy vehicles to make such belt systems more comfortable to wear and easier to use. The proposed changes were set forth in a notice of proposed rulemaking (NPRM) published on May 30, 1985 (50 FR 23041). Among other things, that notice proposed that emergency locking retractors (ELRs) be installed on the safety belt system at each outboard seating position in heavy trucks and MPVs and on the safety belt system at the driver's seat in heavy buses. The notice proposed to require ELRs because those retractors do not give rise to the "cinch down" problem for safety belt occupants that has occurred with some designs of ALRs. With designs of ALRs that were current in 1985, the safety belt could "cinch down" (become progressively tighter) around an occupant as the vehicle travelled over potholes or other jarring surfaces of the road. Vehicle occupants that experienced this "cinching down" effect were often discouraged from continued use of the safety belt system. The agency had tentatively determined that it could eliminate this problem by focusing on the working of the retractor mechanism.

A number of commenters objected to the proposed prohibition of belt systems with ALRs. These commenters indicated that NHTSA had proposed an overly restrictive approach to solving the problem of progressive tightening or "cinching down" of belt systems that used ALRs. These commenters suggested that newer innovative designs of belt systems that incorporated ALRs did not experience the problem of "cinch down." NHTSA further investigated these newer designs by visiting three retractor manufacturers (IMMI, TRW and Allied) to review their anti-cinch ALR programs. As a result of the information gained from reviewing these manufacturers' programs, NHTSA concluded that the cinching down problem for ALRs may have been solved.

A final rule setting forth additional requirements for the safety belt systems installed in heavy vehicles was published on July 6, 1988 (53 FR 25337). With respect to the type of retractor required to be installed on heavy vehicle belt systems, this rule expanded the proposed approach to permit ALRs with anti-cinch capability to be installed on the safety belts in heavy vehicles. For the purposes of this rule, the determination of whether a heavy vehicle safety belt system with an ALR had this anti-cinch capability was to be made by examining the working of the retractor mechanism. For a safety belt assembly equipped with an ALR and installed in a heavy vehicle to comply with this requirement, the retractor could not retract webbing to the next locking position until at least ¾ of an inch of webbing had moved into the retractor.

NHTSA received three petitions for reconsideration of this rule. The petition that was filed by the Recreation Vehicle Industry Association is granted in a final rule published elsewhere in today's edition of the **Federal Register.** Indiana Mills & Manufacturing, Inc. (IMMI) filed a petition for reconsideration asking NHTSA to amend this rule to permit safety belt systems installed in heavy vehicles to comply with the ¾ inch minimum webbing travel requirement by means other than the working of the retractor itself. According to IMMI, a minimum webbing travel requirement that focused on the performance of the entire belt system in meeting the goal of preventing "clinch down," instead of focusing on the performance of the retractor alone, would permit the development of more innovative means of overcoming the cinch down problem for safety belt systems equipped with ALRs. Grumman Olson raised substantially similar points in its petition for reconsideration.

NHTSA has reexamined its minimum webbing travel requirements in response to these petitions. The purpose of including minimum webbing travel requirements for safety belt systems equipped with ALRs was to ensure that these belt systems would be more comfortable for users than safety belt systems equipped with ALRs that cinched down. The proposed and final requirements for heavy vehicle safety belt systems have focused exclusively on the working of the retractor mechanism itself as the means for ensuring increased occupant comfort, because "cinch down" can be prevented simply and effectively by the working of the retractor mechanism. Nevertheless, any safety belt system equipped with an ALR that provided enhanced comfort for belt users by preventing "cinch down" would seem to fulfill the purpose of the minimum webbing travel requirement, regardless of whether the retractor alone met that requirement. After this reexamination, NHTSA has tentatively determined that the current requirement for heavy vehicle safety belt systems is unnecessarily restrictive.

To reflect this tentative determination, this notice proposes to adopt a less restrictive approach to ensuring occupant comfort when using safety belt systems equipped with ALRs. Instead of focusing solely on the workings of the retractor mechanism to determine if the belt system complies with the minimum webbing travel requirement, as the July 1988 final rule does, this notice proposes to examine the workings of the belt system *as a whole* to determine if it complies with the minimum webbing travel requirement. A bench test would be used to evaluate the workings of the belt system as a whole. First, the belt system would be buckled. Then the retractor end of the belt system would be anchored. The other end of the belt system would not be anchored during this bench test, and is referred to as the "free end" of the belt system in this rule. The belt webbing would be extended to 75 percent of its length and the ALR would be locked after this initial adjustment. A load of 20 pounds would be applied to the free end of the belt system in the direction away from the retractor. The position of the free end of the belt system would be recorded. Then the 20 pound load would be slowly released (i.e., released within a 30 second period) until the retractor moves to the next locking position. The position of the free end of the belt system would be recorded again. The distance between the recorded positions of the free end of the belt system would have to be equal to or greater than ¾ inch.

NHTSA believes that this proposed bench test would be satisfied by any safety belt system incorporating an ALR that meets the current requirement for a ¾ inch spacing between ratcheting positions on the retractor. Additionally, vehicles could comply with this proposed bench test if the safety belt system incorporates a device or devices external to the ALR mechanism itself that will operate *automatically* to prevent cinch down. This proposed bench test would *not* be satisfied by devices that must be manually operated to prevent cinch down, because no manual adjustments will be performed during the bench testing.

NHTSA has considered the effects of this proposed rulemaking action and determined that it is neither "major" within the meaning of Executive Order 12291 nor "significant" within the meaning of the Department of Transportation's regulatory policies and procedures. The agency has also determined that the economic and other impacts of this proposed rule are so minimal that a full regulatory evaluation is not required.

Those heavy vehicle manufacturers that choose to rely on the working of the retractor mechanism alone to comply with the test for "cinch down," as required by the current regulatory language will not have to change their plans if this proposal were adopted as a final rule. On the other hand, this proposal would also give manufacturers the opton of adopting other innovative approaches to comply with the test for "cinch down." Those manufacturers that choose to take advantage of this proposal to use an innovative means of solving "cinch down" could experience some slight cost savings. However, the costs of complying with the anti-cinch retractor requirement have been estimated throughout this rulemaking as being minimal, so any savings from the costs of anti-cinch retractors would necessarily also be minimal.

NHTSA has also considered the effects of this proposed rule under the Regulatory Flexibility Act. I hereby certify that any final rule adopting this proposal would not have a significant economic impact on a substantial number of small entities. Few, if any, of the heavy vehicle manufacturers are small entities. To the extent that these manufacturers might experience a cost savings as a result of this proposal, the savings would be minimal, as explained above. Likewise, small organizations and small governmental entities will not be significantly affected by this rule. Although those groups do purchase havey vehicles, this proposed action would not result in any price increases for heavy vehicles.

The agency has also analyzed this proposal for the purposes of the National Environmental Policy Act and determined that it would not have any significant impact on the quality of the human environment, if the proposal were adopted as a final rule.

Finally, NHTSA has considered the federalism implications of this proposal, as required by Executive Order 12612, and determined that the proposal does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

Interested persons are invited to submit comments on the proposal. It is requested but not required that 10 copies be submitted.

All comments must not exceed 15 pages in length. (49 CFR 553.21). Necessary attachments may be appended to these submissions without regard to the 15-page limit. This limitation is intended to encourage commenters to detail their primary arguments in a concise fashion.

If a commenter wishes to submit certain information under a claim of confidentiality, three copies of the complete submission, including purportedly confidential business information, should be submitted to the Chief Counsel, NHTSA, at the street address given above, and seven copies from which the purportedly confidential information has been deleted should be submitted to the Docket Section. A request for confidentiality should be accompanied by a cover letter setting forth the information specified in the agency's confidential business information regulation. 49 CFR Part 512.

All comments received before the close of business on the comment closing date indicated above for the proposal will be considered, and will be available for examination in the docket at the above address both before and after that date. To the extent possible, comments filed after the closing date will also be considered. Comments received too late for consideration in regard to the final rule will be considered as suggestons for further rulemaking action. Comments on the proposal will be available for inspection in the docket. The NHTSA will continue to file relevant information as it becomes available in the docket after the closing date, and it is recommended that interested persons continue to examine the docket for new material.

Those persons desiring to be notified upon receipt of their comments in the rules docket should enclose a self-addressed, stamped postcard in the envelope with their comments. Upon receiving the comments, the docket supervisor will return the postcard by mail.

List of Subjects in 49 CFR Part 571

Imports, Motor vehicle safety, Motor vehicles, Rubber and rubber products, Tires.

PART 571—FEDERAL MOTOR VEHICLE SAFETY STANDARDS

In consideration of the foregoing, it is proposed that 49 CFR Part 571 be amended as follows:

1. The authority citation for Part 571 would continue to read as follows:

Authority: 15 U.S.C. 1392, 1401, 1403, 1407· delegation of authority at 49 CFR 1.50.

§ 571.208 [Amended]

2. S4.3.2.2 of § 571.208 would be revised to read as follows:

S4.3.2.2 *Second option—belt system.* The vehicle shall, at each designated seating position, have either a Type 1 or a Type 2 seat belt assembly that conforms to § 571.209 of this Part and S7.2 of this Standard. A Type 1 belt assembly or the pelvic portion of a dual retractor Type 2 belt assembly installed at a front outboard seating position shall include either an emergency locking retractor or an automatic locking retractor. A seat belt asembly equipped with an automatic locking retractor that is installed at a front outboard seating position must allow at least ¾ inch of webbing movement before retracting webbing to the next locking position. To determine compliance with this requirement, the seat belt assembly is buckled and the retractor end of the seat belt assembly is anchored to the test bench. The webbing is extended to 75 percent of its length and the retractor is locked after the initial adjustment. A load of 20 pounds is applied to the free end of the belt assembly (i.e., the end of the belt assembly that is not anchored to the test bench) in the direction away from the retractor. The position of the free end of the belt assembly is recorded. Within a 30 second period, the 20 pound load is slowly decreased, until the retractor moves to the next locking position. The position of the free end of the belt assembly is recorded again. The difference between the two positions recorded for the free end of the belt assembly shall be equal to or greater than ¾ inch. An automatic locking retractor used at a front outboard seating position that has some type of suspension system for the seat shall be attached to the seat structure that moves as the suspension system functions.

3. S4.2.2 of § 571.208 would be revised to read as to follows:

S4.2.2 *Second option—belt system—driver only.* The vehicle shall, at the driver's designated seating position, have either a Type 1 or a Type 2 seat belt assembly that conforms to § 571.209 of this Part and S7.2 of this Standard. A Type 1 belt assembly or the pelvic portion of a dual retractor Type 2 belt assembly installed at the driver's seating position shall include either an emergency locking retractor or an automatic locking retractor. A seat belt assembly equipped with an automatic locking retractor that is installed at the driver's seating position must allow at least ¾ inch of webbing movement before retracting webbing to the next locking position. To determine compliance with this requirement, the seat belt assembly is buckled and the retractor end of the seat belt assembly is anchored to the test bench. The webbing is extended to 75 percent of its length and the retractor is locked after the initial adjustment. A load of 20 pounds is applied to the free end of the belt assembly (i.e., the end of the belt assembly that is not anchored to the test bench) in the direction away from the retractor. The position of the free end of the belt assembly if recorded. Within a 30 second period, the 20 pound load is slowly decreased, until the retractor moves to the next locking position. The position of the free end of the belt assembly is recorded again. The difference between the two positions recorded for the free end of the belt assembly shall be equal to or greater than ¾ inch. An automatic locking retractor used at a driver's seating position that has some type of suspension system for the seat shall be attached to the seat structure that moves as the suspension system functions.

Issued on July 5, 1989.

Barry Felrice,

Associate Administrator for Rulemaking.

[FR Doc. 89-16225 Filed 7-10-89; 8:45 am]

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49 CFR Part 571 and 572

[Docket No. 89-13; Notice 01]

RIN 2127-AB94

Anthropomorphic Test Dummies—3-Year-Old Child

AGENCY: National Highway Traffic Safety Administration (NHTSA), DOT.

ACTION: Notice of proposed rulemaking.

SUMMARY: In this notice, NHTSA proposes changes to its specifications for the 3-year-old child test dummy.

First, the agency proposes a new head assembly for the 3-year-old test dummy. The current head of the 3-year-old dummy has a low natural frequency response, which causes it to give unreliable data in test environments where the head may contact a rigid surface. Until January 22, 1988, Standard 213 specified performance and test criteria only for add-on child restraint systems. In tests of those systems, the dummy's head does not contact a rigid surface. On that date, a final rule became effective, establishing performance and test criteria for a child restraint system that is an integral part of the vehicle (built-in restraint). During compliance testing of these built-in restraints, the dummy's head may contact a rigid surface. The new head has a higher natural frequency response, and should be suitable for testing in all environments, including ones in which rigid surface contacts occur.

Second, the agency proposes to set generic specifications for two accelerometers which may be used with the dummy. The regulation currently specifies that a particular accelerometer model made by one manufacturer will be used in the 3-year-old dummy. The manufacturer has discontinued production of that particular model. NHTSA has tentatively concluded that it is unnecessary to specify a particular model for use in compliance testing, because any accelerometer that meets the specified response criteria, and is positioned in the test dummy at the specified reference points, will give the same measurements as any other accelerometer with the equivalent response characteristics and positioning. Therefore, this notice proposes to specify response criteria for the triaxial accelerometer, and positioning requirements for the accelerometer cube that will align the seismic masses of each sensing element with the head and thoracic reference points.

DATES: *Comment closing date:* November 8, 1989.

Proposed effective date: The changes proposed in this notice would take effect 30 days after any final rule is published.

ADDRESSES: Comments should refer to the docket and notice numbers of this proposal and be submitted to: Docket Section, National Highway Traffic Safety Administration, Room 5109, 400 Seventh Street SW Washington, DC 20590.

Docket Room hours are 8 a.m. to 4 p.m., Monday through Friday except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Stan Backaitis, Office of Vehicle Safety Standards, NRM-12, National Highway Traffic Safety Administration, 400 Seventh Street SW., Washington, DC 20590, (202) 366-4912.

SUPPLEMENTARY INFORMATION:

Background

On December 27 1979, NHTSA published a final rule establishing specifications in 49 CFR Part 572 for an anthropomorphic test dummy representing a 3-year-old child. (44 FR 76527.) The agency specified the use of that dummy in dynamic testing of child restraints under what was then a newly revising Standard 213, *Child Restraints.* The child restraints were tested in simulated barrier impacts using a standard seat assembly. The assembly is not surrounded by an actual or simulated vehicle during the test. Although the standard did not expressly so provide, it had the effect of permitting only "add-on" child restraints, i.e., child restraints that do not form an integral part of a vehicle, but are placed on a vehicle seat and secured by the vehicle belt.

The New Dummy Head Assembly

After NHTSA issued the 3-year-old dummy specifications, Ford Motor Company (Ford) and General Motors Corporation (GM) petitioned the agency to reconsider whether the specified dummy was an appropriate test device. In Standard 213 tests, petitioners said it was important to ensure that the test results reflect the force of the impact and not vibration in the head materials or structure. The petitioners asserted that the summy's head had a relatively low natural frequency (the freqency of a free vibration at which an elastic system starts to vibrate when impacted by a force). This low natural frequency, petitioners argued, interfered with acceleration measurements because small variations in applied force could produce a large variation in the measured acceleration. The tester could not determine the extent to which those measurements were attributable, at least in part, to natural frequency vibration in the dummy instead of the applied test force.

In a document published December 15, 1980, (45 FR 82265), NHTSA denied these petitions for a number of reasons, one of which is relevant here. The agency found that while the dummy head showed a relatively low natural frequency, this characteristic did not effect Standard 213 compliance testing. The agency explained that resonance in the head would not occur in testing, if the surfaces with which the head came in contact provided forces with frequencies below the natural frequency of the head. Under the dynamic test procedures promulgated in 1979, the test environment for a child restraint system was a standard vehicle seat assembly to which the restraint was attached by a lap belt. During testing, the dummy would contact only the seat belt or the padded surfaces of the child restraint, all of which produced a force with a frequency below that of the dummy's head. therefore, there was no possibility of contact with a hard, unyielding surface (such as a vehicle instrument panel) which would produce a force having a frequency equal to or higher than the natural frequency of the test device.

Need for new head assembly. The need for a new dummy head was created by the special compliance test procedures adopted in a final rule issued in January 1988. That notice amended Standard No. 213 expressly to permit a manufacturer to install built-in child restraint systems in motor vehicles. (A built-in child restraint is one that forms an integral part of a vehicle.) These restraints may be tested for compliance either as installed in a specific vehicle (barrier impact testing), or as installed in a specific vehicle shell which is mounted on a test platform (for simulated barrier impact testing). (49 CFR § 571.213, S6.1.1[a], [c]. In testing these restraints, the dummy's head may contact the hard surfaces of the vehicle or the vehicle shell. As a consequence of such impacts and the current head's low natural frequency response (about 250 HZ), that head may not give dependable head acceleration measurements in tests of built-in restraints. The test data could misrepresent the head's acceleration because testers could not determine the extent to which a measurement arose from applied test forces instead of resonances in the head assembly. As a consequence, the data would yield inaccurate head impact criteria (HIC) values.

The new head assembly specifications NHTSA proposes today are the result of research initiated by the agency in October 1980. The upgraded head acceleration measurement capability of the new head assembly extends the range of impacts which can be measured with the 3 year-old test dummy. (See Contract Numbers DTNH 22-80-P-02093 and DTNH 22-82-P-02066; Report Number DOT HS 806 742, Performance Measurements of Three Year-Old Test Dummy Heads, December 1983.)

Development and selection of a new 3-year-old dummy head. There were six candidate dummy heads in the selection pool from which NHTSA selected the new dummy head. A threshold determination made by the agency in selecting a new head assembly involved the level of the natural frequency response of the assembly. NHTSA considered a response of over 1000 Hz to be desirable because this level is accepted universally as the lowest natural frequency response appropriate for a dummy's head used in automobile crash testing.

To determine the natural frequency response for each of the six heads considered, NHTSA conducted head-drop tests. Each head-drop test consisted of dropping the head from a height of 7 inches onto a 2-inch thick, polished steel plate. Two heads met the essential minimum natural frequency response of 1000 Hz. Of those two heads, NHTSA tentatively selected the polyester/fiberglass design with a 0.5 inch vinyl "skin" as the one most similar in impact performance characteristics to the old head. The head-drop test further showed that the "g" measurements of the selected new head were more similar than those of the other candidate head to the measurements of the current head. Although the new head showed a shorter duration pulse response measurement, this disparity in pulse width response is insignificant, and is a direct consequence of the difference in materials used for the new head. The new material and construction considerably raise the natural frequency response of the head and make it a useful test device in all types of test environments, including ones in which the head strikes a hard surface.

Comparing the old and new dummy heads. After the agency tentatively selected a new head with an acceptable natural frequency response, NHTSA then evaluated the new head under calibration and performance procedures set out in 49 CFR Part 572 and Standard 213, to determine whether the new head produced calibration and performance measurements comparable to those for the head currently specified, and to determine variability in the measurements obtained. (Variability has two elements: repeatability and reproducibility. Repeatability is a measurement of dispersion in test results for an individual test dummy when that dummy is subjected to a series of identical tests. Reproducibility is a measurement of dispersion among two or more test dummies built to the same specifications, and subjected to the same tests.)

The agency's evaluation consisted of calibration tests under 49 CFR Part 572, Subpart C, and compliance-type tests based on Standard 213 test procedures. NHTSA notes that head calibration tests prescribed under Subpart C are different from the head drop tests which determine the natural frequency response; therefore, test results showed different peak accelerations and pulse widths. The Subpart C test involves impacting the forehead of a seated, unsupported test dummy at 7 fps with a cylindrical test probe weighing 10 pounds, six ounces. The agency tested three heads with four head impacts on each head. These test results were compared with calibration test data on the old head. The comparison showed equivalent measurements between the old and new heads except with respect to one measurement, i.e., the time interval of the recorded acceleration-time curve at the 50g level.

The new head has an average acceleration pulse width of 1.5 milliseconds at or above the 50g level. This is a smaller width than that of the old head. Its average is 2.5 milliseconds at the same "g" level. This disparity is a direct consequence of the difference in materials used for the new head. The old head is constructed of urethane, while the new head material is fiberglass epoxy. The epoxy has different stiffness and damping properties. Since the change in materials is necessary to produce a head with a higher natural frequency response, the disparity in acceleration pulse widths is an unavoidable consequence.

Overall, the variability of the new head in Part 572 calibration tests (both repeatability and repoducibility range) was never more than five percent. Similar testing with four specimens of the current head shows repeatability range of one percent, and reproducibility range of 10 percent. (See Calibration of Three-Year-Old Child Dummies, May 1, 1978.)

In the compliance-type sled tests, the agency used one test dummy equipped with a new head and one with the old head, and seated the dummies side-by-side. NHTSA tested two different child restraint models. Each model was tested twice. Tests results showed comparable head acceleration measurements between the two heads, with the new head showing slightly less dispersion in repeatability of peak accelerations. Repeatability for the new head was 5 percent compared with 17 percent for the old head.

Because the new head requires different installations than the currently specified head, NHTSA is proposing to amend section 572.17 *Neck*, to set out installation specifications for the new head assembly.

NHTSA is also proposing to amend Standard No. 213, *Child Restraint Systems*, to specify the use of the appropriate head assembly in compliance testing of child restraints.

Built-in child restraints. Only the head assembly proposed in this notice would be used in compliance testing of built-in child restraint systems beginning 30 days after publication of the final rule adopting the new head assembly proposed in this notice. As explained above, the higher natural frequency response of the proposed head assembly will ensure that the head acceleration measurements taken during testing of built-in child restraints are accurate and reliable. The need for accurate and reliable head acceleration measurements forms the basis for the agency's proposed finding of good cause for this effective date.

Add-on child restraints. Either the current or the proposed head assembly would give accurate and reliable head acceleration measurements for add-on child restraints, since there is no possibility of head contact with a hard, unyielding surface in compliance testing of add-on child restraints. Therefore, this notice proposes that manufacturers of add-on child restraints would have the option of specifying the use of the current or proposed head assembly during NHTSA's compliance testing, beginning 30 days after publication of the final rule adopting the new head assembly proposed in this notice. Permitting optional use of the proposed head assembly beginning 30 days after publication of a final rule will not impose any burdens on any party, and will further the public interest by allowing manufacturers to gain experience testing with this new head assembly. Hence, NHTSA would find good cause for such an effective date.

In spite of the equivalence of the current and proposed head assemblies, this notice proposes to require the use of the proposed head assembly in all compliance testing three years after publication of a final rule adopting the proposed new head assembly. As explained above, the current head assembly may not give accurate or reliable head acceleration measurements for built-in child restraints. Since the current and proposed head assemblies are outwardly identical, it is possible that the agency would inadvertently use the current head assembly in compliance testing of a built-in child restraint. Such errors would represent a needless waste of time and resources.

Further, test dummy heads on average must be replaced after approximately three years use in compliance testing, because of the wear resulting from the testing and the aging of the rubbers and plastics used in the test dummy head. Thus, no costs should be imposed by specifying mandatory use of the proposed head assembly three years after publication of a final rule. Testing facilities could continue to use the head assemblies they currently own and purchase the new head assemblies specified in the final rule when the current head assemblies must be replaced.

The New Accelerometer Specifications

NHTSA is proposing to amend its accelerometer specification to specify the instrumentation by location and sensitivity of the triaxial cluster instead of identifying a particular model of triaxial accelerometer to be used in compliance testing. The proposed specifications would be set forth in Part 572 and in documents incorporated by that Part. Under these proposed specifications, *any* accelerometer that conforms with the specific locations of seismic masses along sensitive axes aligned with the specified reference point in the dummy assembly may be used in compliance testing.

The current version of Part 572 specifies the accelerometer to be used in the three-year-old test dummy by model and manufacturer, and also specifies the precise dimensions for the platform on which the accelerometer is to be mounted. When NHTSA first promulgated specifications for the three-year-old dummy, agency and industry experience with the test device was limited, and there was concern with ensuring the objectivity of the test procedures. At that time, the agency believed that specifiying the accelerometer by manufacturer and model and specifying the precise dimensions of the platform on which the accelerometer was mounted was necessary to minimize the potential variability in test results. *See* 45 FR 43355; June 26, 1980 and 45 FR 82265; December 15, 1980. However, the manufacturer of the accelerometer currently specified for use in compliance testing with the three-year-old test dummy has discontinued production of that model. Therefore, NHTSA must amend its specifications for the three-year-old test dummy in Part 572 or it will become impossible to conduct compliance testing in accordance with Standard No. 213.

NHTSA has tentatively concluded that there are no legitimate policy reasons at this time to propose specifying any one particular accelerometer model as the only one that can be used in compliance testing. Broader experience with test dummies has shown that any triaxial cluster within specified dimensions will produce reliable data if the instrument itself meets specified response characteristics, and if its installation is such that the point of intersection of the sensitive axes of the sensing masses in the cube align with the center of gravity for the head or chest. Under Part 572, the centers of gravity for the head and chest assembly are designated respectively as the head and thorax reference points. Accordingly, NHTSA believes it would be unnecessarily restrictive for this notice to propose the use of any particular model accelerometer.

Similarly, past rulemakings regarding the 3-year-old dummy have specified the dimensions of the block or platform upon which the accelerometer was to be mounted, in order to achieve the specified relationship between the accelerometer elements and the head and thorax reference points. However, the agency has tentatively concluded that it is no longer necessary to specify dimensions of the mounting platform or block for the accelerometer, for essentially the same reasons as the agency has tentatively decided not to propose any particular accelerometer model. That is, any triaxial accelerometer should yield repeatable and reliable test data as long as the accelerometer's measuring sensors have the specified impact response characteristics, and the seismic mass centers of each sensing element are positioned correctly with respect to the appropriate reference points within the dummy.

To reflect these tentative decisions, NHTSA is proposing to establish two specifications for accelerometers that can be used in the 3-year-old dummy during compliance testing. The first proposed specification consists of generic requirements for a triaxial accelerometer and its installation based on the characteristics of the currently specified accelerometer model and mounting block. NHTSA is proposing this to allow continued use of 3-year-old test dummies instrumented as specified in the current version of Part 572.

The second proposed specification is also a generic requirement for a triaxial accelerometer and its installation. In this case, however, the alignment of the seismic masses, sensitive axes, and head and thorax reference points are *not* based on the characteristics of the currently specified accelerometer and mounting block. Instead, the agency is proposing to reflect the characteristics common to the newer, state-of-the-art accelerometers, without identifying any particular model. By avoiding references to the characteristics of any one particular accelerometer model, NHTSA is seeking to ensure that it will not have to amend Part 572 whenever the manufacturer of the specified model discontinues production of that model.

To determine the appropriate locations for the seismic mass centers of newer accelerometers, NHTSA conducted testing to ensure that a three-year-old test dummy with accelerometers installed in accordance with the second proposed specifications would produce essentially the same results as a 3-year-old test dummy with the accelerometer installed and positioned in accordance with the current requirements. Because of this testing, NHTSA has tentatively determined that equivalent test results will be obtained using a 3-year-old test dummy instrumented in accordance with the current requirements or either of the two sets of specifications proposed in this notice. (Report Number DOT HS 806 642, Performance Evaluation of a 3-Year-Old Child Test Dummy, December 1982). Since test results would be equivalent, the proposed changes to the accelerometer requirements for the 3-year-old test dummy would not require a manufacturer to recertify any child restraint system that was certified using the current accelerometer and installation specifications for that test dummy, nor would this proposal indirectly affect the requirements of Standard No. 213 by resulting in higher or lower force readings for identical impact conditions.

Comments

Comments which provide data on the head assembly's durability, variability of results, and test conditions would be particularly useful. The agency invites comments from all interested persons on these issues and other relevant issues.

The agency asks that comments on the proposal be submitted in writing, and requests (but does not require) that such persons supply 10 copies of each comment. To encourage commenters to be concise, NHTSA requires that interested persons limit their remarks to no more than 15 pages (49 CFR 553.21). A commenter may attach any necessary supporting document without regard to the 15-page limit. All comments will be filed and available for examination in the Docket Section both before and after the comment closing date.

If a commenter wishes to submit certain information under a claim of confidentiality, then it must send three copies of the complete submission, including purportedly confidential business information, to the Chief

Counsel, NHTSA, at the street address given in the "ADDRESS" caption. Further, the commenter must send seven copies from which the purportedly confidential information has been deleted to the Docket Section. Submit each request for confidentiality with a cover letter setting out the information specified in the agency's confidential business information regulation (49 CFR Part 512).

NHTSA will consider all comments received before the close of business on the comment closing date indicated in the "Dates" caption of this proposal. If possible, NHTSA also will consider comments filed after the closing date. Ifa the agency receives a comment too late for consideration in the final rule, then the comment will be considered as a suggestion for further rulemaking action. After the closing date, NHTSA will continue to file relevant information in the Docket as this information becomes available, and recommends that interested persons continue to examine the Docket for new material.

Persons who wish to be notified of the receipt of their comments in the rules Docket should enclose a self-addressed, stamped postcard in the envelope with their comments. Upon receiving the comments, the Docket supervisor will return the postcard by mail.

Impact Assessments

Executive Order 12291 and Department of Transportation Regulatory Policies and Procedures. NHTSA has considered costs and other factors associated with this proposal and tentatively determined that the proposal, if adopted, would neither be major under Executive Order 12291, nor significant under the Department of Transportation's Regulatory Policies and Procedures. The agency anticipates that this proposal will not result in new costs which a manufacturer would pass on to consumers. The costs of new and old head assemblies and accelerometers are comparable; and manufacturers and test facilities periodically must buy new items to replace old ones so that tests may be conducted with properly specified and instrumented dummies. The agency concludes therefore that a fully regulatory evaluation is not required.

Small Business Impact. The Regulatory Flexibility Act of 1980 requires agencies to evaluate the potential effects of their proposed and final rules on small businesses, small organizations, and small governmental jurisdictions. There are no small business manufacturing test surrogates or accelerometers. Of the 15 manufacturers currently producing child restraints, seven are small businesses. Manufacturers that choose to have their restraints tested usually do so by contracting with a test laboratory. Because the cost to test a restraint system should not change if this rule becomes final, there should be no new cost to small businesses. Consequently, there should be no new costs to small governmental jurisdictions or small organizations that may be child restraint systems purchasers.

Therefore, I certify that this proposed rule would not have a significant economic impact on a substantial number of small entities.

Environmental Impact. Under the National Environmental Policy Act of 1969, NHTSA has considered the environmental impact of this proposed rule, and has determined that this proposal would not be a major Federal action significantly affecting the quality of the human environment.

Paperwork Reduction Act. This proposed rule does not involve a collection of information request or requirement.

Executive Order 12612. The agency has analyzed this proposed rule under the principles and criteria in Executive Order 12612, and has determined that the rule does not have sufficient Federalism implications to warrant preparing a Federalism Assessment.

List of Subjects

49 CFR Part 571

Imports, Motor vehicle safety, Motor vehicles.

49 CFR Part 572

Motor vehicle safety.

In consideration of the foregoing, NHTSA proposed to amend 49 CFR Parts 571 and 572 as follows:

PART 571—FEDERAL MOTOR VEHICLE SAFETY STANDARDS

1. The authority citation for Part 571 would continue to read as follows:

Authority: 15 U.S.C. 1392, 1401, 1403, 1407· delegation of authority at 49 CFR 1.50.

2. S7.2 of § 571.213 would be revised to read as follows:

§ 571.213 Standard No. 213; Child Restraint Systems

S7.2 *Three-year-old dummy.* A three-year-old dummy conforming to Subpart C of Part 572 of this chapter is used for testing a child restraint that is recommended by its manufacturer in accordance with S5.6 for use by children in a weight range that includes children weighing more than 20 pounds. When a three-year-old dummy is used for testing a built-in child restraint, the dummy shall be assembled with the head assembly specified in § 572.16(a)(1). When a three-year-old dummy is used for testing an add-on child restraint, the dummy shall be assembled using either head assembly specified in § 572.16(a) until three years after publication of a final rule on this proposal. After the date three years after publication of a final rule on this proposal, when a three-year-old dummy is used for testing an add-on child restraint, the dummy shall be assembled with the head assembly specified in § 572.16(a)(1).

PART 572—ANTHROPOMORPHIC TEST DUMMIES

1. The Authority Citation for Part 572 would continue to read as follows:

Authority: 15 U.S.C. 1392, 1407· delegation of authority at 49 CFR 1.50.

Subpart C—3-Year-Old Child

2. Paragraphs (a) and (b) of section 572.16 would be revised to read as follows:

§ 572.16 Head.

(a) The head consists of the assembly designated as SA 103C 010 on drawing no. SA 103C 001, and conforms to either—

(1) Each item specified on drawing SA 103C 002(B), sheet 8; or

(2) Each item specified on drawing SA 103C 002, sheet 8.

(b) When the head is impacted by a test probe specified in § 572.21(a)(1) at 7 fps, then the peak resultant acceleration measured at the location of the accelerometer mounted in the headform according to § 572.21(b) is not less than 95g and not more than 118g.

(1) The recorded acceleration-time curve for this test is unimodal at or above the 50g level, and lies at or above that level for intervals:

(i) In the case of the head assembly specified in paragraph (a)(1) of this section, not less than 1.3 milliseconds and not more than 2.0 milliseconds;

(ii) In the case of the head assembly specified in paragraph (a)(2) of this section, not less than 2.0 milliseconds and not more than 3.0 milliseconds.

(2) The lateral acceleration vector does not exceed 7g.

3. Section 572.17(a) would be revised to read as follows:

§ 572.17 Neck.

(a)(1) The neck for use with the head assembly described in § 572.16(a)(1) consists of the assembly designated as

SA 103C 020 on drawing No. SA 103C 001, and conforms to each item specified on drawing No. SA 103C 002(B), sheet 9.

(2) The neck for use with the head assembly described in § 572.16(a)(2) consists of the assembly designated as SA 103C 020 on drawing No. SA 103C 001, and conforms to each item specified on drawing No. SA 103C 002, sheet 9.

4. Section 572.21 would be amended by revising paragraphs (a), (b), and (c) to read as follows:

§ 572.21 Test conditions and instrumentation.

(a) (1) The test probe use for head and thoracic impact tests is a cylinder 3 inches in diameter, 13.8 inches long, and weighing 10 lbs., 6 ozs. Its impacting end has a flat right face that is rigid and that has an edge radius of 0.5 inches.

(2) The head and Thorax assembly may be instrumented with a Type A or Type C accelerometer.

(i) Type A accelerometer is defined in drawing SA-572 S1.

(ii) Type C accelerometer is defined in drawing SA-572 S2.

(b) *Head Accelerometers.* Install one of the triaxial accelerometers defined in § 572.21(a)(2) on a mounting block located on the horizontal transverse bulkhead as shown in the drawings subreferenced under assembly SA 103C 010 so that the seismic mass centers of each sensing element are positioned as specified in this paragraph, relative to the head accelerometer reference point located at the intersection of a line connecting the longitudinal centerlines of the transfer pins in the side of the dummy head with the midsagittal plane of the dummy head.

(1) The sensing elements of the Type C triaxial accelerometer will be aligned as follows:

(i) Align one sensitive axis parallel to the vertical bulkhead and midsagittal plane, with the seismic mass center located 0.2 inches dorsal to, and 0.1 inches inferior to the head accelerometer reference point.

(ii) Align the second sensitive axis with the horizontal plane, perpendicular to the midsagittal plane, with the seismic mass center located 0.1 inches inferior. 0.4 inches to the right of, and 0.9 inches dorsal to the head accelerometer reference point.

(iii) Align the third sensitive axis so that it is parallel to the midsagittal and horizontal planes, with the seismic mass center located 0.1 inches inferior to, 0.6 inches dorsal to, and 0.4 inches to the right of the head accelerometer reference point.

(iv) All seismic mass centers will be positioned with ±0.05 inches of the specified locations.

(2) The sensing elements of the Type A triaxial accelerometer will be aligned as follows:

(i) Align one sensitive axis parallel to the vertical bulkhead and midsagittal planes, with the seismic mass center located from 0.2 to 0.047 inches dorsal to, from 0.01 inches inferior to 0.21 inches superior, and from 0.0 to 0.17 inches right of the head accelerometer reference point.

(ii) Align the second sensitive axis with the horizontal plane, perpendicular to the midsagittal plane, with the seismic mass center located 0.1 to 0.13 inches inferior to, 0.17 to 0.4 inches to the right of, and 0.47 to 0.9 inches dorsal of the head accelerometer reference point.

(iii) Align the third sensitive axis so that it is parallel to the midsagittal and horizontal planes, with the seismic mass center located 0.1 to 0.13 inches inferior to, 0.6 to 0.81 inches dorsal to, and from 0.17 inches left to 0.4 inches right of the head accelerometer reference point.

(c) *Thorax Accelerometers.* Install one of the triaxial accelerometers defined in § 572.21(a)(2) on a mounting plate attached to the vertical transverse bulkhead shown in the drawing subreferenced under assembly No. SA 103C 030 in drawing SA 103C 001, so that the seismic mass centers of each sensing element are positioned as specified in this paragraph, relative to the thorax accelerometer reference point located in the midsagittal plane 3 inches above the top surface of the lumbar spine, and 0.3 inches dorsal to the accelerometer mounting plate surface.

(1) The sensing elements of the Type C triaxial accelerometer will be aligned as follows:

(i) Align one sensitive axis parallel to the vertical bulkhead and midsagittal planes, with the seismic mass center located 0.2 inches to the left of, 0.1 inches inferior to, and 0.2 inches ventral to the thorax accelerometer reference point.

(ii) Align the second sensitive axis so that it is in the horizontal transverse plane, and perpendicular to the midsagittal plane, with the seismic mass center located 0.2 inches to the right of, 0.1 inches inferior to, and 0.2 inches ventral to the thorax accelerometer reference point.

(iii) Align the third sensitive axis so that it is parallel to the midsagittal and horizontal planes, with the seismic mass center located 0.2 inches superior to, 0.5 inches to the right of, and 0.1 inches ventral to the thorax accelerometer reference points.

(iv) All seismic mass centers shall be positioned with ±0.05 inches of the specified locations.

(2) The sensing elements of the Type A triaxial accelerometer will be aligned as follows:

(i) Align one sensitive axis parallel to the vertical bulkhead and midsagittal planes, with the seismic mass center located from 0.2 inches left to 0.28 inches right, from 0.5 to 0.15 inches inferior to, and from 0.15 to 0.25 inches of the thorax accelerometer reference point.

(ii) Align the second sensitive axis so that it is in the horizontal transverse plane and perpendicular to the midsagittal plane, with the seismic mass center located from 0.6 inches left to 0.2 inches right of, from 0.1 inches inferior to 0.24 inches superior, and 0.15 to 0.25 inches ventral to the thorax accelerometer reference point.

(iii) Align the third sensitive axis so that it is parallel to the midsagittal and horizontal planes, with the seismic mass center located 0.15 to 0.25 inches superior to, 0.28 to 0.5 inches to the right of, and from 0.1 inches ventral to 0.19 inches dorsal to the thorax accelerometer reference point.

*

Issued on July 5, 1989.

Barry Felrice,

Associate Administrator for Rulemaking.

[FR Doc. 89-16229 Filed 7-10-89; 8:45 am]

BILLING CODE 4910-59-M

Notices

Federal Register
Vol. 54, No. 131
Tuesday, July 11, 1989

This section of the FEDERAL REGISTER contains documents other than rules or proposed rules that are applicable to the public. Notices of hearings and investigations, committee meetings, agency decisions and rulings, delegations of authority, filing of petitions and applications and agency statements of organization and functions are examples of documents appearing in this section.

DEPARTMENT OF AGRICULTURE

Office of the Secretary

Meat Import Limitations; Third Quarterly Estimate

Public Law 88-482, enacted August 22, 1964, as amened by Pub. L. 96-177 Pub. L. 100-418, and Public Law 100-449 (hereinafter referred to as the Act"), provides for limiting the quantity of fresh, chilled, or frozen meat of bovine, sheep except lamb, and goats; and processed meat of beaf or veal (Harmonized Tariff Schedule of the United States subheadings 0201.10.00, 0201.20.20, 0201.20.40, 0201.20.60, 0201.30.20, 0201.30.40, 0201.30.60, 0202.10.00, 0202.20.20, 0202.20.40, 0202.20.60, 0202.30.20, 0202.30.40, 0202.30.60, 0204.21.00, 0204.22.40, 0204.23.40, 0204.41.00, 0204.42.40, 0204.43.40, and 0204.50.00), which may be imported, other than products of Canada, into the United States in any calendar year. Such limitations are to be imposed when the Secretary of Agriculture estimates that imports of articles, other than products of Canada, provided for in Harmonized Tariff Schedule of the United States subheadings 0201.10.00, 0201.20.40, 0201.20.60, 0201.30.40, 0201.30.60, 0202.10.00, 0202.20.40, 0202.20.60, 0202.30.40, 0202.30.60, 0204.21.00, 0204.22.40, 0204.23.40, 0204.41.00, 0204.42.40, 0204.43.40, and 0204.50.00 (hereinafter referred to as "meat articles"), in the absence of limitations under the Act during such calendar year, would equal or exceed 110 percent of the estimated aggregate quantity of meat articles prescribed for calendar year 1989 by subsection 2(c) as adjusted under subsection 2(d) of the Act.

As announced in the Notice published in the **Federal Register** on April 4, 1989 (54 FR 13538), the estimated aggregate quantity of meat articles other than products of Canada prescribed by subsection 2(c) as adjusted by subsection 2(d) of the Act for calendar year 1989 is 1,245.3 million pounds.

In accordance with the requirements of the Act, I have determined that the third quarterly estimate of the aggregate quantity of meat articles other than products of Canada which would, in the absence of limitations under the Act, be imported during calendar year 1989 is 1,250 million pounds.

Done at Washington, DC, this 3rd day of July 1989.

Clayton Yeutter,

Secretary of Agriculture.

[FR Doc. 89-16140 Filed 7-10-89; 8:45 am]

BILLING CODE 3410-10-M

COMMISSION ON CIVIL RIGHTS

District of Columbia Advisory Committee; Agenda and Public Meeting

Notice is hereby given, pursuant to the provisions of the Rules and Regulations of the U.S. Commission on Civil Rights, that a meeting of the District of Columbia Committee to the Commission will convene at 2:00 p.m. and adjourn at 4:00 p.m. on Wednesday, July 26, 1989, at 1121 Vermont Avenue, NW Washington, DC 20425, 5th floor conference room. The Committee will discuss activity plans and select a project topic. Loretta Caldwell, director, DC Office of Human Rights and Minority Business, will speak on continuing liaison and interagency coordination.

Persons desiring additional information, or planning a presentation to the Committee, should contact Committee Chairperson James G. Banks or John I. Binkley, Director, Eastern Regional Division at (202) 523-5264, TDD (202) 376-8117 Hearing impaired persons who will attend the meeting and require the services of a sign language interpreter should contact the Eastern Regional Division at least five (5) working days before the scheduled date of the meeting.

The meeting will be conducted pursuant to the provisions of the rules and regulations of the Commission.

Dated at Washington, DC, July 5, 1989.

Melvin L. Jenkins,

Acting Staff Director.

[FR Doc. 89-16240 Filed 7-10-89; 8:45 am]

BILLING CODE 6335-01-M

DEPARTMENT OF COMMERCE

International Trade Administration

[A-588-021]

Cell-Site Transceivers and Related Subassemblies From Japan; Preliminary Results of Antidumping Duty Administrative Review and Intent To Revoke

AGENCY: International Trade Administration/Import Administration; Department of Commerce.

ACTION: Notice of preliminary results of antidumping duty administrative review and intent to revoke.

SUMMARY: In response to a request from a manufacturer/exporter, the Department of Commerce has conducted an administrative review of the antidumping duty order on cell-site transceivers and related subassemblies from Japan. The review covers one manufacturer/exporter of this merchandise to the U.S., Kokusai Electric Co., Ltd. ("Kokusai"), and the period January 1, 1988 through July 28, 1988. There were no known shipments of this merchandise to the United States by Kokusai during the period and there are no known unliquidated entries.

As a result of the review, the Department intends to revoke the antidumping duty order.

Interested parties are invited to comment on these preliminary results and intent to revoke.

EFFECTIVE DATE: July 11, 1989.

FOR FURTHER INFORMATION CONTACT: Michael J. Heaney or Phyllis Derrick, Office of Antidumping Compliance, International Trade Administration, U.S. Department of Commerce, Washington, DC 20230; telephone: (202) 377-4195/2923.

SUPPLEMENTARY INFORMATION:

Background

On December 20, 1988 the Department of Commerce ("the Department") published in the **Federal Register** (53 FR 51127) the final results of its last administrative review of the antidumping duty order on cell-site transceivers and related subassemblies from Japan (50 FR 307 January 3, 1985). Kokusai requested in accordance with section 353.54(f) of the 1988 Commerce Regulations that we conduct an administrative review. We published a notice of initiation on March 8, 1989 (54 FR 9868). The Department has now conducted that administrative review in accordance with section 751 of the Tariff Act of 1930 ("the Tariff Act".)

Scope of the Review

The United States has developed a system of tariff classification based on the international harmonized system of customs nomenclature. On January 1, 1989, the United States fully converted to the *Harmonized Tariff Schedule* ("HTS"), as provided for in section 1201 *et seq.* of the Omnibus Trade and Competitiveness Act of 1988. All merchandise entered, or withdrawn from warehouse, for consumption on or after that date is now classified solely according to the appropriate HTS item number(s).

Imports covered by the review are cell-site transceivers and related subassemblies which are part of the radio frequency (RF) equipment in the base station of a cellular radio communications system. This single-package equipment functions as a locating receiver and provides simultaneous two-way voice and data communications between the base station and the subscriber's mobile telephone by using different frequencies to transmit and receive. Subassemblies are an assemblage of parts dedicated for use in cell-site transceivers as defined above. During the review period such merchandise was classifiable under *Tariff Schedules of the United States Annotated* item numbers 685.2810 and 685.2820. Such merchandise is currently classifiable under HTS item numbers 8525.20.15, 8525.20.20, and 8525.20.30. The HTS item numbers are provided for convenience and Customs purposes. The written description remains dispositive.

The review covers one manufacturer/exporter of this merchandise to the U.S., Kokusai, and the period January 1, 1988 through July 28, 1988. There were no known shipments by Kokusai of this merchandise to the United States during the period and there are no known unliquidated entries.

Preliminary Results of the Review

As a result of our review, we preliminarily determine that the following margin exists:

Manufacturer/Exporter	Time period	Margin (percent)
Kokusai	1/1/88-07/28/88	[1] 0.08

[1] No shipments during the period; margin from last period in which there were shipments.

Interested parties may request disclosure within 5 days of the date of publication of this notice and may request a hearing within 10 days of publication. Any hearing, if requested, will be held 45 days after the date of publication, or the first workday thereafter. Pre-hearing briefs and/or written comments from interested parties may be submitted not later than 30 days after the date of publication. Rebuttal briefs and rebuttals to written comments, limited to issues raised in those comments, may be filed not later than 37 days after the date of publication.

On July 28, 1988 we tentatively revoked the order with respect to Kokusai. However since Kokusai is the only manufacturer/exporter that we have covered in this or past administrative reviews of this order, we intend to revoke the entire order. If this revocation is made final, it will apply to all unliquidated entries of this merchandise entered, or withdrawn from warehouse, for consumption on or after the date of publication of the tentative revocation.

This administrative review, intent to revoke, and notice are in accordance with sections 751(a) (1) and (c) of the Tariff Act (19 U.S.C. 1675(a)(1), (c)) and sections 353.53a and 353.54 of the Commerce Regulations (19 CFR 353.53a, 353.54) (1988).

Eric I. Garfinkel,

Assistant Secretary for Import Administration.

Date: June 30, 1989.

[FR Doc. 89-16134 Filed 7-10-89; 8:45 am]

BILLING CODE 3510-DS-M

[C-223-401]

Portland Hydraulic Cement From Costa Rica; Final Results of Countervailing Duty Administrative Review, Determination To Cancel Suspension Agreement, and Resumption of Investigation

AGENCY: International Trade Administration/Import Administration Department of Commerce.

ACTION: Notice of Final Results of Countervailing Duty Administrative Review, Determination to Cancel Suspension Agreement, and Resumption of Investigation.

SUMMARY: On January 9, 1989, the Department of Commerce published the preliminary results of its administrative review of the agreement suspending the countervailing duty investigation and tentative determination to cancel suspension agreement on portland hydraulic cement from Costa Rica. We have completed that review and determined to cancel the suspension agreement and resume the investigation.

EFFECTIVE DATE: July 11, 1989.

FOR FURTHER INFORMATION CONTACT: Patricia W. Stroup or Paul J. McGarr, Office of Countervailing Compliance, International Trade Administration, U.S. Department of Commerce, Washington, DC 20230; telephone: (202) 377-2786.

SUPPLEMENTARY INFORMATION:

Background

On January 9, 1989, the Department of Commerce ("the Department") published in the **Federal Register** (54 FR 654) the preliminary results of its administrative review of the agreement suspending the countervailing duty investigation and tentative determination to cancel the suspension agreement (49 FR 47280; December 2, 1984).

On January 19, 1989, we received a certified statement from the Central Bank of Costa Rica indicating that Cementos del Pacifico, S.A. ("CPSA"), the sole exporter of the subject merchandise during the review period and not a signatory to the suspension agreement, had not received Tax Credit Certificates (Certificados de Abono Tributario, or "CAT" certificates) on its exports of portland hydraulic cement to the United States. On February 3, 1989, we received a copy of the suspension agreement, signed by a CPSA official, indicating that firm's desire to be recognized as a signatory to the suspension agreement.

Scope of the Review

The United States, under the auspices of the Customs Cooperation Council, has developed a system of tariff classification based on the international harmonized system of customs nomenclature. On January 1, 1989 the United States fully converted to the Harmonized Tariff Schedule ("HTS"), as provided for in section 1201 *et seq.* of the Omnibus Trade and Competitiveness Act of 1988. All merchandise entered, or withdrawn from warehouse, for consumption on or after that date is now classified solely according to the appropriate HTS item number(s).

Imports covered by this review are shipments of Costa Rican portland hydraulic cement. During the period of review, such merchandise was classifiable under item number 511.1440 of the Tariff Schedules of the United States Annotated. This merchandise is currently classifiable under HTS item number 2523.29.00. The written description remains dispositive.

The review covers the period October 1, 1985 through September 30, 1986, and two firms, Industria Nacional de Cementos, S.A. ("INCSA") and CPSA.

Analysis of Comments Received

We gave interested parties an opportunity to comment on the preliminary results. We received written comments from the Government of Costa Rica and from the petitioners, the Puerto Rican Cement Co., Inc. (including Ponce Cement Corp.) and the San Juan Cement Co., Inc.

Comment: The Government of Costa Rica requested that the Department accept CPSA's agreement to become a signatory to the suspension agreement and requested that the suspension agreement be maintained. Conversely, petitioners urged the Department to cancel the suspension agreement with INCSA, resume its investigation and proceed to a final determination, imposing countervailing duties in the amount of 15 percent *ad valorem* on imports of the subject merchandise from Costa Rica.

Department's Position: It has long been our practice to consider submissions made after publication of the preliminary results of administrative review as not timely filed and to disregard those submissions (see, *e.g., Michelin X-Radial Steel Belted Tires from Canada; Final Results of Administrative Review of Countervailing Duty Order* (46 FR 48737· October 2, 1981)). This long-standing practice has recently been incorporated into § 355.31(a)(ii) of the Department of Commerce Regulations, published in the **Federal Register** on December 27 1988 (53 FR 52358). In suspended investigations, as in all other proceedings, it is imperative that any submission be timely filed so that not only the Department, but interested parties as well, will have adequate opportunity to consider and comment on the content of the submission. Neither CPSA's agreement to become a signatory nor the certification of nonreceipt of benefits were filed in a timely manner.

In our May 1986 questionnaire in this review, we pointed out that INCSA might no longer account for substantially all U.S. imports of the subject merchandise, and afforded other shippers the opportunity to become signatories to the suspension agreement. After receipt of CPSA's questionnaire response, we advised the respondents several times that if CPSA chose not to become a signatory, we would have to terminate the agreement and reopen the investigation. Thus, CPSA was clearly aware of the consequences of noncooperation but did not avail itself of the opportunity to become a signatory to the suspension agreement and did not submit the requested documentation until *after* the Department had published its preliminary results. Accordingly, we cannot take CPSA's submission into account in the final results in this review.

Final Results of Review and Cancellation of Suspension Agreemenet

As a result of our review, we determine that the suspension agreement no longer meets the requirements of sections 704(b) and (d) of the Tariff Act. Section 704(b) requires that exporters accounting for "substantially all" U.S. imports of the subject merchandise be signatories to any agreement suspending a countervailing duty investigation. Section 355.18(c) of the new Commerce Regulations defines "substantially all" as 85 percent of total U.S. imports. Section 704(d) of the Tariff Act mandates that a suspension agreement must be in the public interest and must be reasonably monitorable.

Because the Costa Rican exporter accounting for 100 percent of exports of the subject merchandise to the United States was not a signatory to the agreement during the period of review and chose not to rectify the situation within a reasonable period, we determine that the requirements of section 704(b) of the Tariff Act have not been satisfied and that continuation of the suspension agreement is not in the public interest. Accordingly, we have determined to cancel the suspension agreement and resume the investigation.

Resumption of Investigation

In accordance with section 704(i)(1)(B) of the Tariff Act, we are resuming the investigation as if the Department's affirmative preliminary determination under section 703(b) of the Tariff Act had been published on the date of publication of this notice of final results of review.

Suspension of Liquidation

As provided by section 704(i)(1)(A) of the Tariff Act, we are instructing the Customs Service to suspend liquidation on all shipments of portland hydraulic cement exported directly or indirectly to the United States from Costa Rica and entered, or withdrawn from warehouse, for consumption on or after [insert date 90 days prior to date of publication]. The Department will also instruct the Customs Service, in accordance with section 703 of the Tariff Act, to require a cash deposit or bond for each such entry of the merchandise in the amount of 15 percent *ad valorem,* the rate found in our preliminary affirmative countervailing duty determination (49 FR 37134; September 21, 1984).

Concurrent with the publication of this notice the Department is notifying the petitioners and all interested parties who are or were parties to the investigation of this action, as required by section 704(i)(1)(E) of the Tariff Act.

This administrative review and notice are in accordance with section 751(a)(1) of the Tariff Act (19 U.S.C. 1675(a)(1)) and §§ 355.19 and 355.22 of the new Commerce Regulations published in the **Federal Register** on December 27 1988 (53 FR 52306) (to be codified at 19 CFR 355.19 and 355.22).

Eric I. Garfinkel,

Acting Assistant Secretary for Import Administration.

[FR Doc. 89-16133 Filed 7-10-89; 8:45 am]

BILLING CODE 3510-DS-M

Export Trade Certificate of Review

AGENCY: International Trade Administration, Department of Commerce.

ACTION: Notice of application for an amendment to an Export Trade Certification of Review.

SUMMARY: The Office of Export Trading Company Affairs, International Trade Administration, Department of Commerce, has received an application for an amendment to an Export Trade Certificate of Review. This notice summarizes the conduct for which certification is sought and requests comments relevant to whether the Certificate should be amended.

FOR FURTHER INFORMATION CONTACT: Douglas J. Aller, Acting Director, Office of Export Trading Company Affairs, International Trade Administration, 202/377-5131. This is not a toll-free number.

SUPPLEMENTARY INFORMATION: Title III of the Export Trading Company Act of 1982 (Pub. L. 97-290) authorizes the Secretary of Commerce to issue Export Trade Certificates of Review. A Certificate of Review protects the holder and the members identified in the Certificate from state and federal government antitrust actions and from private, treble damage antitrust actions for the export conduct specified in the Certificate and carried out in compliance with its terms and conditions. Section 302(b)(1) of the Act and 15 CFR 325.6(a) require the Secretary to publish in the **Federal Register** identifying the applicant and summarizing its proposed export conduct.

Request for Public Comments

Interested parties may submit written comments relevant to the determination whether a Certificate should be amended. An original and five (5) copies should be submitted not later than 20 days after the date of this notice to: Office of Export Trading Company Affairs, International Trade Administration, Department of Commerce, Room 1223, Washington, DC 20230. Information submitted by any person is exempt from disclosure under the Freedom of Information Act (5 U.S.C. 552). Comments should refer to this application as "Export Trade Certificate of Review, application number 84-4A012.

OETCA has received the following application for an amendment to Export Trade Certificate of Review No. 84-00012 which was issued on June 11, 1984 (49 FR 24581, June 14, 1984).

Summary of the Application

Applicant: Northwest Fruit Exporters, 1005 Tieton Drive, Yakima, Washington 98902.

Contact: Kenneth F Severn, Secretary/Treasurer, telephone: (509) 453-4837

Application No.. 84-4A012.

Date Deemed Submitted: June 23, 1989.

Northwest Fruit Exporters seeks to amend its Certificate to:

1. Add the following additional companies as "Members" within the meaning of § 325.2(1) of the Regulations (15 CFR 325.2(1)): Yakima Fruit & Cold Storage, Yakima, WA and Oneonta Trading Corp., Wenatchee, WA.

2. Delete the following companies as "Members:" Muriel Oliver-Winterscheid, Mercer Island, WA and Mojonnier & Sons, Sunnyside, WA.

3. Change the address location of the "Member" company Amerifresh from Yakima, WA to Wenatchee, WA.

Date: June 29, 1989.

Douglas J. Aller,

Acting Director, Office of Export Trading Company Affairs.

[FR Doc. 89-16130 Filed 7-10-89; 8:45 am]

BILLING CODE 3510-DR-M

National Oceanic and Atmospheric Administration

[Docket No. 90643-9143]

RIN 0648-AC34

King and Tanner Crab Fisheries in the Bering Sea/Aleutian Islands

AGENCY: National Marine Fisheries Service (NMFS), NOAA, Commerce.

ACTION: Notice of approval of a fishery management plan.

SUMMARY: NOAA announces the approval of the Fishery Management Plan for Commercial King and Tanner Crab Fisheries in the Bering Sea/Aleutian Islands (FMP). This FMP establishes a State/Federal cooperative management regime that defers much of crab management to the State of Alaska (State) with Federal oversight. The management measures are ones that have been used in managing the King and Tanner crab fisheries of the Bering Sea/Aleutian Islands area and have evolved over the history of the fishery.

EFFECTIVE DATE: June 2, 1989.

ADDRESS: Copies of the FMP and Environmental Assessment may be obtained from the North Pacific Fishery Management Council, P.O. Box 103136, Anchorage, Alaska 99510. A copy of the Federalism Assessment may be obtained from the Regional Director, NOAA Fisheries, P.O. Box 21668, Juneau, Alaska 99802-1668.

FOR FURTHER INFORMATION CONTACT: Raymond E. Baglin, 907-586-7229.

SUPPLEMENTARY INFORMATION:

Background

The FMP was adopted by the North Pacific Fishery Management Council (Council) on January 17 1989. This FMP culminates a ten-year effort by the Council to address the concerns of various user groups while at the same time acknowledging more than 20 years of management of crab by the State. It contains a general management goal with seven management objectives identified, and relevant management measures required to meet the objectives that are presented. The FMP establishes three categories of management measures: (1) Fixed measures implemented by the State, that require an FMP amendment to change; (2) measures that the State may implement and amend, subject to Federal criteria specified in the FMP and enforce against State-registered vessels in the exclusive economic zone (EEZ); and (3) measures that the State may implement and amend, without specific Federal criteria specified in the FMP and enforce against State-registered vessels in the EEZ. Several management measures may contribute to more than one objective, and several objectives may mesh in any given decision on a case-by-case basis.

In adopting the FMP the Council intended that, to the extent practicable, the State should continue to play a leading role in the management of the King and Tanner crab fisheries in the Bering Sea/Aleutians Islands. Alaska has developed a comprehensive management system for managing the King and Tanner Crab fisheries off its shores, both within and beyond the three-mile limit. This system, representing the acquired expertise of scores of State employees and an investment by that State over the years of many millions of dollars, could not be duplicated in the near future by the National Marine Fisheries Service (NMFS). At the same time, some residents of States other than Alaska who participate or previously participated in the crab fisheries have long been concerned about their lack of representation on the Alaska Board of Fisheries (Board) and in the Alaska Department of Fish and Game (AD&G), the agencies that manage fisheries on behalf of Alaska.

In order to take minimum advantage of Alaska's ability and willingness to continue to manage the King and Tanner crab fisheries while at the same time providing sufficient Federal oversight to ensure representation and consideration of non-Alaskan concerns, the FMP provides for a special means of access to the Bering Sea/Aleutian Islands King and Tanner crab regulatory process for nonresidents of Alaska through a Pacific Northwest Crab Industry Advisory Committee (PNCIAC). The PNCIAC will meet at appropriate times and places throughout the year to review and advise the State and the Council on crab management issues, stock status information, and biological and economic analyses relating to the crab fisheries. The FMP also establishes a Crab Interim Action Committee (CIAC) composed of the Alaska Regional Director of NMFS, the Commissioner of ADF&G, and the Director of the Washington State Department of Fisheries, or their designees. The CIAC will provide oversight of the FMP and provide for Council review of management measures and other relevant matters.

Representatives from the Council, NMFS, and NOAA General Counsel will participate in the State development of regulations for management of King and Tanner crab fisheries in the Bering Sea/

Aleutian Islands area, including directly participating in the Board meeting for the purpose of assisting the State in determining the extent to which proposed management measures are consistent with the FMP the Magnuson Act, and other applicable Federal law. Federal management oversight is also provided in the form of a review and appeals procedure for all State preseason and in-season crab management measures applicable to State-registered vessels in the EEZ. All current State laws applicable to fishing vessels in the EEZ have been reviewed by the Secretary and found facially consistent with the FMP Preseason and in-season State management measures will be reviewed by the Secretary of Commerce (Secretary) as a matter of discretion, or upon timely appeal by an interested party. Secretarial review is limited to whether the challenged State law is consistent with the FMP the Magnuson Act, or other applicable Federal law.

Public Comments

Written comments were received from the ADF&G and three industry associations.

In general, the ADF&G commented that the FMP is not necessary for the management of King and Tanner crab fisheries of the Bering Sea/Aleutian Islands (BS/AI), but ADF&G will participate in a cooperative FMP provided that Federal funds are available to cover implementation costs to the State.

Two of the industry associations recommend the approval of the FMP with various modifications.

One industry association objects to deferring management authority to the State and believes that a conventional FMP is necessary.

The following are specific comments on the FMP and NOAA s responses:

Comment: One commenter noted the following three key factors influencing the need for an FMP for the BS/AI crab fisheries: (1) The majority of participants in the fisheries are nonresidents of Alaska, (2) the coastal boundary of the fishing area is unique, incorporating the largest coastline of any EEZ fishery and bordering only one state, and (3) controversial allocation issues necessitate the protection afforded by an FMP

Response: This comment reaffirms past concerns expressed by some crab industry members and contains some of the chief reasons why the Council has submitted the FMP for Secretarial review.

Comment: One commenter indicated that his association is now substantially in agreement on most of the FMP issues except pot limits, exclusive registration, and closed waters, all of which the State maintains it must preside over. This commenter stated his concerns as follows:

1. Pot limits (gear limitation): A limit on the number of pots would be unenforceable in this high seas, offshore and remote fishery.

2. (Exclusive) Registration: This is a *defacto form* of limited entry that would ultimately favor resident small boat fishermen that do not depend on the need for mobility, to move from one fishery to another within the geographic area.

3. Closed Waters (Jurisdiction): State priority giving subsistence users exclusive fishing areas is objectionable. Expansion and or creation of new subsistence fishing zones should be restricted to the jurisdiction of the NPFMC along with jurisdiction over #1 and #2 above.

Response: 1. Although section 8.2.7 of the FMP authorizes the State to promulgate pot limits for purposes specified in the FMP NOAA notes that no pot limits are currently imposed in the management area. The Secretary also notes that section 8.2.7 of the FMP requires the State to consider, among other factors, the enforceability of any proposed pot limits. Consequently, practicality of enforcement will be addressed if and when the State decides to promulgate any limits on the number of pots a vessel may deploy or carry.

2. Section 8.2.8 of the FMP authorizes the State to designate, subject to limitations, crab exclusive registration areas. Under exclusive area designation, the operator of any fishing vessel may register for fishing in a single exclusive area without restriction, but cannot fish in any other exclusive area during the registration year. Any vessel may, however, fish in all nonexclusive areas without restriction, even if registered in an exclusive area.

In an appropriate case, exclusive area designation may aid in dispersing fishing effort while still allowing the fleet the opportunity to harvest the available crab resource. Exclusive area designation may also allow small, less mobile vessels the opportunity to fish in accessible waters near the home port of those vessels, while allowing the larger, more mobile vessels to fully harvest available crab resources elsewhere.

Exclusive area designation may, in any particular case, result in allocation of fishing opportunities among the fleet. Such allocation may be permissible under national standard 4 of the Magnuson Act if fair and equitable to all fishermen, reasonably calculated to promote conservation, and carried out in such a manner that no single entity acquires an excessive share of fishing privileges. In addition, section 8.2.8 of the FMP specifies six factors that the State must consider when proposing an exclusive area designation. Those factors include the extent to which the proposed designation will encourage efficiency and provide all vessels a reasonable opportunity to participate in the fishery. These factors must be considered if and when exclusive areas are designated.

3. Section 8.2.9 of the FMP authorizes the State to designate and modify commercial fishery closures to meet State subsistence obligations. The State, if and when it proposes such a closure or modification, must consider the need to protect subsistence fisheries, the need to protect critical habitat, prevention of conflict, and creation of navigational hazard.

It is important to remember that the Secretary will review measures adopted by the State to determine if they are consistent with the FMP the Magnuson Act, and its national standards in accordance with chapters 9 and 10 of the FMP

Restricting the authority of the Council over these three management measures by placing them into Category 1 (fixed measures) was considered and rejected by the Council. The State is and has been intimately involved in the management of the king and Tanner crab fisheries and has long-term monitoring, enforcement, and research programs in place. The perceived net benefits of utilizing the existing State programs versus the costs of developing entirely new Federal programs led the Council to direct the Council's Crab Management Committee to develop a cooperative State/Federal management plan in which significant authority is deferred to the State.

The Council wanted to avoid problems that were experienced with the repealed Tanner crab FMP and ensure that the new FMP is flexible enough to provide for management based on the best scientific information available and provide for timely Federal and State coordination of management.

Comment: One commenter concluded that E.O. 12612, the Executive Order on Federalism, in no way interferes with adoption and implementation of the FMP

Response: A Federalism Assessment prepared by NOAA concluded that the FMP complies with the criteria and principles of Executive Order 12612. Copies are available from the Alaska Regional Office.

Comment: One commenter discussed the importance and necessity of an FMP for the BS/AI crab stocks. In supporting the need for an FMP he cited Congressional intent, conservation and management requirement of the BS/AI crab fishery, and Federal statutes and guidelines.

Response: Comment noted.

Comment: Several commenters presented several suggested modifications for the Secretary to incorporate into the FMP

Response: The Secretary is required to approve, disapprove, or partially disapprove plans after the 75th day, but before the close of the 95th day, following receipt of a plan. He is to review the FMP to determine whether it is consistent with the national standards, other provisions of the Magnuson Act, and any other applicable law. There is no provision for making substantive modifications to the FMP at this stage of the review process. The commenters should make any request for substantive charges to the FMP to the Council for future consideration.

Comment: One commenter stated that the FMP descriptions of the use of economic data within the crab management process do not clearly recognize that socioeconomic or bio-economic objectives are secondary to resource conservation concerns.

Response: NOAA refers the commenter to section 7.2.1 of the FMP which states that "* the maintenance of adequate reproductive potential in each crab stock will take precedence over economic and social considerations. Provisions of the Magnuson Act, including National Standard 1, also establish the paramountcy of resource conservation.

Comment: One commenter said that the Secretary should clearly state that economic and social considerations alone may not be used to justify management measures. He recommended modifying the FMP so that market and other economic considerations are not the sole criterion used in setting minimum size limits or setting guidelines harvest levels (GHLs).

Response: As stated above, NOAA cannot make substantive changes to the Council's FMP text at this time. However, the commenter's suggested addition is unnecessary; Magnuson Act national standard 5 states that no conservation and management measure may have economic allocation as its sole purpose.

Comment: One commenter states that the descriptions in the FMP which justify management measures that maintain or improve the economic stability of coastal communities cause deep concern. The commenter believes that this will likely create conflict, cause inefficiency, and serve as an economic allocation scheme, potentially violating National Standard 5, and that such a preference scheme should not be the sole criterion on which EEZ management measures are based.

Response: The Secretary will review measures adopted by the State to determine if they are consistent with the FMP the Magnuson Act, and its national standards in accordance with chapters 9 and 10 of the FMP Because measures aimed at stabilizing coastal communities have purposes beyond economic allocation, they are unlikely to conflict with national standard 5.

Comment: One commenter states that the FMP allows State and Federal observer programs to coexist without coordination.

Comment: One commenter states that the

Response: NOAA refers the commenter to section 8.1.3 of the FMP which states, "To the maximum extent practicable, the Regional Director will coordinate any Federal observer program with that required by the State. NOAA notes that there are no present plans for a Federal observer program for the crab fisheries under this FMP

Comment: One commenter contends that separate but similar observer programs are burdensome and cause unnecessary duplication.

Response: The State currently has a crab observer program in place, while the Federal Government does not. Any concern of duplication of future observer programs will be reviewed by the Secretary if and when a Federal program is considered. NOAA notes that Magnuson Act national standard 7 prohibits, where practicable, unnecessary duplication.

Comment: Frameworking does not adequately prevent the inequitable and discriminatory application of pot limtis against larger vessels.

Response: The framework language in section 8.2.7 of the FMP requires that pot limits be designated in a nondiscriminatory manner. For example, the FMP states that pot limits related to vessel size could affect small and large vessels equally. Currently, there are no pot limits in effect in the management unit. If pot limits are implemented in the future, they must be designated in a nondiscriminatory manner.

Comment: One commenter points out that pot limits are unnecessary because alternative management measures may be utilized to meet the same objectives served by pot limits.

Response: NOAA believes that the availability of other types of management measures for meeting the same objective is not sufficient reason to eliminate a viable management tool, assuming it is applied consistently with the FMP the Magnuson Act, and other applicable law. The Council has prepared a cooperative FMP to try to preserve the flexibility of State management, not restrict it unnecessarily.

Comment: Registration areas do not need to be frameworked. An amendment cycle does not place a restraint on the State great enough to justify discretionary use of a frameworked management measure.

Response: NOAA approves the Council's designation of registration areas as Category 2 (frameworked) measures. The Council determined that situations might arise in which a timely change to registration area designation would serve a legitimate conservation and management purpose.

Comment: Closed water regulations unnecessarily duplicate other FMP regulations.

Response: NOAA believes that the State should have the flexibility to achieve its legitimate management purposes by a combination of measures, and that there is no reason why the Federal Government should unnecessarily restrict the State. NOAA notes that any State measures closing waters to commercial fishing must be consistent with the provisions of the FMP the Magnuson Act, and other applicable law.

Comment: Frameworking of closed water designations provides the State with too much discretion to prohibit commercial fishing.

Response: The FMP is intended to preserve, within the limits of Federal law, the State's management flexibility. The Secretary will review management actions taken by the State, including changes in closed waters, and if the State action violates the FMP the Magnuson Act, or other applicable Federal law, the Secretary will act to supersede the State regulation in the EEZ.

Comment: The FMP unlawfully grants to the State jurisdiction to close waters outside of State territorial waters. Furthermore, the FMP does not discuss the extent to which it recognizes the State regulations relevant to Tanner crabs, subsistence harvests, and commercial fisheries.

Response: Section 306(a)(3) of the Magnuson Act provides that a State may regulate fishing vessels outside its boundaries if the vessels are registered under the law of the State. The FMP at Section 8.1.2, assumes that all crab vessels are licensed and registered under the laws of the State. While fishing in the EEZ they are subject to all State regulations that are consistent with the FMP Magnuson Act, and other applicable Federal law. If, in the future, vessels participate in the fishery without registering with the State, it is likely that an FMP amendment will be required to establish vessel registration for those fishermen operating in the EEZ.

Comment: The Board of Fisheries and the Commissioner of ADF&G currently entertain only administrative appeals concerning conservation emergencies. Moreover, the FMP states that the Secretary will not consider an appeal unless the appeal asserts a state regulation or statute is inconsistent with the FMP the Magnuson Act, or other applicable Federal law. Consequently, interested parties have no forum for appeals which do not meet any of the State or Federal criteria. The commenter recommends language changes to chapters 9 and 10 of the FMP broadening the scope of the Secretarial appeals section to include more Federal policy oversight on State management decisions.

Response: This FMP is written as a cooperative FMP in an attempt to avoid problems that were encountered in the implementation of the previous Tanner and King crab FMPs. It is intended to optimize the use of limited State and Federal resources and prevent duplication of effort by making use of the existing State management expertise.

The State has made a substantial investment in facilities, communications, information systems, vessels, equipment, experienced personnel capable of carrying out extensive crab management, and research and enforcement programs. The intent of the FMP is to preserve the State's management flexibility within the bounds of Federal law. The FMP is predicated on continued sound State management policy, with full public participation in the State's regulatory process. The language changes suggested by the commenter would diminish the State's ability to exercise that policy discretion.

Comment: The CICA decision process is unclear. The FMP does not clarify how the CIAC recommendations and decisions will be made.

Response: The Council will establish operating procedures for the CIAC as it does for all standing committees. The commenter is urged to raise its concerns with the Council.

Comment: One commenter indicated that his association is pleased to see an FMP covering the BS/AI crab stocks. He also strongly recommended that work begin immediately to prepare an FMP for the Gulf of Alaska crab stocks.

Response: Comment noted. The commenter should make his request for an FMP for the Gulf of Alaska stocks to the Council.

Comment: The State believes that an FMP is unnecessary and that the primary changes resulting from the FMP are merely the additional regulatory processes associated with extra layers of administration of crab management. The State questions whether the FMP will resolve critical problems and provide meaningful benefits to participants in the fisheries, regulatory agencies, and the nation overall.

Response: The FMP is the product of a ten-year effort by the Council to balance the concerns of various user groups with the 20-year record of successful management of crab by the State. It formalizes commitments by the State and Federal governments, providing for the Board to take the lead role in crab management, but reserves oversight responsibility to the Secretary to ensure that State preseason and in-season actions comply with the FMP the Magnuson Act, and other Federal law. NOAA believes that the cooperative FMP is the best approach to management of the crab fisheries in the BS/AI area and that it will provide meaningful benefits by limiting the State's discretion so that discrimination by state of residence will be less likely.

Comment: The State believes that the benefits derived from an FMP could be obtained more efficiently and effectively by instituting the following five modifications to the current regulatory system: (1) ADF&G and the Board could formally adopt a policy of nondiscrimination based on residency for allocation decisions within commercial fisheries; (2) an industry funded PNCIAC could be sanctioned without implementing an FMP· a nonresident seat on the Dutch Harbor Advisory Committee has already been created and an informal guide describing the State regulatory system could be prepared; (3) more frequent meetings could be held between the ADF&G, Board of Fisheries, NMFS, and interestd crab industry members; (4) a joint statement of principles could be prepared between NMFS and ADF&G, with an annual review by the Secretary of all State management actions, and (5) a memorandum of understanding could be developed between the State and the U.S. Coast Guard to formalize enforcement commitments.

Response: NOAA believes that the cooperative FMP is a preferable form of management. Controversial management measures are either fixed in the FMP requiring an FMP amendment to change or frameworked with factors for the State to consider when information is available. This provides an extra degree of predictability to the management process. NOAA also believes that additional benefits will be derived from the formal appeals process that is contained in the FMP

Comment: The State indicated that if the Secretary determines an FMP is necessary for managing the king and Tanner crab fisheries of the BS/AI, it will require Federal funds in the amount of $181,400 to cover costs to the State associated with implementation of the FMP during the first year, and $171,400 annually thereafter.

Response: The Alaska Region, NMFS, has requested supplemental funding to cover any additional costs to the State, and will work with the State on determination of what such costs should be. NOAA has made no advance commitment of specific funding.

Comment: One commenter expressed concern with an FMP that delegates Federal management authority to the State.

Response: The FMP does not delegate Federal management authority to the State. The FMP allows continuation of the State's authority over vessels in the EEZ, to the extent authorized under the Magnuson Act, subject to Federal oversight.

Three categories of management measures are created: (1) Those that are specifically fixed in the FMP and require an FMP amendment to change; (2) those that are framework-type measures which the State can change following criteria set out in the FMP and (3) those measures that are neither rigidly specified nor frameworked in the FMP The measures in (2) and (3) may be adopted as State laws subject to the appeals process outlined in the FMP

Comment: One commenter believes that nonresidents of the State will not receive equal treatment with Alaska residents.

Response: Magnuson Act national standard 4 and other Federal and State laws protect against discrimination based on state of residence. The FMP also affords a formalized review and appeals procedure to prevent the possibility of such discrimination.

Comment: One commenter expressed concern that the FMP's concept could become a precedent for management of groundfish fisheries.

Response: This FMP recognizes the State's expertise in managing the king and Tanner crab fisheries. NOAA, at this time, is not considering deferring management authority for the groundfish to the State.

Comment: The FMP should be amended to allow for groundfish fishermen to participate in the crab decisionmaking process relative to crabbers' bycatch needs. The FMP should specify criteria for selection of groundfish fishermen as participants on both the Alaska Board of Fisheries and the advisory PNCIAC.

Response: Under current State regulations, groundfish fishermen, as well as any other interested members of the public, may participate in the Board's regulatory process (see Appendix C of the FMP). NOAA considers this level of public participation adequate. The Council is responsible for establishing membership qualifications for the PNCIAC.

Comment: The cooperative management contemplated by the FMP is a total abandonment of the entire purpose and policy underlying the enactment of the Magnuson Act.

Response: This FMP incorporated management measures necessary and appropriate for the conservation and the management of the fishery. The FMP limits direct Federal involvement but retains Federal oversight to assure compliance with the FMP, Magnuson Act, and other applicable Federal law. This approach is consistent with the purposes and policy of the Magnuson Act and is not an abandonment of Federal responsibilities. Regionalization was built into the Magnuson Act to provide flexibility and creativity in dealing with unique or unusual fisheries.

Comment: Although the FMP requires the State to consider the impacts on coastal communities of its management measures, it does not define which coastal communities will be considered and how impacts on coastal communities will be quantified, and how those impacts for non-Alaskan coastal communities effectively can be presented and evaluated under the FMP. The special interest treatment envisioned is ill-conceived and will not square with national standards. These oversights should be corrected before FMP implementation.

Response: Section 7.2.2 of the FMP states that fishery management measures shall maximize economic and social benefits to the nation over time. Economic and social benefit is a complex term as it relates to fishery management. The FMP broadly defines economic and social benefits to include, without limitation, "profits, income, employment, benefits to consumers, and less tangible or less quantifiable social benefits such as the economic stability of coastal communities;" (FMP § 7.2.2). Thus, economic stability of coastal communities is just one of the broad range of issues that may be considered when assessing the economic and social effects of any management measure.

The commenter correctly points out that the FMP does not specify which coastal communities will be considered and how impacts on those communities will be quantified. This lack of specificity is unavoidable at this point. However, as particular management measures are proposed and evaluated, relevant impacts on affected coastal communities will be evaluated as thoroughly as available data allow.

The commenter is also apparently concerned that the FMP ignores social and economic dependence of communities outside Alaska. NOAA notes that the FMP does not prohibit the State and the Secretary from considering the relevant impacts of proposed measures on all affected communities, whether inside or outside the State of Alaska. NOAA also notes that Magnuson Act National Standard 4, the FMP and other applicable law prohibit conservation and management measures that discriminate between residents of different states.

Comment: The FMP fails to specify, in detail, procedures to be used in deriving guideline harvest levels (GHLs) or biomass estimates for the crab stocks. Use of this resource and attainment of optimum yield (OY) must maintain a national perspective. The FMP relies upon historical harvest levels as a basic methodology to establish maximum sustainable yield (MSY), OY, and upper limits for annual catch levels. This approach is questionable and could lead to arbitrary and politically motivated management decisions. This could be avoided through mandatory annual stock assessment procedures to attain crab biomass data which will provide confidence in determining the amount of crab available.

Response: Although the estimate of MSY is of questionable utility in managing crab stocks due primarily to highly variable recruitment, MSY has been estimated on the basis of the best scientific data available for each species and stock of king and Tanner crab covered in this FMP. Lacking detailed information, MSY is equated to the average catch levels in recent fisheries.

The FMP defines optimum yield in Chapter 4. The definition of OY prescribes that the benefits of the fishery resources be allocated among all of the people affected by the fishery. The estimates of OY indicate short-term harvest potential during periods of high crab abundance. However, they may overstate the harvest potential on a continuing basis, because peaks of harvest associated with developing fisheries may have contributed to subsequent volatility in the abundance of crab stocks.

In addition the OY estimates do not indicate which stocks should be subject to rebuilding schedules, not the manner in which the national interest is served over time through a balance of economic, social, and ecological factors relevant to OY. Because of temporal variability in these factors, GHLs are adjusted annually based upon current evaluations of the biological and socioeconomic components. The large upper limit on OYs is specified to accommodate the full range of possible GHL specifications depending upon annual assessments of short- and long-term tradeoffs in these factors.

The GHL is composed primarily of two interrelated components: a biological component and a socioeconomic component. The FMP requires the State to consider five factors (see section 8.2.2 of the FMP) to the extent information is available when establishing GHLs.

The process of determining a GHL which prevents recruitment overfishing and maximizes socioeconomic benefits includes the routine collection and analysis of biological, economic, social, and other data. Crab resources of the BS/AI area vary in the level of scientific information available for management. Consequently, exact procedures for determining appropriate acceptable biological catches and GHLs vary due to differences in the quality and quantity of resource data bases. Information necessary to evaluate the five Federally approved factors for establishing GHLs include data from trawl surveys, pot surveys, fishery performance statistics (catch per unit of effort), price, personal income, employment and other market and income data.

NOAA fisheries already conducts an annual trawl survey in the eastern Bering Sea to determine the distribution and abundance of the crab resources.

Comment: Observers are needed on crab vessels. The current State program has not collected detailed data on a timely basis. The FMP should require all crab catcher vessels to accept NMFS observers if requested to do so. A requirement placing NMFS observers on crab catcher vessels while fishing in the EEZ should be incorporated into the FMP

Response: NOAA agrees observer requirements are important to attainment of the biological conservation and research and management objectives of the FMP The commenter is referred to section 8.1.3 of the FMP which states, Any vessel fishing for king or Tanner crab, and/or processing king or Tanner crab within the BS/AI area, shall be required to take aboard an observer, when so requested by the Director, Alaska Region, NMFS. NOAA considers the current level of State observer coverage adequate at this time.

Comment: Allocative management measures should be confined to Category 1; as a minimum, the following should be fixed in the FMP as Federal management measures: pot limits, registration areas, closed waters, reporting requirements, and bycatch limits. They key management concepts currently listed within the frameworking Category 2 should be placed within Category 1. This will ensure a balanced approach and prevent discrimination on the basis of State residence.

Response: The Council designed this FMP as a cooperative FMP for reasons previously mentioned. The FMP describes legitimate and non-allocative reasons for all of these management measures. There is no reason to deny the State the flexibility needed to manage the crab resources in the most efficient and timely manner possible. All management measures must be consistent with the FMP Magnuson Act, and other applicable Federal law, all of which prevent discrimination on the basis of State residence.

Comment: One commenter states that the FMP framework provisions do not conform with the NMFS Operational Guidelines-Fishery Management Plan Process (1983).

Response: The commenter evidently has confused the concept of Federal frameworking with the concept of frameworking utilized in this FMP The NMFS Operational Guideline citation refers to a conventional frameworked FMP implemented by Federal regulations pursuant to the Magnuson Act. Although this cooperative FMP uses the term "framework, it results instead in the limited deferral of management authority to the State within the boundaries defined in the FMP The cited NMFS Operational Guidelines are inapposite.

Comment: The FMP defers reporting requirements to the State. This is unacceptable because the crab fishery bycatch of both crab and halibut remain unaccounted. Handling and other bycatch mortality of crab is not effectively measured under this system. Reporting requirements need to be designated Category 1 management measures.

Response: Placing reporting requirements into Category 1 would unnecessarily limit the State's flexibility to promulgate conservation and management measures in a timely manner. NOAA notes that the State already collects information on incidental catches in crab pots from ADF&G samplers, interviews and observers on board catcher processors and uses such information in determining the need for fisheries closures (see State E.O. 4-2-09-89). The commenter is urged to suggest any modifications to this program to the appropriate State agency.

Comment: Any decision regarding the amount of crab allowable as bycatch in groundfish fisheries is an allocation decision, and should be reserved to the Council.

Response: The crab FMP only defers bycatch limits in crab fisheries to the State. Crab bycatch in groundfish fisheries is managed under the Fishery Management Plan for the Groundfish Fishery of the Bering Sea and Aleutian Islands area implemented by regulations at 50 CFR 611.93 and 50 CFR Part 675.

Comment: Bycatch limits should be set for crab fishermen. This will have the positive impact of encouraging a reduction in the crab fishermen's incidence of non-target crab bycatch.

Reponse: The FMP already authorizes the State to impose bycatch limits without the need for FMP amendment. The commenter is urged to raise this issue with the appropriate State agency.

Comment: One commenter expressed concern with the appeal procedure described in chapter 10 of the FMP to set aside in-season actions. He wanted to be certain that actions taken would be based on a written public record.

Response: A written record of the appeal and the Secretary's final action will be made available for review by interested parties.

Comment: The CIAC could delay the appeals process. The CIAC's comments should be in writing and be made available to the public within 30 days of making its recommendations.

Response: The CIAC consists of the Regional Director of NMFS, the Commissioner of ADF&G and the Director of the Washington State Department of Fisheries or their designees. NOAA expects these members to fulfill their responsibilities in a timely fashion. For in-season management actions the Secretary allows CIAC five days for comment on an appeal. However, if the Secretary determines that there is not sufficient time available for this review, he will seek comments by telephone from the Commissioner of ADF&G and from the Council.

The CIAC's comments will be in writing and will be made available upon request.

Comment: One commenter questioned the fairness of informal hearings provided for by the FMP

Response: The purpose of informal hearings is to supplement the record to increase the Secretary's knowledge of issues. NOAA believes the informal hearings may be necessary before taking final action on any appeals.

Comment: One commenter questioned the FMP's prohibition against bringing an in-season appeal of a State regulation that had been unsuccessfully appealed preseason.

Response: Controversy regarding the consistency of State regulations with the FMP and applicable law must be put to rest promptly and finally, after full consideration of relevant issues. NOAA sees no need to allow an additional opportunity for in-season appeal of State regulations already determined to be consistent with the Magnuson Act, the FMP and other applicable Federal law.

Comment: A requirement which will advise the interested public of the basis for rejection or acceptance of an appeal should be required by the FMP

Response: A written record of the notice and all public documents will be available for review by interested parties.

Comment: One commenter recommended instituting a federally managed crab FMP for both BS/AI and the GOA.

Response: The Council considered several factors in determining the boundaries for the management unit. It noted that the stocks in the BS/AI are discrete from stocks in the GOA and that the physical environment has attributes that are distinguishable. It also noted that the fisheries, composition of resident and nonresident fishermen, the composition and mix of vessel size classes and portion of fisheries occurring in state territorial waters is different.

One of the alternatives that the Council considered and ultimately rejected was a conventional federal crab FMP

Comment: One commenter would like the Board, the PNCIAC, and the CIAC to take the same oath of office as the Council members take.

Response: Members of the Council's standing committees are not required to take an oath; only appointed Council members are. All appointed members of the Board do sign a State oath of office. NOAA does not believe that it is necessary for the members of the Board to take the same oath of office as the Council.

Implementation of FMP

No immediate Federal regulatory action is necessary to implement this FMP The Secretary has preliminarily determined that existing State laws appear to be consistent with the FMP the Magnuson Act, and other applicable Federal law. The Secretary later may find that a State regulation or statute governing king or Tanner crab in the BS/AI is inconsistent with the FMP the Magnuson Act, or other applicable Federal law, either as the result of an appeal or the discretionary review of measures adopted by the Board provided for in the FMP. If necessary, he may publish a regulation in the **Federal Register** superseding such State regulation or statute as it applies in the EEZ.

Appeals to the Secretary

Sections 9 and 10 of the FMP establish a procedure for interested members of the public to appeal State of Alaska regulations and statutes to the Secretary. Appeals conforming to the criteria described in those sections may be submitted in writing to the Regional Director, NOAA Fisheries, P.O. Box 21668, Juneau, Alaska 99802–1668. Appeals must set forth the reasons why the appellant believes the challenged regulations or statutes are inconsistent with the FMP the Magnuson Act, or other applicable Federal law, and must include any supporting facts or documentation.

Classification

The Regional Director has determined that the Fishery Management Plan for the Commercial King and Tanner Crab Fisheries in the Bering Sea and Aleutian Islands is necessary for the conservation and management of the Bering Sea and Aleutian Islands crab fisheries, and that this FMP is consistent with the Magnuson Act and other applicable law. A copy of the FMP may be obtained from the Council at the address above.

The Council prepared an environmental assessment (EA) for this FMP The Assistant Administrator for Fisheries concluded that there will be no significant impact on the environment as a result of FMP approval. A copy of the EA may be obtained from the Council at the address above.

Because this FMP requires no implementing regulations, 5 U.S.C. section 553 of the Administrative Procedure Act, Executive Order 12291 and the Regulatory Flexibility Act do not apply to this notice of FMP approval.

This FMP does not contain collection of information requirements subject to the Paperwork Reduction Act.

The Council determined that this FMP is consistent to the maximum extent practicable with the approved coastal zone management program of Alaska. This determination was submitted for review by the responsible State agencies under section 307 of the Coastal Zone Management Act. The State agencies failed to comment within the statutory time period; therefore, State concurrence is assumed.

The Federalism Implementation Officer of the Department of Commerce has certified that the policies in the FMP are consistent with the federalism principles, criteria, and requirements set forth in the sections 2 through 5 of Executive Order 12612. A copy of the Federalism Assessment prepared for this FMP may be obtained from the Regional Director, Alaska, at the address above.

The Secretary approved the FMP on June 2, 1989, and determined that it is consistent with the Magnuson Act and other applicable law. Therefore, NOAA issues this notice announcing approval of the FMP

Authority: 16 U.S.C. 1801 *et seq.*

Dated: July 6, 1989.

James W. Brennan,
Assistant Administrator for Fisheries, National Marine Fisheries Service.

[FR Doc. 89–10236 Filed 7–10–89; 8:45 am]

BILLING CODE 3510–22–M

COMMITTEE FOR THE IMPLEMENTATION OF TEXTILE AGREEMENTS

Establishment of an Import Limit for Certain Cotton Textile Products Produced or Manufactured in Guatemala

July 5, 1989.

AGENCY: Committee for the Implementation of Textile Agreements (CITA).

ACTION: Issuing a directive to the Commissioner of Customs establishing a limit.

EFFECTIVE DATE: July 13, 1989.

FOR FURTHER INFORMATION CONTACT: Naomi Freeman, International Trade Specialist, Office of Textiles and Apparel, U.S. Department of Commerce, (202) 377–4212. For information on the quota status of this limit, refer to the Quota Status Reports posted on the bulletin boards of each Customs port. For information on embargoes and quota re-openings, call (202) 377–3715. For information on categories on which consultations have been requested, call (202) 377–3740.

SUPPLEMENTARY INFORMATION:

Authority. E.O. 11651 of March 3, 1972, as amended; section 204 of the Agricultural Act of 1956, as amended (7 U.S.C. 1854); Article 3 of the Arrangement Regarding International Trade in Textiles.

Inasmuch as the consultations held between the Governments of the United States and Guatemala have not resulted in a mutually satisfactory limit for Categories 347/348, the United States Government has decided to establish a twelve-month limit on these categories for the period April 26, 1989 through April 25, 1990.

The United States remains committed to finding a solution concerning Categories 347/348. Should such a solution be reached in further consultations with the Government of Guatemala, further notice will be published in the **Federal Register.**

A description of the textile and apparel categories in terms of HTS numbers is available in the Correlation: Textile and Apparel Categories with the Harmonized Tariff Schedule of the United States (see **Federal Register** notice 53 FR 44937, published on November 7 1988). Also see 54 FR 21268, published on May 17, 1989.

Auggie D. Tantillo,
Chairman, Committee for the Implementation of Textile Agreements.

July 5, 1989.

Commissioner of Customs,
Department of Commerce, Washington, DC 20229.

Dear Mr. Commissioner: Under the terms of section 204 of the Agricultural Act of 1956, as amended (7 U.S.C. 1854), and the Arrangement Regarding International Trade in Textiles done at Geneva on December 20, 1973, as further extended on July 31, 1986; and in accordance with the provisions of Executive Order 11651 of March 3, 1972, as amended, you are directed to prohibit, effective on July 13, 1989, entry into the United States for consumption and withdrawal from warehouse for consumption of cotton textile products in Categories 347/348, produced or manufactured in Guatemala and exported during the twelve-month period which began on April 26, 1989 and extends through April 25, 1990, in excess of 686,682 dozen.

Textile products in Categories 347/348 which have been exported to the United States prior to April 26, 1989 shall not be subject to this directive.

Textile products in Categories 347/348 which have been released from the custody of the U.S. Customs Service under the

The limit has not been adjusted to account for any imports exported after April 25, 1989.

provisions of 19 U.S.C. 1448(b) or 1484(a)(1)(A) prior to the effective date of this directive shall not be denied entry under this directive.

In carrying out the above directions, the Commissioner of Customs should construe entry into the United States for consumption to include entry for consumption into the Commonwealth of Puerto Rico.

The Committee for the Implementation of Textile Agreements has determined that this action falls within the foreign affairs exception to the rulemaking provisions of 5 U.S.C. 553(a)(1).

Auggie D. Tantillo,

Chairman, Committee for the Implementation of Textile Agreements.

[FR Doc. 89-16167 Filed 7-10-89; 8:45am]

BILLING CODE 3510-DR-M

COMMODITY FUTURES TRADING COMMISSION

Coffee, Sugar & Cocoa Exchange, Inc., Proposed Amendment Relating to the Coffee "C" Futures Contract

AGENCY: Commodity Futures Trading Commission.

ACTION: Notice of Proposed Contract Market Rule Changes.

SUMMARY: The Coffee, Sugar & Cocoa Exchange, Inc. ("CSCE" or "Exchange") has submitted a proposal to amend its coffee "C" futures contract. The proposed amendment will increase the minimum permissible price change to five one-hundredths of one cent per pound from one one-hundredth of one cent per pound for trading in the coffee "C" futures contract. In accordance with Section 5a(12) of the Commodity Exchange Act and acting pursuant to the authority delegated by Commission Regulation 140.96, the Director of the Division of Economic Analysis ("Division") of the Commodity Futures Trading Commission ("Commission") has determined, on behalf of the Commission, that this proposal is of major economic significance. On behalf of the Commission, the Division is requesting comment on this proposal.

DATE: Comments must be received on or before August 10, 1989.

ADDRESS: Interested persons should submit their views and comments to Jean A. Webb, Secretary, Commodity Futures Trading Commission, 2033 K Street NW Washington, DC 20581. Reference should be made to the amendments to the CSCE coffee "C" futures contract.

FOR FURTHER INFORMATION CONTACT: Fred Linse, Division of Economic Analysis, Commodity Futures Trading Commission, 2033 K Street NW., Washington, DC 20581, (202) 254-7303.

SUPPLEMENTARY INFORMATION: The coffee "C" contract's current rules mandate that all bids and offers to buy or sell coffee "C" contracts shall be quoted on a per pound basis, in cents and decimal fractions of one cent. The contract's current rules do not permit transactions in coffee "C" futures contracts at prices consisting of fractions smaller than one one-hundredth of one cent per pound ($.0001).

Under the proposed amendment, transactions in coffee "C" futures contracts would not be permitted at prices consisting of fractions smaller than five one-hundredths of one cent per pound ($.0005). In its submission proposing the amendment, the Exchange indicated that it has conducted a study of trading in coffee "C" futures contracts during the last six trading days of February 1989 and found that approximately 97 to 99 percent of all price changes that occurred during the study period were at fractional price intervals of $.0005 per pound. The Exchange indicates that, following Commission approval, the amended rules would be made effective with respect to all existing and newly listed contract months.

The Division, on behalf of the Commission, requests comment on the proposed increase in the minimum price fluctuation. The Division also specifically requests comment on the Exchange's proposal to apply the proposed increase in the minimum permissible price change to existing positions in currently listed coffee "C" futures contract months.

Copies of the proposed amendment will be available for inspection at the Office of the Secretariat, Commodity Futures Trading Commission, 2033 K Street NW Washington, DC 20581. Copies of the amended terms and conditions can be obtained through the Office of the Secretariat by mail at the above address or by phone at (202) 254-6314.

The material submitted by the Exchange in support of the proposed amendment may be available upon request pursuant to the Freedom of Information Act (5 U.S.C. 552) and the Commission's regulations thereunder (17 CFR Part 145 (1987)). Requests for copies of such material should be made to the FOI, Privacy and Sunshine Acts Compliance Staff of the Office of the Secretariat at the Commission's headquarters in accordance with 17 CFR 145.7 and 145.8.

Any person interested in submitting written data, views or arguments on the proposed amendment should send such comments to Jean A. Webb, Secretary, Commodity Futures Trading Commission, 2033 K Street NW., Washington, DC, by the specified date.

Issued in Washington, DC on July 5, 1989.

Steven Manaster,

Director, Division of Economic Analysis.

[FR Doc. 89-16135 Filed 7-10-89; 8:45 am]

BILLING CODE 6351-01-M

DEPARTMENT OF DEFENSE

Public Information Collection Requirement Submitted to OMB for Review

ACTION: Notice.

The Department of Defense has submitted to OMB for clearance the following proposal for collection of information under the provisions of the Paperwork Reduction Act (44 U.S.C. Chapter 35).

Title, Applicable Form, and Applicable OMB Control Number: Army Tracking Study (ATS); No Form; and No OMB Control Number.

Type of Request: New.

Average Burden Hours/Minutes per Response: 25 minutes.

Frequency of Response: Quarterly.

Number of Respondents: 1,000.

Annual Burden Hours: 250.

Annual Responses: 1,000.

Needs and Uses: The data is to be used by staff agencies within USAREC and Headquarters, Department of the Army, as the basis for developing incentives and advertising programs for near term recruiting activities related specifically to the target population. Without this survey, the planner will have no substantive national current data on which to base policy and program design decisions.

Affected Public: Individuals or households.

Frequency: Quarterly.

Respondent's Obligation: Voluntary.

OMB Desk Officer: Dr. J. Timothy Sprehe.

Written comments and recommendations on the proposed information collection should be sent to Dr. J. Timothy Sprehe at Office of Management and Budget, Desk Officer, Room 3235, New Executive Office Building, Washington, DC 20503.

DOD Clearance Officer: Ms. Pearl Rascoe-Harrison.

Written reqeusts for copies of the information collection proposal should be sent to Ms. Rascee-Harrison, WHS/DIOR, 1215 Jefferson Davis Highway, Suite 1204, Arlington, Virginia 22202-4302.

L.M. Bynum,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

July 6, 1989.

[FR Doc. 89-16231 Filed 7-10-89; 8:45 am]

BILLING CODE 3810-01-M

Department of the Air Force

USAF Scientific Advisory Board; Meeting

June 8, 1989.

The USAF Scientific Advisory Board Ad Hoc Committees on Electronic Combat and Air-to-Surface Conventional Munitions will meet on 12 August 1989 from 8:00 a.m. to 12:00 p.m. at the Pentagon, Washington DC.

The purpose of this meeting is to brief the conclusions and recommendations of the summer studies. This meeting will involve discussions of classified defense matters listed in Section 552b(c) of Title 5, United States Code, specifically subparagraph (1) thereof, and accordingly will be closed to the public.

For further information, contact the Scientific Advisory Board Secretariat at (202) 697-4648.

Patsy J. Conner,

Air Force Federal Register Liaison Officer.

[FR Doc. 89-16160 Filed 7-10-89; 8:45 am]

BILLING CODE 3910-01-M

Defense Mapping Agency

Membership; Defense Mapping Agency Performance Review Board

AGENCY: Defense Mapping Agency (DMA), Department of Defense (DoD).

ACTION: Notice of membership of the Defense Mapping Agency Performance Review Board (DMA PRB).

SUMMARY: This notice announces the appointment of the members of the DMA PRB. The publication of PRB membership is required by 5 U.S.C. 4314(c)(4). The Board provides fair and impartial performance appraisals and makes recommendations regarding performance ratings and performance awards to the Director, DMA.

EFFECTIVE DATE: August 1, 1989.

FOR FURTHER INFORMATION CONTACT: Gerald F Pittman, Defense Mapping Agency, Civilian Personnel Division, 8613 Lee Highway, Fairfax, VA 22031-2137 telephone (703) 756-9153.

SUPPLEMENTARY INFORMATION: In accordance with 5 U.S.C. 4314(c)(4), the following is a standing register of executives appointed to the DMA PRB; specific PRB panels will be constituted from this standing register. Executives listed will serve a one-year renewable term, effective August 1, 1989.

Ancell, A. Clay, Deputy Director for Programs, Production and Operations, DMA Aerospace Center

Berg, Richard A., Chief, Scientific Data Department, DMA Hydrographic/Topographic Center

Brown, William J., Deputy Director for Programs, Production and Operations, DMA Hydrographic/Topographic Center

Coglan, Thomas K., Chief, Digital Products Department, DMA Hydrographic/Topographic Center

Daugherty, Kenneth I., Director, DMA Systems Center

Dierdorff, Curtis L., Director, Personnel Office, Headquarters, DMA

Gilliam, Penman R., Deputy Director for Management and Technology, Headquarters, DMA

Hall, Charles D., Deputy Director for Research and Engineering, Headquarters, DMA

Hall, Robert H., Deputy Director for Programs, Production and Operations, DMA Reston Center

Hogan, William N., Deputy Director for Programs, Production and Operations, Headquarters, DMA

Jackson, Mikel F Assistant Deputy Director for Production and Distribution, Headquarters, DMA

Krygiel, Annette J., Deputy Director for Modernization Development, DMA Systems Center

Labovitz, Mordecai Z., Director of Acquisition, Headquarters, DMA

Mendez, John M., Deputy Director for Transition Management, Headquarters, DMA

Muncy, Larry N., Chief, Scientific Data Department, DMA Aerospace Center

Peeler, Paul L., Jr., Technical Director, DMA Reston Center

Phillips, Earl W Assistant Deputy Director for Programming, Headquarters, DMA

Robinson, Bill E., Director, DMA Telecommunications Services Center

Skidmore, James R., Technical Director, DMA Aerospace Center

Smith, Kathleen M., Chief, Digital Products Department, DMA Aerospace Center

Smith, Lon M., Technical Director, DMA Hydrographic/Topographic Center

Smith, Robert N., Chief, Data Services Department, DMA Reston Center

Smith, William D., Chief, Program/Budget Division (Deputy Comptroller), Headquarters, DMA

Vaughn, John R., Comptroller, Headquarters, DMA

Ward, Curtis B., Deputy Director for Program Integration and Operation, DMA Systems Center.

L.M. Bynum,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

July 6, 1989.

[FR Doc. 89-16232 Filed 7-10-89; 8:45 am]

BILLING CODE 3810-01-M

DEPARTMENT OF EDUCATION

[CFDA No.. 84.044]

Notice Inviting Applications From Current Grantees for New Initiatives Under the Talent Search Program for Fiscal Year 1989

Purpose:

To provide grant awards to current Talent Search grantees to attract seventh and eighth grade students and dropouts as project participants in order to encourage them to complete high school and continue their education at the postsecondary level after graduation. In order to be considered for funding, applicants must submit proposals that include the following project activities: (a) Identification of eligible seventh and eighth grade participants; (b) academic, personal, and career counseling; (c) basic skills instruction; (d) tutoring; (e) mentoring; (f) participant follow-up; (g) involvement; (h) campus visits; and (i) evidence of cooperative relationships with local businesses, community groups, and school districts.

Deadline for Transmittal of Applications: August 11, 1989.

Applications Available: July 12, 1989.

Funds Available: The Secretary of Education has set aside $2.9 million for awards for this new initiative under the Talent Search Program.

Estimated Size of Award: $50,000.

Estimated Number of Awards: 55.

Note: The Department is not bound by any estimates in this notice.

Project Period: 24 months.

Applicable Regulations: Regulations applicable to the Talent Search Program are: (a) The Education Department General Administrative Regulations (EDGAR) in 34 CFR Parts 74, 75, 77 and 85; (b) the Notice of Final Priority soon to be published in the **Federal Register**; and (c) the Talent Search regulations in 34 CFR Part 643.

It is the policy of the Department of Education not to solicit applications before the publication of a notice of final priority. However, in this case it is essential to solicit applications for this competition on the basis of the notice of proposed funding priority published in the **Federal Register** on May 5, 1989 at 54 FR 19534 in order to make the awards in fiscal year 1989.

The Secretary has carefully reviewed the few public comments received on the proposed priority and does not expect to make any changes in the priority on the basis of the comments. If any changes are made in the final priority for this program, applicants will be given a chance to amend their appalications.

For Applications or Information Contact: Mrs. Goldia Hodgdon, Chief, Education Outreach Branch, Division of Student Services, U.S. Department of Education (Room 3060, Regional Office Building 3), 400 Maryland Avenue SW Washington, DC 20202-5249.

Telephone number: (202) 732-4804.

Program Authority: 20 U.S.C. 1070d, 1070d-1.

Dated: June 29, 1989.

James B. Williams,

Acting Assistant Secretary for Postsecondary Education.

(Catalog of Federal Domestic Assistance Number: 84.044—Talent Search Program)

[FR Doc. 89-16310 Filed 7-10-89; 8:45 am]

BILLING CODE 4000-01-M

DEPARTMENT OF ENERGY

Intent To Negotiate a Grant Renewal With the Research Foundation of the State University of New York (SUNY)

Summary: The Department of Energy, Idaho Operations Office, intends to negotiate on a noncompetitive basis with SUNY at Syracuse, New York for the purpose of renewing Grant No. DE-FG07-87ID12673. The proposed research will allow the awardee to evaluate the performance of membranes developed in earlier phases of the grant. The evaluation will be performed through a pilot scale test program involving membrane separations of several industrially important organic/water streams at an industrial host site, W. R. Grace and Co. The authority and justification for the determination to make this renewal award on a noncompetitive basis is DOE Financial Assistance Rules 10 CFR 600.7(b)(2)(i), (A), and (B). The proposed work is a renewal of and necessary to the satisfactory completion of Program objectives for the work presently being conducted at SUNY under the current grant. Competition would have a significant adverse effect on continuity of the work. The effort would likely be conducted using resources donated by a third party. However, without DOE support SUNY's involvement and public dissemination of the results would be minimal. DOE support will, therefore, enhance the public benefits to be derived. DOE knows of no other entity which is conducting or is planning to conduct this activity. The renewal award will extend the project term of the grant by one year at an estimated cost of $225,000. This funding level will be shared 56% DOE and 44% SUNY. Public response may be addressed to the contract specialist stated below.

Contact: U.S. Department of Energy, Idaho Operations Office, 785 DOE Place, Idaho Falls, Idaho 83402, Elizabeth M. Bowhan, Contract Specialist (208) 526-1229.

Issued this 29th day of June, at Idaho Falls, Idaho.

Date: June 29, 1989.

J. Roger Gonzales,

Director, Contracts Management Division.

[FR Doc. 89-16173 Filed 7-10-89; 8:45 am]

BILLING CODE 6450-01-M

Office of Fossil Energy

[FE Docket No. 89-36-NG]

Northern Natural Gas Company, Division of Enron Corp., Application To Import Natural Gas From Canada

AGENCY: Department of Energy.

ACTION: Notice of Application for Blanket Authorization to Import Natural Gas from Canada.

SUMMARY: The Office of Fossil Energy of the Department of Energy (DOE) gives notice of receipt on June 13, 1989, of an application filed by Northern Natural Gas Company, Division of Enron Corp. (Northern), requesting a blanket authorization to import up to 219 Bcf of natural gas from Canada over a two-year term beginning on the date of first delivery. Northern states that it intends to use existing facilities to transport the imported gas and will file quarterly reports detailing each transaction.

The application is filed under to section 3 of the Natural Gas Act and DOE Delegation Order Nos. 0204-111 and 0204-127 Protests, motions to intervene, notices of intervention, and written comments are invited.

DATE: Protests, motions to intervene or notices of intervention, as applicable, requests for additional procedures and written comments are to be filed no later than August 10, 1989.

FOR FURTHER INFORMATION:

Larine A. Moore, Office of Fuels Programs, Fossil Energy, U.S. Department of Energy, Forrestal Building, Room 3F-056, 1000 Independence Avenue, SW Washington, DC 20585, (202) 586-9478;

Michael T. Skinker, Natural Gas and Mineral Leasing, Office of General Counsel, U.S. Department of Energy, Forrestal Building, Room 6E-042, 1000 Independence Avenue, SW., Washington, DC 20585, (202) 586-6667

SUPPLEMENTARY INFORMATION: Northern, a division of Enron Corp. which is organized under the laws of the State of Delaware, with its principal place of business located in Houston, Texas, proposes to purchase gas from a variety of Canadian suppliers on a short-term, interruptible basis at market responsive prices. Northern intends to import the purchased gas for system supply for resale to its customers. The specific terms of each import transaction, including price and volumes, would be negotiated on an individual basis to reflect market conditions. Northern contemplates that the imported volumes would enter the U.S. either at Monchy, Saskatchewan, and be transported from that point via the existing pipeline facilities related to the Alaska Natural Gas Transportation System (ANGTS) or at Emerson, Manitoba, via the facilities of Great Lake Gas Transmission Company, or at other existing import points. The decision on the application for import authority will be made consistent with the DOE's natural gas import policy guidelines, under which the competitiveness of an import arrangement in the markets served is the primary consideration in determining whether it is in the public interest (49 FR 6684, February 22, 1984). Parties that may oppose this application should comment in their responses on the issue of competitiveness as set forth in the policy guidelines. The application asserts that this import arrangement will be competitive and thus in the public interest. Parties opposing the arrangement bear the burden of overcoming this assertion.

All parties should be aware that if this request is granted, the authorization would be conditioned on the filing of quarterly reports to facilitate monitoring of the operation and effectiveness of the blanket import program.

NEPA Compliance

The DOE has determined that compliance with the National Environmental Policy Act (NEPA), 42 U.S.C. 4321, et seq., can be accomplished by means of a categorical exlcusion. On March 27 1989, the DOE published in the **Federal Register** (54 FR 12474) a notice of amendments to its guidelines for compliance with NEPA. In that notice, the DOE added to its list of categorical exclusions the approval or disapproval of an import-export authorization for natural gas in cases not involving new construction. Application of the categorical exclusion in any particular case raises a rebuttable presumption that the DOE's action is not a major Federal action under NEPA. Unless the DOE receives comments indicating that the presumption does not or should not apply in this case, no further NEPA review will be conducted by the DOE.

Public Comment Procedures

In response to this notice, any person may file a protest, motion to intervene or notice of intervention, as applicable, and written comments. Any person wishing to become a party to the proceeding and to have the written comments considered as the basis for any decision on the application must, however, file a motion to intervene or notice of intervention, as applicable. The filing of a protest with respect to this application will not serve to make the protestant a party to the proceeding, although protests and comments received from persons who are not parties will be considered in determining the appropriate action to be taken on the application. All protests, motions to intervene, notices of intervention, and written comments must meet the requirements that are specified by the regulations in 10 CFR Part 590. Protests, motions to intervene, notices of intervention, requests for additional procedures, and written comments should be filed with the Office of Fuels Programs, Fossil Energy, Room 3F-056, FE-50, Forrestal Building, 1000 Independence Avenue, SW., Washington, DC 20585. They must be filed no later than 4:30 p.m., e.d.t., August 10, 1989.

It is intended that a decisional record will be developed on the application through responses to this notice by parties, including the parties' written comments and replies thereto. Additional procedures will be used as necessary to achieve a complete understanding of the facts and issues. A party seeking intervention may request that additional procedures be provided, such as additional written comments, an oral presentation, a conference, or trial-type hearing. Any request to file additional written comments should explain why they are necessary. Any request for an oral presentation should identify the substantial question of fact, law, or policy at issue, show that it is material and relevant to a decision in the proceeding, and demonstrate why an oral presentation is needed. Any request for a conference should demonstrate why the conference would materially advance the proceeding. Any request for a trial-type hearing must show that there are factual issues genuinely in dispute that are relevant and material to a decision and that a trial-type hearing is necessary for a full and true disclosure of the facts.

If an additional procedure is scheduled, notice will be provided to all parties. If no party requests additional procedures, a final opinion and order may be issued based on the official record, including the application and responses filed by parties pursuant to this notice, in accordance with 10 CFR 590.316.

A copy of Northern's application is available for inspection and copying in the Office of Fuels Programs Docket Room, 3F-056 at the above address. The docket room is open between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday, except Federal holidays.

Issued in Washington, DC, June 30, 1989.

J. Allen Wampler,

Assistant Secretary, Fossil Energy.

[FR Doc. 89-16174 Filed 7-10-89; 8:45 am]

BILLING CODE 6450-01-M

Waste Isolation Pilot Plant (WIPP) Draft Supplement to the Environmental Impact Statement Public Comment Period Extension

AGENCY: U.S. Department of Energy.

ACTION: Extension of the public comment period on the draft Supplemental Environmental Impact Statement (SEIS) on WIPP

SUMMARY: On April 21, 1989, the Department of Energy (DOE) published a notice in the **Federal Register** (54 FR 16350) announcing the availability of the draft SEIS, the subsequent 60-day public comment period, and the six public hearing schedules, locations and procedures. On June 12, 1989, a notice was published (54 FR 24940), announcing two additional hearings in Texas and New Mexico and a 7-day extension of the comment period. On June 26, 1989, a notice was published (54 FR 26828) announcing a third additional public hearing on the SEIS in Ogden, Utah and an extension of the public comment period to July 11, 1989. In response to requests, the public comment period has been extended to July 20, 1989 (90-days total), to ensure that all interested citizens have time to comment.

Participation Procedures: Written comments should be mailed to the address below and postmarked by July 20, 1989.

ADDRESSES: Written comments should be directed to: W. John Arthur III, Project Manager, WIPP SEIS Project Office, U.S. Department of Energy, 6301 Indian School Road NE., 7th Floor, Albuquerque, NM 87110.

FOR FURTHER INFORMATION CONTACT:

W John Arthur, III, WIPP SEIS Project Manager, U.S. Department of Energy, Albuquerque Operations Office, P.O. Box 5400, Albuquerque, NM 87110, (505) 889-3038

or

Carol Borgstrom, Director, Office of NEPA Project Assistance (EH-25), U.S. Department of Energy, 1000 Independence Avenue, SW., Washington, DC 20585, (202) 586-4600.

Issued in Washington, DC, this 6th day of July 1989.

Peter N. Brush,

Acting Assistant Secretary, Environment, Safety and Health.

[FR Doc. 89-16311 Filed 7-7-89; 12:03 pm]

BILLING CODE 6450-01-M

Federal Energy Regulatory Commission

[Docket No. G-13299-007, et al.]

ARCO Oil and Gas Co., Division of Atlantic Richfield Company, et al., Applications for Termination or Amendment of Certificates [1]

June 29, 1989.

Take notice that each of the Applicants listed herein has filed an applicatin pursuant to section 7 of the Natural Gas Act for authorization to terminate or amend certificates as described herein, all as more fully described in the respective applications which are on file with the Commission and open to public inspection.

Any person desiring to be heard or to make any protest with reference to said applications should on or before July 10, 1989, file with the Federal Energy Regulatory Commission, Washington, DC 20426, a petition to intervene or a protest in accordance with the requirements of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 385.214). All protests filed with the Commission will be considered by it in determining the appropriate action to be taken but will not serve to make the protestants parties to the proceeding. Any person wishing to

This notice does not provide for consolidation for hearing of the several matters covered herein.

become a party in any proceeding herein must file a petition to intervene in accordance with the Commission's rules.

Under the procedure herein provided for, unless otherwise advised, it will be unnecessary for Applicants to appear or to be represented at the hearing.

Lois D. Cashell,
Secretary.

Filing code:
A—Initial service
B—Abandonment
C—Amendment to add acreage
D—Assignment of acreage
E—Succession
F—Partial succession

Docket No. and date filed	Applicant	Purchaser and location	Description
G-13299-007 D 5-30-89	ARCO Oil and Gas Company, Division of Atlantic Richfield Company, P.O. Box 2819, Houston, TX 75221.	ANR Pipeline Company, Laverne Field, Beaver and Harper Counties, Oklahoma.	Assigned 9-1-89 to Cheyenne Petroleum Company.
G-13552-001 D 6-5-89	Texaco, Inc., P.O. Box 52332, Houston, TX 77052.	Texas Eastern Transmission Corporation, Hidalgo Field, Hidalgo County, Texas.	Assigned 4-1-89 to Sue-Ann Oil Gas Company.
CI61-819-000 D 5-3-89	Texaco Producing Inc., P.O. Box 52332, Houston, TX 77052.	ANR Pipeline Company, Cedardale Field, Major County, Oklahoma.	Assigned 11-1-88 to Plains Resources Inc. and 1-1-89 Post Oak Oil Company.
CI63-1261-001 D 2-7-89	Amoco Production Company, P.O. Box 50879, New Orleans, LA 70150.	Valley Gas Transmission Company, Big Lake Field, Cameron Parish, Louisiana.	Assigned 11-30-84 to Dazet Oil & Gas Company.
CI70-674-000 D 5-22-89	Oryx Energy Company, P.O. Box 2880, Dallas, TX 75221.	NI Gas Supply, Elk City Field, Beckham County, Oklahoma.	Assigned 4-1-89 to Scarth Oil and Gas Company.
CI76-533-001 D 5-15-89	Chevron U.S.A. Inc., P.O. Box 3725, Houston, TX 77253.	Panhandle Eastern Pipe Line Company, Hansford Field, Hansford County, Texas.	Assigned 2-1-89 to Faulconer Energy Joint Venture.
CI88-192-001 D 3-13-89	Terra Resources, Inc., P.O. Box 2329, Tulsa, Oklahoma 74101.	Arkla Energy Resources, a division of Arkla, Inc., Leflore, Latimer, and Pittsburg Counties, Oklahoma.	Assigned 9-30-88 to Puritan Oil & Gas Corp.
CI88-192-002 D 3-13-89	Terra Resources, Inc.	Arkla Energy Resources, a division of Arkla, Inc., Leflore, Latimer and Pittsburg Counties, Oklahoma.	Assigned 9-30-88 to Purtian Oil & Gas Company.
CI89-383-000 (G-10165) D 4-25-89	Chevron U.S.A	Tennessee Gas Pipeline Company, Bully Camp Field, Lafourche Parish, Louisiana.	Assigned 10-1-88 to Greenhill Petroleum Corporation.
CI89-419-000 (G-18235) D 5-15-89	Oxy USA Inc., P.O. Box 300, Tulsa, OK 74102	Transwestern Pipeline Company, Section 52, Block 1, I&GN Survey, Hemphill County, Texas.	Assigned 5-3-89 to Paco Petroleum Inc.
CI89-426-000 (CI76-779) D 5-26-89	Union Pacific Resources Company, P.O. Box 7, Forth Worth, TX 76101.	Western Gas Processors Ltd., Manning Field, Converse County, Wyoming.	Assigned 1-1-89 to Berenergy Corporation.
CI89-427-000 (CI77-763) D 5-26-89	Union Pacific Resources Company	Colorado Interstate Gas Company, Shell Creek Field, Moffat County, Colorado.	Assigned 1-1-89 to Berenergy Corporation.
CI89-429-000 (CI65-1275) D 5-30-89	ARCO Oil and Gas Company, Division of Atlantic Richfield Company.	Williams Natural Gas Company, Weis "A" Unit, Ellis County, Oklahoma.	Assigned 1-1-87 to Hondo Oil and Gas Company.
CI89-430-000 (CI88-192-000) D 3-13-89	Terra Resources, Inc	Arkla Energy Resources, a division of Arkla, Inc., Leflore, Latimer and Pittsburg Counties, Oklahoma.	Assigned 9-30-88 to Puritan Oil & Gas Corporation.
CI89-431-000 (CI88-192-000) D 3-13-89	Terra Resources, Inc	Arkla Energy Resources, a division of Arkla, Inc., Leflore, Latimer and Pittsburg Counties, Oklahoma.	Assigned 9-30-88 to Puritan Oil & Gas Corporation.
CI89-432-000 (CI88-192-000) D 3-13-89	Terra Resources, Inc	Arkla Energy Resources, a division of Arkla, Inc., Leflore, Latimer and Pittsburg Counties, Oklahoma.	Assigned 9-30-88 to Puritan Oil & Gas Corporation.
CI89-433-000 (CI88-192-000) D 3-13-89	Terra Resources, Inc	Arkla Energy Resources, a division of Arkla, Inc., Leflore, Latimer and Pittsburg Counties, Oklahoma.	Assigned 9-30-88 to Puritan Oil & Gas Corporation.
CI89-434-000 (CI88-192-000) D 3-13-89	Terra Resources, Inc	Arkla Energy Resources, a division of Arkla, Inc., Leflore, Latimer and Pittsburg Counties, Oklahoma.	Assigned 9-30-88 to Puritan Oil & Gas Corporation.
CI89-435-000 (CI88-192-000) D 3-13-89	Terra Resources, Inc	Arkla Energy Resources, a division of Arkla, Inc., Leflore, Latimer and Pittsburg Counties, Oklahoma.	Assigned 9-30-88 to Puritan Oil & Gas Corporation.

Docket No. and date filed	Applicant	Purchaser and location	Description
CI89-439-000 (G-4624) D 2-7-89	Amoco Production Company	Arkla Energy Resources, a division of Arkla, Inc., Bear Creek Field, Bienville Parish, Louisiana.	Assigned 9-28-84 to B. R. Eubanks, M.D.
CI89-440-000 (G-16465) D 2-7-89	Amoco Production Company	Texas Gas Transmission Corporation, Calhoun and Carlton Fields, Lincoln and Ouachita Parishes, Louisiana.	Assigned 9-30-84 to B. R. Eubanks, M.D.
CI89-441-000 (CI69-883) D 2-7-89	Amoco Production Company	Arkla Energy Resources, a division of Arkla, Inc., Calhoun Field, Ouachita Parish, Louisiana.	Assigned 9-28-84 to B. R. Eubanks, M.D.
CI89-442-000 (CI67-1666) D 2-7-89	Amoco Production Company	Arkla Energy Resources, a division of Arkla, Inc., Danville Field, Bienville Parish, Louisiana.	Assigned 9-28-84 to B. R. Eubanks, M.D.
CI89-443-000 (G-4070) D 2-7-89	Amoco Production Company	Arkla Energy Resources, a division of Arkla, Inc., East Haynesville Field, Clairborne Parish, Louisiana.	Assigned 9-30-84 to B. R. Eubanks, M.D.
CI89-444-000 (G-17582) D 2-7-89	Amoco Production Company	Texas Gas Transmission Corporation, Minden Field, Webster Parish, Louisiana.	Assigned 9-12-84 to Crystal Oil Company.
CI89-445-000 (G-4305) D 2-7-89	Amoco Production Company	Arkla Energy Resources, a division of Arkla, Inc., Ruston Field, Lincoln Parish, Louisiana.	Assigned 9-28-84 to B. R. Eubanks, M.D.
CI89-446-000 (G-3660) D 2-7-89	Amoco Production Company	Arkla Energy Resources, a division of Arkla, Inc., Sentell Field, Bossier Parish, Louisiana.	Assigned 9-28-84 to B. R. Eubanks, M.D.
CI89-447-000 (G-15130) D 2-7-89	Amoco Production Company	ANR Pipeline Company, Big Lake Field, Cameron Parish, Louisiana.	Assigned 11-30-84 to Dazet Oil & Gas Company.
CI89-448-000 (CI61-143) D 2-7-89	Amoco Production Company	United Gas Pipe Line Company, Chauvin Field, Terrebone Parish, Louisiana.	Assigned 9-12-84 to IMC Exploration Company.
CI89-449-000 (G-3209) D 2-7-89	Amoco Production Company	Columbia Gas Transmission Company, Church Point Field, Acadia Parish, Louisiana.	Assigned 1-9-85 to Sierra Production Company.
CI89-450-000 (G-6076) D 2-7-89	Amoco Production Company	ANR Pipeline Company, South Jennings Field, Jefferson Davis Parish, Louisiana.	Assigned 7-19-85 to Riceland Petroleum Company.
CI89-451-000 (CI78-554) D 2-7-89	Amoco Production Company	Tennessee Gas Pipeline Company, Lake Washington Field, Plaquemines Parish, Louisiana.	Assigned 9-28-89 to B.R. Eubanks, M.D..
CI89-452-000 (G-15225) D 2-7-89	Amoco Production Company	United Gas Pipe Line Company, Napoleonville Field, Assumption Parish, Louisiana.	Assigned 10-21-85 to Jolen Production Company.
CI89-453-000 (CI64-304) D 2-7-89	Amoco Production Company	Tennessee Gas Transmission Company, Patterson Field, St. Mary Parish, Louisiana.	Assigned 9-28-84 to B. R. Eubanks, M.D.

[FR Doc. 89-16157 Field 7-10-89; 8:45 am]

BILLING CODE 6717-01-M

[Docket No. CI89-422-000, et al.]

Louis Dreyfus Energy Corp., et al., Applications for Blanket Certificates with Pregranted Abandonment [1]

June 29, 1989.

Take notice that each Applicant listed herein has filed an application pursuant to section 7 of the Natural Gas Act and the Federal Energy Regulatory Commission's (Commission) regulations thereunder for a blanket certificate with pregranted abandonment authorization for an unlimited term, all as more fully set forth in the applications which are on file with the Commission and open for public inspection.

Any person desiring to be heard or to make any protest with reference to said applications should on or before July 19, 1989, file with the Federal Energy Regulatory Commission, Washington, DC 20426, a petition to intervene or a protest in accordance with the requirements of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 385.214). All protests filed

[1] This notice does not provide for consolidation for hearing of the several matters covered herein.

with the Commission will be considered by it in determining the appropriate action to be taken but will not serve to make the protestants parties to the proceeding. Any person wishing to become a party in any proceeding herein must file a petition to intervene in accordance with the Commission's rules.

Under the procedure herein provided for, unless otherwise advised, it will be unnecessary for Applicants to appear or to be represented at the hearing.

Lois D. Cashell,

Secretary.

Docket No.	Date filed	Applicant
CI89-422-000	6-12-89	Louis Dreyfus Energy Corporation, 10 Westport Road, P.O. Box 810, Wilton, Connecticut 06879-0810.
CI89-461-000	6-16-89	Quantum Chemical Corporation, c/o Baker & Botts, 555 13th Street, NW., Suite 500 East, Washington, DC 20004-1109.
CI89-465-000	6-21-89	Union Pacific Fuels, Inc., 801 Cherry Street, Fort Worth, Texas 76102.

[FR Doc. 89-16158 Filed 7-10-89; 8:45 am]

BILLING CODE 6717-01-M

[Docket Nos. CP-1340-000, et al.]

Sabine Pipe Line Co., et al., Natural Gas Certificate Filings

June 29, 1989.

Take notice that the following filings have been made with the Commission:

1. Sabine Pipe Line Company

[Docket No. CP89-1340-000]

Take notice that on May 9, 1989, Sabine Pipe Line Company (Sabine), P.O. Box 52332, Houston, Texas 77052, filed in Docket No. CP89-1340-000 an application, as supplemented June 21, 1989, pursuant to section 7(c) of the Natural Gas Act for a certificate of public convenience and necessity authorizing Sabine to lease, install and operate compression facilities and to construct and operate appurtenant compression facilities at its Lake Charles valve station in Calcasieu Parish, Louisiana. Sabine, also, requests authorization to flow gas in either a westerly or easterly direction depending upon market and operating conditions. Further, Sabine requests authorization to temporarily waive its current firm allocation priority tariff provision, all as more fully set forth in the application on file with the Commission and open to public inspection.

Sabine proposes to lease, install and operate two compressors, or their equivalent, with a rated horsepower (hp) of approximately 2,4000 hp. Sabine states that the installation of the proposed compression facilities would allow Sabine to transport, on a firm basis, a maximum quantity of 70 MMcf per day of natural gas in a west to east direction on its mainline system. Sabine indicates that firm and interruptible transportation service utilizing the proposed facilities would be provided under its currently effective FT-1 and IT-1 Rate Schedules. Sabine proposes to temporarily waive its current firm allocation priority tariff provisions in order to conduct an open season, of not less than ten days, to allow all current and potential shippers an equal opportunity to request firm transportation service utilizing the newly available capacity of the proposed compression facilities. Sabine states the estimated cost of these facilities is $630,000 with an estimated annual rental and operation expense of $763,415. Sabine plans to finance the proposed facilities from internally generated funds or a combination of internally generated funds and short-term borrowing.

Comment date: July 20, 1989, in accordance with Standard Paragraph F at the end of this notice.

2. Panhandle Eastern Company Pipe Line

[Docket No. CP89-1643-000]

Take notice that on June 15, 1989, Panhandle Eastern Pipe Line Company (Panhandle), P.O. Box 1642, Houston, Texas 77251-1642, filed in Docket No. CP89-1643-000 a request, as supplemented on June 21, 1989, pursuant to §§ 157.205 and 284.223 of the Commission's Regulations under the Natural Gas Act (18 CFR 157.205) and the Natural Gas Policy Act (18 CFR 284.223) for authorization to transport natural gas for National Steel Corporation (National), a shipper and end user of natural gas, under Panhandle's blanket certificate issued in Docket No. CP86-585-000 pursuant to section 7 of the Natural Gas Act, all as more fully set forth in the request which is on file with the Commission and open to public inspection.

Panhandle proposes to transport up to 17,000 dekatherms (dkt) of natural gas equivalent per day on a firm basis for National pursuant to a transportation agreement dated May 1, 1989, between Panhandle and National. Panhandle would receive the gas from Phillips-Kingfisher in Kingfisher County, Oklahoma and deliver equivalent volumes, less fuel used and unaccounted for line loss, to National and Union Gas Limited in Wayne County, Michigan. Panhandle also states that National may nominate quantities from interruptible points of receipt on Panhandle's system as long as the sum of the volumes nominated from such interruptible points together with the sum of the quantity nominated from firm points of receipt shall not exceed the contract quantity of the transportation agreement for service under Rate Schedule PT.

Panhandle states that the estimated daily and annual quantities would be 17,000 dkt and 6,205,000 dkt, respectively. Service under § 284.223(a) commenced on May 1, 1989, as reported in Docket No. ST89-3783-000.

Comment date: August 14, 1989, in accordance with Standard Paragraph G at the end of this notice.

3. Colorado Interstate Gas Company

[Docket No. CP89-1673-000]

Take notice that on June 21, 1989, Colorado Interstate Gas Company (CIG), Post Office Box 1087 Colorado Springs, Colorado, 80944, filed in Docket No. CP89-1673-000, a request pursuant to §§ 157.205 and 157.212 of the Commission's Regulations under the Natural Gas Act, to establish a new delivery point for Peoples Natural Gas Company, Division of UtiliCorp United, Inc. (Peoples), an existing customer, under CIG's blanket certificate issued in Docket No. CP83-21-000, pursuant to section 7 of the Natural Gas Act all as more fully set forth in the request on file with the Commission and open to public inspection.

CIG states that it would construct and operate a delivery point on its Valley Line Transmission System to provide for another point of delivery to Peoples. The new delivery point would be known as the Spruce Hill Meter Station and would be located in Douglas County, Colorado for serving customers in the Palmer

Lake/Monument area of Colo asserted.

CIG projects the volume of gas delivered to be 10,000 Mcf per day and the amount is within CIG's currently authorized level of sales.

Comment date: August 14, 1989, in accordance with Standard Paragraph G at the end of this notice.

4. Northwest Pipeline Corporation

[Docket No. CP89-1677-000]

Take notice that on June 22, 1989, Northwest Pipeline Corporation (Northwest), 295 Chipeta Way, Salt Lake City, Utah 84108, filed in Docket No. CP89-1677-000, a request pursuant to §§ 157.205 and 284.223 of the Commission's Regulations under the Natural Gas Act for authorization to transport natural gas on behalf of Willamette Industries, Inc. (Willamette), an end user of natural gas, under Northwest's blanket certificate issued in Docket No. CP86-578-000, pursuant to section 7(c) of the Natural Gas Act, all as more fully set forth in the request on file with the Commission and open to public inspection.

Northwest proposes to transport up to 6,500 Ncf per day on an interruptible basis for Willamette pursuant to a transportation agreement, under Rate Schedule TI-1, dated May 8, 1989, as amended May 8, 1989, between Northwest and Willamette. Northwest would receive gas from existing points of receipt on its system in Colorado, Oklahoma, Oregon, Utah, Washington, and Wyoming, and redeliver at existing points of delivery on its system in Colorado, Idaho, New Mexico, Oklahoma, Oregan, Utah, Washington, and Wyoming.

Northwest further states that the maximum daily transportation volumes would be no more than 6,500 MMBtu, while it estimates that average day and annual transportation volumes initially will be approximately 100 MMBtu and 36,500 MMBtu, respectively.

Service under § 284.233(a) commenced on May 25, 1989 as reported in Docket No. ST89-3889-000, Northwest advises.

Comment date: August 14, 1989, in accordance with Standard Paragraph G at the end of this notice.

5. Northwest Pipeline Corporation

[Docket No. CP89-1678-000]

Take notice that on June 22, 1989, Northwest Pipeline Corporation (Northwest), 295 Chipeta Way, Salt Lake City, Utah 84108, filed in Docket No. CP89-1678-000 a request pursuant to § 157.205 of the Commission's Regulations under the Natural Gas Act (18 CFR 157.205) for authorization to provide an interruptible transportation service for Phillips Gas Marketing Company (Phillips), a marketer, under the blanket certificate issued in Docket No. CP86-578-000, pursuant to section 7 of the Natural Gas Act, all as more fully set forth in the request that is on file with the Commission and open to public inspection.

Northwest states that pursuant to a transportation agreement dated February 10, 1988, as amended December 5, 1988, and April 11, 1989, under its Rate Schedule TI-1, it proposes to transport up to 75,000 MMBtu per day equivalent of natural gas for Phillips. Northwest states that it would transport the gas through its system from any transportation receipt point on its system to any transportation delivery point on its system, as defined in the December 5, 1988, amendment.

Northwest advises that service under Section 284.223(a) commenced May 13, 1989, as reported in Docket No. ST89-3866 (filed June 12, 1989). Northwest further advises that it would transport 100 MMBtu on an average day and 36,500 MMBtu annually.

Comment date: August 14, 1989, in accordance with Standard Paragraph G at the end of this notice.

6. Northwest Pipeline Corporation

[Docket No. CP89-1679-000]

Take notice that on June 22, 1989, Northwest Pipeline Corporation (Northwest), 295 Chipeta Way, Salt Lake City, Utah 84108, filed in Docket No. CP89-1679-000 a request pursuant to § 157.205 of the Commission's Regulations for authorization to provide transportation service on behalf of Columbus Energy Corporation (Columbus), a producer of natural gas, under Northwest's blanket certificate issued in Docket No. CP86-578-000, pursuant to section 7 of the Natural Gas Act, all as more fully set forth in the application which is on file with the Commission and open to public inspection.

Northwest requests authorization to transport, on an interruptible basis, up to a maximum of 8,000 MMBtu of natural gas per day for Columbus from receipt points located in Colorado, Oklahoma, Oregon, Utah, Washington and Wyoming to delivery points located in Colorado, Idaho, New Mexico, Oklahoma, Oregon, Utah, Washington and Wyoming. Northwest anticipates transporting on an average day 100 MMBtu and an annual volume of 36,500 MMBtu.

Northwest states that the transportation of natural gas for Columbus commenced May 18, 1989, as reported in Docket No. ST89-3890-000, for a 120-day period pursuant to § 284.223(a) of the Commission's Regulations and the blanket certificate issued to Northwest in Docket No. CP86-578-000.

Comment date: August 14, 1989, in accordance with Standard Paragraph G at the end of this notice.

7 United Gas Pipe Line Company

[Docket No. CP89-1682-000]

Take notice that on June 23, 1989, United Gas Pipe Line Company (United), P.O. Box 1478, Houston, Texas 77251-1478, filed in Docket No. CP89-1682-000 a request pursuant to § 157.205 of the Commission's Regulations under the Natural Gas Act (18 CFR 157.205) for authorization to provide an interruptible transportation service for American Central Gas Companies (American), a marketer, under the blanket certificate issued in Docket No. CP88-6-000, pursuant to section 7 of the Natural Gas Act, all as more fully set forth in the request that is on file with the Commission and open to public inspection.

United states that pursuant to a transportation agreement dated November 9, 1988, as amended on April 21, 1989, under its Rate Schedule ITS, it proposes to transport up to 185,400 MMBtu per day equivalent of natural gas for American. United states that it would transport the gas from multiple receipt points as shown in Exhibit A of the transportation agreement and would deliver the gas to multiple delivery points shown in Exhibit "B" of the agreement.

United advises that service under § 284.223(a) commenced April 25, 1989, as reported in Docket No. ST89-3749-000 (filed June 1, 1989). United further advises that it would transport 185,400 MMBtu on an average day and 67,671,000 MMBtu annually.

Comment date: August 14, 1989, in accordance with Standard Paragraph G at the end of this notice.

8. Panhandle Eastern Pipe Line Co.

[Docket No. CP89-1689-000]

Take notice that on June 26, 1989, Panhandle Eastern Pipe Line Company (Panhandle), P.O. Box 1642, Houston, Texas, 77251-1642 filed in Docket No. CP89-1686-000 a request pursuant to § 157.205 of the Commission's Regulations under the Natural Gas Act (18 CFR 157.205) for authorization to transport natural gas for Transtate Gas Service Company (Transtate), a shipper and marketer of natural gas, under Panhandle's blanket certificate, issued in Docket No. CP86-585-000, all as more fully set forth in the request which is on file with the Commission and open to public inspection.

It is stated that Panhandle requests authority to transport on an interruptible basis up to 275,000 dt equivalent on a peak day, 150,000 dt equivalent on an average day, and 54,750,000 dt equivalent on an annual basis on behalf of Transtate pursuant to Transportation Agreement dated August 29, 1988 between Panhandle and Transtate (Transportation Agreement). It is further stated that Panhandle would receive gas from various existing points of receipt on its system for redelivery to Michigan Gas Storage in Oakland County, Michigan. It is stated that service under § 284.223(a) commenced on May 1, 1989, as reported in Docket No. ST89-3731.

Comment date: August 14, 1989, in accordance with Standard Paragraph G at the end of this notice.

Standard Paragraphs

F Any person desiring to be heard or make any protest with reference to said filing should on or before the comment date file with the Federal Energy Regulatory Commission, 825 North Capitol Street NE., Washington, DC 20426, a motion to intervene or a protest in accordance with the requirements of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 385.214) and the Regulations under the Natural Gas Act (18 CFR 157.10). All protests filed with the Commission will be considered by it in determining the appropriate action to be taken but will not serve to make the protestants parties to the proceeding. Any person wishing to become a party to a proceeding or to participate as a party in any hearing therein must file a motion to intervene in accordance with the Commission's Rules.

Take further notice that, pursuant to the authority contained in and subject to jurisdiction conferred upon the Federal Energy Regulatory Commission by Sections 7 and 15 of the Natural Gas Act and the Commission's Rules of Practice and Procedure, a hearing will be held without further notice before the Commission or its designee on this filing if no motion to intervene is filed within the time required herein, if the Commission on its own review of the matter finds that a grant of the certificate is required by the public convenience and necessity. If a motion for leave to intervene is timely filed, or if the Commission on its own motion believes that a formal hearing is required, further notice of such hearing will be duly given.

Under the procedure herein provided for, unless otherwise advised, it will be unnecessary for the applicant to appear or be represented at the hearing.

G. Any person or the Commission's staff may, within 45 days after the issuance of the instant notice by the Commission, file pursuant to Rule 214 of the Commission's Procedural Rules (18 CFR 385.214) a motion to intervene or notice of intervention and pursuant to § 157.205 of the Regulations under the Natural Gas Act (18 CFR 157.205) a protest to the request. If no protest is filed within the time allowed therefore, the proposed activity shall be deemed to be authorized effective the day after the time allowed for filing a protest. If a protest is filed and not withdrawn within 30 days after the time allowed for filing a protest, the instant request shall be treated as an application for authorization pursuant to section 7 of the Natural Gas Act.

Lois D. Cashell,

Secretary.

[FR Doc. 89-16156 Filed 7-10-89; 8:45 am]

BILLING CODE 6717-01-M

[Project No. 10290-001 Washington]

Washington Hydro Development Co., Surrender of Preliminary Permit

June 29, 1989.

Take notice that Washington Hydro Development Company, permittee for the Sandy and Dillard Creeks Project, has requested that its preliminary permit be terminated. The preliminary permit was issued August 18, 1987 and would have expired on July 31, 1990. The project would have been located within the Snoqualmie-Mt. Baker National Forest in Whatcom County, Washington, near the town of Concrete.

The permittee filed the request on June 2, 1989, and the preliminary permit for Project No. 10290 shall remain in effect through the thirtieth day after issuance of this notice, unless that day is a Saturday, Sunday, or holiday, as described in 18 CFR 385.2007 in which case the business day following that day. New applications involving this project site, to the extent provided for under 18 CFR Part 4, may be filed on the next business day.

Lois D. Cashell,

Secretary.

[FR Doc. 89-16151 Filed 7-10-89; 8:45 am]

BILLING CODE 6717-01-M

[Project No. 2775-002 Massachusetts]

Linweave, Inc., Availability of Environmental Assessment

June 26, 1989.

In accordance with the National Environmental Policy Act of 1969 and the Federal Energy Regulatory Commission's (Commission's) regulations, 18 CFR Part 380 (Order No. 486, 52 FR 47897), the Office of Hydropower Licensing has reviewed the application for a minor license for the proposed Gill Mill, D Wheel, Hydroelectric Project located on the Holyoke Canal System, on the Connecticut River, in Holyoke, Hampden County, Massachusetts, and has prepared an Environmental Assessment (EA) for the proposed project. In the EA, the Commission's staff has analyzed the potential environmental impact of the proposed project and has concluded that approval of the proposed project would not constitute a major federal action significantly affecting the quality of the human environment.

Copies of the EA are available for review in the Public Reference Branch, Room 1000, of the Commission's offices at 825 North Capitol Street NW Washington, DC 20426.

Lois D. Cashell,

Secretary.

[FR Doc. 89-16150 Filed 7-10-89; 8:45 am]

BILLING CODE 6717-01-M

[Project No. 2497-002 Massachusetts]

Linweave, Inc., Availability of Environmental Assessment

June 26, 1989.

In accordance with the National Environmental Policy Act of 1969 and the Federal Energy Regulatory Commission's (Commission's) regulations, 18 CFR Part 380 (Order No. 486, 52 FR 47897), the Office of Hydropower Licensing has reviewed the application for a minor license for the proposed Mt. Tom Mill Hydroelectric Project located on the Holyoke Canal System, on the Connecticut River, in Holyoke, Hampden County, Massachusetts, and has prepared an Environmental Assessment (EA) for the proposed project. In the EA, the Commission's staff has analyzed the potential environmental impacts of the proposed project and has concluded that approval of the proposed project would not constitute a major federal action significantly affecting the quality of the human environment.

Copies of the EA are available for review in the Public Reference Branch, Room 1000, of the Commission's offices at 825 North Capitol Street, NE., Washington, DC 20426.

Lois D. Cashell,

Secretary.

[FR Doc. 89-16143 Filed 7-10-89; 8:45 am]

BILLING CODE 6717-01-M

[Project No. 2758-003 Massachusetts]

Linweave, Inc., Availability of Environmental Assessment

June 26, 1989.

In accordance with the National Environmental Policy Act of 1969 and the Federal Energy Regulatory Commission's (Commission's) regulations, 18 CFR Part 380 (Order No. 486, 52 FR 47897), the Office of Hydropower Licensing has reviewed the application for a minor license for the proposed Crocker Mill, A and B Wheels, Hydroelectric Project located on the Holyoke Canal System, on the Connecticut River, in Holyoke, Hampden County, Massachusetts, and has prepared an Environmental Assessment (EA) for the proposed project. In the EA, the Commission's staff has analyzed the potential environmental impacts of the proposed project and has concluded that approval of the proposed project would not constitute a major federal action significantly affecting the quality of the human environment.

Copies of the EA are available for review in the Public Reference Branch, Room 1000, of the Commission's offices at 825 North Capitol Street, NE., Washington, DC 20426.

Lois D. Cashell,

Secretary.

[FR Doc. 89-16144 Filed 7-10-89; 8:45 am]

BILLING CODE 6717-01-M

[Project No. 2766-002 Massachusetts]

Linweave, Inc., Availability of Environmental Assessment

June 26, 1989.

In accordance with the National Environmental Policy Act of 1969 and the Federal Energy Regulatory Commission's (Commission's) regulations, 18 CFR Part 380 (Order No. 486, 52 FR 47897), the Office of Hydropower Licensing has reviewed the application for a minor license for the proposed Albion Mill, D Wheel, Hydroelectric Project located on the Holyoke Canal System, on the Connecticut River, in Holyoke, Hampden County, Massachusetts, and has prepared an Environmental Assessment (EA) for the proposed project. In the EA, the Commission's staff has analyzed the potential environmental impacts of the proposed project and has concluded that approval of the proposed project would not constitute a major federal action significantly affecting the quality of the human environment.

Copies of the EA are available for review in the Public Reference Branch, Room 1000, of the Commission's offices at 825 North Capitol Street NE., Washington, DC 20426.

Lois D. Cashell,

Secretary.

[FR Doc. 89-16145 Filed 7-10-89; 8:45 am]

BILLING CODE 6717-01-M

[Project No. 2768-002 Massachusetts]

Linweave, Inc., Availability of Environmental Assessment

June 26, 1989.

In accordance with the National Environmental Policy Act of 1969 and the Federal Energy Regulatory Commission's (Commission's) regulations, 18 CFR Part 380 (Order No. 486, 52 FR 47897), the Office of Hydropower Licensing has reviewed the application for a minor license for the proposed Albion Mill, A Wheel, Hydroelectric Project located on the Holyoke Canal System, on the Connecticut River, in Holyoke, Hampden County, Massachusetts, and has prepared an Environmental Assessment (EA) for the proposed project. In the EA, the Commission's staff has analyzed the potential environmental impacts of the proposed project and has concluded that approval of the proposed project would not constitute a major federal action significantly affecting the quality of the human environment.

Copies of the EA are available for review in the Public Reference Branch, Room 1000, of the Commission's offices at 825 North Capitol Street NE., Washington, DC 20426.

Lois D. Cashell,

Secretary.

[FR Doc. 89-16146 Filed 7-10-89; 8:45 am]

BILLING CODE 6717-01-M

[Project No. 2770-002 Massachusetts]

Linweave, Inc., Availability of Environmental Assessment

June 26, 1989.

In accordance with the National Environmental Policy Act of 1969 and the Federal Energy Regulatory Commission's (Commission's) regulations, 18 CFR Part 380 (Order No. 486, 52 FR 47897), the Office of Hydropower Licensing has reviewed the application for minor license for the proposed Crocker Mill, C Wheel, Hydroelectric Project located on the Holyoke Canal System, on the Connecticut River, in Holyoke, Hampden County, Massachusetts, and has prepared an Environmental Assessment (EA) for the proposed project. In the EA, the Commission's staff has analyzed the potential environmental impacts of the proposed project and has concluded that approval of the proposed project would not constitute a major federal action significantly affecting the quality of the human environment.

Copies of the EA are available for review in the Public Reference Branch, Room 1000, of the Commission's offices at 825 North Capitol Street NE., Washington, DC 20426.

Lois D. Cashell,

Secretary.

[FR Doc. 89-16147 Filed 7-10-89; 8:45 am]

BILLING CODE 6717-01-M

[Project No. 2771-002 Massachusetts]

Linweave, Inc., Availability of Environmental Assessment

June 26, 1989.

In accordance with the National Environmental Policy Act of 1969 and the Federal Energy Regulatory Commission's (Commission's) regulations, 18 CFR Part 380 (Order No. 486, 52 FR 47897), the Office of Hydropower Licensing has reviewed the application for minor license for the proposed Nonotuck Mill Hydroelectric Project located on the Holyoke Canal System, on the Connecticut River, in Holyoke, Hampden County, Massachusetts, and has prepared an Environmental Assessment (EA) for the proposed project. In the EA, the Commission's staff has analyzed the potential environmental impacts of the proposed project and has concluded that approval of the proposed project would not constitute a major federal action significantly affecting the quality of the human environment.

Copies of the EA are available for review in the Public Reference Branch, Room 1000, of the Commission's offices at 825 North Capitol Street NE., Washington, DC 20426.

Lois D. Cashell,

Secretary.

[FR Doc. 89-16148 Filed 7-10-89; 8:45 am]

BILLING CODE 6717-01-M

[Project No. 10690-000]

Utah Power and Light Co., Availability of Environmental Assessment

June 5, 1989.

In accordance with the National Environmental Policy Act of 1969 and the Federal Energy Regulatory Commission's (Commission's) regulations, 18 CFR Part 380 (Order No. 486, 52 FR 47897), the Office of Hydropower Licensing has reviewed the application for exemption from licensing for the proposed Fountain Green Hydropower Project located on Big Springs in Sanpete County, Utah, and has prepared an Environmental Assessment (EA) for the project. In the EA, the Commission's staff has analyzed the potential environmental impact of the proposed project and has concluded that approval of the proposed project with appropriate mitigation measures, would not constitute a major federal action significantly affecting the quality of the human environment.

Copies of the EA are available for review in the Public Reference Branch, Room 1000, of the Commission's offices at 825 North Capitol Street NE., Washington, DC 20426.

Lois D. Cashell,

Secretary.

[FR Doc. 89-16152 Filed 7-10-89; 8:45 am]

BILLING CODE 6717-01-M

[Docket No. GP89-32-000]

List of First Sellers Who Have Asserted Contractual Authority To Collect Delivery Allowances Pursuant to § 271.1104 of the Commission's Regulations; Compression Allowances and Protest Procedures

July 3, 1989.

AGENCY: Federal Energy Regulatory Commission.

ACTION: Republication to avoid possible confusion and to assure adequate notice of Transcontinental Gas Pipe Line Corporation's (Transco) list of first sellers who have asserted contractual authority to collect delivery allowances pursuant to Section 271.1104(h) of the Commission's regulations.

SUMMARY: In Order No. 473, 52 FR 21,660 (June 9, 1987), the Federal Energy Regulatory Commission amended its regulations for the delivery of natural gas which were heretofore presumed authorized by "area rate" clauses in gas sales contracts. Order No. 473 amended 18 CFR 271.1104(h) to require all interstate pipelines to provide a listing of those producers that have claimed an entitlement to delivery allowances pursuant to "area rate" clause. The interstate pipelines were required to indicate whether they concurred in the producers' claim for delivery allowances.

DATE: As required by § 271.1104(h) by the Commission regulations, Transco submitted on July 8, 1988, a list of first sellers who have asserted contractual authority to collect delivery allowances. The Commission noticed Transco's filing in the Federal Register in October 1988 under Docket No. RM86-7-000. Subsequently, the Commission redocketed the proceeding under Docket No. GP89-32-000. The Commission now renotices certain of Transco's producer contracts (List III) to avoid possible confusion and provide adequate notice to all interested persons.

DATE: As provided in 18 CFR 271.1104(h)(4)(i) (1987), any protest must be filed by October 10, 1989. Because Order No. 473 provided no mechanism for adding producers-sellers to service lists, Transco is requested to submit the names and addresses of the producers-sellers in this proceeding so that they can be added to the official service list. This material must be filed by the date protests are due.

ADDRESS: An original and 14 copies of each protest must be filed with the Office of the Secretary, Federal Energy Regulatory Commission, 825 North Capital Street NE., Washington, DC 20426.

FOR FURTHER INFORMATION CONTACT: Edward G. Gingold, Office of the General Counsel, Federal Energy Regulatory Commission, 825 North Capitol Street, NE. Washington, DC 20426, (202) 357-9114.

SUPPLEMENTARY INFORMATION: In addition to publishing the full text of this document in the **Federal Register**, the Commission also provides all interested persons an opportunity to inspect or copy the comments of this document during normal business hours in Room 1000 at the Commission's Headquarters, 825 North Capitol Street NE., Washington, DC 20426.

The Commission Issuance Posting System (CIPS), an electronic bulletin board service, provides access to the texts of formal documents issued by the Commission. CIPS is available at no charge to the user and may be accessed using a personal computer with a modem by dialing (202) 357-8997 The full text of this list of first sellers who have asserted contractual authority to collect delivery allowances pursuant to § 271.1104 of the Commission's Regulations is available to CIPS for 10 days from the date of issuance. The complete text on diskette is in WordPerfect format may also be purchased from the Commission's copy contractor, La Dorn Systems Corporation, also located in Room 1000, 825 North Capitol Street NE., Washington, DC 20426.

Lois D. Cashell,

Secretary.

LIST III.—TRANSCONTINENTAL GAS PIPELINE CORPORATION (TRANSCO) PRODUCER CONTRACTS WHICH DO CONTAIN CONTRACTUAL AUTHORIZATION FOR DELIVERY ALLOWANCES UNDER FERC ORDER NO. 94-A.

Producer name and address	Transco contract	
	Number	Date
Louisiana Land & Exploration Company	00034	04/12/79
Canadian Occidental of California, Inc	00036	04/20/79
Canadian Occidental of California, Inc	00046	08/01/79
Canadian Occidental of California, Inc	00048	08/03/79
Arco Oil and Gas Company	00049	10/24/79
Petro-Lewis Funds, Inc	00051	11/19/79
Arco Oil and Gas Company	00056	12/30/81
Arco Oil and Gas Company	00062	09/29/79
Elf Aquitaine, Inc	00067	06/22/83
Mobil Oil Explor. & Prod., SE, Inc	06032	09/12/47
Suburban Propane Gas Corporation	06100	03/07/58
Sun Exploration & Prod. & Marion Corp	06159	02/12/58
Superior Oil Company	06182	12/30/58
BHP Petroleum (Americas, Inc.)	06233	07/28/60
Knob Hill	06243	07/03/60
Amoco Production Company	06256	04/04/61
Amoco Production Company	06273	01/10/63
Conoco, Inc	06273	07/14/60
Gulf Oil Corporation	06286	07/07/65
Knob Hill	06320	03/28/60
Superior Oil Company	06322	05/27/68
Amoco Production Company	06326	03/03/69
Gulf Oil Corporation	06345	06/16/69
Superior Oil Company	06368	07/28/74
Sun Exploration and Production Co	06391	06/09/71
Superior Oil Company	06414	05/23/72
Highland Resources	06415	05/24/72
Canadian Superior Oil (US) Ltd	06417	05/25/72
Kerr-McGee Corporation	06418	06/08/72
Getty Oil Company	06420	07/03/72
Getty Oil Company	06438	04/02/73
C and K Petroleum	06443	03/20/74
Getty Oil Company	06501	03/22/76
Texaco, Inc	06502	02/10/76
Sun Oil Company	06570	10/26/77
Getty Oil Company	06573	10/26/77
Natresco, Inc	06582	12/19/77
Kerr-McGee Corporation	06732	02/22/79
Pioneer Production Company	06753	03/20/79
NT Corporation	06765	08/15/80
Pyro Energy Corporation	06769	05/07/79

LIST III.—TRANSCONTINENTAL GAS PIPELINE CORPORATION (TRANSCO) PRODUCER CONTRACTS WHICH DO CONTAIN CONTRACTUAL AUTHORIZATION FOR DELIVERY ALLOWANCES UNDER FERC ORDER NO. 94-A.—Continued

Producer name and address	Transco contract	
	Number	Date
Sanchez-O'Brien Minerals Corporation	06788	06/06/79
Shell Oil Company	06798	06/15/79
Shall Oil Company	06799	06/15/79
Sanchez-O'Brien Minerals Corporation	06812	07/11/79
NT Corporation	06822	06/29/79
Getty Oil Company	06832	08/17/79
Texas Eastern Exploration Company	06839	08/20/79
Petro-Lewis	06857	09/17/79
Texaco, Inc	06866	09/27/79
Phillips Oil Company	06867	10/01/79
Sun Exploration and Production	06919	01/01/80
Transco Exploration Company	06920	02/18/80
Pioneer Production Corporation	06923	12/03/79
Shell Onshore Partnership	06931	06/13/80
Diamond Shamrock Offshore	06933	03/13/80
Amoco Production Company	06935	03/14/80
Amoco Production Company	06936	03/14/80
Superior Oil/Oil Participant, Inc	06965	04/23/80
NT Corporation	06988	07/28/80
NT Corporation	06989	07/28/80
Kerr-McGee Corporation	61019	09/29/80
Shell Oil Company	61020	08/01/80
Sonat	61027	11/04/80
Kerr-McGee Corporation	61042	11/26/80
Pioneer Production Corporation	61049	12/15/80
Norse Petroleum, Inc	61076	02/11/81
Southern Natural Gas Company	61079	12/09/80
Amerada Hess	61118	06/14/81
Transco Exploration	61140	07/14/81
Arco Oil and Gas	61146	05/19/81
Conoco, Inc	61163	08/24/81
Petro-Lewis Funds, Inc	61171	09/01/81
Florida Exploration Company	61175	08/26/81
Texaco, Inc	61185	09/23/81
Park Pipeline Company	61186	01/01/81
Sun Operation Limited Partnership	61192	10/08/81
Sun Exploration and Production Company	61212	12/02/81
Superior Oil Company	61215	12/04/81
Texaco, Inc	61227	01/25/82
Sun Exploration and Production/David Crow Trustee	61232	02/12/82
Pennzoil Production Company	61245	03/29/82
Sun Exploration and Production/David Crow Trustee	61254	06/28/82
Felmont Oil Corporation	61257	07/14/82
Amerada Hess	61261	08/23/82
Petro-Lewis Funds	61277	03/21/83
Arco Oil and Gas Company	61367	08/27/85
Arco Oil and Gas Company	61369	10/01/85

[FR Doc. 89-16159 Filed 7-10-89; 8:45 am]

BILLING CODE 6717-01-M

[Docket No. TM89-13-20-000]

Algonquin Gas Transmission Co., Proposed Change in FERC Gas Tariff

July 3, 1989.

Take notice that Algonquin Gas Transmission Company ("Algonquin") on June 27 1989, tendered for filing to its FERC Gas Tariff, Second Revised Volume No. 1 the following tariff sheets:

Proposed to be effective November 1, 1988

Revised Twenty-third Revised Sheet No. 204

Proposed to be effective January 1, 1989

Revised Twenty-fourth Revised Sheet No. 204

Proposed to be effective February 1, 1989

Revised Twenty-fifth Revised Sheet No. 204

Proposed to be effective March 1, 1989

Revised Twenty-sixth Revised Sheet No. 204

Proposed to be effective April 1, 1989

Revised Twenty-seventh Revised Sheet No. 204

Proposed to be effective May 1, 1989

Revised Twenty-eighth Revised Sheet No. 204

Proposed to be effective June 1, 1989

Revised Twenty-ninth Revised Sheet No. 204

Proposed to be effective July 1, 1989

Thirtieth Revised Sheet No. 204

Algonquin states that it is making the instant filing to request authority to modify the Winter Requirement Quantity ("WRQ") rate as billed to Algonquin by National Fuel Gas Supply Corporation ("National"). Algonquin states that applying the new calculation method for the revised WRQs, as modified and approved by the Commission's Letter Orders dated April 7 1989 and May 18, 1989 in Docket Nos. RP89-103-000 and 001, to its customers, produces over-collection of the WRQ charges (as billed to it by National) of $1,230.98 per month. In order to correct this discrepancy, Algonquin is requesting authority to modify National's as billed WRQ rate to the extent necessary to properly collect the WRQ charges from its customers for reimbursement to National. All as more fully set forth in Algonquin's filing.

Algonquin notes that copies of this filing were served upon each affected party and interested state commissions.

Any person desiring to be heard or to protest said filing should file a motion to intervene or protest with the Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington, DC 20426, in accordance with Sections 385.214 and 385.211 of the Commission's Rules and Regulations. All such motions or protests should be filed on or before July 11, 1989. Protests will be considered by the Commission in determining the appropriate action to be taken but will not serve to make protestants, parties to the proceeding. Any person wishing to become a party must file a motion to intervene. Copies of this filing are on file with the Commission and are available for public inspection in the Public Reference Room.

Linwood A. Watson, Jr.,

Acting Secretary.

[FR Doc. 89-16154 Filed 7-10-89; 8:45 am]

BILLING CODE 6717-01-M

[Docket No. RP89-200-000]

Pacific Gas Transmission Co., Notice of Tariff Filing

July 3, 1989.

Take notice that on June 28, 1989, Pacific Gas Transmission Company (PGT) tendered for filing Original Volume No. 1-A to its FERC Gas Tariff.

PGT states that Original Volume No. 1-A will allow it to commence open access transportation pursuant to Section 311 of the Natural Gas Act. Original Volume No. 1-A reflects establishment of PGT's new Rate Schedules FTS-1 and ITS-1, which provide for firm and interruptible gas transportation, respectively, on PGT's system. PGT does not propose a rate change in the instant filing but will utilize for the ITS-1 rate, the rate contained in PGT's existing Rate Schedule IT-1, in effect and subject to refund in Docket Nos. RP87-62-000 and RP86-148-000. The priority for the new, interruptible transportation service under the proposed Rate Schedule ITS-1 will be provided on a first-come/first-serve basis. PGT states it will utilize the queue established by lottery approved by the Commission in Docket No. CP87-159-000 to determine the priority of new, interruptible transportation requests.

PGT requests that the Commission grant any waivers necessary so that these tariff sheets may become effective August 1, 1989. Copies of this filing have been sent to all parties who have requested interruptible transportation service as proposed by PGT in Docket No. CP87-159-000, jurisdictional customers and the Public Utilities Commission of the State of California.

Any person desiring to be heard or to protest said filing should file a motion to intervene or a protest with the Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington, DC 20426, in accordance with Rules 214 and 211 of the Commission's Rules of Practice and Procedure (18 CFR 385.214 and 385.211 (1985)). All such motions or protests should be filed on or before July 11, 1989. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a motion to intervene. Copies of this filing are on file with the Commission and are available for public inspection.

Lois D. Cashell,

Secretary.

[FR Doc. 89-16155 Filed 7-10-89; 8:45 am]

BILLING CODE 6717-01-M

Office of Hearings and Appeals

Decisions and Orders Issued During Week of May 1 Through May 5, 1989

During the week of May 1 through May 5, 1989 the decisions and orders summarized below were issued with respect to appeals and applications for other relief filed with the Office of Hearings and Appeals of the Department of Energy. The following summary also contains a list of submissions that were dismissed by the Office of Hearings and Appeals.

Copies of the full text of these decisions and orders are available in the Public Reference Room of the Office of Hearings and Appeals, Room 1E-234, Forrestal Building, 1000 Independence Avenue, SW Washington, DC 20585, Monday through Friday, between the hours of 1:00 p.m. and 5:00 p.m., except federal holidays. They are also available in *Energy Management: Federal Energy Guidelines*, a commercially published loose leaf reporter system.

George B. Breznay,

Director, Office of Hearings and Appeals.

June 30, 1989.

Appeals

Michael G. Lloyd, 5/4/89, KFA-0275

Michael G. Lloyd filed an Appeal from a determination issued by the DOE's Oak Ridge Operations Office in which the Office withheld a doument entitled "Case Analysis and Review" in its entirety pursuant to subsection (d)(5) of the Privacy Act, which exempts from disclosure "any information compiled in reasonable anticipation of a civil action or proceeding. 5 U.S.C. § 522a(d)(5). In denying Lloyd's Appeal, the DOE determined that the document at issue was created in anticipation of civil litigation and therefore properly withheld pursuant to subsection (d)(5). In making that determination, the DOE found that the fact that the Office and Lloyd subsequently resolved the matter at issue did not strip the document of its exempt status under the Privacy Act.

The Schenectady Gazette, 5/4/89, KFA-0274

The Schenectady Gazette filed an Appeal from a determination by the DOE's Naval Reactors Program (NRP) denying the Gazette's Freedom of Information Act (FOIA) request for five documents. The NRP determined that portions of the five documents were properly withheld pursuant to Exemptions 3, 4, and 5. The appellant only challenged the portion of the determination that concerned Exemption 5. The DOE found that the portions of the documents withheld pursuant to Exemption 5 were properly withheld, because were part of the delibertative process or because they were nonsegregable factual materials. Accordingly, the Appeal was denied.

Supplemental Order

Research Fuels, Inc., Oasis Petroleum Corporation, 5/3/89, HCX-0100, KER-0013, KEZ-0095, KER-0051

The DOE issued a Decision and Order concerning three motions related to a consolidated case remanded to the Office of Hearings and Appeals (OHA) by the United States District Court for the Northern District of Texas and a Petition for Special Redress filed with OHA pursuant to the terms of an order issued by the United States District Court for the Middle District of Florida. The three motions all pertain to a Decision and Order issued by OHA in 1986, *Lucky Stores, Inc./Research Fuels, Inc.*, 14 DOE ¶82,505 (1986). Those motions are the following: 1) a motion to Strike certain portions of the 1986 Decision; 2) a Motion for Reconsideration of other portions of the 1986 Decision; and 3) a Motion for Modification of the 1986 Decision and for other Forms of Relief. The filing of the first two motions described above was precipitated by an order issued by the Texas district court vacating portions of the 1986 Decision.

In considering the Motion to Strike, the DOE recalled that the consolidated case remanded to OHA from the Texas district court was separate and distinct from the case referred to OHA by the Florida district court. Viewing the two court proceedings in this way, the DOE found that the Motion to Strike should be granted only insofar as it pertained to or affected the two actions remanded to OHA from the Texas district court. The DOE denied the motion insofar as it pertained to or affected the matter referred to the DOE from the Florida district court. The DOE explained that its decision to leave its 1986 Decision intact for the Florida court was not one made in flagrant disregard for the Texas court's Order to Vacate. Rather, it was a decision made in recognition of the Florida court's interest in the integrity of the 1986 Decision. The DOE decided that it was for the Florida court, not OHA, to determine the collateral effect, if any, of the Texas court's Order to Vacate on the litigation pending before the Florida court.

The DOE next denied in its entirety the Motion for Reconsideration. With respect to the Texas remand proceeding, DOE found that those portions of the 1986 Decision which it struck for purposes of the Texas remand cases in no way served as legal or factual predictes for the other portions of the Decision which DOE left intact. The DOE therefore found there to be no basis to "reconsider" its 1986 Decision and strike the remaining portions of that Decision.

With respect to the Motion as it pertained to the Florida litigation, the DOE observed that the reconsideration request was contingent upon the unconditional granting of the Motion to Strike. Inasmuch as the DOE denied the Motion to Strike as it pertained to the Florida litigation, the DOE determined that the Motion for Reconsideration directed toward the Florida forum must fail as well. The DOE further opined that even if the Motion for Reconsideration did not depend on the unconditional granting of the Motion to Strike, the motion could not prevail because it, like the Motion to Strike, could not be used as a procedural vehicle to deprive the Florida court of an opportunity to evaluate independently the 1986 Decision in its entirety.

The DOE also decided, *sua sponte*, to dismiss Case No. HCX-0100 which concerned the contemplated remedial phase of the proceeding underlying the 1986 Decision. DOE explained that the administrative proceeding which culminated in issuance of the 1986 Decision became moot after the Texas district court distributed the monies held in several escrow accounts under its control. OHA would have determined in the remedial phase of Case No. HCX-0100 the proper recipients of all or a portion of those escrow accounts.

Finally, the DOE dismissed the Motion for Modification and Other Forms of Relief on the basis that the motion concerned the administrative proceeding which had been rendered moot as the result of action taken by the Texas district court.

Refund Applications

A.B. Wolle & Co., Inc., Burdette Hansen, Custer's Garage Diamond Gas & Fuel Co., 5/4/89, RF272-22282; RF272-22905; RF272-23116; RF272-23537

The DOE issued a Decision and Order denying refunds to four applicants in the crude oil Subpart V proceeding. All four applicants were retailers of petroleum products during the period August 19, 1973 through January 27 1981. Because none of the applicants demonstrated that they were injured due to the crude oil overcharges, they were found ineligible for crude oil refunds. Accordingly, their Applications for Refund were denied.

Aminoil U.S.A. Inc./Vanguard Petroleum Corp., 5/3/89, RF139-206

The DOE issued a Supplemental Order concerning an Application for Refund filed by Vanguard Petroleum Corp. The Supplemental Order modified an error in the February 21, 1989 Decision and Order which granted the firm a refund of $900,101 in principal plus a proportionate share of the interest accrued on the Aminoil U.S.A. Inc. escrow account.

Atlantic Richfield Company/Glow's Arco Service et al., 5/3/89, RF304-1546 et al.

The DOE issued a Decision and Order concerning fifty Applications for Refund filed in the Atlantic Richfield Company (ARCO) special refund proceeding. All of the applicants documented the volume of their ARCO purchases and were end-users or reseller/retailers requesting refunds of less than $5,000. Therefore, each applicant was presumed injured. The refunds granted in this Decision totaled $84,208.

Atlantic Richfield Company/Montalbano Brothers et al., 5/5/89, RF304-2201 et al.

The DOE issued a Decision and Order concerning twenty-one Applications for Refund filed in the Atlantic Richfield Company (ARCO) special refund proceeding. All of the applicants documented the volume of their ARCO purchases and were end-users or reseller/retailers requesting refunds of $5,000 or less. Therefore, each applicant was presumed injured. The refunds granted in this Decision totaled $18,120.

Boise Cascade Corp. et. al., 5/4/89, RF272-67314 et al.

The DOE issued a Decision and Order denying Motions for Reconsideration and Applications for Refund filed by Boise Cascade Corporation, Packaging Corporation of America, and Burlington Industries, Inc. Each of these firms previously had submitted Applications for Refund in both the crude oil Subpart V proceedings as well as the Surface Transporter (ST) or Rail and Water Transporter (RWT) refund proceedings conducted pursuant to the Stripper Well Settlement Agreement. For each applicant, the DOE had granted its ST or RWT claim and denied the crude oil claim. In each case, the DOE determined that the firms had irrevocably waived any rights they might have had to a crude oil refund by submitting valid ST or RWT waivers. Each firm filed a Motion for Reconsideration of those Decisions, as well as a contingent Application for Refund in the crude oil proceedings. In each of their Motions and Applications, the firms argued that the ST or RWT Waivers extended only to the actual gallons of petroleum products for which the applicant was making a claim. This argument was expressly rejected by the Temporary Emergency Court of Appeals in *Mid-America Dairymen, Inc. v. Herrington*, No. 10-79 (Temp. Emer. Ct. App. April 19, 1989). The DOE agreed with the court's determination in this regard, and therefore denied the firms' Motions and Applications. The DOE also denied a Motion for Discovery filed by a group of states regarding the Boise Cascade Application for Refund.

Crown Central Petroleum Corporation/Beaty Oil Company, Inc. et al., 5/3/89, RF313-87 et al.

The DOE issued a Decision and Order granting Applications for Refund filed by ten purchasers of Crown refined petroleum products in the Crown Central Petroleum Corporation special refund proceeding. According to the procedures set forth in *Crown Central Petroleum Corp.*, 18 DOE ¶ 85,326 (1988), each applicant was found to be eligible for a refund based on the volume of products it purchased from Crown. The total amount of refunds approved in this Decision was $38,889.

Dorchester Gas Corp./ Christian County Gas Company, et al., 5/3/89, RF253-52 et al.

The DOE issued a Decision and Order concerning seven Applications for Refund in the Dorchester Gas Corporation refund proceeding. Each of the applicants purchased Dorchester propane from Home Petroleum Corporation. The DOE had previously determined that Home was not injured with respect to its purchases of Dorchester propane. Accordingly, the indirect purchasers were eligible for their full allocable shares. Under the small claims presumption of injury, the applicants were granted refunds, including both principal and interest, totalling $29,683.

Dorchester Gas Corp./Liquid Petroleum Corp., 5/1/89, RF253-36

The DOE issued a Decision and Order concerning an Application for Refund submitted by Liquid Petroleum Corporation (Liquid) in the Dorchester Gas Corporation special refund proceeding. Liquid adequately established that it purchased 9,117,908 gallons of normal butane from Dorchester. Liquid requested a refund greater than $5,000 and, therefore, was required to submit a detailed demonstration of injury. Liquid demonstrated that it maintained cost banks during the relevant time period greater than its allocable share of the Dorchester funds. Market prices are not available for butane prior to July 1975. Therefore, to complete Liquid's competitive disadvantage analysis, the DOE extrapolated average national market prices for butane before July 1975 by comparing *Platt's* data for propane and EIA data for butane. Based on the resulting information, the DOE determined that in less than half of the months of the consent order period, Dorchester's prices to Liquid exceeded average national market prices. Liquid was granted a refund based on the above-market gallons of butane multiplied by the volumetric. The total refund granted was $56,084.

Eastern Oil Company/Highway Transport Inc., 5/3/89, RF306-4

The DOE issued a Decision and Order granting an Application for Refund filed by Highway Transport Inc. in the Eastern Oil Company special refund proceeding. The applicant was an end-user of motor gasoline and received its full allocable share based on a presumption of injury. The total refund granted is $3,689.

Exxon Corporation/Darlington Fuel Company, Inc., 5/1/89, RF307-1098

The DOE issued a Decision and Order concerning an Application for Refund filed in the Exxon Corporation special refund proceeding. Darlington Fuel purchased directly from Exxon and was a reseller of Exxon products. Darlington received a refund based on a presumption of injury. The amount of refund granted in this Decision is $5,909.

Exxon Corporation/Howgen Transport Co., Inc., et al., 5/4/89, RF307-6200 et al.

The DOE issued a Decision and Order concerning 51 Applications for Refund filed in the Exxon Corporation special refund proceeding. Each of the applicants purchased directly from Exxon and was either a reseller whose allocable share is less than $5,000 or an end-user of Exxon products. The DOE determined that each applicant was eligible to receive a refund equal to its full allocable share. The sum of the refunds granted in this Decision is $37,519.

Exxon Corporation/Fairland Exxon et al., 5/4/89, RF307-5384 et al.

The DOE issued a Decision and Order concerning 46 Applications for Refund filed in the Exxon Corporation special refund proceeding. Each of the applicants included in the Decision purchased directly from Exxon and was a reseller or retailer of Exxon products whose allocable share is less than $5,000, or an end-user. The DOE determined that each applicant was eligible to receive a refund equal to its full allocable share. The sum of the refunds granted in this Decision is $45,178.

Gulf Oil Corporation/Axselle's Gulf Service et al., 5/3/89, RF300-8138 et al.

The DOE issued a Decision and Order concerning 29 Applications for Refund submitted in the Gulf Oil Corporation special refund proceeding. Each application was approved using a presumption of injury. The sum of the refunds granted in this Decision is $53,703.

Gulf Oil Corporation/Billy's Gulf Station et al., 5/1/89, RF300-82 et al.

The DOE issued a Decision and Order concerning 34 Applications for Refund submitted in the Gulf Oil Corporation special refund proceeding. Each application was approved using a presumption of injury. The sum of the refund granted in this Decision is $59,487

Gulf Oil Corporation/Cochran's Gulf Service et al., 5/1/89, RF300-34 et al.

The DOE issued a Decision and Order concerning 21 Applications for Refund submitted in the Gulf Oil Corporation special refund proceeding. Each application was approved using a presumption of injury. The sum of the refunds granted in this Decision is $35,005.

Gulf Oil Corporation/Dill Brothers et al., 5/5/89, RF300-7600 et al.

The DOE issued a Decision and Order concerning 28 Applications for Refund submitted in the Gulf Oil Corporation special refund proceeding. Each application was approved using a presumption of injury. The sum of the refunds granted in this Decision is $44,621.

Gulf Oil Corporation/Disco County Corp. et al., 5/5/89, RF300-7777 et al.

The DOE issued a Decision and Order concerning five Applications for Refund submitted in the Gulf Oil Corporation special refund proceeding. Each application was approved using a presumption of injury. The sum of the refunds granted in this Decision is $40,896.

Gulf Oil Corporation/Dye's Gulf et al., 5/1/89, RF300-11 et al.

The DOE issued a Decision and Order concerning 10 Applications for Refund submitted in the Gulf Oil Corporation special refund proceeding. Each applicant established that it purchased some or all of its Gulf products indirectly from a Gulf jobber. The jobbers that supplied these 10 applicants: 1) have not applied in the Gulf proceeding; 2) have not attempted to prove injury; or 3) have already received a refund in the Gulf proceeding under an injury presumption. Accordingly, the 10 applicants were treated in the same manner as applicants who purchased directly from Gulf. Each application was approved using a presumption of injury. The sum of the refunds granted in this Decision is $12,724.

Gulf Oil Corporation/Ellsworth Oil Company, 5/1/89, RF300-5233.

The DOE issued a Decision and Order concerning an Application for Refund submitted in the Gulf Oil Corporation special refund proceeding by Ellsworth Oil Company, a consignee and reseller of Gulf refined products. Ellsworth Oil Company's allocable share as a reseller is less than $5,000, and its total principal refund is less than $5,000. Therefore, it was not required to provide a detailed demonstration that it absorbed Gulf's alleged overcharges. The refund granted to Ellsworth Oil Company in this Decision and Order is $2,134.

Gulf Oil Corporation/J.P Messina Gulf Service Station et al., 5/3/89, RF300-206 et al.

The DOE issued a Decision and Order concerning 11 Applications for Refund submitted in the Gulf Oil Corporation special refund proceeding. The applications were approved using a presumption of injury. The sum of the refunds granted in this Decision, which includes both principal and interest is $26,132.

Gulf Oil Corporation/Mont-East Gas Supply, Inc., 5/1/89, RF300-10791

The DOE issued a Supplemental Order concerning two Applications for Refund submitted in the Gulf Oil Corporation special refund proceeding by Mont-East Gas Supply, Inc. (Case No. RF300-2847) and Langer Gas Service Co. (Case No. RF300-3156). Because both firms were operationally related during the consent order period, it is appropriate to consider them together when applying the presumptions of injury. However, both firms had already benefitted from consideration under separate presumptions of injury and received refund amounts of $953 and $6,404 ($5,000 plus interest) in this proceeding. The two firms collectively purchased 12,260,548 gallons of covered Gulf products. In the absence of a specific injury showing, this purchase volume entitles the firms to a total refund of $5,000 plus interest. Thus, the DOE rescinded the refund granted to Mont-East Gas Supply, Inc. in the amount of $953 in *Guy W Ward, et al.* 18 DOE ¶85,217 (1989)

Gulf Oil Corporation/Petroleum Products of South Georgia, Inc., 5/1/89, RF300-5326

The DOE issued a Decision and Order concerning an Application for Refund submitted in the Gulf Oil Corporation special refund proceeding by Petroleum Products of South Georgia, Inc., a consignee and reseller of Gulf refined products. The applicant's allocable share as a reseller is less than $5,000, and its total principal refund is less than $5,000. Therefore, it was not required to provide a detailed demonstration that it absorbed Gulf's alleged overcharges. The refund granted to Petroleum Products in this Decision and Order is $5,450.

Gulf Oil Corporation/R. Brown Gulf, 5/1/89, RF300-10698

The DOE issued a Supplemental Order amending a refund granted on December 9, 1988 to R. Brown Gulf from the Gulf Oil Corporation special refund proceeding (*Gulf Oil Corporation/Lyle's Guld, et al.*) in order to include purchases by another service station owned by the applicant during the consent order period. The DOE granted an additional refund of $2,572 thereby bringing the applicant's total refund to $3,289.

Gulf Oil Corporation/T. L. Baker, 5/1/89, RF300–5488

The DOE issued a Decision and Order concerning an Application for Refund submitted in the Gulf Oil Corporation special refund proceeding by T.L. Baker, a consignee and reseller of Gulf refined products. T.L. Baker's allocable share as a reseller is less than $5,000, and its total principal refund is less than $5,000. Therefore, it was not required to provide a detailed demonstration that it absorbed Gulf's alleged overcharges. The refund granted to T.L. Baker in this Decision and Order is $2,179.

Henry's Texaco et al., 5/4/89, RF272–445 et al.

The DOE issued a Decision and Order, denying five Applications for Refund filed in the crude oil Subpart V refund proceeding. Each applicant was either a reseller or a retailer during the period August 19, 1973 through January 27 1981. Because none of the applicants demonstrated that it was injured due to the crude oil overcharges, each was ineligible for a crude oil refund.

Huber's, Inc., 5/5/89, RF272–23395

The DOE issued a Decision and Order denying the Application for Refund filed by Huber's, Inc., a vehicle rental firm, in the crude oil Subpart V proceeding. For the purposes of Subpart V proceedings, vehicle rental firms are considered to be retailers. Because Huber's failed to demonstrate that it was injured due to the crude oil overcharges, it was found to be ineligible for a crude oil refund. Accordingly, Huber's Application for Refund was denied.

Indian Wells Oil Company /Gates Learjet Corporation, 5/3/89, RF317–1

The DOE issued a Decision and Order concerning an Application for Refund filed by Gates Learjet Corporation (Gates) in the Indian Wells Oil Company special refund proceeding. *See Indian Wells Oil Co.*, 18 DOE ¶ 85,296 (1988). Gates was an end-user of Indian Wells natural gas liquids and natural gas liquid products. Gates was entitled to a refund equal to its allocable share as set forth in the *Indian Wells* Appendix, $5,010, plus a proportionate share of the interest that accrued in the Indian Wells escrow account. Accordingly, Gates was granted a refund of $5,468.

Marathon Petroleum Company /Rogers Oil Company, 5/3/89, RR250–5

Rogers Oil Company filed a Motion for Reconsideration of a partial denial of its refund request from a consent order fund made available by Marathon Petroleum Company. Because the DOE found that Rogers had failed to prove injury at a higher level, Rogers was granted a refund of $11,541 based on the 35 percent presumption of injury methodology. In its Motion for Reconsideration, the firm claimed that in assessing whether it had experienced a competitive disadvantage in purchasing product from Marathon, the DOE incorrectly found that the prices it paid should be compared to prices other retailers in its market area paid, rather than to refinery and terminal prices. Rogers maintained that it was a wholesaler, not a retailer of product. The DOE rejected this argument, finding that Rogers' sister firm, Diamond Services, Inc., retailed the Marathon product purchased by Rogers, and that Rogers was, therefore, in essence, a retailer of product. Accordingly, the Motion was denied.

Mobil Oil Corp. /McCall Oil and Chemical Corporation, 5/5/89, RF225–9122

The DOE issued a Decision and Order granting an Application for Refund filed by McCall Oil and Chemical Corporation in the Mobil Oil Corporation special refund proceeding. *Mobil Oil Corp.*, 13 DOE ¶ 85,339 (1985). McCall, a retailer of home heating oil, claimed a refund on its purchases of 82,412,752 galllons of No. 2 fuel oil from Mobil. The DOE did not have all of the information required to apply a "competitive disadvantage test" to McCall's purchases from Mobil. However, after examining the firm's cost banks and the specific effects of Mobil's pricing practices on several indices of McCall's business performance, the DOE concluded that McCall was injured by its purchases from Mobil. Accordingly, McCall was granted a refund of $41,701.

Modine Manufacturing Company, 5/4/89, RF272–18968

The DOE issued a Decision and Order granting a refund from crude oil overcharge funds to Modine Manufacturing Company based on Modine's purchases of refined petroleum products during the period August 19, 1973 through January 27 1981. However, the portion of Modine's claim based on methyl ethyl ketone (MEK) was denied. The DOE determined that MEK, having never been defined as a covered product during the controls period and being too remote from crude oil to be considered a covered product, could not form a basis for a refund in the Subpart V proceeding. Modine's total gallonage figure was adjusted accordingly. Modine was an end-user of the products it claimed and was therefore presumed injured by the alleged crude oil overcharges. The amount of the refund granted in this Decision is $1,983.

Sunflower Electric Coop., Inc, et al., 5/4/89, RF272–332 et al.,

The DOE issued a Decision and Order concerning five Applications for Refund submitted in the crude oil Subpart V proceeding. Each of the applicants is an electric cooperative. The States submitted objections to the five Applications, which stated that the applicants were not eligible to receive a crude oil refund because they were not injured by crude oil overcharges. The States argued that the five applicants passed through any overcharges directly to their members. The DOE determined that the five applicants were eligible for refunds provided that they passed through the refunds received on a dollar-for-dollar basis to their members. The sum of the refunds granted in this Decision is $125,699.

Total Petroleum Inc./Dilries Oil, Inc. et al., 5/4/89, RF310–308 et al.

The DOE issued a Decision and Order concerning 11 Applications for Refund filed by purchasers of motor gasoline from Total Petroleum, Inc. The applicants sought a portion of the settlement fund obtained by the DOE through a consent order entered into with Total. Each of the applicants was a reseller whose allocable share is less than $5,000. Under the standards established in *Total Petroleum, Inc.*, 17 DOE ¶ 85,542 (1988), the DOE granted refunds in this proceeding which total $11,089.

United Technologies Corp., 5/4/89, RF272–9183, RD272–9183

The DOE issued a Decision and Order granting a refund from crude oil overcharge funds to United Technologies Corporation (United), a conglomerate corporation specializing in the design and manufacture of high-technology products. In reaching its determination, the DOE rejected the objections to United's claim submitted by a group of States and denied the States' Motion for Discovery. Specifically, the DOE restated its position that general economic arguments which are applicable to most segments of the United States economy are insufficient to rebut the presumption that end-users outside of the petroleum industry were injured by crude oil overcharges. The DOE also determined that the States' showing of sustained growth and profitability of a particular firm does not rebut the end-user presumption. In evaluating United's claim, the DOE found that 5.2 percent of the firm's sales during the period of price controls were attributable to cost-reimbursement type contracts. The DOE determined that United could not have been injured by crude oil overcharges in its sales for which its costs were reimbursed pursuant to contractual provisions, and therefore reduced United's total refund claim by 5.2 percent. The total refund granted to United was $360,075.

Crude Oil End-Users

The Office of Hearings and Appeals granted crude oil overcharge refunds to end-user applicants in the following Decisions and Orders:

Name	Case No.	Date	No. of applicants	Total refund
Town of Gaston et al. ...	RF272-17258	5/5/89	54	$75,917
Vernon O. Setzer et al	RF272-50200	5/5/89	183	20,111

Dismissals

The following submissions were dismissed:

Name and Case No.

A&A Service Center, RF272-3561
Al's Gulf, RF300-10743
Alex's Arco Service Station, RF304-8148
Amer Arco, RF304-2271
Bamford Land Company RF272-74999
Bastile and Cella Arco, RF304-3537
Beck Suppliers, Inc., RF304-7204
Benton's Exxon RF307-9141
Bill Arco, RF304-3493
Bill's Arco, RF304-5355
Bud's Arco Service, RF304-3240
Bushman's S.S., RF304-4064
Cater Gulf Service, RF300-10029
Chuck Hauber, RF304-7486
City of Cleveland Heights, RF272-69488
Claude D. Lodge, RF307-9674
Clifford M. Akey, RF272-61915
Colonial Oil Industries, Inc., RF307-8950
Daniel Shelitsky, RF304-7577
Davis County Highway Dept., RF272-37386
Downey's Arco. RF304-2647
Downtown Exxon, RF307-149
E.W Bowker Co., Inc., RF272-65397
Eddie Mcae, RF272-65341
Friendly Kens Exxon *et al.* (See attached list), RF307-2000
Ft. Madison Community School District, RF272-60598
Hawkeye Oil Co., RF300-9415
Hillcrest Esso, RF272-8138-
Howardine Hembree, RF272-1991
Jerral Mayes, RF307-9675
Jim Atchley SS & Car Wash, RF307-5960
John Cardullo and Sons, RF300-9652
John Zekler, RF304-1921
Jordan's Humble SVC Station, RF307-8295
Joseph J. Shevlin, RF272-21441
Ken Sutherland Gas and Oil Inc. *et al.* (See attached list), RF310-4
Kenneth A. Denning, RF272-55010
Larry's, RF304-2935
Lynchburg Oil Co., Inc., RF309-1118
Millard M. Strickland, RF307-9676
Modesto Perez Gomez, RF307-8499
Northeast Utilities Service Co., RF300-10546
Pennsylvania Turnpike Commission, RF304-5193
Ray's Exxon, RF307-1057
Robb's Gulf, RF300-10313
Roger H. Brack, RF307-9673
Ronceverte Ice & Produce Co., RF304-3967
Sam's Arco, RF304-3192
Slaven's Gulf, RF300-10694
Strother's Holiday Gulf, RF300-8132
Sutton Oil Co., RF300-8991
Tahquamenon Area Schools, RF272-75308
Tennessee River Pulp & Paper Co., RF272-4758
Watson Gulf RF300-10376
Wright's Exxon Station, RF307-1829, RF307-2025

Service List

RF307-2000

Mr. Kenneth Campbell, c/o Friendly Kens Exxon, Bob Wallace Ave., Huntsville, AL 35706

RF307-2001

Mr. Brent Bousson, c/o P and S Garage, 899 Madison, Memphis, TN 38103

RF307-2002

Mr. Wade Walley, c/o Walley's Auto Parts, Box 702, Winnsboro, LA 71295

RF307-2003

Mr. S.R. Spearman, c/o Spearman Place, Rt. 3, Box 17 Gaylesville, AL 35973

RF307-2005

Mr. Stele Bledsoe, c/o Senatobia Exxon, 503 E. Main St., Senatobia, MS 38668

RF307-2008

Mr. Roland Freeman, c/o U-Pack Grocery, Box 116, Hwy 1, White Castle, LA 70788

RF307-2013

Mr. Felix Jordan, c/o Felix Jordan Exxon, 3201 S. Oakland, S. Dallas, TX 75215

RF307-2014

Ms. Linda Huntley, c/o Fruitland Grocery, Rt. 2, Box 139, Hendersonville, NC 28739

RF307-2016

Mr. Eddie Hudgin, c/o Short Stop and Gas, 3502 College Ave., Jackson, AL 36545

RF307-2017

Mr. Birl Jones, c/o Geyer Springs Exxon, 7724 Geyer Spring Rd., Little Rock, AR 72209

RF307-2019

Mr. Otto Black, c/o Blacks Exxon, 200 N. First East St., Haynesville, LA 71038

RF307-2024

Ms. Ronnie Lynn Temple, c/o Ronnies Service, 7 Fair Avenue, Winnsboro, LA 71295

RF307-2053

Mr. Joe Matthew, c/o Matthew Service Station, 3995 Raleigh, Millington, TN 38128

RF307-2054

Mr. Clifford Baker, c/o Baker's Service Station, 1302 Highland Ave., Jackson, TN 38301

RF307-2057

Mr. Wilson Miller, c/o Cameron Exxon, Box 713, Cameron, LA 70631

RF307-2058

Ms. Paulette Flowers, c/o Deltons Exxon, 1904 S. Stockton, Monahans, TX 79756

RF307-2061

Mr. Charles Reine, c/o Four Way Exxon, 6861 Hwy. 70, Memphis, TN 27836

RF307-2060

Mr. Ray Grants, c/o Grants Exxon, 1700 E. Holmer, Memphis, TN 38116

RF307-2062

Mr. Joe Gastins, c/o Gaskin's, 2801 S. Perkins, Memphis, TN 38113

RF307-2063

Mr. Leroy Cassingham, c/o C and B Exxon, 3900 Bob Wallace Ave., Huntsville, AL 35802

RF307-2065

Ms. Lanette Winson, c/o Dinglers Exxon, 3603 Westwall, Midland, NC 27836

RF307-2066

Mr. Ken Jones, c/o FAirpark Exxon, 101 N. Van Buren, Little Rock, AR 72205

RF307-2069

Mr. Jim Lipe, c/o Park Hill Exxon, Box 263, N. Little Rock, AR 72115

RF307-2070

Richard M. Bunch, c/o Carolina Exxon, 1205 Ashley River Rd., Charleston, SC 29407

RF307-2071

Mr. E.C. Hollis, c/o Fox Meadows Exxon, 2705 Mt. Moriah Rd., Memphis, TN 38115

RF307-2074

Mr. Herman Bennett, c/o Bennett Exxon, 478 Meeting St., Charleston, SC 29403

RF307-2079

Mr. Joe Champ, 4077 Tolane Ave., New Orleans, LA

RF307-2081

Mr. Raffi Mavelian, c/o Raffi's Exxon, 8022 Ferguson Rd., Dallas, TX 75228

RF307-2082

Mr. Clyde K. Cook, c/o Brookwood Exxon, 6501 S. University Ave., Little Rock, AR 72209

RF307-2092

Ms. Glenda Ashlock, c/o E. Ritter Seed Co., 300 Adamson Rd., Tree, AR 72365

RF307-2096

Mr. B.F Childress, c/o Childress Grocery, 4451 Collierville Arlington Rd., Arlington, TN 38802

RF307-2083

Mr. Bill McDaniel, c/o Bill's Exxon, 110 Nathan, Marked Tree, AR 72365

RF307-2087

Ms. Penney Chamberlain, c/o Total Performance Gas Island, 2530 S. Wilmot, Tucson, AZ 85711

RF307-2089

Mr. Jimmy D. Moore, c/o Bryant Exxon, Box 411, Bryant, AR 72002

RF307-2090

Mr. Frederick Young, c/o AAA BEE CEE Movers, 3082 Connahbrook, Memphis, TN 38106

RF307-2091

c/o E. Ritter Lumber Co., 507 W Second Street, Marked Tree, AR 72365

RF307-2103

Mr. Charles Hollingworth, c/o Willow Creek Exxon, 9701 N. Central Exp. Marked. Dallas. TX 75231

RF307-2106

Mr. David Proctor, c/o Proctor s Exxon, 4586 Quince. Memphis, TN 38117

RF307-2098

Mr. Fred Young, c/o ABC Moving and Storage, 3082 Connahbrooks, Memphis, TN 38106

RF307-2099

Mr. Sam Pleasant, c/o Pleasant Grocery, Rt. 3, Collerville, TN 38107

RF307-2101

Mr. Bell Forrester, c/o Murphrees city Wide Wrecker Service, 3913 Lamar Ave., Memphis, TN 38116

RF307-2107

Mr. Bill McCoy, c/o McCoy Exxon, Hwy 63 Tyronza, Tyronza, AR 72386

RF307-2108

Mr. Raymond Dorrell, c/o Cantrell Exxon, 3723 Cantrell Rd., Little Rock, AR 72202

RF307-2110

Mr. Audbrey Cross, c/o Cross & Sons Exxon, 946 S. Parkway E., Memphis, TN 38106

Attachment

RF310-4—Ken Sutherland Gas and Oil Inc.
RF310-6—Ed's Refinery Corporate
RF310-11—Wolfe Motor Co.
RF310-12—Squan Transit Co.
RF310-14—Rays Apco
RF310-16—George Young Apco Service
RF310-17—Glasgow Apco
RF310-32—Flower Petroleum
RF310-33—Mick's Apco
RF310-35—East Side Service
RF310-43—C & H Total Service
RF310-44—M 60 Total
RF310-49—Frank's Bay Service
RF310-50—Erskin Refinery Service
RF310-55—Wessos
RF310-56—Suttons Bay Total
RF310-58—Kenny's Service Station
RF310-59—Perryville C Mart
RF310-60—Frank's Total Service
RF310-62—Younge Apco
RF310-65—Brian Vickers Service Center
RF310-67—Frank Osborn Oil and Tire
RF310-69—Ed's Refinery Stations #1-24
RF310-73—East Bay
RF310-74—Wiederholt Apco Station
RF310-80—United Petroleum Corp.
RF310-135—Frank Osborn Oil & Tire
RF310-261—Pentwater Pines Golf Course
RF310-266—Atwood General Store
RF310-268—South Shore Car Wash
RF310-269—Downtown Car Wash
RF310-270—Dubois Oil Company
RF310-287—Fort Custer Off Road & Campground
RF310-288—Archies Qwik Stop
RF310-290—Jerry's Service
RF310-293—Rayburn Auto Parts, Inc.
RF310-296—Wayne Oakland Oil Company
RF310-299—Meijer, Inc

[FR Doc. 89-16175 Filed 7-10-89: 8:45am]

BILLING CODE 6450-01-M

ENVIRONMENTAL PROTECTION AGENCY

[FRL-3614-8]

Availability and Review of Proposed Enforcement Agreements; Ocean Dumping of Sewage Sludge

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of availability and review.

SUMMARY: EPA announces the availability of six proposed judicial consent decrees and enforcement agreements (Agreements) for public review and comment in accordance with the requirements of the Ocean Dumping Ban Act of 1988.

EPA has received complete applications from the following New Jersey sewage sludge generators[1]: Bergen County Utilities Authority (BCUA), Joint Meeting of Essex and Union Counties (JMEUC), Linden Roselle Sewerage Authority (LRSA), Middlesex County Utilities Authority (MCUA), Passaic Valley Sewerage Commissioners (PVSC), and Rahway Valley Sewerage Authority (RVSA) for issuance of special permits to transport and dispose of sewage sludge under the Marine Protection, Research, and Sanctuaries Act of 1972, 33 U.S.C. 1401. In conjunction with preparing permit conditions for each applicant and making a tentative determination to issue these permits for a term ending on March 17 1991, EPA has drafted these Agreements to ensure that the applicants aggressively pursue through completion the implementation of alternative disposal methods as required by the Ocean Dumping Ban Act. The New Jersey applicants have accepted these Agreements. EPA and the State of New Jersey have accepted their cessation schedules.

DATE: Comments must be received on or before July 26, 1989.

ADDRESSES: Send comments to: Bruce Kiselica, Chief, Ocean Dumping Task Force, EPA, Region II, 26 Federal Plaza, Room 813, New York, New York 10278-0090.

These proposed Agreements are available for public inspection at the above address.

[1] Complete applications were also received from the following New York sewage sludge generators: Nassau County Department of Public Works (NCDPW), New York City Department of Environmental Protection (NYCDEP), and Westchester County Department of Environmental Facilities (WCDEF). Their Agreements were noticed in the Federal Register last month.

FOR FURTHER INFORMATION CONTACT: Bruce Kiselica, Chief, Ocean Dumping Task Force, EPA, Region II, 26 Federal Plaza, Room 813, New York, New York 10278-0090, (212) 264-5693.

Public meeting sessions regarding these documents have been scheduled as follows:

July 19—Long Branch Municipal Building, Second Floor, Council Chamber, 344 Broadway, Long Branch, New Jersey.

The afternoon meeting session will commence at 1:00 PM, and the evening session will commence at 6:00 PM.

SUPPLEMENTARY INFORMATION: NCDPW's Agreement was published in the Federal Register on June 20, 1989 (54 FR 25902); the other New York ocean dumpers' Agreements were published on June 30, 1989 (54 FR 27704). This notice today discusses the six New Jersey ocean dumpers. The only major differences among the various Agreements are the specific interim schedules for ceasing ocean disposal and long term schedules for implementing final land based alternatives, provisions concerning special masters, and varying amounts of stipulated penalties depending on the size of the dumping operation. The applicants have developed the following plans for their sludges as part of the Agreements. BCUA proposes to dewater and chemically fix and in- or out-of-state landfill as cover on an interim basis and to incinerate on a long term basis. JMEUC proposes to out-of-state landfill on an interim basis and to incinerate on a long term basis. LRSA proposes to incinerate at an existing in-state incinerator or out-of-state landfill on an interim basis and to incinerate on a long term basis. MCUA proposes to dewater, chemically fix, and in-state landfill as cover on a long term basis. PVSC proposes to dewater and out-of-state landfill on an interim basis and to incinerate on a long term basis. RVSA proposes to dewater and out-of-state landfill on an interim basis and to incinerate at JMEUC's facility on a long term basis. The applicants propose to implement their plans by the following dates:

Applicant	Interim plan		Long-term plan	
	Date	Percent	Date	Percent
BCUA	3/17/91		1/01/96	
JMEUC	3/17/91		2/10/98	
LRSA	3/17/91		1/01/96	
MCUA	3/17/91		3/17/91	
PVSC	3/17/91		12/31/96	
RVSA	3/17/91		2/10/98	
NCDPW	6/30/91	50	12/31/94	

Applicant	Interim plan		Long-term plan	
	Date	Percent	Date	Percent
	12/31/91	100		
NYCDEP	12/31/91	20	12/31/95	>50
	6/30/92	100	6/30/98	100
WCDEF [3]	12/31/91		9/15/95	

Acceptability of MCUA's long term plan is contingent upon State approval.

As noted in the FEDERAL REGISTER notices published last month, the New York applicants propose to dewater and out-of-state landfill or use a private vender on an interim basis. They are each investigating the full range of sludge management alternatives for use on a long term basis.

The proposed Agreements may be inspected, and arrangements made for copying, at the above office between 9:00 a.m. and 4:00 p.m., Monday through Friday, except federal holidays. The file supporting the related proposed permits required under the Marine Protection, Research, and Sanctuaries Act is also available for public inspection at the above address. The proposed permits were similarly available during a separate comment period, which closed on April 28, 1989.

Dated: July 6, 1989.

William J. Muszynski,

Acting Regional Administrator for Region II.

[FR Doc. 89-16362 Filed 7-10-89; 8:45 am]

BILLING CODE 6560-50-M

FEDERAL COMMUNICATIONS COMMISSION

Public Information Collection Requirements Submitted to Office of Management and Budget for Review

July 3, 1989.

The Federal Communications Commission has submitted the following information collection requirements to the Office of Management and Budget for review and clearance under the Paperwork Reduction Act, as amended (44 U.S.C. 3501-3520).

Copies of the submissions may be purchased from the Commission's copy contractor, International Transcription Service, (202) 857-3800, 2100 M Street NW Suite 140, Washington, DC 20037 Persons wishing to comment on these information collections should contact Eyvette Flynn, Office of Management and Budget, Room 3235 NEOB, Washington, DC 20503, (202) 395-3785. Copies of these comments should also be sent to the Commission. For further information contact Jerry Cowden, Federal Communications Commission, (202) 632-7513.

OMB Number: None.

Title: Amendment of the Commission's Ex Parte Rules—47 CFR Section 1.1206, Documentation required for written or oral ex parte presentations in non-restricted proceedings.

Action: Existing collection in use without an OMB control number.

Respondents: Individuals or households, state or local governments, businesses (including small businesses), federal agencies or employees, and non-profit institutions.

Frequency of Response: On occasion.

Estimated Annual Burden: 130 responses; 130 hours; 1 hour average burden per response.

Needs and Uses: In order to alert all parties in non-restricted Commission proceedings to presentations by members of the public to FCC decision-making personnel, FCC rules require that a copy of the written presentation be made available for public review and that a summary of any oral presentation be made available. Effects only "presenters" who do not serve all parties in the proceeding or are filing outside of normal comment periods established by the FCC.

OMB Number: 3060-0357

Title: Section 63.701—Request for Designation as a Recognized Private Operating Agency.

Action: Reinstatement.

Respondents: Businesses.

Frequency of Response: On occasion.

Estimated Annual Burden: 30 responses; 150 hours; 5 hours average burden per respondent.

Needs and Uses: The information is needed to identify entities who seek governmental recognition as a Recognized Private Operating Agency (RPOA). The information will be used to ensure that RPOA's will obey the laws and treaties of the United States.

OMB Number: None.

Title: Section 74.913, Selection procedure for mutually exclusive ITFS applications.

Action: New collection.

Respondents: Non-profit institutions.

Frequency of Response: On occasion.

Estimated Annual Burden: 12 responses; 12 hours; 1 hour average burden per response.

Needs and Uses: Section 74.913(d) requires applicants tied in a comparative selection proceeding for Instructional Television Fixed Service stations to submit a statement of student enrollment at its proposed receive locations. The number of students claimed to be served must correlate to the applicant's purpose and proposed programming. The data is used by the FCC staff to determine the most qualified applicant.

Federal Communications Commission.
Donna R. Searcy,
Secretary.

[FR Doc. 89-16131 Filed 7-10-89; 8:45 am]
BILLING CODE 6712-01-M

FEDERAL EMERGENCY MANAGEMENT AGENCY

Agency Information Collection Submitted to the Office of Management and Budget for Clearance

The Federal Emergency Management Agency (FEMA) has submitted to the Office of Management and Budget the following information collection package for clearance in accordance with the Paperwork Reduction Act (44 U.S.C. Chapter 35).

Type: New
Title: Emergency Broadcast System Database
Abstract: This collection of informaiton is needed by FEMA to effectively manage the distribution of Federal funds to selected critical radio stations in the Emergency Broadcast System (EBS). Since funding is limited for this Presidentially required communications system, the information will be used to determine which stations will receive funds in order to keep existing operational, to enhance the survivability of the system, and to expand the number of survivable stations that comprise the backbone of the EBS. The funds will be used to purchase protection and backup equipment to ensure that the EBS will function when needed.
Type of Respondents: Businesses or other for-profit
Estimate of Total Annual Reporting and Recordkeeping Burden: 1,000
Number of Respondents: 1,000
Estimated Average Burden Hours per Response: 1
Fequency of Response: Annually

Copies of the above information collection request and supporting documentation can be obtained by calling or writing the FEMA Clearnace Officer, Linda Shiley, (202) 646-2624, 500 C Street, SW Washington, DC 20472.

Direct comments regarding the burdan estimate or any aspect of this information collection, icluding suggestions for reducing this burden, to the FEMA Clearance Officer at the above address; and to Pamela Barr, (202) 395-7231, Office of Management and Budget, 3235 NEOB, Washington, DC 20503 within two weeks of this notice.

Date: June 30, 1989.
Gail L. Kercheval,
Acting Director, Office of Administrative Support.
[FR Doc. 89-16198 Filed 7-10-89; 8:45 am]
BILLING CODE 6718-01-M

[FEMA-834-DR]

Major Disaster and Related Determinations; Kentucky

AGENCY: Federal Emergency Management Agency.
ACTION: Notice.

SUMMARY: This is a notice of the Presidential declaration of a major disaster for the Commonwealth of Kentucky, (FEMA-834-DR), dated June 30, 1989, and related determinations.

DATED: June 30, 1989.

FOR FURTHER INFORMATION CONTACT: Neva K. Elliott, Disaster Assistance Program, Federal Emergency Management Agency, Washington, DC. 20472 (202) 646-3614.

Notice: Notice is hereby given that, in a letter dated June 30, 1989, the President declared a major disaster under the authority of the Robert T. Stafford Disaster Relief and Emergency Assistance act (42 U.S.C. 5121 *et seq.*, Pub. L. 93-288, as amended by Pub. L. 100-707), as follows:

I have determined that the damage in certain areas of the Commonwealth of Kentucky, resulting from severe storms and flooding beginning on June 15, 1989, is of sufficient severity and magnitude to warrant a major disaster declaration under Public Law 93-288, as amended by Public Law 100-707 I, therefore, declare that such a major disaster exists in the Commonwealth of Kentucky.

In order to provide Federal assistance, you are hereby authorized to allocate, from funds available for these purposes, such amounts as you find necessary for Federal disaster assistance and administrative expenses.

You are authorized to provide Individual Assistance and Public Assistance in the designated areas. Consistent with the requirement that Federal assistance be supplemental, any Federal funds provided under Pub. L. 93-288, as amended by Pub. L. 100-707 for Public Assistance will be limited to 75 percent of the total eligible costs.

The time period prescribed for the implementation of section 310(a), Priority to Certain Applications for Public Facility and Public Housing Assistance, shall be for a period not to exceed six months after the date of this declaration.

Notice is hereby given that pursuant to the authority vested in the Director of the Federal Emergency Management Agency under Executive Order 12148, I hereby appoint Thomas P Credle of the Federal Emergency Management Agency to act as the Federal Coordinating Officer for this declared disaster.

I do hereby determine the following areas of the Commonwealth of Kentucky to have been affected adversely by this declared major disaster:

The counties of Bell, Clay, Floyd, Knott, Knox, and Leslie for Individual Assistance; and

The counties of Bell, Clay, Knox, and Leslie for Public Assistance.

(Catalog of Federal Domestic Assistance No. 83.516, Disaster Assistance.)

Robert H. Morris,
Acting Director, Federal Emergency Management Agency.

[FR Doc. 89-16169 Filed 7-10-89; 8:45 am]
BILLING CODE 6718-02-M

FEDERAL MARITIME COMMISSION

Security for the Protection of the Public Indemnification of Passengers for Nonperformance of Transportation; Issuance of Certificate (Performance)

Notice if hereby given that the following have been issued a Certificate of Financial Responsibility for Indemnification of Passengers for Nonperformance of Transportation pursuant to the provisions of section 3, Pub. L. 89-777 (89 Stat. 1357 1358) and Federal Maritime Commission General Order 20, as amended (46 CFR Part 540):

Special Expeditions, Inc. and Wilderness Cruises, Inc., 720 Fifth Avenue, New York, New York 10019
Vessel: Sea Lion

Date July 6, 1989.
Joseph C. Polking,
Secretary.

[FR Doc. 89-16166 Filed 7-10-89; 8:45 am]
BILLING CODE 6730-01-M

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Social Security Administration

Disability Advisory Committee; Meeting

AGENCY: Social Security Administration, HHS.
ACTION: Notice of meeting.

SUMMARY: In accordance with the Federal Advisory Committee Act (Pub. L. 92-463), this notice announces the schedule and proposed agenda of a forthcoming meeting of the Disability Advisory Committee (the Committee).

DATE: July 24, 1989, 9:00 a.m. to 5:00 p.m., July 25, 1989, 9:00 a.m. to 3:00 p.m.

ADDRESS: Hubert H. Humphrey Building, Humphrey Auditorium, 200 Independence Avenue SW., Washington, DC 20201.

Agenda: Approve Final Report.

The Committee may hold additional session during the evenings of July 24 and/or July 25, 1989. If the Committee decides to hold these evening sessions, the Committee will make an announcement during the regularly scheduled sessions.

FOR FURTHER INFORMATION CONTACT: Jean H. Hinckley, Executive Director, Disability Advisory Committee, P.O. Box 17064, Baltimore, Maryland 21235, (301) 965-4646.

SUPPLEMENTARY INFORMATION:

The Committee is established under and governed by the provisions of section 1114 of the Social Security Act, as amended, and the provisions of the Federal Advisory Committee Act, as amended, (Pub. L. 92-463). The Committee is chaired by Dr. John E. Affeldt.

The purposes of the Committee are to study the Social Security administrative review process (known as the "appeals process") to ensure that the process protects the rights of the claimants, produces accurate and swift decisions, and is viewed as fair and equitable; receive and consider public views on reform of the process; and make a report and recommendation to the Commissioner of Social Security.

This meeting is open to the public to the extent space is available.

A transcript of the Committee meeting is available to the public on an at-cost-of duplication basis. The transcript can be ordered from the Executive Director of the Committee. The transcript will become part of the record of these proceedings.

Dated: June 30, 1989.

Jean H. Hinckley,

Executive Director, Disability Advisory Committee.

[FR Doc. 89-16172 Filed 7-10-89; 8:45 am]

BILLING CODE 4190-11-M

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Office of the Assistant Secretary for Community Planning and Development

[Docket No. N-89-1991: FR 2628]

Community Development Work Study Program

AGENCY: Office of Assistant Secretary for Community Planning and Development, HUD.

ACTION: Revision to Notice of Fund Availability.

SUMMARY: On June 27 1989, HUD published a Notice of Fund Availability soliciting applications for the Community Development Work Study Program under the Secretary's Discretionary Fund.

This document revises the June 27 Notice to provide a third funding period alternative for applicants seeking funding under this program. In all respects, the two funding periods provided for in the original Notice remain effective. This document gives applicants an opportunity to apply, as well, for a funding cycle running from Spring 1990 to Spring 1992.

EFFECTIVE DATE: July 11, 1989.

FOR FURTHER INFORMATION CONTACT: James H. Turk, Technical Assistance Division, Office of Program Policy Development, Department of Housing and Urban Development, 451 Seventh Street, SW Washington, DC 20410. Telephone (202) 755-6876. (This is not a toll-free number.) Application packages may be obtained immediately at the following address: Department of Housing and Urban Development, Office of Procurement and Contracts, Program Support Division, 451 Seventh Street, SW Room 5252, Washington, DC 20410.

SUPPLEMENTARY INFORMATION: In a Notice of Fund Availability published on June 27 1989, HUD invited institutions of higher education, either directly or through areawide planning organizations or States, to apply for grants to assist economically disadvantaged and minority students who participate in community development work study programs and who are enrolled in full-time graduate or undergraduate programs in community and economic development, community planning, or community management.

HUD's Notice indicated that an applicant could submit a proposal to fund applicants for programs that begin in the fall of 1989 (funding would support programs from September 1989 to September 1991), or a proposal to fund applicants for programs beginning in September 1990 (with funding from September 1990 to September 1992).

In light of the late notice, application period, and funding approval dates that HUD's June 27 1989 Notice provides, the Department recognizes that applicants for funding in Fall, 1989 are significantly disadvantaged. While the Department continues to offer funding for this Fall, this Notice expands the Work Study program to provide a third alternative—funding for a two-year support cycle beginning in Spring, 1990 (funding would support programs from January 1990 to January 1992).

Accordingly, applicants are invited to respond to the June 27 1989 funding notice with applications for one or more of the funding cycles described in that notice, or for the additional funding period described in this document. Applicants may apply for two (or more) grant periods, but a separate budget breakdown of requested student participations must be submitted for each funding cycle for which an application is submitted.

Except as noted above, all application procedures for the Work Study program remain as described in the earlier publication.

Dated: July 3, 1989.

Andrey E. Scott,

General Deputy Assistant Secretary for Community Planning and Development.

[FR Doc. 89-16139 Filed 7-10-89; 8:45 am]

BILLING CODE 4210-29-M

DEPARTMENT OF THE INTERIOR

Office of the Secretary

Privacy Act of 1974; Establishment of New Notice of System of Records

Pursuant to the provisions of the Privacy Act of 1974, as amended (I5 U.S.C. 552a), notice is hereby given that the Department of the Interior proposes to establish a new notice describing a system of records maintained by the Office of Surface Mining Reclamation and Enforcement (OSMRE). The notice is entitled "Collection Management Information System (CMIS)—Interior, OSMRE-11" and describes records on financial debts incurred by individuals due to Federal unpaid penalties or fees arising under the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The notice is published in its entirety below.

As required by Section 3 of the Privacy Act of 1974, as amended (5 U.S.C. 552a(r)), the Office of Management and Budget, the Senate Committee on Governmental Affairs, and the House Committee on Government Operations have been notified of this action.

5 U.S.C. 552a(e)(11) requires that the public be provided a 30-day period in which to comment on the intended use of the information in the system of records. The Office of Management and Budget in its Circular A-130 requires a 60-day period to review such proposals. Therefore, written comments on this proposal can be addressed to the Chief, Division of Debt Management, Office of Surface Mining Reclamation and Enforcement, U.S. Department of the Interior, 1951 Constitution Avenue, NW Washington, DC 20240. Comments received within 60 days of publication in the **Federal Register** will be considered. The notice shall be effective as proposed without further publication at the end of the comment period, unless comments are received which would require a contrary determination.

Oscar W. Mueller, Jr.,

Director, Office of Management Improvement.

Date: June 29, 1989.

INTERIOR/OSMRE-11

SYSTEM NAME:

Collection Management Information System (CMIS)—Interior, OSMRE-11

SYSTEM LOCATION:

The Office of Surface Mining Reclamation and Enforcement (OSMRE), Department of the Interior, Washington, DC 20240, and various OSMRE Field Offices. For specific identification and addresses of Field Offices contact the System Manager at the address given below.

CATEGORIES OF INDIVIDUALS COVERED BY THE SYSTEM:

The system contains related information about individuals and business entities (companies, corporation, etc.) who are cited as violators of the Surface Mining Control and Reclamation Act (SMCRA) of 1977 This information relates to type of violation cited, financial assessments, and financial resolution.

CATEGORIES OF RECORDS IN THE SYSTEM:

(1) Violation information recorded against an entity;

(2) Appeal and abatement schedules; and,

(3) Financial assessment payments and resolution information.

The system contains both detail violation data and entity level summary data.

AUTHORITY FOR MAINTENANCE OF THE SYSTEM:

The Surface Mining Control and Reclamation Act of 1977 30 U.S.C. 1201 *et seq.*

ROUTINE USES OF RECORDS MAINTAINED IN THE SYSTEM, INCLUDING CATEGORIES OF USERS AND THE PURPOSES OF SUCH USES:

The primary uses of the records are to: (a) Serve as a tool for OSMRE to track, maintain and resolve financial debt that has been imposed on individuals and companies due to acts of violations prescribed by SMCRA; (b) enable OSMRE to take appropriate action to resolve outstanding debt which may be uncollectible due to the financial status of such violators; (c) provide statistics by company, region, State, and nationwide for management purposes; (d) enable OSMRE and State Regulatory Authorities to maintain effective enforcement programs; (e) verify the status of abatement plans, payment plans, judicial appeals, financial compromises, and bankruptcy status; and, (f) forward the status and identity of outstanding violators data to the Applicant Violator System (AVS) which is matched to new permit requests.

DISCLOSURE TO CONSUMER REPORTING AGENCIES:

Disclosure outside the Department of the Interior may be made to: (1) The appropriate State agency responsible for processing permit applications; (2) private business agencies for determination of net worth; (3) private collection agencies for collection of outstanding debt; (4) the U.S. Department of Justice or in a proceeding before a court or adjudicative body when: (a) The United States, the Department of the Interior, a component of the Department, or, when represented by the Government, an employee of the Department is a party to litigation or anticipated litigation or has an interest in such litigation, and (b) the Department of the Interior determines that the disclosure is relevant or necessary to the litigation and is compatible with the purpose for which the records were litigation and is compatible with the purpose for which the records were compiled; (5) a congressional office from the record of an individual in response to an inquiry the individual has made to the congressional office; and, (6) a State or applicable regulatory authority official to verify that an individual/company is or is not currently liable for debt imposed upon him.

POLICIES AND PRACTICES FOR STORING, RETRIEVING, ACCESSING, RETAINING, AND DISPOSING OF RECORDS IN THE SYSTEM:

STORAGE:

Maintained in manual form in file cabinets and recorded on computer magnetic media.

RETRIEVABILITY:

Data is retrievable by numerous combinations of data fields such as assigned company index number, company name, individual name, violation number, State, and amounts owed and paid.

SAFEGUARDS:

Maintained with safeguards meeting the requirements of 43 CFR 2.51 for computerized and manual records. Manual records are maintained in areas occupied by OSMRE and/or contractor personnel during working hours with buildings locked and/or guarded during nonworking hours.

RETENTION AND DISPOSAL:

Data stored on computer usable media will be retained until it is determined that the data is no longer needed or required. Manual records will be retained to serve as verification and back-up material. Automated Data Processing printout records will be disposed of periodically when superseded. Records are retained and disposed of in accordance with OSMRE Records Disposition Authority NC1-433-80-1, Item No. 302-06.

SYSTEM MANAGER(S) AND ADDRESS:

Chief, Division of Debt Management, Office of Surface Mining Reclamation and Enforcement, 1951 Constitution Avenue, NW., Washington, DC 20240.

NOTIFICATION PROCEDURE:

To determine whether information is maintained on you in this system, write to the System Manager. See 43 CFR 2.60 for form of request.

RECORD ACCESS PROCEDURES:

To see your records, write the System Manager. Describe as specifically as possible the records sought and mark the request "Privacy Act Request for Access. See 43 CFR 2.63 for required content of request.

CONTESTING RECORD PROCEDURES:

A petition for amendment shall be addressed to the System Manager and must meet the content requirement of 43 CFR 2.71. The petition for amendment must be submitted in writing.

RECORD SOURCE CATEGORIES:

(1) OSMRE Regulation Program inpsection files,

(2) Individual, operator, and company financial reports,

(3) Individual or company Net Worth Determination Reports,

(4) Department of the Interior Solicitor files,

(5) OSMRE contractors who prepare and document investigative reports; and

(6) OSMRE mine site inspection data reports.

[FR Doc. 89-16237 Filed 7-10-89; 8:45 am]

BILLING CODE 4310-05-M

Bureau of Land Management

[CA-010-09-4212-13; CA 25406]

Realty Action: Exchange of Public and Private Lands in Placer County, California

AGENCY: Bureau of Land Management.

SUMMARY: The following described public land is being considered for exchange under section 206 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1716):

Selected Public Land

Placer County, California

T. 15 N., R. 10 E., MDM,
Sec. 26, Lots 6, 9, MS 2339, W½NW¼S W¼, SW¼SW¼, S½SE¼SW¼;
Sec. 35, N½N½NW¼, SW¼NW¼NW¼, W½SW¼NW¼.

Aggregating 185 acres, more or less.

In exchange for the surface and mineral estate of the above land, the United States will acquire the surface and mineral estate of the following described private land from Bohemia Incorporated:

Offered Private Land

Placer County, California

T. 15 N., R. 10 E., MDM,
Sec. 16, SW¼SW¼;
Sec. 17 E½;
Sec. 21, NW¼, N½SW¼.

Aggregating 600 acres, more or less.

The private land being offered to the U.S. by Bohemia, Inc. includes property within the North Fork of the American River Canyon. Because of the unspoiled nature and spectacular scenery within the canyon, the river was designated a Wild and Scenic River by Congress in 1978. This acquisition, which includes approximately ¼-miles of river frontage, will afford added long-term protection for this invaluable resource.

The value of the properties to be exchanged are approximately equal; full equalization of values will be achieved with a payment to the U.S. by Bohemia, Inc. in an amount not to exceed 25% of the total value of the public lands that are to be transferred out of Federal ownership.

A right-of-way for ditches and canals will be reserved to the U.S. on the public lands to be transferred (43 U.S.C. 945); in addition, authorized roads, utility lines and any other authorized land uses will be identified as prior existing rights.

All necessary clearances for archaeology, rare plants and animals shall be granted prior to conveyance of title by the United States.

SUPPLEMENTARY INFORMATION: Publication of this notice in the Federal Register segregates the public lands from settlement, location and entry under the public land laws and the mining laws for a period of two years from the date of first publication.

FOR ADDITIONAL INFORMATION: Contact Mike Kelley, Folsom Resource Area Office, (916) 985-4474, at the address listed below.

DATE: Interested parties may submit comments to the District Manager; comments must be received on or before August (45 days, please add date), 1989.

ADDRESS: Comments should be sent to the District Manager, c/o the Folsom Resource Area Office, 63 Natoma Street, Folsom, California 95630; (916) 985-4474.

D.K. Swickard,

Area Manager.

[FR Doc. 89-16195 Filed 7-10-89; 8:45 am]

BILLING CODE 4310-40-M

[AZ 020-41-5410-10-NARC; A-22887]

Mineral, Interest Application; Arizona

AGENCY: Bureau of Land Management, Interior.

ACTION: Notice of Receipt of Conveyance of Mineral Interest Application.

Notice is hereby given that pursuant to Section 209 of the Act of October 21, 1976, 90 Stat. 2757 Saddlebrooke Development Company has applied to amend their application for conveyance of the mineral estate described as follows:

Gila and Salt River Meridian, Arizona

T. 10 S., R. 14 E.,
Sec. 23,
Sec. 26,
Sec. 27

Containing approximately 1,100 acres.

Additional information concerning this application may be obtained from the Area Manager, Phoenix Resource Area, Phoenix District Office, 2015 West Deer Valley Road, Phoenix, Arizona 85027

Upon publication of this notice in the Federal Register, the mineral interests described above will be segregated to the extent that they will not be open to appropriation under the public land laws, including the mining laws. The segregative effect of the application shall terminate either upon issuance of a patent or other document of conveyance of such mineral interests, upon final rejection of the application or two years from the date of filing of the application, July 2, 1989, whichever occurs first.

Date: July 3, 1989.

Henri R. Bisson,

District Manager.

[FR Doc. 89-16194 Filed 7-10-89; 8:45 am]

BILLING CODE 4310-32-M

[NV-930-09-4212-22]

Filing of Plats of Survey; Nevada

June 30, 1989.

AGENCY: Bureau of Land Management, Interior.

ACTION: Notice.

SUMMARY: The purpose of this notice is to inform the public and interested State and local government officials of the latest filing of Plats of Survey in Nevada.

EFFECTIVE DATES: Filings are effective at 10:00 a.m. on the dates shown below.

FOR FURTHER INFORMATION CONTACT: Lacel Bland, Chief, Branch of Cadastral Survey, Nevada State Office, Bureau of Land Management, 850 Harvard Way, P.O. Box 12000, Reno, Nevada 89520, 702-328-6341.

SUPPLEMENTARY INFORMATION: The Plats of Survey of lands described below will be officially filed at the Nevada State Office, Reno, Nevada, effective at 10:00 a.m. on August 24, 1989:

Mount Diablo Meridian

T. 11 N., R. 68 E.—Survey
T. 11 N., R. 69 E.—Dependent Resurvey and Survey
T. 13 N., R. 69 E.—Dependent Resurvey and Survey

All of the above listed plats were accepted on June 15, 1989.

The area surveyed within Township 11 North, Range 68 East, ranges from about 8,900 to 10,300 ft. above sea level and is mountainous.

This survey represents a portion of the subdivisional lines and a traverse of Highland Ridge, through section 1.

The soil consists of sandy clay loam and is rocky. Vegetation consists of sagebrush, buckbrush, mahogany and native grass. There is Bristlecone pine, limber pine and aspen throughout the township.

The area is drained by Decathon Canyon, Johns Wash and Murphy Wash, which drains southerly.

Access into the area is limited to a hiking trail from Lehman Caves National Monument.

Principal users of the area are cattlemen.

There were no mineral formations of consequence noted during this survey.

The area surveyed within Township 11 North, Range, 69 East, ranges from about 7,800 to 10,300 ft. above sea level and is mountainous.

This survey represents a dependent resurvey of a portion of Mineral Survey No. 4432A and the remonumentation of a corner of Mineral Survey No. 4432B, designed to restore the corners in their true original locations according to the best available evidence, and the survey of a portion of the west boundary and a portion of the subdivisional lines.

The soil consists of sandy clay loam and is rocky. Vegetation consists of sagebrush, buckbrush, mahogany and native grass. There are Bristlecone pine, limber pine, and aspen throughout the township.

The area is drained by Lexington Creek, which drains easterly and Big Spring Wash, which drains southerly.

Access into the township is limited to a few trail roads.

Principal users of the area are cattlemen and sheepherders.

There is some mining activity located in sec. 3.

The area surveyed within Township 13 North, Range 69 East, ranges from about 6,400 to 7,880 ft. above sea level and is mostly mountainous to rolling.

This survey represents a dependent resurvey of a portion of the subdivisional lines, designed to restore the corners in their true original locations according to the best available evidence; and the survey of a portion of the subdivisional lines.

The soil is sandy clay loam and is rocky. Vegetation consists of sagebrush, buckbrush and native grass. There are stands of juniper, pinon pine, mahogany and some cottonwood throughout the township.

The area is drained by Lehman Creek and Baker Creek, which flows easterly. Access into the area is provided by State Route No. 488 and numerous improved and unimproved roads.

Principal users of the area are cattlemen.

There were no mineral formations of consequence noted during the survey. Subject to valid existing rights, the provisions of existing withdrawals and classifications, and the requirements of applicable land laws, the following described lands which are located within the Humboldt National Forest will be open at 10:00 a.m. on August 24, 1989, to such forms of disposition as may be law be made of national foret lands:

Mount Diablo Meridian

T. 11 N., R. 68 E.,
Sec. 1, Lots 3–6, 9, 10, S½NW¼, SW¼.
T. 11 N., R. 69 E.,
Sec. 3, Lots 1–14, S½NW¼.
T. 13 N., R. 69 E.,
Sec. 14, Lots 1–12;
Sec. 23, Lots 1–4, S½N½, S½.

The lands described above have been and continue to be open to mining location and mineral leasing.

Subject to valid existing rights, the provisions of existing withdrawals and classifications, and the requirements of applicable land laws, the following described public lands will be open at 10:00 a.m. on August 24, 1989, to the public land laws generally.

Mount Diablo Meridan

T. 13 N., R. 69 E.,
Sec. 3, Lots 1–4, W½E½, W½;
Sec. 24, Lots 1–12.

The lands described above have been and continue to be open to mining location and mineral leasing.

Subject to valid existing rights, the following described lands which are located within the Great Basin National Park remain closed to all forms of appropriation under the public land laws, including the mining and mineral leasing laws, and geothermal laws:

Mount Diablo Mendian

T. 11 N., R. 68 E.,
Sec. 1. Lots 1, 2, 7 8, 11, SE¼NE¼, E½SE¼.

The following Plats of Survey are resurveys and surveys which do not open any lands and, therefore, do not require an opening. These plats were accepted on June 15, 1989, and officially filed at the Nevada State Office, Reno, Nevada on June 29, 1989:

Mount Diablo Mendian

T. 12 N., R. 69 E.—Dependent Resurvey and Survey
T. 12 N., R. 70 E.—Dependent Resurvey and Survey

All of the surveys in this notice were executed to meet the administrative needs of the National Park Service.

All of the above listed plats are now the basic record for describing the lands for all authorized purposes. The plats will be placed in the open files of the BLM Nevada State Office and will be available to the public as a matter of information. Copies of the plats and related field notes may be furnished to the public upon payment of the appropriate fee.

Fred Wolf,

Associate State Director, Nevada.

[FR Doc. 89–16238 Filed 7–10–89; 8:45 am]

BILLING CODE 4310-HC-M

Minerals Management Service

Development Operations Coordination Document; BP Exploration Inc.

AGENCY: Minerals Management Service.

ACTION: Notice of the receipt of a proposed Development Operations Coordination Document (DOCD).

SUMMARY: Notice is hereby given that BP Exploration Inc. has submitted a DOCD describing the activities it proposes to conduct on Leases OCS–G 7597 and 9382, Blocks 43F and 58, respectively, West Cameron Area, offshore Louisiana. Proposed plans for the above area provide for the development and production of hydrocarbons with support activities to be conducted from an existing onshore base located at Cameron, Louisiana.

DATE: The subject DOCD was deemed submitted on June 26, 1989. Comments must be received within 15 days of the publication date of this Notice or 15 days after the Coastal Management Section receives a copy of the plan from the Minerals Management Service.

ADDRESSES: A copy of the subject DOCD is available for public review at the Public Information Office, Gulf of Mexico OCS Region, Minerals Management Service, 1201 Elmwood Park Boulevard, Room 114, New Orleans, Louisiana (Office Hours: 8 a.m. to 4:30 p.m., Monday through Friday). A copy of the DOCD and the accompanying Consistency Certification are also available for public review at the Coastal Management Section Office located on the 10th Floor of the State Lands and Natural Resources Building, 625 North 4th Street, Baton Rouge, Louisiana (Office Hours: 8 a.m. to 4:30 p.m., Monday through Friday). The public may submit comments to the Coastal Management Section, Attention OCS Plans, Post Office Box 44487 Baton Rouge, Louisiana 70805.

FOR FURTHER INFORMATION CONTACT: Mr. W Williamson; Minerals Management Service, Gulf of Mexico OCS Region, Field Operations, Plans and Pipeline Section, Exploration/Development Plans Unit; Telephone (504) 736–2874.

SUPPLEMENTARY INFORMATION: The purpose of this Notice is to inform the public, pursuant to section 25 of the OCS Lands Act Amendments of 1978, that the Minerals Management Service is considering approval of the DOCD and that it is available for public review. Additionally, this Notice is to inform the public, pursuant to Section 930.61 of Title 15 of the CFR, that the Coastal Management Section/Louisiana Department of Natural Resources is reviewing the DOCD for consistency with the Louisiana Coastal Resources Program.

Revised rules governing practices and procedures under which the Minerals Management Service makes information contained in DOCDs available to affected States, executives of affected local governments, and other interested parties became effective May 31, 1988 (53 FR 10595).

Those practices and procedures are set out in revised § 250.34 of Title 30 of the CFR.

Date: June 30, 1989.

J. Rogers Pearcy,

Regional Director, Gulf of Mexico OCS Region.

[FR Doc. 89-16201 Filed 7-10-89; 8:45 am]

BILLING CODE 4310-MR-M

Development Operations Coordination Document; Conoco Inc.

AGENCY: Minerals Management Service.

ACTION: Notice of the receipt of a Proposed Development Operations Coordination Document (DOCD).

SUMMARY: Notice is hereby given that Conoco Inc. has submitted a DOCD describing the activities it proposes to conduct on Lease OCS-G 7733, Block 221, Eugene Island Area, offshore Louisiana. Proposed plans for the above area provide for the development and production of hydrocarbons with support activities to be conducted from existing onshore bases located at Cameron and Morgan City, Louisiana.

DATE: The subject DOCD was deemed submitted on June 29, 1989. Comments must be received within 15 days of the publication date of this Notice or 15 days after the Coastal Management Section receives a copy of the plan from the Minerals Management Service.

ADDRESSES: A copy of the subject DOCD is available for public review at the Public Information Office, Gulf of Mexico OCS Region, Minerals Management Service, 1201 Elmwood Park Boulevard, Room 114, New Orleans, Louisiana (Office Hours: 8 a.m. to 4:30 p.m., Monday through Friday). A copy of the DOCD and the accompanying Consistency Certificate are also available for public review at the Coastal Management Section Office located on the 10th Floor of the State Lands and Natural Resources Building, 625 North 4th Street, Baton Rouge, Louisiana (Office Hours: 8 a.m. to 4:30 p.m., Monday through Friday). The public may submit comments to the Coastal Management Section, Attention OCS Plans, Post Office Box 44487 Baton Rouge, Louisiana 70805.

FOR FURTHER INFORMATION CONTACT: Ms. Angie D. Gobert; Minerals Management Service, Gulf of Mexico OCS Region, Field Operations, Plans and Pipeline Section, Exploration/Development Plans Unit; Telephone (504) 736-2876.

SUPPLEMENTARY INFORMATION: The purpose of this Notice is to inform the public, pursuant to section 25 of the OCS Lands Act Amendments of 1978, that the Minerals Management Service is considering approval of the DOCD and that it is available for public review. Additionally, this Notice is to inform the public, pursuant to section 930.61 of Title 15 of the CFR, that the Coastal Management Section/Louisiana Department of Natural Resources is reviewing the DOCD for consistency with the Louisiana Coastal Resources Program.

Revised rules governing practices and procedures under which the Minerals Management Service makes information contained in DOCDs available to affected States, executives of affected local governments, and other interested parties became effective May 31, 1988 (53 FR 10595).

Those practices and procedures are set out in revised § 250.34 of Title 30 of the CFR.

Date: July 3, 1989.

J. Rogers Pearcy,

Regional Director, Gulf of Mexico OCS Region.

[FR Doc. 89-16202 Filed 7-10-89; 8:45 am]

BILLING CODE 4310-MR-M

National Park Service

National Register of Historic Places; Notification of Pending Nominations

Nominations for the following properties being considered for listing in the National Register were received by the National Park Service before July 1, 1989, Pursuant to § 60.13 of 36 CFR Part 60 written comments concerning the significance of these properties under the National Register criteria for evaluation may be forwarded to the National Register, National Park Service, P.O. Box 37127 Washington, D.C. 20013-7127 Written comments should be submitted by July 26, 1989.

Caroll D. Shull,

Chief of Registration, National Register.

ARIZONA

Maricopa County

Glendale Woman's Club Clubhouse, 7032 N. 56th Ave., Glendale, 89001003

CALIFORNIA

Orange County

Parker House, 163 S. Cypress St., Orange, 89000975

Santa Cruz County

Santa Cruz Downtown Historic District, Roughly Rincon St., Church St., Chestnut St., Walnut St., Cedar St., Laurel St., Myrtle St., and Lincoln St., Santa Cruz, 89001005

COLORADO

Boulder County

Eldora Historic District (Metal Mining and Tourist Era Resources of Boulder County MPS), Roughly Eaton Pl., 6th, Pearl, and 4th Sts., Huron Ave., 6thSt., Eldorado Ave., and 7th St., Klondyke Ave., and Tenth St., Eldora, 89000978

Gold Hill Historic District (Metal Mining and Tourist Era Resources of Boulder County MPS), Roughly bounded by North St., Pine St., Boulder St., Gold Run St., and College St., Gold Hill, 89000979

Jamestown Mercantile Building (Metal Mining and Tourist Era Resources of Boulder County MPS), Main St., Jamestown, 89000985

Little Church in the Pines (Metal Mining and Tourist Era Resources of Boulder County MPS), 414 Gold Run Rd., Salina, 89000983

Salina School (Metal Mining and Tourist Era Resources of Boulder County MPS), 536 Gold Run Rd., Salina, 89000984

Snowbound Mine, Co. Rd. 52, Gold Hill vicinity, 89000998

Sunshine School (Metal Mining and Tourist Era Resources of Boulder County MPS), 355 Co. Rd. 83, Sunshine, 89000982

Wallstreet Assay Office (Metal Mining and Tourist Era Resources of Boulder County MPS), 6352 Four Mile Canyon Dr., Wallstreet, 89000986

Ward Congregational School (Metal Mining and Tourist Era Resources of Boulder County MPS), 41 Modoc, Ward, 89000981

Ward School (Metal Mining and Tourist Era Resources of Boulder County MPS), 66 Columbia, Ward, 89000980

Cheyenne County

Cheyenne County Courthouse, 51 S. 1st St., Cheyenne Wells, 89000997

Custer County

Westcliff School, 304 4th St., Westcliffe, 89000999

Denver County

Saint Thomas Theological Seminary, 1300 S. Steele, Denver, 89001007

Gunnison County

Marble High School (Marble MPS), 412 Main St., Marble, 89000989
Marble Town Hall (Marble MPS), 407 Main St., Marble, 89000988
Parry, William D., House (Marble MPS), 115 Main St., Marble, 89000987
St. Paul's Church (Marble MPS), 123 State St., Marble, 89000990

Larimer County

MacGregor Ranch, 180 MacGregor Ave., Estes Park vicinity, 89001008

IDAHO

Gooding County

Hagerman State Bank, Limited, 100 S. State St., Hagerman, 89001000

Nez Perce County

JEAN (steamboat), 3620 A Snake River Ave., in Hells Gate State Park, Lewistown, 89001001

LOUISIANA

Caddo Parish

Jefferson Hotel, 907 Louisiana Ave., Shreveport, 89000977

Caldwell Parish

Oasis, The, Main St./LA 845, Clarks, 89000976

MASSACHUSETTS

Suffolk County

Massachusetts School of Art, 364 Brookline Ave., Boston, 89000974

MISSOURI

Buchanan County

Kelley and Browne Flats (St. Joseph MPS), 1208–1216 Frederick Ave., St. Joseph, 89000991
Robidoux Hill Historic District (St. Joseph MPS), Roughly bounded by Franklin St., Robidoux St., Fourth St., Louis St., and Fifth St., St. Joseph, 89000992

NEW JERSEY

Camden County

Blackwood Historic District, Roughly Church St. from E. Railroad Ave. to Indiana Ave., Blackhorse Pike, and Central Ave., Blackwood, 89000996

Middlesex County

Christ Episcopal Church, 5 Paterson St., New Brunswick, 89000994

Morris County

Cary, Stephen, House, Mountainside Rd., Mendhan vicinity, 89000995

Sussex County

High Breeze Farm, Barrett Rd. off NJ 94, Highland Lakes vicinity, 89000993

Union County

Hatfield, Deacon Andrew, House, Constitution Plaza, Mountainside, 89001004

OKLAHOMA

Tulsa County

Neasey, James Alexander, House, 1802 S. Cheyenne Ave., Tulsa, 89001006

WISCONSIN

Jefferson County

Fuermann, August, Jr., and Eliza, House, 500 S. Third St., Watertown, 89001002.

[FR Doc. 89–16184 Filed 7–10–89; 8:45 am]

BILLING CODE 4310-70-M

INTERSTATE COMMERCE COMMISSION

[Finance Docket No. 31464]

Indiana Rail Road Co.—Lease and Operation Exemption—Norfolk & Western Railway Co.

AGENCY: Interstate Commerce Commission.

ACTION: Notice of exemption.

SUMMARY: The Interstate Commerce Commission exempts under 49 U.S.C. 10505 from the prior approval requirements of 49 U.S.C. 11343–11345 the lease and subsequent operation by Indiana Rail Road Company (IRRC) of 38.87 miles of rail line in Marion, Hamilton, and Tipton Counties, IN, owned by the Norfolk and Western Railway Company, subject to standard labor protective conditions.

DATES: The exemption will be effective on August 14, 1989. Petitions to stay must be filed by July 26, 1989, and petitions for reconsideration must be filed by August 7 1989.

ADDRESSES: Send pleadings referring to Finance Docket No. 31464 to:

(1) Office of the Secretary, Case Control Branch, Interstate Commerce Commission, Washington, DC 20423
(2) Petitioners' representatives: John H. Broadly (IRRC), 21 Dupont Circle, NW Washington, DC 20036
Thomas W Amber, Norfolk Southern Corporation, Three Commercial Place, Norfolk, VA 23510–2191.

FOR FURTHER INFORMATION CONTACT: Joseph H. Dettmar, (202) 275–7245 [TDD for hearing impaired: (202) 275–1721].

SUPPLEMENTARY INFORMATION: Additional information is contained in the Commission's decision. To purchase a copy of the full decision, write to, call, or pick up in person from: Dynamic Concepts, Inc., Room 2229, Interstate Commerce Commission Building, Washington, DC 20423. Telephone (202) 289–4357/4359. [Assistance for the hearing impaired is available through TDD services at (202) 275–1721.]

Decided: July 3, 1989.

By the Commission, Chairman Gradison, Vice Chairman Simmons, Commissioners Andre, Lamboley, and Phillips.

Noreta R. McGee,

Secretary.

[FR Doc. 89–16204 Filed 7–10–89; 8:45 am]

BILLING CODE 7035-01-M

Intent To Engage in Compensated Intercorporate Hauling Operations

This is to provide notice as required by 49 U.S.C. 10524(b)(1) that the named corporations intend to provide or use compensated intercorporate hauling operations as authorized in 49 U.S.C. 10524(b).

A. 1. Parent corporation and address of principal office:
Halliburton Company
3600 Lincoln Plaza
500 North Akard Street
Dallas, Texas 75201
2. Wholly-owned subsidiaries which will participate in the operations, and state(s) of incorporation:
Wholly-owned subsidiaries of Halliburton Company:
a. Brown & Root, Inc.—Texas
i. Allied Industries, Inc.—Texas
ii. Brown & Root Development, Inc.—Texas
iii. Brown & Root Industrial Services—Delaware
iv. Brown & Root International, Inc.—Delaware
v. Brown & Root U.S.A., Inc.—Texas
(y) Southwestern Contracting Company—Texas
vi. Brown & Root Services Corporation—Delaware
vii. Enterprise Building Corporation—Florida
viii. Fargo Engineering Company—Michigan
ix. Flo-Tronics, Inc.—Texas
x. Houston Executive Air Service, Inc.—Texas
xi. Mid-Valley, Inc.—Delaware
xii. Missouri Resources Services, Inc.—Missouri
xiii. Petrochemicals Procurement, Inc.—Texas
xiv. Raintree Resource Recovery, Inc.—Texas
(z) Raintree Energy Corporation—California
b. Chemtronics, Inc.—North Carolina
c. Concourse Property Corporation—Texas
d. G & H Management Company—Delaware
e. GLM Mechanical Associates, Inc.—New York
f. Halliburton Delaware Corporation—Delaware
g. Halliburton Domestic International Sales Company—Delaware
h. Halliburton International, Inc.—Texas

i. Halliburton Logging Services, Inc.—Texas
j. Halliburton Telecommunications, Inc.—Delaware
k. Health Economics Corporation—Texas
i. Response Network, Inc.—Texas
l. Highlands Insurance Company—Texas
i. Aberdeen Insurance Company—Texas
ii. Highlands Casualty Company—Texas
iii. Highlands Underwriters Insurance Company—Texas
m. Howard Smith Screen Company—Texas
n. Jet Research Center, Inc.—Texas
o. Joe D. Hughes, Inc.—Texas
p. NUS Corporation—Delaware
i. Eqex Corporation—Delaware
ii. NUS Facilities Management Corporation—Delaware
iii. NUS International Corporation—Delaware
iv. NUS of Michigan, Inc.—Michigan
v. NUS of New York, P.C.—New York
vi. NUS Operating Services Corporation—Delaware
vii. NUS Training Corporation—Delaware
q. Otis Engineering Corporation—Delaware
i. Otis Latin-America, Inc.—Delaware
r. Overseas Marine Leasing Corporation—Delaware
s. Sierra Geophysics, Inc.—California
t. Southern California Bonding Services, Inc.—California
u. Taylor International, Inc.—Delaware
i. Mid-Valley Marine, Inc.—Delaware
ii. Taylor Diving, Inc.—Louisiana
v. Underwriters Special Risks, Inc.—Texas
i. Highlands Claims and Safety Services, Inc.—Texas
ii. Highlands Lloyds—Texas
iii. Transportation Recovery Services, Inc.—New York

B. 1. *Parent Corporation* and address of principal office:
KO-DA TRADING CO. LTD., a British Columbia Corporation, having its registered and records offices located at 1050-1185 West Georgia Street, Vancouver, British Columbia, Canada V6E 4E6.

2. Wholly-owned subsidiaries which will participate in the operations, and Province of incorporation:
a. KO-DA FISHERIES LTD., a British Columbia Corporation, having its registered and records offices located at 1050-1185 West Georgia Street, Vancouver, British Columbia, Canada V6E 4E6 (the owner of the goods to be transported).
b. KO-DA TRANSPORT LTD., a British Columbia Corporation, having its registered and records offices located at 1050-1185 West Georgia Street, Vancouver, British Columbia, Canada V6E 4E6 (the intended transporter).

Noreta R. McGee,
Secretary.

[FR Doc. 89-16203 Filed 7-10-89; 8:45 am]
BILLING CODE 7035-01-M

DEPARTMENT OF JUSTICE

Lodging of Consent Decree Pursuant to Clean Air Act

In accordance with Department policy, 28 CFR 50.7 notice is hereby given that on June 14, 1989, a proposed Consent Decree in *United States* v. *Phillips Pipeline Co.,* Civil Action No. 89-409-G, was lodged with the United States District Court for the Middle District of North Carolina. The Complaint filed by the United States sought injunctive relief and the assessment of civil penalties under the Clean Air Act. The Complaint alleges that the defendant failed to install air pollution emissions control equipment that is required under the regulations promulgated by the U.S. Environmental Protection Agency pursuant to the Clean Air Act.

Under the proposed Consent Decree, the defendant will pay a civil penalty of $35,000. The defendant has now installed the required emissions control equipment.

The Department of Justice will receive for a period of thirty (30) days from the date of this publication comments concerning the proposed Consent Decree. Comments should be addressed to the Assistant Attorney General, Land and Natural Resources Division, U.S. Department of Justice, P.O. Box 7611, Ben Franklin Station, Washington, DC 20044, and should refer to *United States* v. *Phillips Pipe Line Co.,* D.J. Ref. 90-5-2-1-1307

The Proposed Consent Decree may be examined at any of the following offices: (1) The United States Attorney for the Middle District of North Carolina, U.S. Post Office & Courthouse, 324 W Market Street, Greensboro, North Carolina; (2) the U.S. Environmental Protection Agency, Region 4, 345 Courtland Street, NE., Atlanta, Georgia; and (3) the Environmental Enforcement Section, Land & Natural Resources Division, U.S. Department of Justice, 10th and Pennsylvania Avenue NW Washington, DC. Copies of the proposed Decree may be obtained by mail from the Environmental Enforcement Section of the Department of Justice, Land and Natural Resources Division, P.O. Box 7611, Benjamin Franklin Station, Washington, DC 20044-7611, or in person at the U.S. Department of Justice Building, Room 1517 10th Street and Pennsylvania Avenue NW Washington, DC.

Donald A. Carr,
Acting Assistant Attorney General, Land & Natural Resources Division.

[FR Doc. 89-16239 Filed 7-10-89; 8:45 am]
BILLING CODE 4410-01-M

DEPARTMENT OF LABOR

Office of the Secretary

Agency Recordkeeping/Reporting Requirements Under Review by the Office of Management and Budget (OMB)

Background

The Department of Labor, in carrying out its responsibilities under the Paperwork Reduction Act (44 U.S.C. Chapter 35), considers comments on the reporting and recordkeeping requirements that will affect the public.

List of Recordkeeping/Reporting Requirements Under Review

As necessary, the Department of Labor will publish a list of the Agency recordkeeping/reporting requirements under review by the Office of Management and Budget (OMB) since the last list was published. The list will have all entries grouped into new collections, revisions, extensions, or reinstatements. The Departmental Clearance Officer will, upon request, be able to advise members of the public of the nature of the particular submission they are interested in.

Each entry may contain the following information:

The Agency of the Department issuing this recording/reporting requirement.

The title of recordkeeping/reporting requirement.

The OMB and Agency identification numbers, if applicable.

How often the recordkeeping/ reporting requirement is needed.

Who will be required to or asked to report or keep records.

Whether small businesses or organizations are affected.

An estimate of the total number of hours needed to comply with the recordkeeping/reporting requirements and the average hours per respondent.

The number of forms in the request for approval, if applicable.

An abstract describing the need for and uses of the information collection.

Comments and Questions

Copies of the recordkeeping/reporting requirements may be obtained by calling the Departmental Clearance Officer, Paul E. Larson, telephone (202) 523-6331. Comments and questions about the items on this list should be directed to Mr. Larson, Office of Information Management, U.S. Department of Labor, 200 Constitution Avenue, NW Room N-1301, Washington, DC 20210. Comments should also be sent to the Office of Information and Regulatory Affairs, Attn: OMB Desk Officer for (BLS/DM,/ ESA/ETA/OLMS/MSHA/OSHA/ PWBA/VETS), Office of Management and Budget, Room 3208, Washington, D.C. 20503 (Telephone (202) 395-6880).

Any member of the public who wants to comment on a recordkeeping/ reporting requirement which has been submitted to OMB should advise Mr. Larson of this intent at the earliest possible date.

New Collection

U.S Department of Labor; Bureau of Labor Statistics; Office of Safety, Health and Working conditions. Feasibility study of fatal occupational injuries.

Form No.	Affected public	Respondents	Frequency	Average time per response (minutes)
Fatal 1	Individuals or households	50	One-time	20
Fatal 2	All	125	do	30
Fatal 3	All, except individuals or households	25	do	30

92 total hours.

The credibility of employer-reported work injury fatality data is being questioned. Death certificate data is often cited to support this claim, yet the validity of death certificate "at work" fatalities has never been evaluated. In this study, the Texas Department of Health will validate death certificate and other fatality data source information.

Revision

Bureau of Labor Statistics

U.S. Export Product Information

1220-0113

Monthly

Form No.	Affected public	Respondents	Frequency	Average time per response
BLS 3007D	Small, Medium, Large Business Firms	1209	Monthly	16.2 minutes.

3.917 total hours.

The International Price Program indexes, one of the nation's primary economic indicators, are used as: measures of price movements in international product prices; indicators of inflationary trends in the economy; sources of information used to determine U.S. monetary, fiscal, trade, and commercial policies. They are also used to deflate the Gross National Product and the monthly merchandise trade figures.

Extension

Employment Standards Administration

Optional Use Payrool Form Under the Davis-Bacon Act

1215-1049; WH-347

Weekly

Individuals or households; State or local governments; Businesses or other for profit; Federal agencies or employees; Small businesses or organizations.

244,400 respondents; 5,500,000 total hours; ½ hour per response; 1 form.

Report is used by contractors to certify payrolls in accordance with requirements of Copeland and Davis-Bacon Acts, attesting that proper wage rates and fringe benefits were paid; reviewed by contracting agencies to verify that rates are legal and that employees are properly classified (29 CFR 3.3, 5.5(a)(3)(ii)).

Extension

Employment Standards Administration

Bona Fide Thrift or Savings Plan (29 CFR Part 547)

1215-0119

On occasion

Businesses or other for profit; Small businesses or organizations.

25 respondents; 2 total hours for reporting; 1 total hour for recordkeeping; 5 minutes per response.

Section 7(e)(3)(b) of the Fair Labor Standards permits the exclusion from an employee's regular rate of pay of payments on behalf of an employee to a "bona fide" thrift or savings plan. Regulations, 29 CFR Part 547 set forth the requirements for a bona fide thrift or savings plan.

Extension

Employment and Training Administration

Benefit Appeals

1205-0172; ETA 5130

Monthly

State or local governments.

53 respondents; 2,544 total hours; 4 hours per response; 1 form. This report is used to monitor the benefit appeals process, to evaluate compliance with the appeals performance standard and to develop plans for remedial action. The report is also needed for budgeting and for workload figures.

Exension

Bureau of Labor Statistics

U.S. Import Product Information

1220-0115

Monthly

Form No.	Affected public	Respondents	Frequency	Average time per response
BLS 3007D	Small, Medium, and Large Business Firms	1324	Monthly	18.0 minutes.

4766 total hours.

The International Price Program indexes, one of the nation's primary economic indicators, are used as: measures of price movements in international product prices; indicators of inflationary trends in the economy; sources of information used to determine U.S. monetary, fiscal, trade, and commercial policies. They are also used to deflate the Gross National Product and the monthly merchandise trade figures.

Extension

Bureau of Labor Statistics

Occupational Employment Statistics Quarterly Progress Report

1220-0068; BLS-2877a

Quarterly

State or Local Government.

212 responses, 70 hours, one form; 20 minutes per response.

The OES survey quarterly progress reports are prepared by State Employment Security Agencies and are the primary source of current management data on the status of the conduct of the Occupational Employment Statistics Survey in each State. They allow for early identification and resolution of State collection problems.

Signed at Washington, DC, this 5th day of July, 1989.

Paul E. Larson,

Departmental Clearance Officer.

[FR Doc. 89-16180 Filed 7-10-89; 8:45 am]

BILLING CODE 4510-24-M

Employment and Training Administration

Investigations Regarding Certifications of Eligibility To Apply for Worker Adjustment Assistance

Petitions have been filed with the Secretary of Labor under section 221(a) of the Trade Act of 1974 ("the Act") and are identified in the Appendix to this notice. Upon receipt of these petitions, the Director of the Office of Trade Adjustment Assistance, Employment and Training Administration, has instituted investigations pursuant to section 221(a) of the Act.

The purpose of each of the investigations is to determine whether the workers are eligible to apply for adjustment assistance under Title II, Chapter 2, of the Act. The investigations will further relate, as appropriate, to the determination of the date on which total or partial separations began or threatened to begin and the subdivision of the firm involved.

The petitioners or any other persons showing a substantial interest in the subject matter of the investigations may request a public hearing, provided such request is filed in writing with the Director, Office of Trade Adjustment Assistance, at the address shown below, not later than July 21, 1989.

Interested persons are invited to submit written comments regarding the subject matter of the investigations to the Director, Office of Trade Adjustment Assistance, at the address shown below, not later than July 21, 1989.

The petitions filed in this case are available for inspection at the Office of the Director, Office of Trade Adjustment Assistance, Employment and Training Administration, U.S. Department of Labor, 601 D Street NW Washington, DC 20213.

Signed at Washington, DC, this 26th day of June 1989.

Glenn M. Zech,

Acting Director, Office of Trade Adjustment Assistance.

APPENDIX

Petitioner: Union/Workers/Firm—	Location	Date received	Date of petition	Petition No.	Articles produced
Adidas, Inc. (Company)	Warren, NJ	6/26/89	6/5/89	23,074	Shoes.
Cadic, Inc. (Workers)	Beaverton, OR	6/19/89	5/31/89	23,075	Computers.
Equitable Handbags (Workers)	New Brunswick, NJ	6/26/89	6/12/89	23,076	Ladies' Handbags.
Four Corners Drilling Co. (Workers)	Farmington, NM	6/26/89	6/9/89	23,077	Oil & Gas.
HECI Exploration Co. (Workers)	Dallas, TX	6/26/89	5/31/89	23,078	Oil & Gas.
Inman Products (Workers)	Rahway, NJ	6/26/89	5/31/89	23,079	Air Freshners.
J.L. Prescott, Co. (Workers)	Passaio, NJ	6/26/89	6/2/89	23,080	Household Cleaning Products.
J.M. Huber Corp.—Oil & Gas Div. (Company)	Houston, TX	6/26/89	6/6/89	23,081	Oil & Gas.
Leo Dress, Inc. (Workers)	New York, NY	6/26/89	2/8/89	23,082	Ladies' Dresses & Suits.
Malina, Inc. (Workers)	Providence, RI	6/26/89	6/8/89	23,083	Yarn.
N.H.R., Inc. (ILGWU)	Nicholls, GA	6/26/89	5/31/89	23,084	Childrens' Outerwear.
National Semiconductors (Company)	Danbury, CT	6/26/89	6/7/89	23,085	Semiconductors.
PMC Equipment Co., Inc. (Company)	Odessa, TX	6/26/89	6/1/89	23,086	Oil & Gas.
Parchman Oilfield Serv., Inc. (Workers)	Edinburg, TX	6/26/89	6/5/89	23,087	Oil & Gas.
Petrolite Corp., Tretolite Oilfield Chemicals Div. (Workers)	Midland, TX	6/26/89	6/7/89	23,088	Oil & Gas.
Quickie Mfg., Co. (Workers)	Cinnaminson, NJ	6/26/89	6/8/89	23,089	Brooms, Mops & Brushes.
Renaissance Eyewear (Company)	Perth Amboy, NJ	6/26/89	5/25/89	23,090	Eyeglass Frames.
St. Clair Pakwell (Workers)	Wilsonville, OR	6/26/89	5/19/89	23,091	Paper Bags.
Stacy Industries, Inc. (UTWA)	Woodridge, NJ	6/26/89	6/2/89	23,092	Fabrics.
Weymouth Art Leather, (Company)	Braintree, MA	6/26/89	6/8/89	23,093	Fabrics.
Wyoming Casing Serv., Inc.	Dickinson, ND	6/26/89	5/30/89	23,094	Oil & Gas.
Wyoming Casing Serv., Inc. (Workers)	Gillette, WY	6/26/89	5/30/89	23,095	Oil & Gas.

[FR Doc. 89-16181 Filed 7-10-89; 8:45am]

BILLING CODE 4510-30-M

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

[Notice (89-53)]

NASA Advisory Council (NAC), Commercial Programs Advisory Committee; Meeting

AGENCY: National Aeronautics and Space Administration.

ACTION: Notice of meeting.

SUMMARY: In accordance with the Federal Advisory Committee Act, Pub. L. 92-463, as amended, the National Aeronautics and Space Administration announces a forthcoming meeting of the NAC, Commercial Programs Advisory Committee.

DATE: August 15, 1989, 8:15 a.m. to 3 p.m.

ADDRESSES: American Institute of Aeronautics and Astronautics, 10th Floor, Conference Room A, 901 D Street, SW, Washington, DC 20024.

FOR FURTHER INFORMATION CONTACT: Dr. Barbara Stone, Office of Commercial Programs, National Aeronautics and Space Administration, Washington, DC 20546, 202/453-8720..

SUPPLEMENTARY INFORMATION: The Commercial Programs Advisory Committee is concerned with the overall NASA program supporting the commercial development of space, both relevant policies and program scope and content. The Committee is chaired by Mr. Edward Donley and is currently composed of 17 members.

The meeting will be closed to the public from 12 noon to 3 p.m. for a discussion of the qualifications of candidates for membership. Such a discussion would invade the privacy of the candidates and other individuals involved. Since this discussion will be concerned with matters listed in 5 U.S.C. 552b(c)(6), it has been determined that the meeting be closed to the public for this period of time. Prior to the closed session, the meeting will be open to the public up to the seating capacity of the room, which is approximately 40 persons including the Committee members and other participants.

Type of Meeting

Open—except for a closed session as noted in the agenda below.

Agenda

August 15, 1989

8:15 a.m.—Welcome.
8:45 a.m.—Commercial Programs Update.
9 a.m.—Market Sector Recommendations.
12 noon—Closed Session.
3 p.m.—Adjourn.

John W. Gaff,
Advisory Committee Management Officer, National Aeronautics and Space Administration.

[FR Doc. 89-16241 Filed 7-10-89; 8:45 am]

BILLING CODE 7510-01-M

NUCLEAR REGULATORY COMMISSION

[Docket No. 50-341]

Detroit Edison Co., Wolverine Power Supply Cooperative, Inc., Consideration of Issuance of Amendment to Facility Operating License and Opportunity for Hearing

The United States Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to Facility Operating License No. NPF-43, issued to the Detroit Edison Company and Wolverine Power Supply Cooperative, Inc. (the licensees), for operation of Fermi-2 located in Monroe County, Michigan.

In accordance with the licensees' application for amendment dated April 3, 1989, the amendment would revise the Technical Specifications (TS) to reflect plant operation following the first fuel reload for Fermi-2 which will be cycle 2.

Prior to issuance of the proposed license amendment, the Commission will have made findings required by the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations.

By August 10, 1989, the licensees may file a request for a hearing with respect to issuance of the amendment to the subject facility operating license and any person whose interest may be affected by this proceeding and who wishes to participate as a party in the proceeding must file a written request for hearing and a petition for leave to intervene. Requests for a hearing and petitions for leave to intervene shall be filed in accordance with the Commission's "Rules of Practice for Domestic Licensing Proceedings" in 10 CFR Part 2. If a request for a hearing or petition for leave to intervene is filed by the above date, the Commission or an Atomic Safety and Licensing Board, designated by the Commission or by the Chairman of the Atomic Safety and Licensing Board Panel, will rule on the request and/or petition, and the Secretary or the designated Atomic Safety and Licensing Board will issue a notice of hearing or an appropriate order.

As required by 10 CFR 2.714, a petition for leave to intervene shall set forth with particularity the interest of the petitioner in the proceeding and how that interest may be affected by the results of the proceeding. The petition should specifically explain the reasons why intervention should be permitted with particular reference to the following factors: (1) The nature of the petitioner's right under the Act to be made a party to the proceeding; (2) the nature and extent of the petitioner's property, financial, or other interest in the proceeding; and (3) the possible effect of any order which may be entered in the proceeding on the petitioner's interest. The petition should also identify the specific aspect(s) of the subject matter of the proceeding as to which petitioner wishes to intervene. Any person who has filed a petition for leave to intervene or who has been admitted as a party may amend the petition without requesting leave of the Board up to fifteen (15) days prior to the first pre-hearing conference scheduled in the proceeding, but such an amended petition must satisfy the specificity requirements described above.

Not later than fifteen (15) days prior to the first prehearing conference scheduled in the proceeding, a petitioner shall file a supplement to the petition to intervene, which must include a list of the contentions that are sought to be litigated in the matter, and the bases for each contention set forth with reasonable specificity. Contentions shall be limited to matters within the scope of the amendment under consideration. A petitioner who fails to file such a supplement which satisfies these requirements with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene become parties to the proceeding, subject to any limitations in the order granting leave to intervene, and have the opportunity to participate fully in the conduct of the hearing, including the opportunity to present evidence and cross-examine witnesses.

A request for a hearing or a petition for leave to intervene must be filed with the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Docketing and Service Branch, or may be delivered to the Commission's Public Document Room, 2120 L Street NW Washington, DC, by the above date. Where petitions are filed during the last ten (10) days of the notice period, it is requested that the petitioner promptly so inform the Commission by a toll-free telephone call to Western Union at 1-

800-325-6000 (in Missouri 1-800-342-6700). The Western Union operator should be given Datagram Identification Number 3737 and the following message addressed to Lawrence A. Yandell: petitioner's name and telephone number; date petition was mailed; plant name; and publication date and page number of this **Federal Register** notice. A copy of the petition should also be sent to the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555, and to John Flynn, Esq., Detroit Edison Company, 2000 Second Avenue, Detroit, Michigan 48226, attorney for the licensee.

Nontimely filings of petitions for leave to intervene, amended petitions, supplemental petitions and/or requests for hearing will not be entertained absent a determination by the Commission, the presiding officer or the presiding Atomic Safety and Licensing Board that the petition and/or request absent a determination by the Commission, the presiding officer or the presiding Atomic Safety and Licensing Board that the petition and/or request should be granted based upon a balancing of the factors specified in 10 CFR 2.714(a)(1)(i)-(v) and 2.714(d).

If a request for hearing is received, the Commission's staff may issue the amendment after it completes its technical review and prior to the completion of any required hearing if it publishes a further notice for public comment of its proposed finding of no significant hazards consideration in accordance with 10 CFR 50.91 and 50.92.

For further details with respect to this action, see the application for amendment dated April 3, 1989, which is available for public inspection at the Commission's Public Document Room, 2120 L Street NW Washington, DC 20555, and at the Monroe County Library System, 3700 South Custer Road, Monroe, Michigan 48161.

Dated at Rockville, Maryland, this 3rd day of July.

For the Nuclear Regulatory Commission.

Lawrence A. Yandell,

Acting Director, Project Directorate III-1, Division of Reactor Projects—III, IV V & Special Projects, Office of Nuclear Reactor Regulation.

[FR Doc. 89-16187 Filed 7-10-89; 8:45 am]

BILLING CODE 7590-01-M

[Docket No. 50-341]

Detroit Edison Co., Wolverine Power Supply Cooperative, Inc., Consideration of Issuance of Amendment to Facility Operating License and Opportunity for Hearing

The United States Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to Facility Operating License No. NPF-43, issued to the Detroit Edison Company and Wolverine Power Supply Cooperative, Inc. (the licensees), for operation of Fermi-2 located in Monroe County, Michigan.

In accordance with the licensees' application for amendment dated April 3, 1989, the amendment would revise the Technical Specifications (TS) relating to the Source Range Monitors (SRM). The change would allow complete core offloading with provisions to suspend the minimum count rate requirement for the SRM channels to allow removal of the final 16 fuel assemblies. The amendment also increases the signal-to-noise ratio required for a reduced SRM minimum count rate requirement and eliminates a related TS provision which is no longer needed.

Prior to issuance of the proposed license amendment, the Commission will have made findings required by the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations.

By August 10, 1989, the licensees may file a request for a hearing with respect to issuance of the amendment to the subject facility operating license and any person whose interest may be affected by this proceeding and who wishes to participate as a party in the proceeding must file a written request for hearing and a petition for leave to intervene. Requests for a hearing and petitions for leave to intervene shall be filed in accordance with the Commission's "Rules of Practice for Domestic Licensing Proceedings" in 10 CFR Part 2. If a request for a hearing or petition for leave to intervene is filed by the above date, the Commission or an Atomic Safety and Licensing Board, designated by the Commission or by the Chairman of the Atomic Safety and Licensing Board Panel, will rule on the request and/or petition, and the Secretary or the designated Atomic Safety and Licensing Board will issue a notice of hearing or an appropriate order.

As required by 10 CFR 2.714, a petition for leave to intervene shall set forth with particularity the interest of the petitioner in the proceeding and how that interest may be affected by the results of the proceeding. The petition should specifically explain the reasons why intervention should be permitted with particular reference to the following factors: (1) The nature of the petitioner's right under the Act to be made a party to the proceeding; (2) the nature and extent of the petitioner's property, financial, or other interest in the proceeding; and (3) the possible effect of any order which may be entered in the proceeding on the petitioner's interest. The petition should also identify the specific aspect(s) of the subject matter of the proceeding as to which petitioner wishes to intervene. Any person who has filed a petition for leave to intervene or who has been admitted as a party may amend the petition without requesting leave of the Board up to fifteen (15) days prior to the first pre-hearing conference scheduled in the proceeding, but such an amended petition must satisfy the specificity requirements described above.

Not later than fifteen (15) days prior to the first prehearing conference scheduled in the proceeding, a petitioner shall file a supplement to the petition to intervene, which must include a list of the contentions that are sought to be litigated in the matter, and the bases for each contention set forth with reasonable specificity. Contentions shall be limited to matters within the scope of the amendment under consideration. A petitioner who fails to file such a supplement which satisfies these requirements with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene become parties to the proceeding, subject to any limitations in the order granting leave to intervene, and have the opportunity to participate fully in the conduct of the hearing, including the opportunity to present evidence and cross-examine witnesses.

A request for a hearing or a petition for leave to intervene must be filed with the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Docketing and Service Branch, or may be delivered to the Commission's Public Document Room, 2120 L Street NW Washington, DC, by the above date. Where petitions are filed during the last ten (10) days of the notice period, it is requested that the petitioner promptly so inform the Commission by a toll-free telephone call to Western Union at 1-800-325-6000 (in Missouri 1-800-342-6700). The Western Union operator should be given Datagram Identification Number 3737 and the following message addressed to Lawrence A. Yandell:

petitioner's name and telephone number; date petition was mailed; plant name; and publication date and page number of this **Federal Register** notice. A copy of the petition should also be sent to the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555, and to John Flynn, Esq., Detroit Edison Company, 2000 Second Avenue, Detroit, Michigan 48226, attorney for the licensee.

Nontimely filings of petitions for leave to intervene, amended petitions, supplemental petitions and/or requests for hearing will not be entertained absent a determination by the Commission, the presiding officer or the presiding Atomic Safety and Licensing Board that the petition and/or request should be granted based upon a balancing of the factors specified in 10 CFR 2.714(a)(1) (i)-(v) and 2.714(d).

If a request for hearing is received, the Commission's staff may issue the amendment after it completes its technical review and prior to the completion of any required hearing if it publishes a further notice for public comment of its proposed finding of no significant hazards consideration in accordance with 10 CFR 50.91 and 50.92.

For further details with respect to this action, see the application for amendment dated April 3, 1989, which is available for public inspection at the Commission's Public Document Room, 2120 L Street NW Washington, DC 20555, and at the Monroe County Library System, 3700 South Custer Road, Monroe, Michigan 48161.

Dated at Rockville, Maryland, this 3rd day of July.

For The Nuclear Regulatory Commission.

Lawrence A. Yandell,

Acting Director, Project Directorate III-1, Division of Reactor Projects—III, IV V & Special Projects, Office of Nuclear Reactor Regulation.

[FR Doc. 89-16186 Filed 7-10-89; 8:45 am]

BILLING CODE 7590-01-M

[Docket No. 50-341]

Detroit Edison Co., Wolverine Power Supply Cooperative, Inc., Consideration of Issuance of Amendment to Facility Operating License and Opportunity for Hearing

The United States Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to Facility Operating License No. NPF-43, issued to the Detroit Edison Company and Wolverine Power Supply Cooperative, Inc. (the licensees), for operation of Fermi-2 located in Monroe County, Michigan.

In accordance with the licensees' application for amendment dated May 11, 1989, the amendment would revise the Technical Specifications to address the use of sodium pentaborate enriched with the Boron-10 isotope to meet the requirements of the anticipated transient without scram (ATWS) rule, 10 CFR 50.62, paragraph (c)(4).

Prior to issuance of the proposed license amendment, the Commission will have made findings required by the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations.

By August 10, 1989, the licensees may file a request for a hearing with respect to issuance of the amendment to the subject facility operating license and any person whose interest may be affected by this proceeding and who wishes to participate as a party in the proceeding must file a written request for hearing and a petition for leave to intervene. Requests for a hearing and petitions for leave to intervene shall be filed in accordance with the Commission's "Rules of Practice for Domestic Licensing Proceedings" in 10 CFR Part 2. If a request for a hearing or petition for leave to intervene is filed by the above date, the Commission or an Atomic Safety and Licensing Board, designated by the Commission or by the Chairman of the Atomic Safety and Licensing Board Panel, will rule on the request and/or petition, and the Secretary or the designated Atomic Safety and Licensing Board will issue a notice of hearing or an appropriate order.

As required by 10 CFR 2.714, a petition for leave to intervene shall set forth with particularity the interest of the petitioner in the proceeding and how that interest may be affected by the results of the proceeding. The petition should specifically explain the reasons why intervention should be permitted with particular reference to the following factors: (1) The nature of the petitioner's right under the Act to be made a party to the proceeding; (2) the nature and extent of the petitioner's property, financial, or other interest in the proceeding; and (3) the possible effect of any order which may be entered in the proceeding on the petitioner's interest. The petition should also identify the specific aspect(s) of the subject matter of the proceeding as to which petitioner wishes to intervene. Any person who has filed a petition for leave to intervene or who has been admitted as a party may amend the petition without requesting leave of the Board up to fifteen (15) days prior to the first pre-hearing conference scheduled in the proceeding, but such an amended petition must satisfy the specificity requirements described above.

Not later than fifteen (15) days prior to the first prehearing conference scheduled in the proceeding, a petitioner shall file a supplement to the petition to intervene, which must include a list of the contentions that are sought to be litigated in the matter, and the bases for each contention set forth with reasonable specificity. Contentions shall be limited to matters within the scope of the amendment under consideration. A petitioner who fails to file such a supplement which satisfies these requirements with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene become parties to the proceeding, subject to any limitations in the order granting leave to intervene, and have the opportunity to participate fully in the conduct of the hearing, including the opportunity to present evidence and cross-examine witnesses.

A request for a hearing or a petition for leave to intervene must be filed with the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Docketing and Service Branch, or may be delivered to the Commission's Public Document Room, 2120 L Street NW., Washington, DC, by the above date. Where petitions are filed during the last ten (10) days of the notice period, it is requested that the petitioner promptly so inform the Commission by a toll-free telephone call to Western Union at 1-800-325-6000 (in Missouri 1-800-342-6700). The Western Union operator should be given Datagram Identification Number 3737 and the following message addressed to Lawrence A. Yandell: petitioner's name and telephone number; date petition was mailed; plant name; and publication date and page number of this **Federal Register** notice. A copy of the petition should also be sent to the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555, and to John Flynn, Esq., Detroit Edison Company, 2000 Second Avenue, Detroit, Michigan 48226, attorney for the licensee.

Nontimely filings of petitions for leave to intervene, amended petitions, supplemental petitions and/or requests for hearing will not be entertained absent a determination by the Commission, the presiding officer or the presiding Atomic Safety and Licensing Board that the petition and/or request should be granted based upon a balancing of the factors specified in 10 CFR 2.714(a)(1)(i)-(v) and 2.714(d).

If a request for hearing is received, the Commission's staff may issue the amendment after it completes its technical review and prior to the completion of any required hearing if it publishes a further notice for public comment of its proposed finding of no significant hazards consideration in accordance with 10 CFR 50.91 and 50.92.

For further details with respect to this action, see the application for amendment dated May 11, 1989, which is available for public inspection at the Commission's Public Document Room, 2120 L Street, NW Washington, DC 20555, and at the Monroe County Library System, 3700 South Custer Road, Monroe, Michigan 48161.

Dated at Rockville, Maryland, this 3rd day of July.

For the Nuclear Regulatory Commission.

Lawrence A. Yandell,

Acting Director, Project Directorate III-1, Division of Reactor Projects—III, IV V & Special Projects, Office of Nuclear Reactor Regulation.

[FR Doc. 89-16188 Filed 7-10-89; 8:45 am]

BILLING CODE 7590-01-M

[Docket No. 40-8857]

Everest Minerals Corp., Final Finding of No Significant Impact Regarding Section 14 Satellite Facility Operation of Everest Minerals Corporation's Highland Project In Converse County, WY

AGENCY: U.S. Nuclear Regulatory Commission.

ACTION: Notice of final finding of no significant impact.

1. Proposed Action

The proposed administrative action is to amend Source Material License SUA-1511 authorizing Everest Minerals to operate a new satellite facility at the Highland in-situ leach uranium recovery operation located in Converse County, Wyoming.

2. Reasons for Final Finding of No Significant Impact

An environmental assessment was prepared by the staff at the U.S. Nuclear Regulatory Commission (NRC) and issued by the Commission's Uranium Recovery Field Office, Region IV The environmental assessment performed by the Commission's staff evaluated potential impacts onsite and offsite due to radiological releases that may occur during the course of the operation. Documents used in preparing the assessment included the licensee's application dated December 30, 1985, the Final Environmental Statement for Exxon Corporation (Everest's Highland site) prepared by the Commission staff dated November 1978, and Everest's November 23, 1988 satellite amendment request documentation. Based on the review of these documents, the Commission has determined that no significant impact will result from the proposed action.

In accordance with 10 CFR Part 51.33(e), the Director, Uranium Recovery Field Office, made the determination to issue a final finding of no significant impact in the FEDERAL REGISTER. Concurrent with this finding, the staff will issue an amendment to Source Material License SUA-1511 authorizing operation of Everest Minerals Corporation's Section 14 satellite facility located in Converse County, Wyoming.

This finding, together with the environmental assessment setting forth the basis for the finding, is available for public inspection and copying at the Commission's Uranium Recovery Field Office located at 730 Simms Street, Golden, Colorado, and at the Commission's Public Document Room at 2120 L Street, NW., Washington, DC.

Dated at Denver, Colorado, this 21st day of June, 1989.

For the Nuclear Regulatory Commission.

Edward F Hawkins,

Branch Chief, Uranium Recovery Field Office, Region IV

[FR Doc. 89-16190 Filed 7-10-89; 8:45 am]

BILLING CODE 7530-01-M

[Docket No. 50-354]

Public Service Electric & Gas Co., Environmental Assessment and Finding of no Significant Impact

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to Facility Operating License No. NPF-57 issued to Public Service Electric & Gas Company (the licensee) for operation of the Hope Creek Generating Station, located in Salem County, New Jersey.

Environmental Assessment

Identification of Proposed Action

The proposed amendment would revise the Technical Specifications (TS) for the Hope Creek Generating Station to (1) separate the Reactor Building Filtration, Recirculation, and Ventilation System (FRVS) into two separate sections, one affecting the FRVS Recirculation Subsystem (FRVS-RS) and the other affecting the FRVS Ventilation Subsystem (FRVS-VS), (2) extend the life of the FRVS-RS absorber charcoal, (3) eliminate unnecessary surveillance tests of the FRVS, and (4) provide minor clarifications for the FRVS and Control Room Emergency Filtration System (CREFS).

The proposed action is in accordance with the licensee's application for amendment dated November 25, 1987 as supplemented by a letter dated April 17 1989.

The Need for the Proposed Action

The proposed change to the Technical Specifications is required to (1) clarify the surveillance requirements for both FRVS and CREFS, (2) relax presently overly conservative surveillance commitments which will, in turn, significantly extend the service life of the FRVS Recirculation and Filtration subsystem charcoal without affecting the systems' capabilities or effectiveness as stated in the FSAR, and (3) permit maintenance activities in the reactor building or control room areas without dogmatically requiring a lengthy surveillance test of the FRVS or CREFS without regard for the actual impact of those maintenance activities on ventilation system efficiency.

Environmental Impacts of the Proposed Action

The Commission has completed its evaluation of the proposed revision to the Technical Specifications. The proposed revision would revise the Technical Specifications Section 3/4.6.5.3 by creating separate Sections 3/4.6.5.3.1, and 3/4.6.5.3.2; rewording certain surveillance requirements and adding a footnote to those Sections; and, for Section 3/4.7.2, rewording surveillance requirement 4.7.2.c and adding a footnote to that Section. The separation of the Filtration, Recirculation, and Ventilation System into two subsystems with identical limiting conditions for operation and surveillance requirements provides the intended clarification and does not remove or relax the current requirements. The requested change of the acceptance criterion to 7.5% methyl iodine penetration for tests of the FRVS-RS charcoal while the acceptance criterion for the test of the FRVS-VS charcoal remains at 1.0% penetration corresponds to a combined iodide penetration for the two beds in series of less than 0.075%, which is within the Regulatory Guide 1.52 criterion. The requested change would require subsystem flow rate, in-place penetration, or carbon absorbent laboratory tests only upon determination that the High Efficiency

Particulate Activity (HEPA) filters or carbon absorbent could have been damaged by structural maintenance or adversely affected by chemicals, fumes or foreign materials. The amendment would further clarify that this determination shall consider the maintenance performed and/or the type, quantity, length of contact time, known effects and previous accumulation history for all contaminants which could reduce the system performance to less than that verified by the acceptance criteria of the tests.

The proposed amendment described above does not change operation of the facility and the change in the surveillance acceptance criterion is consistent with the intent of Regulatory Guide 1.52. Therefore, the proposed changes do not increase the probability or consequences of accidents, no changes are being made in the types of any effluents that may be released offsite, and there is no significant increase in the allowable individual or cumulative occupational radiation exposure. Accordingly, the Commission concludes that this proposed action would result in no significant radiological environmental impact.

With regard to potential non-radiological impacts, the proposed change to the TS involves systems located within the restricted area as defined in 10 CFR Part 20 and changes to the surveillance requirements. It does not affect non-radiological plant effluents and has no other environmental impact. Therefore, the Commission concludes that there are no significant non-radiological environmental impacts associated with the proposed amendment.

Alternative to the Proposed Action

Since the Commission concluded that there are no significant environmental effects that would result from the proposed action, any alternatives with equal or greater environmental impacts need not be evaluated.

The principal alternative would be to deny the requested amendment. This would not reduce environmental impacts of plant operation and would result in reduced operational flexibility.

Alternative Use of Resources

This action does not involve the use of any resources not previously considered in the Environmental Report-Operating License Stage for the Hope Creek Generating Station, dated August, 1983.

Agencies and Persons Consulted

The NRC staff consulted with the State of New Jersey. The comments received from the Bureau of Nuclear Engineering of the State of New Jersey will be addressed in the Safety Evaluation issued with the amendment.

Finding of No Significant Impact

The Commission has determined not to prepare an environmental impact statement for the proposed license amendment.

Based upon the foregoing environmental assessment, we conclude that the proposed action will not have a significant effect on the quality of the human environment.

For further details with respect to this action, see the application for amendment dated November 25, 1987 and a supplement dated April 17 1989 which are available for public inspection at the Commission's Public Document Room, 2120 L Street NW Washington, DC 20555 and at the Pennsville Public Library, 190 S. Broadway, Pennsville, New Jersey 08070.

Dated at Rockville, Maryland, this 3rd day of July, 1989.

For the Nuclear Regulatory Commission.

Walter Butler,

Director, Project Directorate I-2, Division of Reactor Projects I/II, Office of Nuclear Reactor Regulation.

[FR Doc. 89-16191 Filed 7-10-89; 8:45 am]

BILLING CODE 7590-01-M

Sacramento Municipal Utility District (Rancho Seco Nuclear Generating Station); Exemption

I

The Sacramento Municipal Utility District holds Facility Operating License No. DPR-54, which authorizes operation of the Rancho Seco Nuclear Generating Station. The license provides among other things, that the facility is subject to all rules, regulations and Orders of the Nuclear Regulatory Commission (the Commission) now or hereafter in effect. This facility is a pressurized water reactor located in Sacramento County, California.

II

Appendix A of 10 CFR Part 20 defines protection factors for respirators. Footnote d-2(c) of this Appendix states that "No allowance is to be made for the use of sorbents against radioactive gases or vapors.

By submittal dated November 17 1988, the Sacramento Municipal Utility District (the District, or the licensee) requested an exemption to 10 CFR Part 20, Appendix A, footnote d-2(c). The licensee submitted this request in accordance with 10 CFR Part 20.103(e).

Test data and canister qualification information obtained from the canister vendor, Mine Safety Appliances Company (MSA), have been provided by the District. This data was also submitted in conjunction with similar exemption requests by Alabama Power Company for the Joseph M. Farley Nuclear Plant, Units 1 and 2 (Docket Nos. 50-348 and 50-364) and Southern California Edison Company for San Onofre Units 1, 2 and 3 (Docket Nos. 50-206, 50-361 and 50-362). The District has provided a detailed submittal responding to all NRC staff concerns relating to the request for exemption to 10 CFR Part 20, Appendix A, footnote d-2(c). The exemption would allow the use of a radio-iodine protection factor of 50 for MSA GMR-I canisters at Rancho Seco Nuclear Generating Station. Criteria and background information used for our evaluation include 10 CFR Part 20.103; 10 CFR Part 19.12; Regulatory Guide 8.15 Acceptable Programs for Respiratory Protection"· Regulatory Guide 8.20, Applications of Bioassay for I-125 and I-131"· NUREG/CR-3403, "Criteria and Test Methods for Certifying Air Purifying Respirator Cartridges and Canisters Against Radioiodine" and Regulatory Guide 8.8, "Information Relevant to Ensuring That Occupational Radiation Exposures at Nuclear Power Stations Will Be As Low As Is Reasonably Achievable. Our discussion and evaluation of the request for exemption follows.

Since a NIOSH/MSHA testing and certification schedule for sorbents for use for protection against radioiodine gases and vapors have not been developed, NRC staff has evaluated the District's request and verified that the licensee has demonstrated by reliable test data and adquate quality assurance measures that the material and performance characteristics of the MSA GMR-I canister can provide the proposed degree of protection (i.e., a protection factor of 50) under the anticipated conditions of use, as required by 10 CFR Part 20.103(e), for 8 hours. We considered canister efficiency and service life, and the effects of temperature, poisons, relative humidity, challenge concentration and breathing rates on canister efficiency and service life. The programmatic evaluation considered quality control/quality assurance, and radiation proctection/ALARA considerations, including task preparation and planning, on-the-job and post-task evaluations, use of engineering controls, radiological surveillance, and radiological training.

The licensee has provided reliable test information which verifies that the MSA

GMR–I canister will provide a protection factor of 50 over a period of 8 hours of continuous use, provided that the total challenge of radioactive and non-radioactive iodine and other halogenated compounds does not exceed 1 ppm, and temperature does not exceed 110°F The data provided by MSA showed the breakthrough point to be well beyond 8 hours.

Testing has been conducted under acceptable conditions of cyclic flow, and under worst cases conditions for those environmental factors affecting service life: temperature, relative humidity, and challenge concentration of CH_3I (methyliodide/methyl redioiodide), which is the most penetrating of the challenge forms. Data provided from MSA indicate that the MSA GMR–I canisters perform adequately under the accepted test conditions. These conditions—the criteria and test methods—are consistent with those derived for the canisters by the staff from NUREG/CR–3403, and are acceptable.

The licensee, through acceptance of MSA QA controls, has provided commitments that the MSA–GMR–I canisters will meet standards for quality assurance and quality control which are recognized by NIOSH, compatible with NRC staff positions, and are therefore acceptable. This includes a commitment by MSA to establish a 1% AQL (Acceptable Quality Limit) in a 5 to 10 ppm challenge concentration of CH^3I, 90% relative humidity, 110°F 64 liters per minute (LPM) pulsed flow, for a maximum service life of 8 hours with no more than 1% of the challenge concentration penetration. Testing data referenced by the licensee demonstrated that performance (I.E., service life) of canisters at 90% relative humidity is not expected to be significantly different than performance at 100% relative humidity and is acceptable.

Coupled with the use of a full facepiece with the capability of providing a fit factor of greater than 500, to be determined by fit test, the protection factor of 50 is conservative under these conditions. Canister efficiency will be retained for the radioioine gas or vapors of interest (CH_3I, I_2, HOI) for the 8-hour period. To preclude aging, service life will be calculated from unsealing time, including periods of non-use, and the canister will not be used in the presence of organic solvents or in temperatures in excess of 110°F Canisters will be stored in sealed humidity-barrier packaging in a cool, dry environment, and discarded after the 8-hour use period to prevent reuse. Through usage restrictions and air sampling, the licensee will preclude exposures to organic vapors and chemicals (such as decontamination components, lubricants, volatilized paint, alochols, freon) which would cause aging, poisoning or desorption of the absorbed radioiodines.

Certain limitations and precautions based on NUREG/CR–3403 guidance are necessary for utilization of the sorbent canisters. We agree with the following such limitations and usage restrictions as proposed by the licensee:

1. Protection factor equal to 50 as a maximum value.

2. The maximum permissible continuous use time is eight hours after which the canister will be discarded.

3. Canisters are not to be used in the presence of ogranic solvent vapors.

4. Canisters are to be stored in sealed, humidity barriers packaging in a cool, dry environment.[1]

5. The allowable service life for sorbent canisters is to be calculated from the time of unsealing the canister, including periods of non-exposure.

6. Canisters are to be used with a full facepiece capable of providing fit factor greater than 500.

7 Canisters are not to be used in total challenge concentrations of organic iodines and other halogenated compounds greater than 1 ppm, including nonradioactive compounds.

8. Canisters are not be used in environments where temperatures are greater than 110°F

In addition to the limitations and usage restrictions noted above, the following additional controls will be utilized by the licensee:

1. Temperatures wil be measured prior to the beginning of work and coincidently with operations which heat the work areas to assure that temperatures do not exceed 110°F during sorbent canister use.

2. In the initial implementation of sorbent canister use, the following program verification measures will be used:

a. whole body counts for individuals using the sorbent canister for radioiodine protection will be conducted routinely (e.g. weekly and at 20 MPC-hours).

b. an investigation level for radioiodine uptakes has been established at 30 nCi.

c. Radioiodine data will be trended to detect problems.

3. Painting or the use of organic substances will be prohibited while the GMR–I canister is in use.

4. Specific plant procedures will incorporate the limitations and usage restrictions, listed as 1 through 8 above, prior to GMR–I canister use. Additionally, training of workers and radiation protection technicians in the use of GMR–I canisters for radioiodine protection will be conducted prior to canister implementation.

5. Existing respiratory protection program requirements and restrictions (e.g., physicals, fit tests, Part 20 requirements including Appendices A and B) still apply.

The primary bases for the District's request for exemption are the potentials for both work effort reduction and dose reduction. The utilization of air purifying respirators in lieu of air-supplied or self-contained apparatus, where possible, can result in person-rem reductions from 25 to 50% for several major tasks. The light weight, less cumbersome air purifying respirators (i.e., sorbent canisters) can provide increased comfort and mobility in most cases. The resultant increased worker efficiency and decreased time on-the-job will provide significant dose savings and be an effective as low as is reasonably achievable (ALARA) measure.

Other actions taken by the licensee to assure that exposures to radioiodine are ALARA are: radioiodine air sampling will be conducted before and during activities involving the use of GMR–I canisters for radioiodine protection; engineering controls such as local HEPA ventilation and the containment purge system used to reduce airborne levels to as low as practical levels; purification and degasification of the primary coolant conducted prior to refueling resulting in reduced radioiodine levels; use of area decontamination, protective coverings, and stripable paint to help control contamination levels; maintenance planning allowing for radioiodine decay times, where practical, prior to breaching primary systems. Whole body counts will be conducted routinely (e.g., weekly and at 20 MPC hours) and radioiodine data will be trended to detect problems; an investigation level for radioiodine uptakes has been established (at 30 nCi); training of workers and health physics technicians in the use and restrictions for use of GMR–I canisters for radioiodine protection will be conducted prior to their use; and procedures delineating the controls, restrictions, and requirements have been developed and will be implemented. The licensee's efforts to keep exposure

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Sorbent canisters will be maintained in licensee "Class A" storage as defined in ANSI N45.2.2 (i.e., 70° ± 10°F; Relative Humidity less than or equal to 40% Design, less than or equal to 70% Maximum) or an equivalent alterntive after reciept on site, except for those maintained for ready issue in the respirator issue area.

ALARA are consistent with the positions in Regulatory Guide 8.8 and are acceptable.

In summary, the NRC staff's review of the licensee's proposal indicates that the actions proposed by the District can result in significant dose savings over alternative methods while still providing effective protection.

This exemption would enable the licensee to use a protection factor for air purifying radioiodine gas and vapor respirators in estimating worker exposures from radioiodine gases and vapors. The licensee has provided usage restrictions and controls which can assure an effective radioiodine protection program. The proposed criteria and test methods for verifying the effectiveness and quality of GMR-I canisters are consistent with NRC staff criteria. The licensee's proposed exemption, with the controls and limitations, meets the staff positions in the SRP NUREG/CR-3403 and Regulatory Guide 8.8, and is acceptable. The actions proposed by the licensee are consistent with the requirements of 10 CFR Part 20.103(e), and form an acceptable basis to authorize the granting of an exemption in accordance with the provisions of 10 CFR Part 20.103(e).

III

Accordingly, the Commission has determined that, pursuant to 10 CFR 20.501 an exemption is authorized by law and will not result in undue hazard to life or property. The Commission hereby grants an exemption from the requirements of Footnote d-2(c) of Appendix of 10 CFR Part 20.

The Commission has prepared an Environment Assessment and Finding of No Significant Impact related to this action which was published in the **Federal Register** on June 26, 1989 (54 FR 26863). The Environmental Assessment concluded that this action will not have a significant effect on the quality of the human environment, and therefore the Commission has determined not to prepare an environmental impact statement for this exemption.

For further details with respect to this action, see the licensee's request dated November 11, 1988, which is available for public inspection at the Commission's Public Document Room, 2120 L Street NW Washington, DC and at the Martin Luther King Regional Library, 7340 24th Street Bypass, Sacramento, California.

Dated at Rockville, Maryland, this 28th day of June 1989.

For the Nuclear Regulatory Commission.

Martin J. Virgilio,

Acting Director, Division of Reactor Projects—III, IV V and Special Projects, Office of Nuclear Reactor Regulation.

[FR Doc. 89-16192 Filed 7-10-89; 8:45 am]

BILLING CODE 7590-01-M

[Docket Nos. 50-361 and 50-362]

Southern California Edison Co. et al., Facility Operating Licenses

The U.S. Nuclear Regulatory Commission (Commission) has issued Amendment No. 74 to Facility Operating License No. NPF-10 and Amendment No. 62 to Facility Operating License No. NPF-15, issued to Southern California Edison Company, San Diego Gas and Electric Company, the City of Riverside, California and the City of Anaheim, California (the licensees), which revised the Technical Specifications for operation of the San Onofre Nuclear Generating Station, Units 2 and 3, located in San Diego County, California.

The amendments were effective as of the date of issuance.

These amendments revised Technical Specification 3/4.8.2.1, "DC Sources, to increase the interval for the 18 month surveillance tests to at least once per refueling interval, which is defined as 24 months.

The application for amendments complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations. The Commission has made appropriate findings as required by the Act and the Commission's regulations in 10 CFR Chapter I, which is set forth in the license amendments.

Notice of Consideration of Issuance of Amendments and Opportunity for Hearing in connection with this action was published in the **Federal Register** on February 14, 1989 (54 FR 6791). No request for a hearing or petition for leave to intervene was filed following this notice.

The Commission has prepared an Environmental Assessment related to the action and has determined that an environmental impact statement will not be prepared and that issuance of the amendment will have no significant adverse effect on the quality of the human environment.

For further details with respect to the action see (1) the application for amendments dated December 29, 1988, (2) Amendment No. 74 to License No. NPF-10 and Amendment No. 62 to License No. NPF-15, (3) the Commission's related Safety Evaluation and (4) the Commission's Environmental Assessment. All of these items are available for public inspection at the Commission's Public Document Room, 2120 L Street NW Washington, DC 20555, and the General Library, University of California, P.O. Box 19557 Irvine, California 92713. A copy of items (2), (3) and (4) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Director, Division of Reactor Projects III, IV V and Special Projects.

Dated at Rockville, Maryland, this 30th day of June 1989.

For the Nuclear Regulatory Commission.

Donald E. Hickman,

Project Manager, Project Directorate V Division of Reactor Projects III, IV V and Special Projects, Office of Nuclear Reactor Regulation.

[FR Doc. 89-16193 Filed 7-10-89; 8:45 am]

BILLING CODE 7190-01-M

Detroit Edison Co., Wolverine Power Supply Cooperative, Inc., Consideration of Issuance of Amendment to Facility Operating License and Opportunity for Hearing

The United States Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to Facility Operating License No. NPF-43, issued to the Detroit Edison Company and Wolverine Power Supply Cooperative, Inc. (the licensees), for operation of Fermi-2 located in Monroe County, Michigan.

In accordance with licensees' application for amendment dated May 31, 1989, the amendment would revise the Technical Specifications to modify the Average Power Range Monitor flow biased rod block and scram limits to allow up to 100% power operation of Fermi-2 with core flow reduction of rated final feedwater temperature. Appropriate changes to the Bases are also proposed.

Prior to issuance of the proposed license amendment, the Commission will have made findings required by the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations.

By August 10, 1989, the licensees may file a request for a hearing with respect to issuance of the amendment to the subject facility operating license and any person whose interest may be affected by this proceeding and who wishes to participate as a party in the proceeding must file a written request for hearing and a petition for leave to intervene. Requests for a hearing and petitions for leave to intervene shall be filed in accordance with the Commission's "Rules of Practice for Domestic Licensing Proceedings" in 10 CFR Part 2. If a request for a hearing or petition for leave to intervene is filed by the above date, the Commission or an Atomic Safety and Licensing Board, designated by the Commission or by the Chairman of the Atomic Safety and Licensing Board Panel, will rule on the request and/or petition, and the Secretary or the designated Atomic Safety and Licensing Board will issue a notice of hearing or an appropriate order.

As required by 10 CFR 2.714, a petition for leave to intervene shall set forth with particularity the interest of the petitioner in the proceeding and how that interest may be affected by the results of the proceeding. The petition should specifically explain the reasons why intervention should be permitted with particular reference to the following factors: (1) The nature of the petitioner's right under the Act to be made a party to the proceeding; (2) the nature and extent of the petitioner's property, financial, or other interest in the proceeding; and (3) the possible effect of any order which may be entered in the proceeding on the petitioner's interest. The petition should also identify the specific aspect(s) of the subject matter of the proceeding as to which petitioner wishes to intervene. Any person who has filed a petition for leave to intervene or who has been admitted as a party may amend the petition without requesting leave of the Board up to fifteen (15) days prior to the first pre-hearing conference scheduled in the proceeding, but such an amended petition must satisfy the specificity requirements described above.

Not later than fifteen (15) days prior to the first prehearing conference scheduled in the proceeding, a petitioner shall file a supplement to the petition to intervene, which must include a list of the contentions that are sought to be litigated in the matter, and the bases for each contention set forth with reasonable specificity. Contentions shall be limited to matters within the scope of the amendment under consideration. A petitioner who fails to file such a supplement which satisfies these requirements with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene become parties to the proceeding, subject to any limitations in the order granting leave to intervene, and have the opportunity to participate fully in the conduct of the hearing, including the opportunity to present evidence and cross-examine witnesses.

A request for a hearing or a petition for leave to intervene must be filed with the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Docketing and Service Branch, or may be delivered to the Commission's Public Document Room, 2120 L Street, NW., Washington, DC, by the above date. Where petitions are filed during the last ten (10) days of the notice period, it is requested that the petitioner promptly so inform the Commission by a toll-free telephone call to Western Union at 1-800-325-6000 (in Missouri 1-800-342-6700). The Western Union operator should be given Datagram Identification Number 3737 and the following message addressed to Lawrence A. Yandell: petitioner's name and telephone number; date petition was mailed; plant name; and publication date and page number of this **Federal Register** notice. A copy of the petition should also be sent to the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555, and to John Flynn, Esq., Detroit Edison Company, 2000 Second Avenue, Detroit, Michigan 48226, attorney for the licensee.

Nontimely filings of petitions for leave to intervene, amended petitions, supplemental petitions and/or requests for hearing will not be entertained absent a determination by the Commission, the presiding officer or the presiding Atomic Safety and Licensing Board that the petition and/or request should be granted based upon a balancing of the factors specified in 10 CFR 2.714(a)(1)(i)-(v) and 2.714(d).

If a request for hearing is received, the Commission's staff may issue the amendment after it completes its technical review and prior to the completion of any required hearing if it publishes a further notice for public comment of its proposed finding of no significant hazards consideration in accordance with 10 CFR 50.91 and 50.92.

For further details with respect to this action, see the application for amendment dated May 31, 1989, which is available for public inspection at the Commission's Public Document Room, 2120 L Street, NW., Washington, DC 20555, and at the Monroe County Library System, 3700 South Custer Road, Monroe, Michigan 48161.

Dated at Rockville, Maryland, this 3rd day of July.

For the Nuclear Regulatory Commission.

Lawrence A. Yandell,

Acting Director, Project Directorate III-1, Division of Reactor Projects—III, IV V & Special Projects, Office of Nuclear Reactor Regulation.

[FR Doc. 89-16189 Filed 7-10-89; 8:45 am]

BILLING CODE 7590-01-M

OFFICE OF THE U.S. TRADE REPRESENTATIVE

[Docket No. 301-63]

Determination Under Section 304 of the Trade Act of 1974, as Amended: European Community's Policies and Practices With Respect to, Inter Alia, Production and Processing Subsidies on Oilseeds and Determination Under Section 305 To Delay Implementation of Any Action Taken Pursuant to Section 301

AGENCY: Office of the United States Trade Representative.

ACTION: Notice of determination under section 304(a)(1)(A) of the Trade Act of 1974 (the "Trade Act") regarding United States' rights under a trade agreement affected by, *inter alia*, subsidies provided by the European Community (the "EC") to producers and processors of oilseeds and animal feed proteins and the practices resulting therefrom; and notice of determination under section 305(a)(2)(A) to delay implementation of any action to be taken under section 301.

SUMMARY: Pursuant to section 304(a)(1)(A) of the Trade Act, 19 U.S.C. 2414, as amended by section 1301 of the Omnibus Trade and Competitiveness Act of 1988, the United States Trade Representative has determined that there is reason to believe that rights of the United States under a trade agreement are being denied by, *inter alia*, the EC's production and processing subsidies on oilseeds and animal feed proteins and the practices resulting thereform, and that the EC practices at issue are unjustifiable and unreasonable, and burden or restrict U.S. commerce, within the meaning of sections 301(a)(1)(B) and 301(b)(1), 19 U.S.C. 2411(a)(1)(B) and 19 U.S.C. 2411(b)(1), respectively. The Trade Representative also has determined that substantial progress is being made with respect to this dispute as evidenced by the fact that a panel has been established under the General Agreement on Tariffs and Trade (the GATT) to consider the issues raised by the United States, and the EC is participating in good faith in the panel's

consideration of this matter. Therefore, the Trade Representative has decided to delay implementation of any action to be taken under section 301 for the period provided in section 305(a)(2)(A), and may reconsider these determinations in light of the GATT panel's findings. The petitioner has indicated it concurs with this decision.

EFFECTIVE DATE: July 5, 1989.

FOR FURTHER INFORMATION CONTACT: Timothy Reif, Assistant General Counsel, (202) 395-6800; Marilyn Moore, Advisor to the Assistant U.S. Trade Representative for Agricultural Affairs (202) 395-5006; or Laura Anderson, Director, European Community Affairs (202) 395-3074).

SUPPLEMENTARY INFORMATION: On December 16, 1987 the American Soybean Association filed a petition under section 302 of the Trade Act, 19 U.S.C. 2412, alleging that the EC has engaged in practices affecting imports of oilseeds, particularly soybeans, that deny rights of the United States under a trade agreement, are inconsistent with a trade agreement, and are unjustifiable, unreasonable and burden or restrict United States commerce. The trade agreement at issue is the General Agreement on Tariffs and Trade (GATT). The practices complained of are, *inter alia*, subsidies provided to the EC producers of oilseeds and animal feed proteins that nullify or impair benefits accruing to the United States under the GATT as a result of zero-binding tariff concessions granted by the EC in 1962, and subsidies provided to EC processors of oilseeds that encourage purchase of EC oilseeds to the detriment of imports of oilseeds, particularly soybeans from the United States.

On January 5, 1988, the Trade Representative initiated an investigation of these practices and requested consultations with the EC, as required by section 303(a) of the Trade Act, 19 U.S.C. 2413. Consultations were held between representatives of the United States and the EC on January 28, 1988, February 19, 1988, and April 19, 1988. These consultations failed to result in a mutually satisfactory resolution of the issues. Thus, on May 4, 1988, the United States requested the GATT Council of Representatives to establish a dispute settlement panel to consider the matter. The panel was established and began its work on May 19, 1989. Briefs were submitted to the panel on June 16, 1989, and the panel held its first meeting with the parties on June 27 1989. The work schedule established by the panel provides that further briefing and argument be completed by October, 1989.

Pursuant to 19 U.S.C. 2414, as amended by section 1301 of the Omnibus Trade and Competitiveness Act of 1988, the Trade Representative is required to determine by July 5, 1989, whether the EC's practices deny "rights to which the United States is entitled" under the GATT and whether such practices are unjustifiable or unreasonable and burden or restrict U.S. commerce. Accordingly, absent any finding by the GATT panel or Contracting Parties to the GATT, the Trade Representative has determined that there is reason to believe that United States' rights under a trade agreement are being denied by, *inter alia*, the EC's production and processing subsidies on oilseeds and animal feed proteins and the practices resulting therefrom within the meaning of section 301(a)(1)(B), 19 U.S.C. section 2411(a)(1)(B), and that the EC practices at issue are unjustifiable and unreasonable, and burden or restrict U.S. commerce, within the meaning of section 301(a)(1)(B) and 301(b)(1), 19 U.S.C. 2411(a)(1)(B) and 19 U.S.C. 2411(b)(1) respectively. Pursuant to section 304(a)(1)(B), the Trade Representative also finds that action under section 301 would be appropriate in light of the GATT panel findings.

Section 305(a)(1) provides that any action to be taken under section 301 shall be implemented within 30 days—in this case, by August 4, 1989. Section 305(a)(2) further provides that such implementation may be delayed by not more than 180 days under certain circumstances. The Trade Representative has determined that substantial progress is being made with respect to this dispute as evidenced by the fact that the EC has agreed to the establishment of a panel to consider issues raised by the United States and is participating in good faith in the panel's consideration of this matter. Therefore, the Trade Representative has decided to delay by not more than 180 days (no later than January 31, 1990) implementation of any action to be taken under section 301. Petitioner has indicated it concurs with this decision.

The Trade Representative may reconsider the decision to delay implementation at any point if it appears that substantial progress is no longer being made in relation to the dispute, and may reconsider the determination under section 304(a)(1)(A) in light of the findings of the GATT panel and Contracting Parties.

A. Jane Bradley,

Chairman, Section 301 Committee.

[FR Doc. 89-16161 Filed 7-10-89; 8:45 am]

BILLING CODE 3190-01-M

Industries Facing Subsidized Imports; Non-Ferrous Metals; Notice of Identification

AGENCY: Office of the United States Trade Representative.

ACTION: Notice of identification of industries under section 409(b) of the U.S.-Canada Free-Trade Agreement Implementation Act of 1988.

SUMMARY: On April 6, 1989 the Non-Ferrous Metals Producers Committee, on behalf of its individual member companies, submitted a petition seeking identification of the copper, lead, and zinc industries under section 409(b) of the U.S.-Canada Free-Trade Implementation Agreement Act of 1988, Pub. L. 100-449 ("the FTA Act").

The USTR, in consultation with the Secretary of Commerce, has identified the primary copper and lead industries under section 409(b) based on a reasonable likelihood that these industries may face both increased competition from possibly subsidized Canadian imports with which they directly compete as a result of the FTA, and deterioration of their competitive position before more effective bilateral rules and disciplines relating to the use of government subsidies have been developed with respect to Canada.

DATE: The identification was made on July 5, 1989.

FOR FURTHER INFORMATION: Specific questions about the copper, lead, and zinc industries should be directed to Mr. Robert Reiley, Director, Office of Metals, Minerals, and Commodities, U.S. Department of Commerce (202) 377-0575. Questions concerning the status of any further actions taken regarding these identifications should be directed to Nancy J. Kelley Office of the United States Trade Representative (202) 395-7305.

SUPPLEMENTARY INFORMATION: On April 6, 1989 the Non-Ferrous Metals Producers Committee (the Committee), on behalf of its individual member companies, submitted a petition seeking identification of the copper, lead, and zinc industries under section 409(b) of the U.S.-Canada Free-Trade Agreement Act of 1988. The Committee alleged that these three U.S. industries were likely to face increased competition from subsidized Canadian imports with which they directly compete as a result of the FTA, and deterioration of their competitive position before rules and disciplines relating to the use of government subsidies have been developed with respect to Canada.

After receiving the petition, the USTR consulted with the Secretary of Commerce and with other agencies pursuant to section 409(b) of the FTA Act. The USTR concluded that a reasonable likelihood exists that the primary copper and lead industries may face both increased competition from possibly subsidized Canadian imports with which they directly compete as a result of the FTA, and deterioration of their competitive position before rules and disciplines relating to the use of government subsidies have been developed with respect to Canada.

On July 5, 1989, USTR identified the copper and lead industries under section 409(b). The USTR does not possess sufficient information at this time to identify the zinc industry under the same provision. However, particularly since the production of zinc is closely related to the production of lead, the USTR will, on request of a representative entity of the zinc industry, seek comparable information relating to the zinc industry within the scope of any study of the lead industry that may be initiated as a result of this identification.

Legal Authority

Section 409(b) of the U.S.-Canada Free Trade Agreement Implementation Act of 1988, Pub. L. 100-449, allows any entity that is representative of an industry to file a petition with USTR for identification. Within 90 days of receiving the petition, USTR must decide, in consultation with the Secretary of Commerce, whether to identify the industry. A decision to identify must rest on a reasonable likelihood that an industry will face both increased competition from subsidized Canadian imports with which it directly competes as a result of the FTA, and deterioration of its competitive position before rules and disciplines relating to the use of government subsidies have been developed with respect to Canada.

Section 409(b) authorizes the gathering of information and subsequent monitoring and review of evidence related to subsidies to Canadian industries that compete with the identified U.S. industry. After identification and at the request of an identified industry, USTR will compile and make available to the industry information under section 308 of the Trade Act of 1974, as amended (formerly section 305), or recommend to the President that the International Trade Commission be requested to investigate the industry under section 332 of the Tariff Act of 1930, or take both actions. The industry may request that USTR update this information annually.

Joshua Bolten,
General Counsel.

[FR Doc. 89-16162 Filed 7-10-89; 8:45 am]

BILLING CODE 3190-01-M

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34-26992; File No. SR-CBOE-89-08]

Self-Regulatory Organizations; Proposed Rule Change by Chicago Board Options Exchange, Inc., Relating to Index Hedge Exemption Pilot

Pursuant to section 19(b)(2) of the Securities Exchange Act of 1934, 15 U.S.C. 78s(b)(1), notice in hereby given that on June 5, 1989,[1] the Chicago Board Options Exchange, Incorporated filed with the Securities and Exchange Commission the proposed rule changes described in Items I, II and III below, which Items have been prepared by the self-regulatory organization. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

Note: [Deletions]; Additions—*italics*

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

Rule 24.4. (a) through (c) No change.

Interpretations and Policies:

.01 [For the period beginning May 24, 1988 through May 24, 1989,] Positions in broad-based index option classes traded on the Exchange held in the aggregate by a public customer (whose orders would be eligible to be placed on the book under Rule 7.4 (a)) are exempt from this position limit rule to the extent that the following procedures and criteria are met:

(a) Through (b) No change.

(c) The customer holds a net long *or short* position in common stocks of a portfolio which has been previously established *or in securities readily convertible, and additionally in the case of convertible bonds economically convertible, into common stocks which would comprise a portfolio.* The *option* hedge position must be carried in an account with an Exchange member.

(d) The stock portfolio *or its equivalent* is composed of net long *or short* positions in common stocks in at least four industry groups and contains at least twenty stocks, none of which accounts for more than fifteen percent of the value of the portfolio (hereinafter "qualified portfolio"). To remain qualified, a portfolio must at all times meet these standards notwithstanding trading activity in the stocks *or their equivalents.*

(e) Subject to the maximum number of exempt *option* contracts allowed under subpart (a) hereof, the exemption [only] applies to [short calls and long puts] *options* in broad-based index options dealt in on the Exchange [,a combination thereof or such equivalent positions as are approved in advance by the Exchange,] to the extent the underlying value of such *option* position does not exceed the unhedged value of the qualified portfolio. The unhedged value would be determined as follows: (1) the values of the net long *or short* positions for each of the stocks *or their equivalents* of the qualified portfolio are totalled; and (2) the value of (a) any [short] *opposite side of the market* calls and [long] puts in broad-based index options, (b) any [short] *opposite side of the market* positions in stock index futures, and (c) any economically equivalent *opposite side of the market* positions in stock index options or *options on stock index* futures, is subtracted from the total. In no event may exempted positions exceed 75,000 *same-side of the market option* contracts in a class of broad-based index options dealt in on the Exchange.

(f) The hedge exemption customer shall agree promptly to provide the Exchange any information requested concerning the dollar value and composition of the customer's stock portfolio *or its equivalent,* the current hedged and aggregate options positions, and any stock index futures positions.

(g) The hedge exemption customer shall agree to and any member carrying an account for the customer shall:

(1) comply with all Exchange rules and regulations.

(2) liquidate and establish options and stock positions *or its equivalent* in an orderly fashion; not initiate or liquidate positions in a manner calculated to cause unreasonable price fluctuations or unwarranted price changes; and not initiate or liquidate a stock position *or its equivalent* with an equivalent index

[1] The Chicago Board Options Exchange filed with the Commission a proposed rule change to the extend the pilot program on April 24, 1989. The Exchange on May 15, 1989 filed with the Commission letter to withdraw this proposal, and the Exchange on June 5, 1989 filed with the Commission this revised proposal.

option position with a view toward taking advantage of any differential in price between a group of securities and an overlying stock index option.

(3) liquidate any options prior to or contemporaneously with a decrease in the hedged value of the qualified portfolio which options would thereby be rendered excessive.

(4) promptly notify the Exchange on any material change in the stock portfolio *or its equivalent* or stock index futures positions which materially affects the unhedged value of the qualified portfolio.

(5) cause all option orders subject to this exemption on the floor to be designated "hedge"

(6) abide by prevailing exercise limits allowed pursuant to Rule 24.5, without regard to the exemption provision, except in expiring series from the last business day prior to expiration until expiration.

(h) If any member carrying an account for a hedge exemption customer with broad-based index option positions dealt in on the Exchange has reason to believe that as a result of an opening transaction, *the position telescoping provisions,*[2] *or the execution of Clearing Member Transfer Account ("CMTA") transactions*[3] *that* the customer, [would,] acting alone or in concert with others, directly or indirectly, violates this hedge *option position* exemption, [and such opening transaction occurs] then the member has violated Exchange Rule 24.4.

(i) No change.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In this filing with the Commission, the self-regulatory organization included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below and is set forth in sections (A), (B), and (C) below.

(A) Self-Regulatory Organization's Statement of the Purpose of, and the Statutory Basis for, the Proposed Rule Change

This rule filing addresses two items. The first is to extend the pilot program which expires May 24, 1989 until the time when the proposed revisions to the pilot are approved by the Commission. At that point in time, the Exchange requests that a one-year pilot for the revised rule be implemented.

The current pilot has been minimally used, but because three customers currently have approved exemptions, the Exchange believes an extension of the pilot is necessary. During the last year, three customers applied for the exemption and all were approved. However, none of the customers used the exemption. The Exchange believes that by expanding the strategies which the exemption applies to, customers will be more willing to apply and use the exemption. In that regard, the Exchange intends to allow the following hedges pursuant to paragraph (e) of interpretation .01 to the rule:

Long stock or its equivalent, short calls and/or long puts

Short stock or its equivalent, long calls and/or short puts

In addition to the change of allowable strategies, a simplified application is being developed which will still provide enough data to properly determine whether an exemption is warranted. Finally, the Exchange believes that equivalent stock positions should be allowed on a case by case basis. In that regard, economically convertible bonds and other readably convertible securities may be used as the underlying basis for allowing an index hedge exemption. The surveillance staff will review each application as it has in the past and track the positions/dollar value of the instruments used to apply for a hedge.

The Exchange believes that the proposed rule change is consistent with the requirements of the Securities Exchange Act of 1934 and the rules and regulations thereunder, in particular, the proposed rule change is consistent with section 6(b)(5) of the Exchange act, which provides, among other things, that the proposed rule is designed to remove impediments and to perfect the mechanism of a free and open market.

(B) Self-Regulatory Organization's Statement on Burden on Competition

This proposed rule change will not impose a burden on competition.

(C) Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received from Members, Participants or Others

The Exchange has not received any formal comments regarding the proposed or existing rule. However, numerous calls were received from customers and firms expressing their concern over the application process and limitation on hedging strategies. As a result of these calls, the Exchange has proposed the revisions to the current rule.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

Within 35 days of the date of publication of this notice in the **Federal Register** or within such longer period (i) as the Commission may designate up to 90 days of such date if it finds such longer period to be appropriate and published its reasons for so finding or (ii) as to which the self-regulatory organization consents, the Commission will:

(A) By order approve such proposed rule change, or

(B) Institute proceedings to determine whether the proposed rule change should be disapproved.

IV Solicitation of Comments

Interested persons are invited to submit written data, views and arguments concerning the foregoing. Persons making written submission should file six copies thereof with the Secretary, Securities and Exchange Commission, 450 Fifth Street, NW., Washington, DC 20549. Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for inspection and copying the Commission's Public Reference Section, 450 Fifth Street, NW., Washington, DC. Copies of such filing will also be available for inspection and copying at the principal office of the above-mentioned self-regulatory organization. All submissions should refer to the file number in the caption above and should be submitted by August 1, 1989.

For the Commission by the Division of Market Regulation, pursuant to delegated authority.

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[2] When an option series becomes the series with the nearest expiration date, a portion of the option contracts may need to be reduced in order to comply with the position limit requirements of Rule 24.4.

[3] An account at a member firm may exceed position limit as the result of a transfer of a position from another member firm.

Dated: June 29, 1989.

Jonathan G. Katz,

Secretary.

[FR Doc. 89-16142 Filed 7-10-89; 8:45 am]

BILLING CODE 8010-01-M

[Rel. No. 34-26995; MSTC-88-8]

Self-Regulatory Organizations; Midwest Securities Trust Company; Order Approving a Proposed Rule Change on a Temporary Basis

June 30, 1989.

On January 4, 1989, pursuant to section 19(b)(3)(A) of the Securities Exchange Act of 1934 ("Act"), 15 U.S.C. § 78s(b)(1), the Securities and Exchange Commission ("Commission") approved on a temporary basis a proposal by the Midwest Securities Trust Company ("MSTC") to enhance MSTC's File Transmission Service ("FTS") by allowing Depository Delivery Instructions ("DDI") [1] to be transmitted through FTS.[2] Subsequently on May 17 1989 and June 9, 1989, MSTC provided the Commission with further information concerning its proposal. The Commission is continuing its review of this proposal and is extending MSTC's pilot program in order to obtain further operational data concerning the safety and security of this proposal. This order extends the pilot program until September 30, 1989.

The Commission finds that the proposed rule change is consistent with the requirements of section 17A of the Act as it is designed to facilitate the prompt and accurate clearance and settlement of securities transactions by allowing DDI instructions to be submitted through FTS.

It is therefore ordered, pursuant to Section 19(b)(2) of the Act, that the proposed rule change (SR-MSTC-88-8) be, and hereby is, approved on a temporary basis until September 30, 1989.

For the Commission, by the Division of Market Regulation, pursuant to delegated authority.

Jonathan G. Katz,

Secretary.

[FR Doc. 89-16176 Filed 7-10-89; 8:45 am]

BILLING CODE 8010-01-M

[1] The DDI service allows firms to transmit delivery instructions to deliver securities to other MSTC participants and non-MSTC participants.

[2] See Securities Exchange Act Release No. 26418 (January 4, 1989), 54 FR 1040 (January 11, 1989). The Commission extended this temporary approval until June 30, 1989 in Securities Exchange Act Release No. 26688 (April 3, 1989) 54 FR 1430" (April 10, 1989).

[Release No. 34-26998; File No. SR-Phlx-89-36]

Self-Regulatory Organizations; Immediate Effectiveness of Proposed Rule Change by the Philadelphia Stock Exchange, Inc. Relating to Currency Options Trading Segments/Holidays

Pursuant to section 19(b)(1) of the Securities Exchange Act of 1934, 15 U.S.C. 78s(b)(1), notice is hereby given that on June 26, 1989, the Philadelphia Stock Exchange, Inc. filed with the Securities and Exchange Commission the proposed rule change as described in Items I, II and III below, which Items have been prepared by the self-regulatory organization. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

The Philadelphia Stock Exchange, Inc. ("PHLX" or "Exchange"), pursuant to Rule 19b-4, hereby proposes to adopt policies pursuant to its By-Law Article 4-4(b)(i) and Rule 101 and Commentary .01 thereunder respecting changes in foreign currency options trading hours. In this regard, the PHLX proposes to close PHLX foreign currency options markets at 1:00 P.M. Eastern Standard Time (EST) on the day before a bank holiday, except for the Friday before expiration. The PHLX intends to implement this policy on Monday, July 3, 1989, prior to the July 4th, 1989 national holiday. Additionally, when an Exchange holiday is regularly observed on a Monday the Exchange proposes, in the case of holidays observed on a Monday, *i.e.*, President's Day, Memorial Day, and Labor Day, that the PHLX foreign currency options market open on the evening of the holiday. The PHLX proposes to implement this policy effective January 1, 1990.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the self-regulatory organization included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The self-regulatory organization has prepared summaries, set forth in sections (A), (B), and (C) below, of the most significant aspects of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for the Proposed Rule Change

This proposed rule change is designed in part to coordinate the closing of PHLX foreign currency options market on the day before a bank holiday with that of futures markets conducted on the Chicago Mercantile Exchange's ("CME") International Monetary Market ("IMM").

The reason for adopting the policy respecting opening of the evening trading segment on the night of a Monday holiday *i.e.*, President's Day, Memorial, and Labor Day is that other foreign exchange markets continue to trade during such periods. In this regard, PHLX foreign currency options participants have determined that a four day closure of trading in such instances is not responsive to the exchange rate risk protection and related hedging requirements of Far Eastern manufacturing banking and other commercial entities utilizing the PHLX foreign currency option market. The PHLX will provide foreign currency options participants and participant organizations with adequate notice of each timing change made as a result of the implementation of the proposed rule change.

The proposed rule change is based on section 6(b)(5) of the Securities Exchange Act of 1934 in that it is designed to further promote the mechanism of a free and open market and to protect investors and the public interest.

B. Self-Regulatory Organization's Statement on Burden on Competition

The PHLX does not believe that the proposed rule change will impose any burden on competition.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received from Members, Participants, or Others

No written comments were either solicited or received.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

The foregoing rule change has become effective pursuant to section 19(b)(3) of the Securities Exchange Act of 1934 and subparagraph (e) of Securities Exchange Act Rule 19b-4. At any time within 60 days of the filing of such proposed rule change, the Commission may summarily abrogate such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Securities Exchange Act of 1934.

IV Solicitation of Comments

Interested persons are invited to submit written data, views and arguments concerning the foregoing. Persons making written submissions should file six copies thereof with the Secretary, Securities and Exchange Commission, 450 Fifth Street, NW Washington, DC 20549. Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for inspection and copying in the Commission's Public Reference Section, 450 Fifth Street, NW Washington, DC 20549. Copies of such filing will also be available for inspection and copying at the principal office of the above-mentioned self-regulatory organization. All submissions should refer to the file number in the caption above and should be submitted by August 1, 1989.

For the Commission by the Division of Market Regulation, pursuant to delegated authority.

Jonathan G. Katz,

Secretary.

Dated: June 30, 1989.

[FR Doc. 89-16141 Filed 7-10-89; 8:45 am]

BILLING CODE 8010-01-M

[Release No. IC-17038; 813-89]

Elfun Trusts; Application

June 30, 2989

AGENCY: Securities and Exchange Commission ("SEC").

ACTION: Notice of application for exemption under the Investment Company Act of 1940 ("1940 Act").

Applicants: Elfun Trusts ("Applicant").

Relevant 1940 Act Sections: Exemption requested under section 6(b) from the provisions of sections 10(a) and 15(c).

Summary of Application: Applicant seeks an order to permit more than sixty percent of its trustees to be "interested persons" as defined in section 2(a)(19) of the 1940 Act, and to exempt it from the requirement that a majority of its disinterested trustees approve any renewal of its investment advisory contract.

Filing Dates: The application was filed on April 25, 1989, and amended on June 26, 1989.

Hearing or Notification of Hearing: An order granting the application will be issued unless the SEC orders a hearing. Interested persons may request a hearing by writing to the SEC's Secretary and serving Applicant with a copy of the request, personally or by mail. Hearing requests should be received by the SEC by 5:30 p.m. on July 24, 1989, and should be accompanied by proof of service on the Applicant, in the form of an affidavit or, for lawyers, a certificate of service. Hearing requests should state the nature of the writer's interest, the reason for the request, and the issues contested. Persons who wish to be notified of a hearing may request notification by writing to the SEC's Secretary.

ADDRESSES: Secretary, SEC, 450 5th Street, NW Washington, DC 20549. Applicants, c/o Alan M. Lewis, Esq., General Electric Investment Corporation, 3003 Summer Street, Stamford, Connecticut 06904-7900.

FOR FURTHER INFORMATION CONTACT: Regina Hamilton, Staff Attorney at (202) 272-3024 or Stephanie Monaco, Branch Chief, at (202) 272-3030 (Office of Investment Company Regulation).

SUPPLEMENTARY INFORMATION: Following is a summary of the application. The complete application is available for a fee. One may obtain a copy by going to the SEC's Public Reference Branch or by telephoning the SEC's commercial copier at (800) 231-3282 (in Maryland (301) 258-4300).

Applicant's Representations

1. Applicant is a trust created pursuant to trust agreement dated May 27 1935, as most recently amended on July 18, 1978. It is a diversified, open-end, management investment company, and meet the requirements of an "employees' securities company" within the meaning of section 2(a)(13) of the 1940 Act. Applicant's objective is to seek long-term growth of capital and future income. General Electric Investment Corporation ("GEIC"), a wholly-owned subsidiary of General Electric Company ("GE"), and an investment adviser registered with the SEC, serves as Applicant's investment adviser.

2. Purchase of Applicant's units may be made by regular and senior members of the Elfun Society (an honorary society of GE employees) and certain of their family members. Regular members of the Elfun Society are selected from active employees of GE and its majority-owned subsidiaries; senior members are former regular members who have retired from those companies. Pursuant to an application filed on May 31, 1989 (File No. 813-90), Applicant has also applied for an order to permit purchases of units not only by Elfun Society members, but also by any persons designated from time to time by its trustees, provided their participation does not alter its status as an "employees' securities company" within the meaning of section 2(a)(13) of the Act.

3. Beginning in 1977 four additional funds, Elfun Tax-Exempt Income Fund, Elfun Income Fund, Elfun Diversified Fund and Elfun Global Fund (the "Other Funds"), were established for the benefit of GE employees and their families. In July 1986, Applicant decided, for the sake of administrative convenience, to have the same set of trustees serve both the Applicant and the Other Funds. At Applicant's request, each of its independent trustees voluntarily submitted his resignation, and the trustees of the Other Funds were elected as trustees of Applicant. Since that time, all of Applicant's trustees have been interested trustees.

4. During a routine file search in March 1989, GEIC discovered that Applicant had substituted interested trustees without having obtained exemptions under sections 10(a) and 15(c). The Other Funds had previously obtained exemptive relief from sections 10(a) and 15(c). *See* Investment Company Act Release Nos. 9879 (July 5, 1977), 13612 (Nov. 2, 1983), 16114 (Nov. 5, 1987), and 16816 (Dec. 22, 1987). Consequently, Applicant filed the application to bring its future operations into compliance with the 1940 Act. Applicant is not seeking relief under section 16(a) with respect to the substitution of interested trustees, nor has it requested, or does it now request, approval of such substitution by the SEC.

5. Applicant acknowledges that the relief requested will be prospective only. Applicant will not rely on any order granted pursuant to the application for relief during the period from July 1986 until April 25, 1989.

6. Applicant's five interested trustees are all GE officers or employees who have been assigned to the operations of GEIC. The trustees do not receive any compensation from Applicant for serving as trustees, although Applicant will be required to reimburse GEIC for the portion of the remuneration they may receive which is allocable to the time they spend on Applicant's matters in their capacity as GEIC employees. While GEIC and GE provide various

services to Applicant and are reimbursed for the reasonable costs of providing such services, no element of profit is included in such charges.

7 Because more than 60% of Applicant's trustees are interested persons as defined in section 2 (a)(19) of the 1940 Act, Applicant seeks relief from section 10(a). Applicant argues that the protection of investors does not require the appointment of disinterested trustees for several reasons. First, the trustees, GEIC, and GE all have a very strong interest in assuring that Applicant is well managed. While GE is not Applicant's sponsor, Applicant offers an additional investing opportunity which is open solely to certain GE employees, former employees, and their immediate relatives. Thus, Applicant's success has a strong bearing on employee morale and satisfactory employee relations, a matter in which GE is vitally interested. Second, it is not necessary to engage outside persons as disinterested trustees to bring Applicant skills needed for its operation, given the extensive experience and knowledge of the persons who have been selected to act as Applicant's trustees. Third, Applicant has estimated that the addition of four disinterested trustees could add approximately $50,000 to annual operating expenses.

8. Because all of the trustees are interested persons of GEIC, an exemption is also requested from the requirements of section 15(c), which would require the approval by a majority of disinterested trustees of any renewal of an investment advisory contract. Since the replacement of trustees, there has been no amendment to Applicant's investment advisory contract, or any other material change in its operations.

9. Applicant asserts that the requested relief is appropriate because the investment advisory services to be furnished to Applicant will be furnished at cost. Moreover, it is highly unlikely that such a contract could be entered with any entity other than one, such as GEIC, which is uniquely related to the needs and welfare of the purchasers of Applicant's fund units. Finally, Applicant believes that GE's interest in Applicant's success is so fundamental that any risk of the retention of unsatisfactory investment advisers would seem remote. For these reasons, Applicant believes that it does not appear to be in the best interest of investors to subject its investment advisory contract to the burdensome and expensive approval and renewal requirements of section 15(c).

For the Commission, by the Division of Investment Management, under delegated authority.

Jonathan G. Katz,

Secretary.

[FR Doc. 89-16177 Filed 7-10-89; 8:45 am]

BILLING CODE 8010-01-M

[Release No. IC-17039; 813-90]

Elfun Trusts Et Al., Application

June 30, 1989.

AGENCY: Securities and Exchange Commission ("SEC").

ACTION: Notice of application for exemption under the Investment Company Act of 1940 ("1940 Act").

Applicants: Elfun Trusts, Elfun Tax-Exempt Income Fund, Elfun Income Fund, Elfun Global Fund, and Elfun Diversified Fund (collectively, Applicants" or "Funds").

Relevant 1940 Act Sections: Exemption requested under section 6(b) to amend previous orders issued pursuant to that section.

Summary of Application: Applicants seek to amend previous orders issued on December 2, 1943 (Investment Company Act Release No. 1936), July 5, 1977 (Investment Company Act Release No. 9879), September 20, 1978 (Investment Company Act Release No. 10414), November 2, 1983 (Investment Company Act Release No. 13612), November 5, 1987 (Investment Company Act Release No. 16114), and December 22, 1987 (Investment Company Act Release No. 16816) ("Previous Orders"). The amended order requested would expand the class of potential Fund unitholders to include not only members of the Elfun Society, but all persons designated by the Funds' trustees, provided their participation does not alter the Funds' status as "employees' securities companies" within the meaning of section 2(a)(13) of the 1940 Act.

Filing Dates: The application was filed on May 31, 1989, and amended on June 26, 1989.

Hearing or Notification of Hearing: An order granting the application will be issued unless the SEC orders a hearing. Interested persons may request a hearing by writing to the SEC's Secretary and serving Applicants with a copy of the request, personally or by mail. Hearing requests should be received by the SEC by 5:30 p.m. on July 24, 1989, and should be accompanied by proof of service on the Applicants, in the form of an affidavit or, for lawyers, a certificate of service. Hearing requests should state the nature of the writer's interest, the reason for the request, and the issues contested. Persons who wish to be notified of a hearing may request notification by writing to the SEC's Secretary.

ADDRESSES: Secretary, SEC, 450 5th Street, NW., Washington, DC 20549. Applicants, c/o Alan M. Lewis, Esq., General Electric Investment Corporation, 3003 Summer Street, Stamford, Connecticut 06904-7900.

FOR FURTHER INFORMATION CONTACT: Regina Hamilton, Staff Attorney, at (202) 272-3024 or Stephanie Monaco, Branch Chief, at (202) 272-3030 (Office of Investment Company Regulation).

SUPPLEMENTARY INFORMATION: Following is a summary of the application. The complete application is available for a fee. One may obtain a copy by going to the SEC's Public Reference Branch or by telephoning the SEC's commercial copier at (800) 231-3282 (in Maryland (301) 258-4300).

Applicants' Representations

1. The Applicants are trusts created pursuant to trust agreements dated May 27 1935, March 14, 1977 December 22, 1982, May 15, 1987 and June 1, 1987 The Funds are diversified, openend, management investment companies, and each meets the requirements of an "employees' securities company" within the meaning of section 2(a)(13) of the 1940 Act.

2. According to the Applicants, under section 2(a)(13), any employee, person on retainer, or former employee of General Electric Company ("GE") or companies affiliated with GE, and members of such employees' immediate families, would be eligible to purchase units of the Funds. Currently, however, units of the Funds are offered only to regular and senior members of the Elfun Society (an honorary society of GE employees) and certain family members. Regular members of the Elfun Society are selected from active employees of GE and its majority-owned subsidiaries; senior members are former regular members who have retired from those companies. Membership in the Elfun Society is limited to individuals in responsible positions. Selection is based upon position level of job classification and years of continuous service.

3. The Funds seek to expand the number of participants eligible to purchase Fund units. The Funds propose to eliminate the requirement that purchasers of units must be Elfun Society members, and to expand the potential class of purchasers to include all persons designated from time to time by the trustees of the Funds, provided their participation does not alter the

Funds' status under section 2(a)(13) of the 1940 Act. Although the trustees have not yet determined which additional eligible classes of purchasers they would select, they currently intend to limit eligible participants to salaried (versus hourly) employees of GE and its majority-owned subsidiaries.

4. The Funds seek to expand eligibility to make participation available to certain groups of employees who either are ineligible for Elfun Society membership, such as employees of General Electric Investment Corporation, the Funds' investment adviser, or have decided not to join. Applicants state that more participants in the Funds will result in greater assets under management, thus increasing the Funds' investment opportunities and potentially reducing their expense ratios.

5. The Funds state that the protection of investors will not be impaired by the requested change.

For the Commission, by the Division of Investment Management, under delegated authority.

Jonathan G. Katz,

Secretary.

[FR Doc. 89-16178 Filed 7-10-89; 8:45 am]

BILLING CODE 8010-01-M

[Rel. No. IC-17040; 811-710]

Liberty Fund, Inc., Application

June 30, 1989.

AGENCY: Securities and Exchange Commission ("SEC").

ACTION: Notice of application for deregistration under the Investment Company Act of 1940 (the "1940 Act").

Applicant: Liberty Fund, Inc. ("Applicant").

Relevant 1940 Act Section: Section 8(f).

Summary of Application: Applicant seeks an order declaring that it has ceased to be an investment company under the 1940 Act.

Filing Dates: The application on Form N-8F was filed on April 21, 1989, and an amendment was filed on June 23, 1989.

Hearing or Notification of Hearing. An order granting the application will be issued unless the SEC orders a hearing. Interested persons may request a hearing by writing to the SEC's Secretary and serving Applicant with a copy of the request, personally or by mail. Hearing requests should be received by the SEC by 5:30 p.m. on July 24, 1989, and should be accompanied by proof of service on the Applicant, in the form of an affidavit or, for lawyers, a certificate of service. Hearing requests should state the nature of the writer's interest, the reason for the request, and the issues contested. Persons who wish to be notified of a hearing may request notification by writing to the SEC's Secretary.

ADDRESSES: Secretary, SEC, 450 Fifth Street, NW Washington, DC 20549. Applicant, c/o Neuberger & Berman Management Incorporated, 342 Madison Avenue, New York, NY 10173.

FOR FURTHER INFORMATION CONTACT: Patricia Copeland, Legal Technician, (202) 272-3009, or Brion Thompson, Branch Chief, (202) 272-3016 (Office of Investment Company Regulation).

SUPPLEMENTARY INFORMATION: Following is a summary of the application; the complete application is available for a fee from either the SEC's Public Reference Branch in person or the SEC's commercial copier (800) 231-3282 (in Maryland (301) 258-4300).

Applicant's Representations

1. Applicant, a Maryland corporation, is registered under the 1940 Act on Form N-8A as an open-end, diversified management investment company. Applicant filed a registration statement pursuant to the Securities Act of 1933 (the "1933 Act"), which became effective on or about January 11, 1956.

2. On December 22, 1988, Applicant's Board of Directors ("Board") approved the Plan of Merger ("Merger") providing for (i) the transfer of Applicant's assets to T. Rowe Price High Yield Fund, Inc. ("High Yield") (File No. 811-4119) in exchange for shares of High Yield having an equivalent net asset value. On March 29, 1989, a majority of Applicant's shareholders approved the Merger. In connection with such shareholder vote, the Applicant solicited proxies pursuant to a proxy statement dated February 7 1989, which was filed with the SEC and mailed to Applicant's shareholders.

3. Immediately preceding the transfer of its assets under the Merger, Applicant had 2,507,186 shares of capital stock outstanding with a par value of $1.00, total net assets of $10,012,890.80 and a per share net asset value of $3.99. On April 3, 1989, Applicant transferred its assets to High Yield, in exchange for 988,439.368 shares of capital stock of High Yield, $.01 par value per share (the "High Yield Shares"), having an aggregate net asset value of $10,012,890.80 as of the close of business on March 31, 1989. The High Yield Shares received by Applicant were distributed to Applicant's shareholders in exchange for their shares of capital stock in Applicant, which were cancelled. Applicant and High Yield each borne their own expenses incurred in connection with the Merger.

4. At the time of filing this application, Applicant had approximately $92,000 of assets which it retained to wind up its affairs. Applicant currently has outstanding liabilities consisting of accounting, legal fees, printing and operating expenses. Applicants states that none of these remaining assets will be invested in securities.

5. Applicant does not currently propose to engage in any business activities other than those related to its dissolution. Applicant has no securityholders, no debts or other liabilities, and is not a party to any litigation or administrative proceeding.

6. Applicant has filed Articles of Transfer with the Office of the State Department of Assessments and Taxation of the State of Maryland, which became effective on April 3, 1989. Applicant will file Articles of Dissolution with the State Department of Assessments and Taxation of the State of Maryland.

For the Commission, by the Division of Investment Management, under delegated authority.

Jonathan G. Katz,

Secretary.

[FR Doc. 89-16179 Filed 7-10-89; 8:45 am]

BILLING CODE 8010-01-M

SMALL BUSINESS ADMINISTRATION

Reporting and Recordkeeping Requirements Under OMB Review

ACTION: Notice of reporting requirements submitted for review.

SUMMARY: Under the provisions of the Paperwork Reduction Act (44 U.S.C. Chapter 35), agencies are required to submit proposed reporting and recordkeeping requirements to OMB for review and approval, and to publish a notice in the **Federal Register** notifying the public that the agency has made such a submission.

DATE: Comments should be submitted on or before August 10, 1987 If you intend to comment but cannot prepare comments promptly, please advise the OMB Reviewer and the Agency Clearance Officer before the deadline.

Copies: Request for clearance (S.F 83), supporting statement, and other documents submitted to OMB for review may be obtained from the Agency Clearance Officer. Submit comments to the Agency Clearance Officer and the OMB Reviewer.

FOR FURTHER INFORMATION CONTACT:

Agency Clearance Officer: William Cline, Small Business Administration, 1441 L Street NW Room 200, Washington, DC 20416, Telephone: (202) 653-8538

OMB Reviewer: Gary Waxman, Office of Information and Regulatory Affairs, Office of Management and Budget, New Executive Office Building, Washington, DC 20503, Telephone: (202) 395-7340.

Title: Certified Development Company Program Annual Report Guide

Form Numbers: SBA Forms 1253 1253a, 1253b

Frequency: Annual

Description of Respondents: All Certified Development Companies

Annual Responses: 449

Annual Burden Hours: 17,960.

William Cline,

Chief, Administrative Information Branch.

[FR Doc. 89-16242 Filed 7-10-89; 8:45 am]

BILLING CODE 8025-01-M

[License No. 09/09-5383]

Far East Capital Corp., Issuance of a Small Business Investment Co. License

On March 23, 1989, a notice was published in the Federal Register (Vol. 54, FR 12043) stating that an application has been filed by Far East Capital Corporation with the Small Business Administration (SBA) pursuant to § 107.102 of the Regulations governing small business investment companies (13 CFR 107.102 (1989)) for a license as a small business investment company.

Interested parties were given until close of business April 23, 1989, to submit their comments to SBA. No comments were received.

Notice is hereby given that, pursuant to section 301(d) of the Small Business Investment Act of 1958, as amended, after having considered the application and all other pertinent information, SBA issued License No. 09/09-5383 on June 26, 1989, to Far East Capital Corporation to operate as a small business investment company.

(Catalog of Federal Domestic Assistance Program No. 59.011, Small Business Investment Companies)

Robert G. Lineberry,

Dated: June 29, 1989.

Deputy Associate Administrator for Investment.

[FR Doc. 89-16250 Filed 7-10-89; 8:45 am]

BILLING CODE 8025-01-M

[Application No. 09/09-5385]

Sowa Capital Corp., Application for a Small Business Investment Co. License

An application for a license to operate a small business investment company under the provisions of section 301(d) of the Small Business Investment Act of 1958, as amended, (the Act), (15 U.S.C. 661, et. seq.) has been filed by Sowa Capital Corporation, 7282 Orangethorpe Avenue, Suite 8, Buena Park, California 90621 (Applicant), with the Small Business Administration (SBA) pursuant to 13 CFR 107.102 (1989).

The Officers, Directors, and Shareholders of the Applicant are as follows:

Name	Title or relationship	Percent of shares owned
Jung-Chieh Kuo, 166-12 33rd Avenue, Flushing, New York 11358.	Board Chairman, Shareholder.	100
George Chi-Yung Hsu, 20615 E. Appaloosa Drive, Walnut, California 91789.	President, Director.	0
Shu-Hwa Kuo, 20129 Vejar Board, Walnut, California 91789.	Secretary, Treasurer, Director.	0

The Applicant, a California corporation, will begin operations with $1,000,000 of paid-in capital and paid-in surplus. The Applicant will conduct its activities principally in Southern California.

As an SBIC under section 301(d) of the Act, the Applicant has been organized and charged solely for the purpose of performing the functions and conducting the activities contemplated under the Small Business Investment Act of 1958, as amended, from time to time, and will provide assistance solely to small business concerns which will contribute to a well-balanced national economy by facilitating ownership in such concerns by persons whose participation in the free enterprise system is hampered because of social or economic disadvantages.

Matters involved in SBA's consideration of the Applicant include the general business reputation and character of the proposed owners and management, and the probability of successful operation of the Applicant under their management, including adequate profitability and financial soundness, in accordance with the small Business Investment Act and the SBA Rules and Regulations.

Notice is hereby given that any person may, not later than 30 days from the publication of this notice, submit to SBA written comments on the proposed Applicant. Any such communication should be addressed to the Deputy Associate Administrator for Investment, Small Business Administration, 1441 L Street NW Washington, DC 20416.

A copy of the Notice shall be published in a newspaper of general circulation in the Buena Park, California area.

(Catalog of Federal Domestic Assistance Program No. 59.011, Small Business Investment Companies)

Robert G. Lineberry,

Deputy Associate Administrator for Investment.

Dated: June 29, 1989.

[FR Doc. 89-16251 Filed 7-10-89; 8:45 am]

BILLING CODE 8025-01-M

[Declaration of Disaster Loan Area #2359]

[Amdt. #1]

Louisiana; (and Contiguous Counties in the States of Mississippi & Texas); Declaration of Disaster Loan Area

The above-numbered Declaration is hereby amended in accordance with the Notice of Amendment to the President's declaration dated June 28, 1989 to include Beauregard and Tangipahoa Parishes in the State of Louisiana, as a result of damages from severe thunderstorms and tornadoes which occurred on June 7-8, 1989.

In addition, applications for economic injury from small businesses located in the contiguous parishes of Calcasieu, Jefferson Davis, St. Tammany, and Washington may be filed until the specified date at the previously designated location.

Any counties contiguous to the above-named primary counties and not listed herein have previously been named as contiguous or primary counties for the same occurrence.

All other information remains the same; i.e., the termination date for physical damage is August 14, 1989 and for economic injury until the close of business on March 16, 1989.

(Catalog of Federal Domestic Assistance Program Nos. 59002 and 59008)

Date: June 29, 1989.

Bernard Kulik,

Deputy Associate Administrator for Disaster Assistance.

[FR Doc. 89-16243 Filed 7-10-89; 8:45 am]

BILLING CODE 8025-01-M

[Declaration of Disaster Loan Area #2354; Amdt. #5]

Louisiana (and Contiguous Counties in the States of Texas, Arkansas & Mississippi); Declaration of Disaster Loan Area

The above-numbered Declaration is hereby amended in accordance with the Notice of Amendment to the President's declaration, dated June 28, 1989, to include the parishes of St. James and St. Martin in the State of Louisiana, as a result of damages from severe storms and flooding which occurred May 4 through May 27 1989.

In addition, applications for economic injury from small businesses located in the contiguous parishes of Ascension, Assumption, Iberville, LaFourche, St. John the Baptist, and St. Mary may be filed until the specified date at the previously designated location.

Any counties contiguous to the above-named primary counties and not listed herein have previously been named as contiguous or primary counties for the same occurrence.

All other information remains the same; i.e., the termination date for filing applications for physical damage is the close of business on July 18, 1989, and for economic injury until the close of business on February 20, 1990.

(Catalog of Federal Domestic Assistance Program Nos. 59002 and 59008)

Date: June 29, 1989.

Bernard Kulik,

Deputy Associate Administrator for Disaster Assistance.

[FR Doc. 89-16244 Filed 7-10-89; 8:45 am]

BILLING CODE 8025-01-M

[Declaration of Disaster Loan Area #2357; Amdt. #1]

Ohio (and Contiguous Counties in the State of Indiana); Declaration of Disaster Loan Area

The above-numbered Declaration is hereby amended in accordance with the Notice of Amendment to the President's declaration, dated June 26, 1989, to include the counties of Coshocton, Franklin and Licking in the State of Ohio, as a result of damages from severe storms and flooding and to establish the incident period as May 23 through June 26, 1989.

In addition, applications for economic injury from small businesses located in the contiguous counties of Delaware, Fairfield, Guernsey, Holmes, Knox, Muskingham, Perry, Pickaway, Tuscarawas and Union in the State of Ohio may be filed until the specified date at the previously designated location.

Any counties contiguous to the above-named primary counties and not listed herein have previously been named as contiguous or primary counties for the same occurrence.

All other information remains the same; i.e., the termination date for filing applications for physical damage is the close of business on August 11, 1989, and for economic injury until the close of business on March 12, 1990.

(Catalog of Federal Domestic Assistance Program Nos. 59002 and 59008)

Date: June 29, 1989.

Bernard Kulik,

Deputy Associate Administrator for Disaster Assistance.

[FR Doc. 89-16245 Filed 7-10-89; 8:45 am]

BILLING CODE 8025-01-M

[Declaration of Disaster Loan Areas #2360]

Tennessee; Declaration of Disaster Loan Area

Rhea County and the contiguous counties of Bledsoe, Cumberland, Hamilton, Meigs, and Roane in the State of Tennessee constitute a disaster area as a result of damages from flooding which occurred from June 14 through June 19, 1989. Applications for loans for physical damage may be filed until the close of business on August 31, 1989 and for economic injury until the close of business on March 30, 1990 at the address listed below: Disaster Area 2 Office, Small Business Administration, 120 Ralph McGill Blvd., 14th Floor, Atlanta, GA 30308; or other locally announced locations.

The interest rates are:

	Percent
Homeowners With Credit Available Elsewhere	8.000
Homeowners Without Credit Available Elsewhere	4.000
Businesses With Credit Available Elsewhere	8.000
Businesses and Non-Profit Organizations Without Credit Available Elsewhere	4.000
Business and Non-Profit Organizations (EIDL) Without Credit Available Elsewhere	4.000
Others (Including Non-Profit Organizations) With Credit Available Elsewhere	9.125

The numbers assigned to this disaster for the State of Tennessee are 236006 for physical damage and 678000 for economic injury.

(Catalog of Federal Domestic Assistance Program Nos. 59002 and 59008)

Date: June 30, 1989.

Susan Engeleiter,

Administrator.

[FR Doc. 89-16246 Filed 7-10-89; 8:45 am]

BILLING CODE 8025-01-M

[Declaration of Disaster Loan Area #2353; Amdt. #5]

Texas (and Continuous Counties in the State of Oklahoma); Declaration of Disaster Loan Area

The above-numbered Declaration is hereby amended in accordance with the Notice of Amendment to the President's declaration, dated June 24, 1989, to include the counties of Baylor, Bosque, Brown, Ector, Hall, Hutchinson, Howard, Leon, Lubbock, Ochiltree, Pecos, Potter, Randall, San Augustine, Sherman, Tyler and Walker in the State of Texas, as a result of damages from severe storms, tornadoes, and flooding.

In addition, applications for economic injury from small businesses located in the contiguous counties of Andrews, Armstrong, Borden, Brazos, Brewster, Briscoe, Carson, Childress, Collingsworth, Comanche, Cottle, Crane, Crockett, Dallas, Dawson, Deaf Smith, Donley, Garza, Glasscock, Gray, Hansford, Hartley, Hemphill, Jeff Davis, Lipscomb, Lynn, Martin, Midland, Mills, Mitchell, Moore, Motley, Oldham, Reeves, Roberts, Scurry, Sterling, Terrell, Terry, Upton, Ward, White Deer and Winkler, in the State of Texas, and the continuous counties of Beaver, Cimarron, and Texas the State of Oklahoma may be filed until the specified date at the previously designated location.

Any counties contiguous to the above-named primary counties and not listed herein have previously been named as contiguous or primary counties for the same occurrence.

All other information remains the same; i.e., the termination date for filing applications for physical damage is the close of business on July 17 1989, and for economic injury until the close of business on February 20, 1990.

(Catalog of Federal Domestic Assistance Program Nos. 59002 and 59008).

Date: June 29, 1989.

Bernard Kulik,

Deputy Associate Administrator for Disaster Assistance.

[FR Doc. 89-16247 Filed 7-10-89; 8:45 am]

BILLING CODE 8025-01-M

[Declaration of Disaster Loan Area #2353; Amdt. #6]

Texas (and Contiguous Counties in the State of Oklahoma); Declaration of Disaster Loan Area

The above-numbered Declaration is hereby amended to correct errors made in Amendment #5.

Dallam County should have been named as a contiguous county for economic injury rather than Dallas County, which was named as a primary county in the original declaration. Applications for economic injury from small businesses located in the above county may be filed until the specified date at the previously designated location.

White Deer County should be deleted from the list of contiguous counties.

All other information remains the same; i.e., the termination date for filing applications for physical damage is the close of business on July 17 1989, and for economic injury until the close of business on February 20, 1990.

(Catalog of Federal Domestic Assistance Program Nos. 59002 and 59008)

Date: July 3, 1989.

Bernard Kulik,

Deputy Associate Administrator for Disaster Assistance.

[FR Doc. 89-16248 Filed 7-10-89; 8:45 am]

BILLING CODE 8025-01-M

Interest Rates

The interest rate on section 7 (a) Small Business Administration direct loans (as amended by Pub. L. 97-35) and the SBA share of immediate participation loans is ten (10) percent for the fiscal quarter beginning July 1, 1989.

On a quarterly basis, the Small Business Administration also publishes an interest rate called the optional "peg" rate (13 CFR 122.8-1 (d)). This rate is a weighted average cost of money to the government for maturities similar to the average SBA loan. This rate may be used as a base rate for guaranteed fluctuating interest rate SBA loans. For the July-September quarter of 1989, this rate will be nine-and-one-eighth (9⅛).

Edwin T. Holloway,

Associate Administrator for Finance and Investment.

[FR Doc. 89-16249 Filed 7-10-89; 8:45 am]

BILLING CODE 8025-01-M

DEPARTMENT OF STATE

[CM-8/1291]

U.S. State Department Overseas Security Advisory Council; Closed Meeting

The Department of State announces a meeting of the U.S. State Department—Overseas Security Advisory Council on Thursday, July 27 1989 at 8:30 a.m. at the Northland Inn, 7025 Northland Drive, Brooklynn Park, Minnesota. Pursuant to Section 10(d) of the Federal Advisory Committee Act and 5 U.S.C. 552(c)(4), it has been determined the meeting will be closed to the public. Matters relative to privileged commercial information will be discussed. The agenda calls for the discussion of private sector physical security policies, bomb threat statistics, and security programs at sensitive U.S. Government and private sector locations overseas.

For more information contact Mrs. Marsha J. Thurman, Overseas Security Advisory Council, Department of State, Washington, DC 20522-1001, phone: 202/663-0002.

Date: June 14, 1989.

Clark Dittmer,

Director of the Diplomatic Security Service.

[FR Doc. 89-16196 Filed 7-10-89; 8:45 am]

BILLING CODE 4710-24-M

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

[Summary Notice No. PE-89-27]

Petition for Exemption; Summary of Petitions Received; Dispositions of Petitions Issued

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of petitions for exemption received and of dispositions of prior petitions.

SUMMARY: Pursuant to FAA's rulemaking provisions governing the application, processing, and disposition of petitions for exemption (14 CFR Part 11), this notice contains a summary of certain petitions seeking relief from specified requirements of the Federal Aviation Regulations (14 CFR Chapter I), dispositions of certain petitions previously received, and corrections. The purpose of this notice is to improve the public's awareness of, and participation in, this aspect of FAA's regulatory activities. Neither publication of this notice nor the inclusion or omission of information in the summary is intended to affect the legal status of any petition or its final disposition.

DATE: Comments on petitions received must identify the petition docket number involved and must be received on or before July 31, 1989.

ADDRESS: Send comments on any petition in triplicate to: Federal Aviation Administration, Office of the Chief Counsel, Attn: Rules Docket (AGC-10), Petition Docket No. xxxx, 800 Independence Avenue SW., Washington, DC 20591.

FOR FURTHER INFORMATION CONTACT: The petition, any comments received, and a copy of any final disposition are filed in the assigned regulatory docket and are available for examination in the Rules Docket (AGC-10), Room 915G, FAA Headquarters Building (FOB 10A), 800 Independence Avenue SW., Washington, D.C. 20591; telephone (202) 267-3132.

This notice is published pursuant to paragraphs (c), (e), and (g) of § 11.27 of Part 11 of the Federal Aviation Regulations (14 CFR Part 11).

Issued in Washington, DC, on June 28, 1989.

Denise Donohue Hall,

Manager, Program Management Staff, Office of the Chief Counsel.

Docket No.. 21882.

Petitioner: China Airlines Limited.

Sections of the FAR Affected: 14 CFR 61.77 (a) and (b) and § 63.23 (a) and (b).

Description of Relief Sought: To extend Exemption No. 4849 that allows the issuance of U.S. special purpose pilot and flight engineer certificates to petitioner's airmen, without meeting the requirement that they hold a current foreign certificate or license issued by a foreign contracting state to the Convention on International Civil Aviation. Exemption No. 4849 will expire on September 30, 1989.

Docket No.. 21987

Petitioner: Texas Department of Public Safety.

Sections of the FAR Affected: 14 CFR 91.65(b), 91.70(b), 91.73(a), 91.79(c), 91.85(b), and 91.109(a).

Description of Relief Sought: To extend Exemption No. 4706 that allows petitioner to conduct certain law enforcement support operations on behalf of the State of Texas and Federal law enforcement agencies. Exemption No. 4706 will expire on August 27 1989.

Docket No.. 24540.

Petitioner: Union Camp Corporation.

Regulations Affected: 14 CFR 91.45.

Description of Relief Sought: To extend Exemption No. 4468 that allows petitioner to perform ferry flights with one engine inoperative from time to time, as the necessity arises, without the requirement to obtain a ferry permit for each flight.

Docket No.. 25864.
Petitioner: Jet Management International, Inc.
Sections of the FAR Affected: 14 CFR 25.857(b)(2).
Description of Relief Sought: To allow the Learjet 25B–170 to be approved for operation in a cargo configuration.

Docket No.. 25915.
Petitioner: National Test Pilot School.
Sections of the FAR Affected: 14 CFR 21.191(c).
Description of Relief Sought: To allow petitioner to permit the training of petitioner's flight test students as well as crew training.

Docket No.. 070CE.
Petitioner: Beech Aircraft Corporation.
Sections of the FAR Affected: 14 CFR 23.207(c).
Description of Relief Sought: To allow the stall warning margin on the Beech Model B300 to be less than 5 knots when the pitch control reaches the stop before aerodynamic stall and the stall warning to be greater than 10 knots or 15% of stalling speed with 75% maximum continuous power.

Docket No.. 071CE.
Petitioner: Beech Aircraft Corporation.
Sections of the FAR Affected: 14 CFR 23.207(c).
Description of Relief Sought: To allow the stall warning margin on the Beech Model 1900D to be less than 5 knots when the pitch control reaches the stop before aerodynamic stall and the stall warning to be greater than 10 knots or 15% of stalling speed with 75% maximum continuous power.

Docket No.. 22461.
Petitioner: Cessna Aircraft Company.
Regulations Affected: 14 CFR 45.25(b) and 45.29(b).
Description of Relief Sought/ Disposition: To amend Exemption No. 3467 that allows display of: (1) at least 12-inch high registration markings, N-numbers, on the fuselage side to extend beyond the horizontal stabilizer leading edge; (2) at least 12-inch high N-numbers on the outer surface of each engine nacelle to extend forwarded of the wing trailing edge; and (3) at least 10-inch high N-numbers on the engine nacelles if displayed on the airplanes noted in the exemption. The amendment would add Cessna aircraft Models 560 and S550 to the exemption.

GRANT, June 19, 1989, Exemption No. 3467A

Docket No.. 25238.
Petitioner: Chromalloy American Corporation.
Regulations Affected: 14 CFR 145.49.
Description of Relief Sought/ Disposition: To allow petitioner to continue to operate its Mexicali, Mexico, facility under its existing domestic repair station certificate.

GRANT, June 15, 1989, Exemption No. 4948A

Docket No.. 25405.
Petitioner: Peninsula Airways, Inc.
Sections of the FAR Affected: 14 CFR 43.3(a) and (g).
Description of Relief Sought/ Disposition: To extend Exemption No. 4949 that allows pilots employed by petitioner to remove and/or replace aircraft cabin seats and seat belts.

GRANT, June 14, 1989, Exemption No. 4949A

Docket No.. 25858.
Petitioner: Riaz Haghpajuh.
Sections of the FAR Affected: 14 CFR 63.35.
Description of Relief Sought/ Disposition: To allow petitioner to serve as a flight engineer without retaking the flight engineer written test, which expired on December 31, 1988.

DENIAL, June 20, 1989, Exemption No. 5061

Docket No.. 25914.
Petitioner: Nashville Eagle, Inc.
Sections of the FAR Affected: § 135.337(a)(2), (3), and (4) and § 135.339(c)(1).
Description of Relief Sought/ Disposition: To allow petitioner to use certain instructor pilots of British Aerospace Corporation to train petitioner's initial cadre of pilots in the British Aerospace Jetstream 31 (BA-3201) type airplane without meeting all of the applicable training requirements of Subpart H of Part 135.

GRANT, June 22, 1989, Exemption No. 5062

[FR Doc. 89–16222 Filed 7–10–89; 8:45 am]
BILLING CODE 4910–13–M

[Summary Notice No. PE–89–28]

Petition for Exemption; Summary of Petitions Received; Dispositions of Petitions Issued

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of petitions for exemption received and of dispositions of prior petitions.

SUMMARY: Pursuant to FAA's rulemaking provisions governing the application, processing, and disposition of petitions for exemption (14 CFR Part 11), this notice contains a summary of certain petitions seeking relief from specified requirements of the Federal Aviation Regulations (14 CFR Chapter I), dispositions of certain petitions previously received, and corrections. The purpose of this notice is to improve the public's awareness of, and participation in, this aspect of FAA's regulatory activities. Neither publication of this notice nor the inclusion or omission of information in the summary is intended to affect the legal status of any petition or its final disposition.

DATE: Comments on petitions received must identify the petition docket number involved and must be received on or before: July 31, 1989.

ADDRESS: Send comments on any petition in triplicate to: Federal Aviation Administration, Office of the Chief Counsel, Attn: Rules Docket (AGC–10), Petition Docket No. ______, 800 Independence Avenue SW Washington, DC 20591.

FOR FURTHER INFORMATION CONTACT: The petition, any comments received, and a copy of any final disposition are filed in the assigned regulatory docket and are available for examination in the Rules Docket (AGC–10), Room 915G, FAA Headquarters Building (FOB 10A), 800 Independence Avenue, SW Washington, DC 20591; telephone (202) 267–3132.

This notice is published pursuant to paragraphs (c), (e), and (g) of § 11.27 of Part 11 of the Federal Aviation Regulations (14 CFR Part 11).

Issued in Washington, DC, on July 5, 1989.

Denise Donohue Hall,
Manager, Program Management Staff, Office of the Chief Counsel.

Petitions for Exemption

Docket No.. 25785.
Petitioner: Western Oklahoma State College.
Regulations Affected: 14 CFR 141.91(a).
Description of Relief Sought: To allow petition to offer to private pilot ground school as a regular credit course at Erick High School, Erick, Oklahoma. This site is approximately 40 miles from the petitioner's main base at Altus, Oklahoma, which exceeds the 25 nautical mile limitation required by § 141.91(a).

Docket No.. 25918.
Petitioner: AFM Corporation.
Sections of the FAR Affected: 14 CFR 91.191(a)(4) and 135.165(b).
Description of Relief Sought: To allow petitioner to operate specific aircraft in

extended overwater flight with single long-range navigation systems and single high-frequency communications systems in the Western Atlantic Ocean, the Caribbean Sea, and the Gulf of Mexico.

Docket No.. 11144.
Petitioner: American Airlines.
Regulations Affected: 14 CFR 121.99 and 121.351(a).
Description of Relief Sought/ Disposition: To extend Exemption No. 1332, as amended, that allows petitioner to operate its airplanes between Wilmington, NC, and St. Thomas and St. Croix, Virgin Islands, via Nassau, without maintaining two-way radio communications between the airplanes and the dispatch office subject to certain conditions.

GRANT, June 29, 1989, Exemption No. 1332I

Docket No.. 23908.
Petitioner: Piedmont Airlines.
Regulations Affected: 14 CFR 121.371(a) and 121.378.
Description of Relief Sought- Disposition: To extend Exemption No. 4811 that allows the foreign original equipment manufacturers of engine parts and aircraft components used on petitioner's Boeing 737-300 and 767-200ER aircraft to perform, outside the United States, maintenance, preventive maintenance, and alterations on such parts and components.

GRANT, June 15, 1989, Exemption No. 4811A

Docket No.. 25640.
Petitioner: Aerospatiale Helicopter Corporation.
Sections of the FAR Affected: 14 CFR 21.195(a).
Description of Relief Sought/ Disposition: To allow petitioner, a foreign manufacturer's subsidiary, to apply for an experimental certificate to perform market surveys in the United States.

GRANT, June 27, 1989, Exemption No. 5063

Docket No.. 25694.
Petitioner: FlightSafety International.
Sections of the FAR Affected: 14 CFR 61.57(a)(1); 61.58(b)(2) and (c)(1); 61.65(g); 61.161(b) (2), (3), and (4); 61.163(a); 61.165(a) (1) and (2); 61.191(c); and 61.57(c)(d).
Description of Relief Sought/ Disposition: To allow petitioner to use the S-76B simulator to conduct practical tests for its students in lieu of the aircraft for various training, checking, and recurrency requirements.

PARTIAL GRANT, June 29, 1989, Exemption No. 5067

Docket No.. 25746.
Petitioner: Seagull Air Service, Inc.
Sections of the FAR Affected: 14 CFR 43.3 (a) and (g).
Description of Relief Sought/ Disposition: To allow pilots employed by petitioner to perform the preventive maintenance functions of removing and/ or replacing the passenger seats and seat belts of aircraft used in Part 135 operations.

GRANT, June 29, 1989, Exemption No. 5066

Docket No.. 25939.
Petitioner: Central States Airlines, Inc.
Sections of the FAR Affected: 14 CFR 135.337(a)(2), (3), and (4) and 135.339(c)(1).
Description of Relief Sought/ Disposition: To allow petitioner to use certain instructor pilots of British Aerospace Corporation to train petitioner's initial cadre of pilots in the British Aerospace Jetstream 31 (BA-3201) type airplane without meeting all of the applicable training requirements of Subpart H of Part 135 of the FAR.

GRANT, June 28, 1989, Exemption No. 5064

[FR Doc. 89-16223 Filed 7-10-89; 8:45 am]
BILLING CODE 4910-13-M

DEPARTMENT OF THE TREASURY

Debt Management Advisory Committee; Meeting

Notice is hereby given, pursuant to Section 10 of Pub. L. 92-463, that a meeting will be held at the U.S. Treasury Department in Washington, DC on August 1 and August 2, 1989, of the following debt management advisory committee: Public Securities Association, U.S. Government and Federal Agencies Securities Committee.

The agenda for the Public Securities Association U.S. Government and Federal Agencies Securities Committee meeting provides for a working session on August 1 and the preparation of a written report to the Secretary of the Treasury on August 2, 1989.

Pursuant to the authority placed in Heads of Departments by section 10(d) of Pub. L. 92-463, and vested in me by Treasury Department Order 101-05, I hereby determine that this meeting is concerned with information exempt from disclosure under section 552b(c)(4) and (9)(A) of Title 5 of the United States Code, and that the public interest requires that such meetings be closed to the public.

My reasons for this determination are as follows. The Treasury Department requires frank and full advice from representatives of the financial community prior to making its final decision on major financing operations. Historically, this advice has been offered by debt management advisory committees established by the several major segments of the financial community, which committees have been utilized by the Department at meetings called by representatives of the Secretary. When so utilized, such a committee is recognized to be an advisory committee under Pub. L. 92-463. The advice provided consists of commercial asnd financal information given and received in confidence. As such debt management advisory committee activities concern matters which fall within the exemption covered by section 552b(c)(4) of Title 5 of the United States Code for matters which are "trade secrets and commercial or financial information obtained from a person and privileged or confidential.

Although the Treasury's final announcement of financing plans may not reflect the recommendations provided in reports of an advisory committee, premature disclosure of these reports would lead to significant financial speculation in the securities market. Thus, these meetings also fall within the exemption covered by section 552b(c)(9)(A) of Title 5 of the United States Code.

The Assistant Secretary (Domestic Finance) shall be responsible for maintaining records of debt management advisory committee meetings and for providing annual reports setting forth a summary of committee activities and such other matters as may be informative to the public consistent with the policy of section 552b of Title 5 of the United States Code.

Date: July 5, 1989.

David W. Mullins, Jr.,
Assistant Secretary (Domestic Finance).
[FR Doc. 89-16138 Filed 7-10-89; 8:45 am]
BILLING CODE 4810-25-M

Internal Revenue Service

Performance Review Board; Membership

AGENCY: Internal Revenue Service, Treasury.

ACTION: Notice of Members of Senior Executive Service Performance Review Board.

DATE: Performance Review Board effective July 1, 1989.

FOR FURTHER INFORMATION CONTACT: DiAnn Kiebler, HR:H:E, Room 3515, 1111 Constitution Avenue, NW, Washington, DC 20224, Telephone No. (202) 566–4633, (not a toll free number).

SUPPLEMENTARY INFORMATION: Pursuant to section 4314(c)(4) of the Civil Service Reform Act of 1978, the members of the Internal Revenue Service's Senior Executive Service Performance Review Board for senior executives other than Regional Commissioners, Assistant Commissioners and executives in Inspection and the Office of the Commissioner are as follows:

Michael J. Murphy, Senior Deputy Commissioner, Chairperson
David G. Blattner, Assistant Commissioner (Examination)
Robert I. Brauer, Assistant Commissioner (Employee Plans and Exempt Organizations)
Richard C. Voskuil, Regional Commissioner, Southwest Region
Cornelius J. Coleman, Regional Commissioner, North Atlantic Region
Robert T. Johnson, Assistant Commissioner (Human Resources Management and Support), Alternate
J. Robert Starkey, Regional Commissioner, Mid-Atlantic Region, Alternate

This document does not meet the criteria for significant regulations set forth in paragraph 8 of the Treasury Directive appearing in the **Federal Register** for Wednesday, November 8, 1978 (43 FR 52122).

Michael J. Murphy,

Acting Commissioner.

[FR Doc. 89–16132 Filed 7–10–89; 8:45 am]

BILLING CODE 4830-01-M

Sunshine Act Meetings

Federal Register
Vol. 54, No. 131
Tuesday, July 11, 1989

This section of the FEDERAL REGISTER contains notices of meetings published under the "Government in the Sunshine Act" (Pub. L. 94-409) 5 U.S.C. 552b(e)(3).

FEDERAL COMMUNICATIONS COMMISSION

The Federal Communications Commission will hold an Open Meeting on the subjects listed below on Thursday, July 13, 1989, which is scheduled to commence at 9:30 a.m., in Room 856, at 1919 M Street NW., Washington, DC.

Agenda, Item No., and Subject

Private Radio—1—Title: Amendment of the Maritime Services Rules (Part 80) regarding the frequency selection capability of VHF maritime transmitters. Summary: The FCC will consider whether to amend Part 80 of the Commission's Rules regarding the frequency selection capability of VHF maritime transmitters.

Private Radio—2—Title: Amendment of Part 90 regarding Business Radio use of certain channels in the 150 MHz band. Summary: The Commission will consider the use of offset channels in the 150 MHz band.

Mass Media—1—Title: Applications in the Direct Broadcast Satellite (DBS) service for construction permits for new systems and for modification of construction permits for authorized systems, filed by the fifth round of DBS applicants, and petitions to deny certain of those applications. Summary: In connection with considering these applications, the Commission will consider its DBS orbital allocations policy and the merits of the petitions to deny.

Mass Media—2—Title: Amendment of Part 73 of the Rules to provide for an additional FM station class (Class C3) and to increase the maximum transmitting power for class A FM stations. Summary: The Commission will consider proposals to increase the power of Class A FM stations from 3 kW to 6 kW.

This meeting may be continued the following work day to allow the Commission to complete appropriate action.

Additional information concerning this meeting may be obtained from Sarah Lawrence, Office of Public Affairs, telephone number (202) 632-5050.

Issued: July 6, 1989.

Federal Communications Commission.

Donna R. Searcy,

Secretory.

[FR Doc. 89-16367 Filed 7-7-89 3:09 pm]

BILLING CODE 6712-01-M

FEDERAL ELECTION COMMISISON

"FEDERAL REGISTER" NUMBER 89-16034

PREVIOUSLY ANNOUNCED DATE AND TIME: Thursday, July 13, 1989, 10:00 a.m.

Meeting Open to the Public

The following item was added to the agenda for the above meeting:

FY 1989 Management Plan Revisions
FY 1989 Supplemental Appropriation

PERSON TO CONTACT FOR INFORMATION: Mr. Fred Eiland, Information Officer, Telephone: 202-376-3155.

Marjorie W. Emmons,

Secretary of the Commission.

[FR Doc. 89-16300 Filed 7-7-89; 10:32 am]

BILLING CODE 6715-01-M

FEDERAL RESERVE SYSTEM BOARD OF GOVERNORS

"FEDERAL REGISTER" CITATION OF PREVIOUS ANNOUNCEMENT: 54 FR 28152, July 5, 1989.

PREVIOUSLY ANNOUNCED TIME AND DATE OF THE MEETING: 11:00 a.m., Friday, July 7 1989.

CHANGES IN THE MEETING: One of the items announced for inclusion at this meeting was consideration of any agenda items carried forward from a previous meeting; the following such closed item(s) was added:

Consideration of legislation relating to banking structure. (This item was previously announced for a closed meeting on July 3, 1989.)

CONTACT PERSON FOR MORE INFORMATION: Mr. Joseph R. Coyne, Assistant to the Board; (202) 452-3204.

Date: July 7 1989.

Jennifer J. Johnson,

Associate Secretary of the Board.

[FR Doc. 89-16385 Filed 7-7-89; 3:52 pm]

BILLING CODE 6210-01-M

FEDERAL RESERVE SYSTEM BOARD OF GOVERNORS

"FEDERAL REGISTER" CITATION OF PREVIOUS ANNOUNCEMENT: Notice forwarded to Federal Register on July 3, 1989.

PREVIOUSLY ANNOUNCED TIME AND DATE OF THE MEETING: 10:00 a.m., Wednesday, July 12, 1989.

CHANGES IN THE MEETING: Addition of the following closed item(s) to the meeting:

Issues relating to Federal Reserve notes.

CONTACT PERSON FOR MORE INFORMATION: Mr. Joseph R. Coyne, Assistant to the Board; (202) 452-3204.

Dated: July 7 1989.

Jennifer J. Johnson,

Associate Secretary of the Board.

[FR Doc. 89-16386 Filed 7-7-89; 3:52 pm]

BILLING CODE 6210-01-M

FEDERAL RESERVE SYSTEM BOARD OF GOVERNORS

TIME AND DATE: 11:00 a.m., Monday, July 17 1989.

PLACE: Marriner S. Eccles Federal Reserve Board Building, C Street entrance between 20th and 21st Streets NW., Washington, DC 20551.

STATUS: Closed.

MATTERS TO BE CONSIDERED:

1. Report of the operations reviewed of the Division of Banking Supervision and Regulation.
2. Personnel actions (appointments, promotions, assignments, reassignments, and salary actions) involving individual Federal Reserve System employees.
3. Any items carried forward from a previously announced meeting.

CONTACT PERSON FOR MORE INFORMATION: Mr. Joseph R. Coyne, Assistant to the Board; (202) 452-3204. You may call (202) 452-3207 beginning at approximately 5 p.m. two business days before this meeting, for a recorded announcement of bank and bank holding company applications scheduled for the meeting.

Date: July 7, 1989.

Jennifer J. Johnson,

Associate Secretary of the Board.

[FR Doc. 89-16387 Filed 7-7-89; 3:52 pm]

BILLING CODE 6210-01-M

UNITED STATES INTERNATIONAL TRADE COMMISSION

[USITC SE-89-24]

TIME AND DATE: Wednesday, July 12, 1989 at 10:00 a.m.

PLACE: Room 101, 500 E Street SW., Washington, DC 20436.

STATUS: Open to the public.

MATTERS TO BE CONSIDERED:

1. Agenda.
2. Minutes.
3. Ratifications.
4. Petitions and Complaints.
5. Inv. No. 731-TA-435 (P) (Certain Steel Pails from Mexico)—briefing and vote.

6. Any items left over from previous agenda.

CONTACT PERSON FOR MORE INFORMATION: Kenneth R. Mason, Secretary, (202) 252-1000.

Kenneth R. Mason,

Secretary.

July 3, 1989.

[FR Doc. 89-16335 Filed 7-7-89; 1:22 pm]

BILLING CODE 7020-02-M

NATIONAL TRANSPORTATION SAFETY BOARD

TIME AND DATE: 9:30 a.m. Tuesday, July 18, 1989.

PLACE: Board Room, Eighth Floor, 800 Independence Avenue, SW Washington, DC 20594.

STATUS: Open.

MATTERS TO BE CONSIDERED:

4939A Marine Accident Report: Ramming of the CSX Railroad Bridge by the Cyprian Bulk Carrier PONTOKRATIS, Calumet River, Chicago, Illinois, May 6, 1988.

FOR MORE INFORMATION CONTACT: Bea Hardesty, (202) 382-6525.

Bea Hardesty,

Federal Register Liaison Officer.

July 7 1989.

[FR Doc. 89-16366 Filed 7-7-89; 3:08 pm]

BILLING CODE 7533-01-M

NUCLEAR REGULATORY COMMISSION

DATE: Weeks of July 10, 17 24, and 31, 1989.

PLACE: Commissioners' Conference Room, 11555 Rockville Pike, Rockville, Maryland.

STATUS: Open and Closed.

MATTERS TO BE CONSIDERED:

Week of July 10

Monday, July 10

2:00 p.m.
Briefing of Status of Emergency Response Data System (Public Meeting)

Tuesday, July 11

10:00 a.m.
Briefing on Staff Comments on DOE Site Characterization Plan for Yucca Mountain (Public Meeting)

1:30 p.m.
Briefing on Policy Statement on Rules for Exemption from Regulatory Control (Public Meeting)

Friday, July 14

11:30 a.m.
Affirmation/Discussion and Vote (Public Meeting) (if needed)

Week of July 17—Tentative

Wednesday, July 19

2:30 p.m.
Briefing on Status of Browns Ferry-2 (Public Meeting)

4:00 p.m.
Affirmation/Discussion and Vote (Public Meeting) (if needed)

Week of July 24—Tentative

Wednesday, July 26

10:00 a.m.
Briefing on Integration of Policy Statements for Severe Accidents, Advanced Reactors, Safety Goals, and Standardization (Public Meeting)

2:00 p.m.
Briefing on Proposed 1989 Waste Confidence Decision (Public Meeting)

3:30 p.m.
Affirmation/Discussion and Vote (Public Meeting) (if needed)

Week of July 31—Tentative

Tuesday, August 1

10:00 a.m.
Briefing on Status of EPRI Design Requirements Document for Advanced Light Water Reactors (Public Meeting)

Thursday, August 3

2:00 p.m.
Briefing on NRC Thermal-Hydraulic Research Program (Public Meeting)

3:30 p.m.
Affirmation/Discussion and Vote (Public Meeting) (if needed)

Note: Affirmation sessions are initially scheduled and announced to the public on a time-reserved basis. Supplementary notice is provided in accordance with the Sunshine Act as specific items are identified and added to the meeting agenda. If there is no specific subject listed for affirmation, this means that no item has as yet been identified as requiring any Commission vote on this date.

TO VERIFY THE STATUS OF MEETINGS CALL. (RECORDING)—(301) 492-0292

CONTACT PERSON FOR MORE INFORMATION: William Hill (301) 492-1661.

William M. Hill, Jr.,

Office of the Secretary.

July 6, 1989.

[FR Doc. 89-16356 Filed 7-7-89; 3:07 pm]

BILLING CODE 7590-01-M

Corrections

Federal Register
Vol. 54, No. 131
Tuesday, July 11, 1989

This section of the FEDERAL REGISTER contains editorial corrections of previously published Presidential, Rule, Proposed Rule, and Notice documents. These corrections are prepared by the Office of the Federal Register. Agency prepared corrections are issued as signed documents and appear in the appropriate document categories elsewhere in the issue.

FEDERAL MARITIME COMMISSION

Agreement(s) Filed

Correction

In the FMC notice document beginning on page 27928 in the issue of Monday, July 3, 1989, make the following corrections:

On page 27929, at the top of the first column, insert the following:

Agreement No.. 224-010940-001.

On the same page, in the same column, at the end of the document, in the file line, the document number should read "89-15575"

BILLING CODE 1505-01-D

NUCLEAR REGULATORY COMMISSION

10 CFR Part 26
RIN 3150-AC81

Fitness-for-Duty Programs

Correction

In rule document 89-12806 beginning on page 24468 in the issue of Wednesday, June 7 1989, make the following corrections:

§ 26.2 [Corrected]

1. On page 24495, in the second column, in the first and second lines,"(insert date 180 days after the effective date of the final rule)" should read "December 4, 1989"

§ 26.73 [Corrected]

2. On page 24499, in the second column, in § 26.73(d), in the first and second lines, "(insert date 180 days after the effective date of the final rule)" should read "December 4, 1989"

BILLING CODE 1505-01-D

federal register

Tuesday
July 11, 1989

Part II

Department of Labor

Occupational Safety and Health Administration

29 CFR Parts 1910, 1915, 1917, and 1918
Occupational Exposure to Lead;
Statement of Reasons; Final Rule

DEPARTMENT OF LABOR

Occupational Safety and Health Administration

29 CFR Parts 1910, 1915, 1917 and 1918

[Docket Nos. H-004E, F G, H, I, and J]

Occupational Exposure to Lead

AGENCY: Occupational Safety and Health Administration (OSHA); Labor.

ACTION: Final rule; statement of reasons.

SUMMARY: This statement of reasons sets forth OSHA's determinations with regard to the technological and economic feasibility of meeting the permissible exposure limit (PEL) of 50 micrograms per cubic meter ($\mu g/m^3$) of air specified in the lead standard (29 CFR 1910.1025) through engineering and work practice controls in nine industry sectors. The nine industry sectors are brass and bronze ingot production (SIC 3341/3362), independent battery breaking (SIC 5093), lead chemicals (SIC 2816/2819), lead chromate pigments (SIC 2816), leaded steel (SIC 3312/3313), nonferrous foundries (SIC 3362/3369), secondary copper smelting (SIC 3341), shipbuilding and ship repair (SIC 3731), and stevedoring (SIC 4463). The determination is made in response to an order of the U.S. Court of Appeals for the District of Columbia Circuit, which remanded the record to OSHA and required OSHA to reconsider the question of feasibility for these industries.

Based upon the record, OSHA has determined that the standard is both technologically and economically feasible in eight of the nine industry sectors because exposure levels above the PEL can be controlled by available and affordable engineering and work practice controls within the time period permitted for compliance. For some operations within certain industries, it may be necessary for employers to rely on respirators for supplemental protection.

For the ninth industry sector, non-ferrous foundries, OSHA has determined 50 $\mu g/m^3$ is technologically feasible. With regard to economic feasibility, because the rule could significantly contribute to the withdrawal of over one-half of small foundries and because small foundries constitute about 60 percent of the nonferrous foundries, OSHA concludes that achieving 50 $\mu g/m^3$ by means of engineering and work practice controls is economically infeasible for the nonferrous foundry industry. OSHA has not, however, examined whether achieving a PEL above 50 $\mu g/m^3$ but below 200 $\mu g/m^3$ by means of engineering and work practice controls is economically feasible.

DATES: Effective date is August 10, 1989. Compliance dates and start up dates for individual industries are set out in Table I of paragraph (e) and paragraph (r) of 29 CFR 1910.1025.

FOR FURTHER INFORMATION CONTACT: James F Foster, Director, Office of Information and Consumer Affairs, Occupational Safety and Health Administration, U.S. Department of Labor, Room N-3647 200 Constitution Avenue NW., Washington, DC 20210. Telephone 202-523-8148.

SUPPLEMENTARY INFORMATION:

Contents of the Preamble

I. Background and judicial history of the lead standard.
II. Feasibility determinations.
A. Introduction to feasibility assessments.
B. Feasibility of the lead standard in each of the nine remand industry sectors.
1. Brass and bronze ingot production (SIC 3341/3362).
2. Independent battery breaking (SIC 5093).
3. Lead chemicals (SIC 2816/2819).
4. Lead chromate pigments (SIC 2816).
5. Leaded steel (SIC 3312/3313).
6. Nonferrous foundries (SIC 3362/3369).
7. Secondary copper smelting (SIC 3341).
8. Shipbuilding and ship repair (SIC 3731).
9. Stevedoring (SIC 4463).
III. Regulatory Flexibility and Environmental Impact Determinations.
IV. Authority and Signature.
V. Amendments to Standard.

References to the remand rulemaking record are made in the text of this preamble using the following abbreviations:

H-004: Lead remand rulemaking docket, which includes Dockets H-004E, H-004F, H-004G, H-004H, H-004I, and 4H-004J.

Ex.. Exhibit number in Docket H-004.

Tr.: Transcript page number for November 1987 public hearing.

App.. Appendix number or letter in Docket H-004.

Att: Attachment number or letter in docket H-004.

I. Background and Judicial History of the Lead Standard

On November 14, 1978, OSHA promulgated the lead standard (29 CFR 1910.1025), which in part limited occupational exposure to airborne concentrations of lead to 50 micrograms per cubic meter of air ($\mu g/m^3$), based on an 8-hour time-weighted average (TWA) (43 FR 52952; and 43 FR 54354, November 21, 1978). In paragraph (e)(1) of the lead standard, employers in the lead industries were required to achieve the 50 $\mu g/m^3$ PEL by means of engineering and work practice controls and various industries were given extended time to comply with that obligation.

Immediately after promulgation, the lead standard was challenged by both industry and labor in several U.S. Courts of Appeals. All cases were transferred to and consolidated in the U.S. Court of Appeals for the District of Columbia Circuit. On August 15, 1980, the United States Court of Appeals for the District of Columbia Circuit upheld the validity of OSHA's lead standard in most respects. The court found OSHA's analysis of the feasibility of the standard to be adequate and upheld the validity of the entire standard for the following industry sectors: primary lead smelting, secondary lead smelting, printing, can manufacturing, battery manufacturing, paint and coating manufacturing, ink manufacturing, wallpaper manufacturing, electronic manufacturing and grey-iron foundries. However, the court found that OSHA had failed to present substantial evidence or adequate reasons to support the feasibility of paragraph (e)(1) of the lead standard for 38 industry sectors. *United Steelworkers of America* v. *Marshall,* 647 F.2d 1189 (D.C. Cir. 1980), *cert. denied,* 453 U.S. 913 (1981).

The court did not vacate any portion of the lead standard. Rather, for the 38 industry sectors, it stayed the enforcement of paragraph (e)(1) of 29 CFR 1910.1025, which requires compliance with the PEL exclusively by means of engineering and work practice controls. The court held that these industries, however, were immediately required to meet the PEL of 50 $\mu g/m^3$ by some combination of engineering, work practice and respirator controls. The court also remanded the record to OSHA for reconsideration of the question of technological and economic feasibility for these industry sectors and gave OSHA six months in which to complete its reassessment of the feasibility issue.

In accordance with the court order, the Agency conducted an expedited rulemaking (45 FR 63476; September 24, 1980). On January 19, 1981, OSHA filed its response to the remand order in which it concluded that attainment of the 50 $\mu g/m^3$ PEL through use of engineering and work practice controls was generally feasible in an expanded list of remand industries. A Supplemental Statement of Reasons and Amendment of the Standard containing this conclusion was published on January 21, 1981 (46 FR 6134).

In response to industry petitions for reconsideration, OSHA subsequently requested and was granted a deferral of further court action pending reconsideration of its January 21, 1981 feasibility findings. Upon reconsideration, OSHA reaffirmed its conclusion that compliance with the PEL was generally feasible for most of the remand industries, either because exposure levels did not generally exceed the PEL, thus requiring minimal or no compliance actions, or because exposure levels above the PEL could be controlled by available engineering controls or work practices. A Revised Statement of Reasons containing this conclusion was published on December 11, 1981 (46 FR 60758). In this notice, OSHA stated that it could not reach a conclusion regarding feasibility on the existing record for eight specified industry sectors and that it also wished to reexamine the applicability of the lead standard for the stevedoring industry. Therefore, OSHA requested the court on December 10, 1981 to remand the record concerning these nine industry sectors for supplementary administrative proceedings (46 FR 60761).

In its December 11, 1981 Revised Statement of Reasons OSHA also amended the Lead Standard (29 CFR 1910.1025) in several important respects, one of which was to exempt employers from the requirement to implement engineering controls for employees who are exposed above the PEL for 30 days or less annually. In that same document OSHA also included a revised footnote 3 in Table I of paragraph (e)(1) of the lead standard. That footnote simply made explicit that the obligation of employers in the lead industries to use engineering and work practice controls to comply with the preexisting 200 $\mu g/m^3$ PEL was continued, until either the 100 $\mu g/m^3$ interim PEL or the final 50 $\mu g/m^3$ PEL for engineering and work practice controls became effective for a particular industry. That footnote was inadvertently omitted from succeeding publications of the Code of Federal Regulations. OSHA in this final rule corrects this typographical omission by republishing footnote 3 as it previously appeared.

On March 31, 1987 the Court of Appeals for the District of Columbia Circuit granted OSHA's request of December 10, 1981 and remanded the record to OSHA for further administrative proceedings to determine the feasibility of paragraph (e)(1) of the lead standard for the nine industry sectors listed above. The Court ordered OSHA to return the record on or before October 1, 1987

On June 17 1987 OSHA filed with the Court a motion requesting a 90-day extension of time in which to return to the Court the record of the nine remand industry sectors. The Court granted OSHA s unopposed motion.

After the March 31, 1987 remand, OSHA contracted with Meridian Research, Inc., a private consulting firm, to collect, develop and update data concerning the feasibility of compliance with the PEL by means of engineering and work practice controls in each of the remand industries. The Meridian preliminary report was placed into the rulemaking record on August 3, 1987 for public review and comment, and OSHA set a September 15, 1987 date for an informal public hearing (52 FR 28727· August 3, 1987). In the notice announcing the hearing OSHA requested interested parties to submit relevant data, including the last two years of air lead monitoring data on an operation-by-operation (job category-by-job category), plant-by-plant basis. OSHA also asked interested parties to address their comments to 22 specific issues and questions OSHA raised in the notice.

On August 18, 1987 OSHA received a request from the Oxide and Chemicals Committee of the Lead Industries Association (LIA), the main trade association for the lead chemicals industry, that the public hearing and deadline for receipt of written comments be deferred for at least 30 days, or in the alternative, that the deadline for receipt of written comment be extended beyond September 2, 1987

In light of the court order granting OSHA additional time to make feasibility determinations concerning the nine industry sectors and to return the record to the court, OSHA decided to defer the public hearing and the deadline for receipt of written comments for two weeks (52 FR 32312; August 27 1987).

Thereafter, on September 8, 1987 the American Cast Metals Association (ACMA) requested a further deferral of the hearing. According to ACMA, the additional time was needed because some important information upon which OSHA's contractor, Meridian Research, Inc., based its feasibility report was not available in the public docket soon enough for ACMA to evaluate it and to submit meaningful comments by the deadline. ACMA sought a further deferral of the dates for the hearing and the close of comments for approximately one or two months. ACMA's request for additional times was immediately supported by similar requests from the American Foundrymen's Society, the Association of Brass and Bronze Ingot Manufacturers, the American Iron and Steel Institute, and the Plumbing Manufacturing Institute.

Thereafter, and without objection from other parties to the rulemaking, OSHA extended the deadline for prehearing comment to October 16, 1987 and the date for the hearing to November 3, 1987 (52 FR 35731; September 23, 1987). OSHA received 111 submissions during the prehearing period and 10 late submissions. Twenty-seven persons, including representatives from eight of the remand industry sectors and two unions, indicated their intention to appear and testify at the hearing.

To supplement the exposure data in the record, on October 27 1987 OSHA by letter made specific requests to 14 companies in six industry sectors for air lead monitoring data job category by job category for 1984–87 (Ex. 646). In response, 13 companies submitted the requested data, which were entered into the record.

Thereafter, on November 3, 1987 in Washington, DC, an informal public hearing was convened by Administrative Law Judge Joan Huddy Rosenzweig pursuant to notice and section 6(b) of the Occupational Safety and Health Act of 1970 (29 U.S.C. 655 (b)(3)). At the hearing, representatives from three industry sectors (lead chemicals, lead chromate pigments and leaded steel) testified and answered questions. Representatives from five other industries (stevedoring, brass and bronze ingot production, nonferrous foundries, independent battery breaking, and secondary copper) made appearances to question OSHA's expert witnesses and contractor, but did not present testimony or submit to questioning by OSHA or other interested parties. The hearing concluded on November 6, 1987

During the remand hearing, certain industry participants expressed concern about the lack of recent plant visits by OSHA or its contractor, Meridian, in preparing the 1987 update of feasibility data. No plant visits had been conducted by OSHA in the remand industries for the rulemaking since 1981–82.

While OSHA considered the existing record sufficient to make a feasibility determination for each of the remand sectors, the Agency agreed that site visits and receipt of additional data would be useful. Therefore, in response to industry's expressed concern, OSHA proposed at the administrative hearing that it conduct expedited post hearing site visits on a voluntary basis in some of the remand industry sectors (Tr. 1289–90). The purpose of the site visits was to collect information on manufacturing processes, employment, exposure levels, engineering and work practice controls, and costs and other economic data which would aid OSHA in its determinations of feasibility.

In view of OSHA's proposal for site visits and the complexity of the issues addressed at the hearing, the administrative law judge ordered that the closing date for submission of additional post hearing information and data would be January 8, 1988 and that the closing date for submission of briefs would be February 5, 1988 (Tr. 1304-05). That order was made contingent upon the court granting a deferral of its January 1, 1988 deadline for return of the record. On November 25, 1987 OSHA requested the court to extend the deadline for return of the record until July 15, 1988 to allow the Agency time to receive and evaluate more data, to conduct post hearing plant visits and produce site visit reports, and to develop and publish a final rule. The court granted the motion by its order of December 16, 1987 with the provision that OSHA file a status report with the court on or before April 4, 1988, which OSHA did. OSHA received 23 submissions during this post hearing comment period.

During January and February, 1988, OSHA conducted eight site visits in four industry segments (lead chemicals, lead chromate pigments, nonferrous foundries and secondary copper). OSHA also tried to arrange site visits in two other industry sectors, brass and bronze ingot production and leaded steel, but those industries declined to arrange visits.

The site visits were conducted according to agreements executed by OSHA and the plants visited or the relevant trade association. According to those agreements, the site visit team included OSHA staff, representatives from OSHA's contractor, Meridian, and an independent certified industrial hygienist. Also according to the site visit agreements, the name of the facility visited was kept confidential by OSHA and each plant was given the opportunity to review the site visit report for accuracy and trade secrets before the reports were placed into the docket for public comment.

The judge certified the hearing record to the Assistant Secretary on March 23, 1988.

On April 7 1988, by **Federal Register** notice (53 FR 1151) OSHA reopened the record until May 9, 1988, for the limited purpose of receiving comments on a final set of documents OSHA placed into the docket. These documents included the eight site visit reports, the final Meridian reports and exposure monitoring data received in response to the site visits and to OSHA's October 27 1987 request.

On April 27 1988, ACMA requested an extension of the comment period for at least 60 days beyond the May 9 deadline because, ACMA asserted, important and complex documents were not entered into the docket by OSHA at the time the record was reopened and the May 9 deadline was insufficient to allow industry to make meaningful comments. ACMA's request was supported by other industry commenters. Thereafter, and without objection from other parties to the rulemaking, OSHA extended the deadline for public comment to May 23, 1988 (53 FR 16731). OSHA received 43 submissions while the record was reopened and two late submissions (Docket H-004J).

On July 15, 1988, OSHA filed with the court a request for an extension of the deadline from July 15, 1988 to November 30, 1988 for returning the remand record. OSHA requested an extension in part because the Agency had been unable to close the comment period on May 9, 1988 as planned and because many comments proved unexpectedly lengthy and complex. On September 7 1988, the court granted OSHA's request and ordered that the Agency file a status report with the court no later than September 30, 1988. OSHA did so.

Thereafter, OSHA filed four other motions requesting additional time to complete its feasibility determinations and to return the record to the court. The first three of these requests for extension of time were granted without objection by the parties to this rulemaking. The Agency's final motion for a 90-day extension of time was objected to by the United Steelworkers of America. The court granted OSHA's motion on May 22, 1989.

On June 28, 1989, OSHA returned the record to the court and requested that the court approve its feasibility findings. OSHA also requested the court to remand to the Agency the record concerning the nonferrous foundry industry to examine whether achieving a PEL above 50 $\mu g/m^3$ but below 200 $\mu g/m^3$ is economically feasible for the nonferrous foundry industry.

II. Feasibility Determinations

A. Introduction to Feasibility Assessments

Feasibility in General

OSHA is obligated by the Occupational Safety and Health Act of 1970 (84 Stat. 1593; 29 U.S.C. 655, 657) and by court decisions interpreting the Act to protect workers to the extent feasible from significant risks of material impairment to health. *Industrial Union Department* v. *American Petroleum Institute*, 448 U.S. 607 (1980); *Building and Construction Trades Department, AFL-CIO* v. *Brock*, 838 F.2d 1258 (D.C. Cir. 1988); *United Steel Workers of America* v. *Marshall*, 647 F.2d 1189.

The courts have established the legal criteria for determining economic and technological feasibility. However, the Agency has considerable discretion in applying those criteria. Since OSHA's judgment on feasibility is considered a "legislative decision, the courts will give it "necessary deference.

The most exhaustive consideration of feasibility and the controlling law for this rulemaking is the "lead decision. *USWA* v. *Marshall*, 647 F.2d 1189.

Technological Feasibility

Introduction. OSHA concludes that achieving the 50 $\mu g/m^3$ PEL of paragraph (e)(1) of the lead standard (29 CFR 1910.1025) by means of engineering and work practice controls is technologically feasible in each of the nine industries for which the court in March 1987 remanded the record to OSHA to pursue further rulemaking. The determination that it is feasible to achieve the PEL of 50 $\mu g/m^3$ is based upon reducing emissions from many sources of lead emission and fugitive emissions by a combination of engineering and work practice controls.

OSHA makes this determination on the basis of conventional technologies that are commonly known, readily available, and, to some degree, currently used in the affected industries. These controls generally can reduce exposures to below the PEL in most operations in each industry.

The controls can be used individually or in combination. If one control is not sufficient, additional ones can be used. If one type of control is somewhat less effective than expected, another may be more effective. It is the interaction of various engineering controls and work practices as part of an integrated system of controls that is predicted to result in the needed overall reduction in exposure levels. OSHA does not specify which control must be implemented. Rather, OSHA allows the employer the choice best suited to the particular characteristics of the workplace.

Where feasible engineering and work practice controls cannot achieve the PEL, as in many maintenance and repair operations, intermittent short-term operations, and tasks performed in confined spaces, respirators are permitted to supplement feasible engineering and work practice controls.

For reasons set out below in the Agency's assessment of economic feasibility, OSHA has recognized the need for extended compliance times in these remand industries. No industry will be required to comply with paragraph (e)(1) of the lead standard in less than two-and-one-half years. This extended compliance time gives additional assurance that the 50 $\mu g/m^3$ level is technologically feasible.

(a) *OSHA's Approach.* In the following pages OSHA analyzes the technological feasibility of achieving the 50 $\mu g/m^3$ PEL by means of engineering and work practice controls operation by operation in each of the nine lead industries included in this remand rulemaking. In that analysis OSHA makes separate feasibility findings for each industry.

OSHA has chosen this analytical approach for several reasons. First, the court's reasoning in the lead decision and its resulting remand orders, which control this rulemaking, would seem to require a detailed and separate analysis for each of the remand industries. *USWA* v. *Marshall*, 647 F.2d at 1301. Second, where the evidence clearly suggests that in important operations achieving the PEL may be difficult, analysis of individual operations would seem to be appropriate to show the PEL can be achieved in most operations. *Id.*, at 1296–97 Third, the level of detail in the record concerning individual industries confirms the appropriateness of industry-by-industry analysis in this rulemaking. Finally, conditions in industries as diverse as shipbuilding and lead chemicals, for example, make it better to consider such industries individually rather than within a single generalized analysis.

In each of the nine remand industries OSHA sought to collect the best evidence for assessing technological feasibility. The Agency hired a contractor, Meridian, to collect data for assessing feasibility and to prepare a preliminary report. OSHA then requested relevant data in a notice of limited reopening of the lead remand rulemaking record (52 FR 28727· August 3, 1987) (Ex. 580) and repeated the request with some specificity numerous times during the public hearing (e.g., Tr. 385–86, 388–89, 392, 402–03, 1127). In addition, OSHA made written requests for exposure monitoring results to 14 specific facilities in the remand industries Ex. 646). Finally, OSHA sought to carry out site visits to facilities in six of the nine industries. After gathering the data, OSHA then proceeded as follows to assess technological feasibility.

First, OSHA briefly describes the production process, operation by operation, and the sources of lead exposure within that process and within the plant. This section also contains background information to make it easier to understand the more detailed feasibility analysis that follows.

Second, OSHA analyzes the data sets in the record for each industry to assess existing exposure levels operation by operation or job classification by job classification and, as evidence permits, correlates those exposure levels with existing engineering controls.

OSHA seeks in each industry to rely on the best evidence available in the record concerning existing and achievable exposure levels. The data sets in each industry are of wide ranging quality. As in most OSHA rulemakings, the record does not contain industrial hygiene or engineering studies that specifically evaluate the ability of particular technologies to control exposures in various operations. Instead, the evidence in the record involves general descriptions of control technologies and general exposure monitoring data, which was collected to measure workers' exposures to lead and not to evaluate the effectiveness of existing controls.

OSHA's conclusions that these technologies can achieve the PEL are supported in each remand industry by documented cases of successful implementation, technical analyses incorporating plant-specific exposure data and first-hand observation of plant operations, and expert testimony as to the effectiveness of properly applied engineering design and industrial hygiene principles. Although this data and information certainly is adequate to determine technological feasibility, it requires analysis and judgment to understand and assess the relationship between exposure levels and control technologies.

In assessing the reliability, usefulness and probative value of the data sets in the record and in determining their implications, if any, for the technological feasibility of achieving the PEL in a particular industry, OSHA also must exercise its expert judgment. With regard to the nine remand industries, OSHA feels comfortable with that judgment. OSHA evaluates the data sets in terms of widely accepted criteria. Using these criteria, OSHA discusses and characterizes each of the data sets industry by industry in an effort to identify the best available evidence of exposure levels. OSHA then relies upon the best evidence available for each industry to make its determinations.

Ideally, the best evidence would be a data set that: (1) Was composed of comprehensive raw monitoring results over the last several years, including monitoring results from tasks associated with higher exposure levels; (2) was gathered by trained personnel; (3) was part of an on-site industrial hygiene evaluation of production processes and existing controls; and (4) was from a facility with typical production processes and state-of-the-art engineering and work practice controls. Such data, accompanied by annotations describing all the relevant conditions under which the sampling was conducted, would provide a most reliable reflection of existing exposure levels and the firmest basis for determining technological feasibility.

However, in none of the nine remand industries does OSHA have data from a facility with state-of-the-art controls. In fact, OSHA has frequently found the application of industrial hygiene principles and effective engineering design to be inadequate throughout these industries. A substantial number of data sets, thus, appear to be from facilities with poor or no controls. Consequently, existing exposure levels generally are not indicative of the levels that an industry can achieve.

The next best data set would include recent and comprehensive raw monitoring results collected by trained personnel at a facility with reasonably typical production processes. It would be accompanied by annotations describing the relevant conditions under which sampling was conducted. It might be supplemented by an OSHA site visit during which observations by industrial hygienists would associate key production processes with current exposure levels and existing controls.

There are a number of these sorts of data sets available in the record, covering at least four industries (lead chemicals, lead pigments, non-ferrous foundries and secondary copper smelting). In general, these data sets enable OSHA to assess technological feasibility with considerable assurance.

A data set that included neither annotations, descriptions of existing controls, nor a site visit would be less useful. There are many such data sets in the record. Typically in this rulemaking, companies submitted data without annotations or descriptions of relevant controls. Nevertheless, where it appears from such data sets that 50 $\mu g/m^3$ already is being achieved or is close to being achieved, such data constitute evidence of technological feasibility. However, where it appears that 50 $\mu g/m^3$ is far from being achieved, it is extremely difficult to evaluate the data because of the lack of contextual information needed to understand why this is so.

The least useful sets of monitoring data: (1) Are incomplete or dated; (2) include only summary statistics of sampling results (e.g., only ranges of results or averages, without individual monitoring results), especially if they are unaccompanied by an explanation of how they were compiled; (3) aggregate data from a number of plants rather than present data plant by plant; (4) aggregate data across job classifications or operations rather than present data operation by operation or job classification by job classification; and (5) include no contextual information concerning the conditions under which sampling was conducted, existing controls, and the like.

For example, even if a data set in some respects is of reasonably good quality, if it is composed of data aggregated from a number of plants, it is generally unreliable for determining technological feasibility. It is unreliable because, to an unknown degree, high monitoring results in one or more plants with poor controls may drastically influence the aggregate.

While OSHA seeks to quantify its assessment of technological feasibility to the extent the data will allow, the data provided by industry are rarely precise or clear enough to allow the Agency to make unassailable, statistically sophisticated determinations. Rather, where appropriate, OSHA uses simple statistical techniques and supplements these techniques with expert judgment. In the final analysis, as indicated above, OSHA has had to exercise expert judgment in interpreting and assessing these data.

Where the record evidence shows that, in one or more facilities with production processes that are reasonably typical of an industry, exposure levels already have been controlled to or below 50 $\mu g/m^3$ in most operations most of the time, that fact is the best evidence that the PEL is technologically achievable in the broader industry. Indeed, as the courts have said, if a PEL has been "virtually met in one plant ... [t]hat in itself can constitute substantial evidence, which would satisfy OSHA's burden of proving technological feasibility for an industry. *Id.*, at 1280.

However, even where this is so and still more generally where the record is not that definitive, OSHA does not simply, or even primarily rely upon existing exposure levels to prove technological feasibility. OSHA rests its feasibility determination for each industry in large part on the fourth part of its analysis, which is set out below and focuses on the expected reductions in existing exposure levels that can be achieved by employers implementing the sorts of additional controls recommended by OSHA.

As a result, the particular method chosen by the Agency to represent the raw exposure data in the Agency's analysis of existing exposure levels in each industry is not crucial to OSHA's feasibility determination for that industry. OSHA presents the exposure data in a variety of generally accepted ways. For example, OSHA often relies upon the geometric mean (see discussion below) to characterize the array of monitoring results in individual operations or job classifications. However, in some industries, OSHA relies upon the frequency distribution of monitoring results or the arithmetic mean (average) of those results to describe existing exposure levels.

In any event, whichever statistic OSHA uses to represent the raw exposure data for a particular industry, OSHA does not treat the fact that that statistic might show that exposures are below 50 $\mu g/m^3$ as complete proof by itself of technological feasibility. Rather, the Agency's position is that such exposure levels generally indicate that controls are in place to limit excessive employee exposure (or that exposure levels are low to begin with) and that only relatively modest further additions and improvements to controls are necessary to reduce the exposure levels of all workers consistently to or below 50 $\mu g/m^3$ OSHA also does not treat the fact that a statistic that shows exposures in a particular operation are below 50 $\mu g/m^3$ as complete proof by itself of technological feasibility because OSHA realizes that a geometric mean or any statistic below 50 $\mu g/m^3$ does not by itself guarantee that an employer will be able to achieve 50 $\mu g/m^3$ at all times under all conditions in that operation. However, based on its knowledge, experience and expertise, OSHA is confident in its assumption that the further a geometric mean is below 50 $\mu g/m^3$ the more likely that most exposure levels in that operation will be below 50 $\mu g/m^3$

Third, OSHA describes typical existing controls operation by operation in an industry.

Fourth, OSHA recommends the implementation of various additional engineering and work practice controls for each operation in an industry to reduce employee exposure levels to or below the 50 $\mu g/m^3$ PEL. When it is able to do so, the Agency also estimates the associated reductions in exposure levels that can be anticipated from implementing such controls. OSHA quantifies the expected reductions where, as in the case of facilities to which the Agency has carried out site visits, OSHA feels reasonably confident it can numerically estimate the extent of the reductions. OSHA's recommendations and estimates are based upon analyses by experienced industrial hygienists, frequently industrial hygienists from outside the Agency who were specifically selected to perform these analyses.[1]

OSHA's main approach in this additional controls section of the preamble is to concentrate first on the operations that industry itself has identified as the most difficult to control to 50 $\mu g/m^3$ Although the Agency does not limit its analysis of additional controls to these operations, OSHA concludes that, if it can show that exposure levels can be controlled to or very near the PEL in those operations, controlling other operations to the PEL should be relatively easy. The controls OSHA recommends are not mandatory. OSHA's lead standard does not require employers to institute specific controls. OSHA intentionally drafted the standard in performance language in order to permit employers the latitude to develop the combination of engineering and work practice controls suited to

[1] In some of the operations for which the expert panel estimated reductions in exposure levels that could be anticipated from implementing recommended controls, the worker's exposure resulted from emissions coming from different independent sources or points within that operation. Estimated reductions in the worker's exposure levels are obtained by eliminating, capturing or in other ways reducing one or more of those contributing, but independent, emission sources. To obtain the overall estimated reduction in the worker's exposure level by controlling every emission source or point in the worker's particular operation or job category, the expert panel utilized the following methodology. The panel first estimated the reductions in emission to the particular operation which could be anticipated from implementing each recommended control. The panel next estimated the percentage each emission source contributed to the worker's overall TWA exposure level in that operation. The panel then arrived at an estimate of the anticipated reduction in the worker's overall exposure level from controlling the particular emission source by multiplying the estimated percentage reduction times the contribution of that emission source to the worker's overall TWA exposure. Finally, OSHA quantified the overall impact of implementing the various recommended controls for a particular operation by adding the weighted contribution of each control to determine the worker's total anticipated reduction in exposure due to controlling the independent emission sources in that operation. OSHA notes that in those situations in which the impact of the controls may be dependent upon each other, OSHA would multiply the reductions anticipated from each of the different recommended controls.

particular facilities. The list of recommended controls also is not exhaustive. OSHA fully expects that industry and its consultants will devise many additional ways to successfully control exposure levels.

The recommended controls also are not intended as a blueprint or infallible guide to be implemented in every facility in an industry. On the contrary, as a fundamental part of the Agency's recommended control strategy, OSHA urges that each plant that needs to reduce exposure levels conduct its own plant-wide industrial hygiene survey and job/task analysis to determine the particular sources of emission, their contribution to employee exposures, and the proper mix of controls needed to deal with the specific exposure problems found in that plant. OSHA also suggests that followup industrial hygiene studies be conducted to evaluate the effectiveness of whatever controls are implemented and to refine the controls in place in accordance with the results of sampling performed after the controls were implemented. Hence, in industries where OSHA finds the 50 $\mu g/m^3$ PEL to be technologically feasible, the recommended controls are simply illustrative of effective, conventional ways to achieve the PEL. As such, they provide a reasonable basis for assessing technological feasibility and for estimating costs of compliance and assessing economic feasibility.

Fifth, OSHA then makes its determination concerning the technological feasibility of achieving the 50 $\mu g/m^3$ PEL by means of engineering and work practice controls in the particular industry. In reaching this decision, OSHA summarizes and responds to an industry's main criticisms and main arguments.

For example, many representatives of industry asserted in their comments that currently available engineering and work practice controls are not capable of achieving the PEL. However, as indicated earlier, OSHA found that often these representatives did not appreciate, and in their facilities did not demonstrate a basic understanding of, the principles of industrial hygiene so necessary to assess and control employee exposures to lead. As a consequence, these industry assertions of technological infeasibility cannot be accepted at face value.

(b) *Data Analysis.* In order to make use of the exposure data in the record to assess technological feasibility, OSHA had to select statistical approaches that would best describe the data in each case. OSHA recognizes that there is no single statistic that can fully describe a set of exposure data, and the statistics one chooses depend in part upon how the data are to be used. For example, a range of exposure levels (e.g., from 8 $\mu g/m^3$ to 579 $\mu g/m^3$) provides very little useful information about typical exposure levels.

Similarly, an arithmetic mean, which is equivalent to the commonly used "average, provides little insight into the distribution of exposures and is subject to gross distortion by outlying numbers. The arithmetic mean is equal to the sum of all the sampling results divided by the number of results. The arithmetic mean is a good way to characterize a set of data where the individual data points follow a normal distribution, that is, where the distribution of points above and below the mean is symmetrical and can be charactrized by a bell-shaped curve. Then, the arithmetic mean is the same as the median (i.e., the point above and below which 50% of the sampling results fall).

The reason the arithmetic mean, which is often used in everyday life, is not the best method for representing and evaluating exposure measurements is that exposure measurements typically are asymetrically distributed and follow a log normal distribution. Where data are distributed lognormally, the arithmetic mean is always greater than the median of the sampling data. With such data, it is generally accepted that the geometric mean is the best single statistic to characterize the data set ("Occupational Exposure Sampling Strategy Manual, Leidel, *et al.*, NIOSH, 1977· Exs. 686A. pp. 12–13; 694–6, p. 2; 694–9, Comments by Company B. pp. 15, 21). (The differences between a "normal" distribution and a "lognormal" distribution are explained with clarity in that same publication, particularly in Technical Appendix M.)

With exposure data, the lower exposures are bounded by the limit of detection or zero but the higher exposures are virtually unbounded. This typically results in many exposures being relatively close to zero with a few very high measurements. Thus, the distribution typically is skewed to the low end and has a long flat "tail" on the high side. When the actual data are depicted graphically, lognormal distributions generally peak to the left of the median and have a long "tail" to the right. Atypical observations on the high side fall in the "tail" area of the lognormal distribution.

If the sampling results from a lognormal distribution are assigned their logarithmic values, they can be plotted as a normal distribution, and the exponent of their average will be the geometric mean. The geometric mean appears to give less weight to, or to discount the few high monitoring results reflected by that tail.

The geometric mean exposure of a group of lognormally distributed exposures represents the median exposure, just as the arithmetic mean represents the median exposure in a normal distribution. Consequently, the use of an arithmetic mean for samples that are lognormally distributed does not adequately describe the data. In such cases, the arithmetic mean will be higher than the median so that mean will always be higher than the "typical" exposure.

In addition to using geometric means, OSHA also looked at the frequency distribution of data points to assess the dispersion of the data. OSHA believes that the use of the frequency distribution in combination with the geometric mean provides an especially stong basis for making informed feasibility determinations. For example, in operations where the vast majority of sampling results already is below 100 $\mu g/m^3$ and the geometric mean already is at or below 50 $\mu g/m^3$ OSHA believes there is enough indication that the spread of exposure levels above 50 $\mu g/m^3$ is quite limited for the Agency to conclude that implementing a few additional controls is likely to consistently control exposure levels in those operations to below 50 $\mu g/m^3$

When information on the record was available, OSHA quantified reductions in exposure levels that could be anticipated from implementing engineering and work practice controls recommended by the expert panel of certified industrial hygienists. As described above, in several cases the geometric mean was one of the methods used to describe worker exposure levels where raw monitoring data on an operation by operation basis were available. However, in many of those cases the exposure data were poorly characterized or not characterized at all so that OSHA was not able to determine why some measurements for the same operation were high and some were low. For example, the data from Company B in the lead chemicals industry did not provide any information on the conditions which may have existed when an monitoring result of 427 $\mu g/m^3$ was obtained for the shipper in 1986, even though all other monitoring results for that operation during that year were below 100 $\mu g/m^3$

Because of the lack of specific information explaining why monitoring results were high or low, OSHA applied the estimated reduction in exposure levels due to implementing the recommended controls to the geometric mean for each operation. OSHA recognizes that reductions in exposure levels will not be the same for all measurements, however, industry has not provided the necessary infomration to show how reductions will vary for the different monitoring results obtained for each operation. OSHA believes that applying the reduction to the geometric mean is a reasonable method for interpreting the data. In any event, OSHA would have reached the same adjusted geometric mean had the estimated reduction been applied to each raw monitoring result and then a new geometric mean been recalculated.

OSHA's contractor, Meridian, applied the reductions to the geometric mean in the same way by using the following methodology (e.g., Ex. 686A, p. 19). First, any reduction in exposure assigned by the expert panel of certified, experienced industrial hygienists to a specific job category or worker was applied to the geometric mean exposure for that job category or worker, and the new geometric mean was calculated. Because the panel generally assigned a range to the expected exposure reduction, the resulting geometric mean exposure was expressed as a range and as the midpoint of that range. After all specific exposure reductions were calculated, any general exposure reduction (e.g., reductions applying either to the facility or work area as a shole) was applied to each affected worker's geometric mean exposure, after which a new geometric mean was calculated.

As to OSHA's reliance on particular statistical methodologies, the Agency is assured that it could have relied on other methodologies and that, once it adjusted the data to better reflect real, underlying conditions, it would have reached the same technological feasibility determinations.

(c) *Technological Feasibility, Exposure Variability, and Enforcement.* Under section 6(b)(5) of the OSH Act, the Agency is to set standards that "to the extent feasible" best protect workers from significant risks of material impairment of health. 29 U.S.C. 655(b)(3); *American Textile Manufacturers Institute, Inc.* v. *Donovan*, 452 U.S. 490 (1981); *Industrial Union Department*, 448 U.S. at 607; *USWA* v. *Marshall*, 647 F.2d at 1189. OSHA does not believe that it can satisfy this obligation by using a lowest-common-denominator approach to protecting workers; i.e., by protecting all workers only to the extent that the most severe feasibility constraint on protecting any worker would allow. On the contrary, OSHA believes that if a minority of workers cannot be as effectively protected as the majority, that fact is not an adequate reason to forego protecting the majority to the extent feasible.

OSHA has developed this understanding of technological feasibility as a matter of policy from recent court decisions. The meaning of feasibility is most thoroughly analyzed in *USWA* v. *Marshall*, 647 F.2d at 1189, which is the law of the case for this rulemaking. That analysis is adopted and further developed in a very recent decision concerning the asbestos standard, *Bldg and Construction Trades Dept., AFL-CIO*, 838 F.2d at 1258:

Under the OSH Act, which has been interpreted by the courts to be "technology-forcing," OSHA is "not bound to the technological status quo." OSHA "at the very least, can impose a standard which only the most technologically advanced plants in an industry have been able to achieve—even if only in some of their operations some of the time. * OSHA can also force industry to develop and diffuse new technology. * * So long as * [OSHA] presents substantial evidence that companies acting vigorously and in good faith can develop the technology, OSHA can require industry to meet PEL's never attained anywhere. *USWA* v. *Marshall*, 647 F.2d at 1264–65.

In proving technological feasibility, OSHA is not required by the courts to provide "anything like certainty. [A] standard is obviously not infeasible solely because OSHA has no hard evidence to show that the standard has been met. The courts "cannot require OSHA to prove with any certainty that industry will be able to develop the necessary technology, or even to identify the single technological means by which it expects industry to meet the PEL. OSHA's duty is to show that modern technology has at least conceived some industrial strategies or devices which are likely to be capable of meeting the PEL and which the industries are generally capable of adopting. *Id.*, at 1266.

With such broad authority, OSHA must bear "the initial burden of proving the general feasibility of the standard for the industry as a whole at the rulemaking stage This proof creates a presumption of general feasibility, which shifts "to the employer in later proceedings the task of overcoming OSHA's initial finding. "[S]ince the presumption of feasibility remains rebuttable, in pre-enforcement review the court would not expect OSHA to prove the standard *certainly* feasible for *all* firms at *all* times in *all* jobs" (italics in original). Rather, OSHA "would have to justify the presumption, and the attendant shift in burden, with reasonble technological * evidence and analysis." *Id.*, at 1270.

Describing this preliminary test of general feasibility that an OSHA standard must pass in a pre-enforcement review, the court sums up OSHA's burden of proof as follows:

> First, within the limits of the best available evidence, and subject to the court's search for substantial evidence, OSHA must prove a reasonable possibility that the typical firm will be able to develop and install engineering and work practice controls that can meet the PEL in most of its operations. OSHA can do so by pointing to technology that is either already in use or has been conceived and is reasonably capable of experimental refinement and distribution within the standard's deadlines. The effect of such proof is to establish a presumption that industry can meet the PEL without relying on respirators, a presumption which firms will have to overcome to obtain relief in any secondary inquiry into feasibility. * Insufficient proof of technological feasibility for a few isolated operations within an industry, or even OSHA's concession that respirators will be necessary in a few such operations, will not undermine this general presumption in favor of feasibility. Rather, in such operations firms will remain responsible for installing engineering and work practice controls to the extent feasible, and for using them to reduce lead exposure as far as these controls can do so. In any proceeding to obtain relief from an impractical standard for such operations, however, the insufficient proof or conceded lack of proof will *reduce* the strength of the presumption a firm will have to overcome in justifying its use of respirators (italics in original) *. Such a standard of review for feasibility, of course, in no way ensures that all companies at all times and in all jobs can meet OSHA's demands *. *Id.*, at 1272.

With this understanding of feasibility, two related questions arise. First, how does a certain amount of random variability in exposure levels affect an assessment that a particular PEL is technologically feasible? Second, is it appropriate for OSHA to find a PEL technologically feasible when it is understood that: (1) That finding does not mean or assure that the PEL is achievable all of the time in all operations; (2) that some random variability in exposure levels is to be anticipated; and (3) that exposure levels in a facility may on a particular day therefore be in excess of the PEL expressed as an 8-hour TWA, potentially subjecting the employer to some risk of citation?

As to the first question, OSHA recognizes that some random fluctuation of exposure levels around an average does exist. Depending upon minor changes in operations or the environment, such as weather, process flow and employee work practices, which may not be fully controllable by the employer, on certain days exposures will be higher, and on others they will be lower than the average. Due to such random variability, employers may want to generally control exposure levels to an average somewhat below the PEL to ensure that random variations above that average will not exceed the limit.

However, not all variability is truly random or outside employers' control. For example, many high exposures are the result of identifiable and controllable causes, such as inadequate or poorly maintained engineering controls, improper work practices, or lack of oversight by qualified industrial hygienists. Many companies recognize that such exposures are not random and record information on operational and environmental conditions prevailing at the time of sampling to explain sampling results (Exs. 688a; 688c). Many companies also concentrate their hygiene efforts on the conditions associated with the highest exposures. OSHA is confident that correcting deficiencies in controls not only will broadly reduce existing exposure levels but also will substantially reduce variability.

After carefully considering the impact of truly random variability on the issue of technological feasibility in this rulemaking, OSHA has concluded that the variability that remains outside the employers' control after the employer has implemented all appropriate controls does not make compliance with the 50 $\mu g/m^3$ PEL technologically infeasible. Control techniques are readily available in most operations to keep average exposures sufficiently below the PEL to ensure that remaining variations will result in very few random exposures above the PEL.

The second question concerns the implications of such a determination of technological feasibility for enforcement. It is a fundamental principle of OSHA Act law that the Act does not impose strict liability; its purpose is preventive rather than punitive or compensatory, and the duties it imposes must therefore be achievable. See, e.g., *National Realty and Construction* v. *OSHRC*, 489 F.2d 1257 (D.C. Cir. 1973). OSHA understands that determining technological feasibility in part on the basis of statistical probabilities may mean that, while an industry generally can achieve compliance with a permissible exposure limit, some employers, in some operations, some of the time will not in fact be able to do so. At such times, these employers may be vulnerable to citation.

In fulfilling its statutory duty to protect workers, the Agency wishes to avoid unfairness to employers. Thus, in recognition of the existence of certain variables that the employer cannot completely control, such as occasional, random outliers in monitoring results, OSHA has built some flexibility into its longstanding enforcement policy to prevent citations from being issued when such events occur. This flexibility means that employers need not control average exposures to so far below the PEL that there remains only a negligible probability that an exposure measurement on any particular day will exceed the PEL.

For example, since, due to sampling and analytical error (SAE), monitoring results may not reflect "true" employee exposures, OSHA has explicitly stated that it will not issue a citation on the basis of a single OSHA sample result unless that result exceeds the PEL plus the SAE (currently determined to be 12% in the case of lead). Consequently, a citation for exceeding the 50 $\mu g/m^3$ PEL will not be issued unless the result of a lead sample is greater than 56 $\mu g/m^3$. This policy in practice may also provide some latitude for random variability.

In addition, OSHA specifically takes account of uncontrollable random variability in its enforcement policy. The OSHA Industrial Hygiene Technical Manual (p. 10-7/ IV-4), directs compliance officers to consider long-term, historical exposure patterns in reaching compliance determinations. Consequently, if a compliance officer finds an exposure over the PEL for an employee, and the employer has many measurements for that employee that are under the PEL, the compliance officer will investigate the problem. If the investigation reveals that the compliance officer's sample may not be a true representation of the employee's exposure, the compliance officer may decide to remonitor. OSHA generally will not cite for a violation of the PEL if the employer shows that the inspector's measurement is unrepresentatively high and that the employer has been taking all feasible steps to meet the PEL. (51 FR 22653-54).

OSHA has been following this approach to enforcement since its inception. In OSHA's experience, this approach has proven to be protective, fair, and efficient. It has been protective of workers. It also has been fair to employers, because it has provided reasonable certainty to employers who, after installing appropriate controls, have consistently achieved the mandated levels. Finally, the approach has been reasonably efficient in terms of the compliance officer's time.

OSHA's approach to enforcement has been upheld by the courts. In a recent decision in the United States Court of Appeals for the District of Columbia Circuit, the court explicitly addressed the interrelationship between OSHA's enforcement policy, technological feasibility, and random uncontrollable variability in exposure levels. In upholding OSHA's policy, the court said, "if OSHA is permitted to adopt a standard that some employers assuredly will not be able to meet some of the time, with the employers limited to challenging feasibility at the enforcement stage, * it is difficult to find legal objection in an OSHA enforcement policy that attempts to take account of particular feasibility difficulties at the pre-citation stage. *Building and Construction Trades Dept., AFL-CIO*, 838 F.2d at 1268.

Economic Feasibility

Introduction. In this section, OSHA explains its interpretation of economic feasibility and presents its general assessment of the ability of these nine remand industry sectors to finance the costs 50 $\mu g/m^3$ standard for occupational exposure to airborne lead.

The criteria for determining economic feasibility are provided in the "lead decision. There, the court said:

> "A standard is not infeasible simply because it is financially burdensome (citation omitted) or even because it threatens the survival of some companies within an industry A standard is feasible if it does not threaten 'massive dislocation' * No matter how initially frightening the projected * costs of compliance appear, a court must examine those costs in relation to the financial health and profitability of the industry and the likely effect of such costs on unit consumer prices .[T]he practical question is whether the standard threatens the competitive stability of an industry (citation omitted) or whether the standard might wreck such stability or lead to undue concentration. * [To demonstrate economic feasibility,] OSHA must construct a reasonable likelihood that these costs will not threaten the existence or competitive structure of an industry, even if it does portend disaster for some marginal firms. *USWA* v. *Marshall*, 647 F.2d 1189.

Thus, the fact that compliance costs could be burdensome to an industry or that some firms could go out of business because of these costs does not mean a standard is economically infeasible. The issue is not whether the standard creates economic hardship for specific firms in an industry or ev n for the industry as a whole. For a standard to be economically infeasible the courts require more. A standard is economically infeasible when the costs imposed are so overwhelming that they create "massive dislocation" of the industry, threaten the "existence" or "competitive stability" of the industry, or lead to "undue concentration" within the industry. *USWA* v. *Marshall*, 647 F.2d 1189.

OSHA believes that it must base its determination of economic feasibility upon substantial evidence that an industry sector is not threatened with massive dislocation attributable to the cost of complying with the standard at the time compliance deadlines arrive. In order to make this judgment, projected capital or annual costs of compliance must be examined in relation to the financial health and profitability of an industry sector and the likely effect of such costs on prices. A standard is economically feasible if costs can be passed on in price increases and/or absorbed by firms, and any necessary absorption of costs will not threaten the competitive stability of the industry.

OSHA interprets economic feasibility as the ability of an industry as a whole to withstand the cost impacts of a rule, even though some firms could discontinue operations. If, for example, an industry is in a period of reconstruction or contraction due to prevailing economic conditions, the fact that a rulemaking could accelerate such trends does not in itself make the standard economically infeasible.

OSHA has found substantial evidence to support its determinations for each of the nine remand industries. While much of industry was largely unresponsive to repeated requests for plant specific financial data, an abundance of information outlining general economic trends encompassing the affected industries exists in the public record and in the public domain.

Financial and price information were submitted by some firms. OSHA used this information, in conjunction with economic data gathered by its contractor as well as data available from other public sources, to develop representative financial profiles.

Cost estimates were prepared by OSHA's contractor and were submitted to the docket for public comment during a written comment period. Also, OSHA's contractor was cross-examined during the informal public hearing. Many commenters submitted useful comments and the final cost estimates represent the combined efforts of OSHA's contractors, industry personnel and associations, and OSHA staff.

Costs and financial data were then used to develop impact ratios. These ratios provided quantitative estimates of the possible impacts of this regulation on prices and industry profitability.

Assessments of economic feasibility were not, however, based solely upon these quantitative impact estimates. In many cases, information was available which provided the Agency with a means to qualitatively assess an industry's ability to withstand the impacts of the rule. Such information included evidence of modernization and/or new construction, evidence of the ability of certain plants to shift away from lead-related products, thus avoiding compliance costs altogether, and evidence of the ability of certain plants to attain the 50 $\mu g/m^3$ PEL with limited or negligible expenditures.

Thus, quantitative estimates and qualitative information were analyzed within the context of each respective industry's market structure and current status to determine economic feasibility.

The results of this analysis led OSHA to conclude that an extended five year compliance schedule is justified for secondary copper smelting, brass and bronze ingot manufacture, and lead chemicals. A two and one-half year schedule will be in effect for stevedoring, shipbuilding and repair, independent battery breaking, leaded steel, and lead chromate pigments. For reasons detailed elsewhere in this preamble, OSHA concluded that the 50 $\mu g/m^3$ PEL is economically infeasible for the nonferrous foundry industry.

The extended compliance schedule was required in three industry sectors principally to permit modernization and construction to continue and to allow firms to phase in engineering controls. The unique cost impact related to lowering permissible exposure levels to lead by means of engineering and work practice controls is not expected to significantly alter restructuring activities which are in response to prevailing economic conditions. OSHA believes that the objectives sought by the 50 $\mu g/m^3$ standard are consistent with such restructuring in that modernization is often accomplished with production technology which inherently reduces worker exposure.

In general, with the five year extended schedule granted to the three sectors mentioned above, evidence demonstrates that most plants in these sectors will not experience undue burden as a result of this rulemaking action. Nevertheless, OSHA recognizes that this regulation could accelerate the phasing out of certain less efficient facilities and that some marginal firms could decide at least in part to discontinue operations as a result of this standard.

Thus, based on the evidence in the record and the analysis below, OSHA has determined that the 50 $\mu g/m^3$ lead standard is economically feasible for eight of the nine remand industries considered.

B. Feasibility of the Lead Standard in Each of the Nine Remand Industry Sectors

1. Brass and Bronze Ingot Production

Process Description. Brass and bronze ingot production involves refining copper-based alloy scrap, which is melted, adjusted to achieve particular alloy specifications, and poured into molds to form ingots. Most of the lead originates in the scrap, with lead added at times to bring a particular melt to desired alloy specifications (Ex. 553–4, p. 1–1). Raw materials used by brass and bronze ingot producers include a wide variety of copper-bearing scrap, such as faucets, automotive radiators, electrical cable and machinings (Ex. 574, p. 1). Typically, the lead content of the scrap varies. The lead content of the most common types of ingots produced is 5–7% (e.g., leaded red brass and semi-red brass; Ex. 574, p. 2). In some brass and bronze ingot producing facilities, no more than 20% of total tonnage is in high lead alloys (25% lead), which means that 80% of their tonnage is comprised of low-lead or unleaded alloys (Ex. 582–89, pp. 34–35).

The main operations in ingot production are scrap preparation; furnace operations, which include charging, melting, slagging (also called drossing and skimming), tapping and sometimes pouring; pouring molten metal into molds; and ingot handling.

Scrap Preparation. Scrap preparation may involve receiving, sorting, cleaning, cutting, preheating and storing copper-based scrap (Ex. 574, p. 1).

Scrap is received by truck and rail in car load quantities from scrap dealers. Scrap is received loose (e.g., tubing from radiator plants), in bulky pieces (e.g., used radiators), and in compressed blocks. Loose scrap is sorted and organized in bins according to metallic composition. Some scrap is processed to facilitate handling and charging. For example, bulky scrap (e.g., automotive radiators) may be reduced in size by briquetters or balers. Bulk quantities of borings and drilling scrap are reduced through crushers and hammermills. If pieces of scrap are too large to handle easily (e.g., ship propellers), they may be cut (Exs. 553–4, p. 1–1; 694–11, p. 9).

In some cases the scrap is also cleaned (e.g., sweated or stripped) to remove oil, paint, lead solder, or plastic wire coating (Ex. 574, p. 1). Rotary dryers also may be used to remove other unwanted contaminants (Ex. 568, p. 116). Processed scrap also may be passed through a magnetic separator to remove ferrous metals before it is fed into the furnace (Ex. 568, p. 47). If scrap is wet, because, for example, it has been stored outdoors or because it has been moistened to suppress dust, it must be preheated before being charged to the furnace.

Furnace Operation. The primary function of the furnace is to melt the scrap charged into it. Furnace operations involve the following tasks: charging, melting, slagging, tapping, sometimes pouring, and transferring molten metal.

Furnaces can be of various types. The most commonly used furnaces in ingot production are directly-fired reverbatory furnaces, which are charged with high-grade copper scrap, and rotary furnaces. OSHA understands that some ingot producers may use reverbatory furnaces primarily for refining the melt, relying on rotary furnaces to produce the particular alloy. Small crucible or electric-fired furnaces are also used sometimes (Ex. 553-4, pp. 1-1 to 1-2).

Charging is done by skip hoists, forklift trucks, or electrically powered vehicles. Reverberatory and rotary furnaces are charged from above, while in other furnaces the charge is added through a side door (Ex. 607, pp. 1-2). Where scrap is top-charged, employees perform the work on ground level, using a monorail skip hoist and tote-bin material-handling system (Ex. 568, p. 236).

Fuels are fired directly into the charged furnace to melt the scrap. When the furnace reaches melt temperature, fluxes are added to reduce impurities. These impurities combine to form slag, which rises to the surface of the melt (Ex. 607 p. 2). During slagging the furnace is rotated approximately 90 degrees so that the charging door is positioned at the side of the furnace. Slag is then skimmed off from the charging door into an uncovered slag ladle (Ex. 568, p. 236). Filled slag ladles are transported from the furnace area by forklift trucks.

When necessary, certain metals are then added to bring the melt to desired alloy specifications. A furnace grab sample of the melt is taken and analyzed to monitor metal composition before the melt is tapped (Ex. 553-4, pp. 1-1 to 1-2). When the molten alloy is ready, the molten metal may be tapped into a ladle or into a trough known as a launder, which leads to a ladle at the casting line (Ex. 568, p. 239). In some cases, the molten alloy is poured directly from the furnace into ingot molds (Ex. 553-4, p. 1-2).

Pouring and Casting. After the molten alloy is tapped and transferred to the pouring area, it is poured into ingot molds. Most facilities use automatic casting methods. For example, with a casting carousel, the operator pours the molten metal into empty molds that rotate into place under the pouring ladle (Ex. 574, p. 20). Some ingot producers do not use automatic casting but instead continue to use manual pouring, which is associated with higher lead exposures for pourers (Ex. 582-85, p. 31). Generally, the alloy is cast into sixty-pound ingots.

Ingot Handling. The ingots are cooled, separated from their molds, and mechanically stacked onto pallets that are moved by forklift truck into the product warehouse until delivery. Some facilities cool ingots using water-cooling methods (Ex. 568, p. 51).

Sources of Exposure. The main sources of lead exposure in ingot production are dust emitted during briquetting of scrap and fume emitted during charging of the furnace, tapping, slagging and pouring. A lesser source of lead exposure is dust generated during scrap preparation. OSHA believes that cross contamination from primary sources of lead emissions may also be a source of higher exposure levels elsewhere in ingot production. OSHA does not believe that ingot handling itself provides a significant source of lead exposure.

Sometimes charging may be a source of high exposure when upsets occur. For example, when scrap fed into the furnace is hung up in the tote bin as it is dumped or is caught in the throat of the charging hopper, a worker may have to climb to the charging deck to dislodge the jam. At these times, the worker may be exposed to high lead exposures from dust and fumes escaping from the charging port.

Employee Exposures—Overview. An overview of existing exposure levels reveals the following. As far back as 1979-81, nearly three-quarters (74%) of all employees in ingot production were reported by OSHA's contractor, JACA, to be exposed at levels below 50 $\mu g/m^3$ (Ex. 553-4, p. 1-3). Moreover, in three of the four plants for which JACA reported employee exposure levels, nearly two-thirds or more of all employees were exposed below 50 $\mu g/m^3$ (Ex. 583-48).

Data from recent OSHA inspections show that 55% of all exposures are below 50 $\mu g/m^3$ (Ex. 574, p. 2). These data thus corroborate JACA's findings on exposure levels in this sector.

The Data. The preceding overview and following analysis of exposure levels is based upon the best available evidence in the record. The record includes four primary data sets: data collected from ingot producers by OSHA's previous contractor, JACA (Exs. 553-4 and 583-48); data submitted by the Association of Brass and Bronze Ingot Manufacturers ("ABBIM") (Ex. 665); data from OSHA inspections (Ex. 574, p. 2); and data submitted by the National Institute for Occupational Safety and Health (NIOSH) and Radian (Exs. 567; 568; 583-16). These data sets tend to be incomplete regarding exposure data and associated control information but they do provide sufficient information to allow OSHA to assess technological feasibility.

For several reasons, the data set provided by ABBIM (Ex. 665) appears to be less useful than other data sets. The data set is upwardly biased, in part because ABBIM has only provided sampling results from operations generally considered to have higher exposure levels. Thus, for example, data are provided concerning pourers and briquetters, but no data are provided for scrap sorters or ingot handlers. Such data cannot therefore be taken as representative of exposure levels throughout the industry. In addition, sampling results from the furnace and pouring areas at Company A are mixed together as "melting and pouring operations" (Ex. 665), so OSHA cannot ascertain exposure levels in either of the individual operations.

As indicated, the ABBIM data set (Ex. 665) also is incomplete. With regard to Company B, for example, ABBIM provided data only from one undated "inspection," rather than providing, as OSHA requested, the more extensive air monitoring data that are required under the lead standard to be collected on a quarterly basis.

Finally, the ABBIM data generally are not accompanied by information concerning underlying conditions, processes or controls. ABBIM provides almost no description of associated controls operation by operation. Consequently, the ABBIM data provide little information with which to perform the operation-by-operation analysis useful for determining whether it is feasible to achieve 50 $\mu g/m^3$ in most operations most of the time. Without such information about existing controls, OSHA cannot conclude simply from high sampling results that controlling to 50 $\mu g/m^3$ is infeasible. The mere fact that in operations like pouring exposure levels are high when the operations may be uncontrolled or poorly controlled says little about the feasibility of controlling to 50 $\mu g/m^3$ For all of these reasons, OSHA considers the data submitted by ABBIM of very limited use in determining technological feasibility.

By contrast, the JACA data (Ex. 553-4) show that by 1979-81 a number of brass and bronze ingot producers already were achieving exposure levels below 50 $\mu g/m^3$ most of the time, whatever the controls being implemented. The fact that existing controls also are not adequately described operation by operation in the JACA report is much less a limiting factor than it is for the ABBIM data. Where air lead levels of 50 $\mu g/m^3$ have already been achieved, it is not so critical to OSHA's determination of technolgical feasibility that the Agency know precisely which of the array of conventional controls were implemented. On the other hand, where 50 $\mu g/m^3$ is not being achieved, it is crucial for purposes of determining technological feasibility that the Agency know the state of existing controls.

In addition, where 50 $\mu g/m^3$ is being achieved, that fact by itself constitutes the best available evidence of technological feasibility. Only a showing that plants achieving 50 $\mu g/m^3$ are not representative of the rest of the industry could refute such evidence. In this case, ABBIM and other commenters for industry have made no such allegation concerning the JACA data. On the contrary, industry representatives repeatedly cite JACA favorably, suggesting that JACA's data are indeed representative of the rest of the industry (Exs. 694-10, p. 2; 694-11, p. 3; 694-39, pp. 13-14).

Specifically concerning the JACA data (Exs. 553-4, pp. 1-2 to 1-3; 583-48), OSHA believes for a number of reasons that they are reliable and useable in determining technological feasibility in this sector. First, the JACA data were supplied by ingot producers and include sampling results as well as distributions of air lead levels across their workforces. Second, the JACA data include the years 1977 to 1981. Since then production levels have fallen and some additional controls have been implemented. Therefore, OSHA considers these data likely to be conservative estimates of current exposure levels.

The final data set was generated by OSHA inspections in 1984-87 of five brass and bronze ingot producers (Ex. 574, p. 4), a number constituting nearly one-third of all current producers. OSHA believes these data to be conservative as well, since OSHA inspectors tend to sample operations where they anticipate high exposure levels. Moreover, inspection data include results from plants OSHA inspects in response to employee complaints. Such plants tend to have relatively high air lead levels. In any event, the recent OSHA inspection data confirm OSHA's findings that 50 $\mu g/m^3$ already has been and continues to be achieved in ingot production.

Looking more closely at the JACA data, in which 74% of employees are exposed below 50 $\mu g/m^3$ OSHA notes the following. Nearly one-half (44%) of all employees were exposed below 30 $\mu g/m^3$ the action level of the lead standard. Thus, nearly twice as many employees were exposed below 30 $\mu g/m^3$ as were exposed above 50 $\mu g/m^3$ (26%) (Ex. 553-4, p. 1-4).

In addition, as indicated above, in three of the four plants for which JACA reported employee exposure data nearly two-thirds or more of all employees were exposed below 50 $\mu g/m^3$ (Ex. 583-48). For example, at Plant K exposure levels were below 50 $\mu g/m^3$ in all operations except the baghouse, a maintenance operation. At Plant K, where 94% of the 68 employees were exposed below 50 $\mu g/m^3$ in 1981, the company reported that typical 8-hour time-weighted averages ("TWAs") for foundry workers were between 30-50 $\mu g/m^3$ For all other workers typical TWAs were below 30 $\mu g/m^3$ except for the baghouse. Typical exposure levels in the baghouse, which OSHA considers essentially a maintenance operation, were said to be between 100-150 $\mu g/m^3$ but the only actual sampling results provided for baghouse attendants indicate average TWA exposure levels of 75 $\mu g/m^3$ in 1981 (Ex. 583-48, Plant K, p. 3).

Similarly, at plants M and N, 65% and 85% of employees were exposed below 50 $\mu g/m^3$ respectively. At the fourth plant, Plant L, which inexplicably had higher exposure levels, 22% of employees were exposed below 50 $\mu g/m^3$ and one-half of the employees were exposed between 100-150 $\mu g/m^3$ (Ex. 583-48, Plant L, p. 1). For all of the brass and bronze ingot workers surveyed by JACA in 1981, fully 73% of all exposures were already below 50 $\mu g/m^3$ and the combined data indicate that only 2% of employees were exposed above 150 $\mu g/m^3$ and none were above 200 $\mu g/m^3$ (Ex. 583-48).

A similar picture is presented by the OSHA inspection data set, which includes 20 air lead monitoring results from five ingot producers (Ex. 574, p. 2). Those data show that 55% of all monitoring results are below 50 $\mu g/m^3$ and 90% are below 100 $\mu g/m^3$ Only 2 results are between 100-200 $\mu g/m^3$ (Ex. 574, p. 2).

Even looking at the ABBIM data (Ex. 665), OSHA notes the following. For Company C, exposure levels have significantly decreased since 1985. For example, 75% of the sampling results at Company C were below 50 $\mu g/m^3$ in 1987 while only 11% and 33% were below 50 $\mu g/m^3$ in 1986 and 1985, respectively (Ex. 665, p. 4). Similarly, all of the sampling results at Company C were below 100 $\mu g/m^3$ in 1987 while only 55% and 58% were below 100 $\mu g/m^3$ in 1986 and 1985, respectively (Ex. 665, p. 4). Viewed operation by operation, substantial reductions in exposure levels were achieved from 1985-87 in all operations at Company C for which ABBIM provided data. Monitoring results for companies A and B were considerably higher than those for Company C. Nonetheless, of the 64 combined exposure monitoring results from all three companies, only two sampling results exceeded 150 $\mu g/m^3$ This fact, in conjunction with the trend in monitoring results from Company C, further confirms OSHA's understanding, based primarily on the JACA and OSHA inspection data, that at many ingot producers 50 $\mu g/m^3$ already is being achieved in most of the operations and that excursions above 150 $\mu g/m^3$ are rare (Exs. 553-4, p. 1-4; 574, p. 2; 583-48).

Existing Controls. OSHA has shown in the previous section that as early as 1979-81, 74% of ingot production employees were reported to be exposed below 50 $\mu g/m^3$ (Ex. 553-4, p. 1-4). Recent OSHA inspection data appear to confirm this picture, with 55% of all exposure levels in all operations at inspected brass and bronze ingot plants already below 50 $\mu g/m^3$ (Ex. 574, p. 2).

These exposure levels have been achieved with existing controls. JACA reported that, in 1981, brass and bronze ingot makers employed manual sorting of scrap and movement of scrap by front-end loader or truck, and that some producers used water spray in the scrapyard to suppress dust (Ex. 553-4, p. 1-3). JACA noted that the extent of the use of local exhaust ventilation on briquetting machines in this sector was not known (Ex. 553-4, p. 1-3). In 1981, facilities visited by JACA had local exhaust ventilation over the furnace tap hole, launder, or ladles; however, JACA reported that the extent to which employers in this sector were using charging hoods on their furnaces in 1981 was not known.

Based on JACA's 1981 data and on OSHA's recent inspection data, OSHA believes that most ingot producers with these controls already are controlling most of their air lead levels to below 50 $\mu g/m^3$ OSHA also believes that many producers without such controls are not achieving employee air lead levels at or below 50 μg/m³

OSHA recognizes that both ABBIM and another commenter have asserted that a number of facilities in the industry do not now have such controls or do not have controls with sufficient volume of air flow (Exs. 582-85, pp. 20-23; 683, pp. 11-13). OSHA is aware that some brass and bronze ingot producers are not using adequate engineering controls. For example, in describing Company A (Ex. 665, p. 2), ABBIM reports that windy conditions or high humidity may cause Company A's air lead levels to fluctuate. OSHA believes that Company A is relying heavily on natural ventilation rather than engineering controls, which would not be affected by wind or humidity. OSHA believes that the reason for Company A's high readings is the lack of engineering controls. However, neither ABBIM nor any other producer in the industry has submitted data or other information to the record to document baseline control levels.

OSHA finds that most plants in this sector already are achieving air lead levels at or below 50 μg/m³ and have very few monitoring results that are above 150 μg/m³ OSHA believes that these exposure levels testify to the fact that many facilities in this sector are adequately and efficiently controlled.

A description of the current level of controls, operation by operation, follows.

Scrap Preparation. Local exhaust is being used at some plants on briquetting machines. At Company A, for example, side-draft ventilation has been installed there (Ex. 665, p. 2). Although Company A asserts without documentation that side-draft ventilation has not produced the anticipated reductions in exposure levels in this operation (Ex. 665, p. 2). briquetting is evidently not a problem operation for many brass and bronze ingot producers (Ex. 553-4, p. 1-4). For example, in facilities where employers have installed briquetting machines of the type described by NIOSH (Ex. 568, p. 177), the briquetter operators' exposure level has been reduced to an average 8-hour TWA of 38 μg/m³ In addition, some companies apparently use little radiator scrap, which results in lower exposure levels (e.g., Company C, Ex. 665).

Furnace Operations. Local exhaust is being used at some plants over furnaces, and is common on launders and ladles, and at tapping points (Ex. 553-4, pp. 1-3 to 1-6). Company C, for example, has hooding above its furnace (Ex. 665). Some hoods over the top of reverberatory furnaces are provided with automatic damper opening systems, which effectively keeps the furnace at negative pressure during charging to prevent lead fume and dust from escaping into the workplace air (Ex. 574, p. 20). A flue gas control system, consisting of a brick-lined flue that connects to steel ductwork leading to baghouses, also is used to control emissions during furnace charging and slagging. This control system provides sufficient draft to capture emissions before they can exit through the charging door. At some plants, the charging door and jamb are water cooled to minimize warpage and maintain a good seal. The water cooled charging door is remotely operated from a station where furnace burning rate can also be regulated. In addition, many plants have local exhaust over the tapping port (Exs. 574, p. 20; 553-4, p. 1-6) and have covered the launder that carries molten metal from the furnace to the ladles (Ex. 553-4, p. 1-6).

Pouring. Most ingot producers in the industry now rely upon automatic, rather than hand pouring to cast ingots (Exs. 574, p. 1; 582-85, p. 32). Where pouring is done automatically by rotating carousel, the tapping point is hooded and exhausted to the baghouse (Ex. 568, pp. 190-92).

Baghouse. Brass and bronze ingot producers have baghouses to capture the dust generated in their facilities (Ex. 553-4, p. 1-3). These baghouses, installed for purposes of air pollution control, filter exhaust air from hood systems positioned over emission sources and collect contaminated dust. Baghouse dust contains substantial amounts of lead. Baghouses can be a significant source of lead dust exposure for employees who tend them or who are responsible for recycling or disposing of dust collected by baghouses. Since this dust can contaminate an entire facility, it must be carefully handled. Many plants, like Company B, have installed screw conveyors to move the dust from the baghouses to a central location to await further disposition (Exs. 665, p. 3; 574, p. 21). This substantially reduces manual removal of dust from the baghouse, which, in turn, reduces worker exposure and the potential for spills that could contaminate the area or plant.

Additional Controls. OSHA believes, based upon JACA and OSHA inspection data, that most employee exposures in brass and bronze ingot facilities are already controlled below 50 μg/m³ OSHA therefore finds, simply on the basis of these data, that it is technologically feasible for brass and bronze ingot makers to achieve the 50 μg/m³ PEL using conventional controls. However, OSHA is also aware that certain facilities in this sector are not adequately controlled (e.g., Company A, which continues to rely on natural ventilation, and other facilities that still hand pour (Ex. 582-85, p. 31)). To aid these facilities in reducing their employee exposures, OSHA in this section describes additional controls that may be implemented to achieve the 50 μg/m³ PEL.

In addition, where necessary, OSHA recommends that ingot producers generally improve their engineering controls as indicated below and eliminate cross contamination to control employee air lead levels consistently to or below 50 μg/m³ With these improvements, OSHA anticipates that exposure levels in all production operations will be controlled to or below 50 μg/m³

OSHA believes that for operations where most employees already are exposed below 50 μg/m³ relatively modest improvements in work practice controls, such as improved housekeeping or better preventive maintenance, will be sufficient to reduce the lead exposures of employees consistently below 50 μg/m³ Similarly, for the remaining operations where employees are exposed to air lead levels of less than 100 μg/m³ OSHA believes that a combination of limited additional and improved controls (e.g., improving the efficiency of the ventilation system) will be sufficient to control exposure levels to or below 50 μg/m³

On the whole, the same sorts of readily available, conventional controls that have successfully reduced exposure levels to below 50 μg/m³ in many plants in this industry and in similar industries, like non-ferrous foundries and secondary copper smelters, are precisely the kinds of additional controls that OSHA recommends to other ingot producers to reduce employee air lead levels to or below 50 μg/m³

The Agency's discussion of the reductions in air lead levels expected to be achieved by implementing recommended controls relies in part on assessments made by OSHA's contractor, Meridian. Meridian's assessments are based upon data in the record and its extensive experience and expertise in industrial hygiene. For purposes of determining technological feasibility, OSHA has also made its own analysis of additional controls and anticipated reductions in air lead levels in ingot production. OSHA's analysis is supported by the testimony of its expert witness, Fredrick W Boelter (Ex. 607).

OSHA's discussion of additional controls and expected reductions is also based upon OSHA's independent analysis of processes and controls in the secondary copper smelting and non-ferrous foundry industries, which are similar in many respects to ingot production. Representatives of these industries provided better data than did ingot producers, particularly concerning exposure levels and associated controls. Unlike ingot producers, representatives of both industries also arranged site visits to facilities. For these reasons, OSHA believes that some of the best evidence concerning additional controls and expected reductions in employee air lead levels among users may come from submissions and testimony about these other industries. Consequently, OSHA believes it is reasonable and entirely appropriate to rely on that evidence in assessing the technological feasibility of achieving 50 $\mu g/m^3$ by means of engineering and work practice controls in ingot production. In previous rulemakings, OSHA has relied upon evidence concerning one industry to prove feasibility in a similar industry (e.g., 51 FR 22656, DATE), and that reliance was not rejected by the courts. *Bldg and Construction Trades Dept, AFL-CIO* v. *Brock,* 838 F.2d 1258 (D.C. Cir. 1988).

The similarities between brass and bronze ingot production, secondary copper smelting and non-ferrous foundries are substantial. Ingot production is like secondary copper production in its scrap preparation and like non-ferrous foundries in its furnace and pouring operations. In addition, as discussed below, facilities in each of these pyro-metallurgical sectors have many operations and procedures in common.

Like copper smelting, ingot production involves copper-based scrap, typically containing a substantial amount of lead, as the raw material, and depends upon refining to produce the finished product. Unlike copper smelting, ingot production does not involve smelting and therefore does not entail the high exposure levels associated with blast furnaces. In addition, unlike copper smelting, the refining process in ingot production is not aimed at removing all metals, like lead, to produce increasingly pure copper. Rather, the purpose in ingot production is to remove only those contaminants that do not meet particular alloy specifications. In these aspects, ingot production, as industry concedes (Ex. 582-85, p. 5), is similar to the process used by non-ferrous foundries that produce lead-containing alloy castings. Indeed, alloy ingots are the primary raw material for the non-ferrous foundry industry. In both industries lead is present throughout the production of leaded alloys, and therefore the potential for lead exposure exists in nearly every operation, and is especially great in hot operations.

To the extent that ingot production is similar to copper smelting and non-ferrous foundries, information concerning sources of exposure, exposure levels, and controls in those industries is applicable to ingot production. The principle of control technology transfer, for example, is widely acknowledged (Ex. 568, p. 9). Many operations in different sectors of the pyro-metallurgical industry have commonalities that make them excellent candidates for such transfer. Among these similarities are: their use of heat to reduce, refine and alloy metals; their handling and preparation of feed materials; their use of furnaces; their production of metal products, slag, and by-product wastes; their use of emission controls (baghouses, ducts, etc.); and their potential for causing employee exposure to metal dust and fume (Ex. 568, p. 9).

Specifically, for example, regarding the scrapyard, where the sources of exposure, applicable controls, and lead content of the scrap in ingot production and in secondary copper smelting are similar, OSHA believes it should be as easy to control scrap preparation in ingot production as it is in secondary copper smelting. OSHA further believes that cross contamination, which is a problem in both secondary copper smelting and non-ferrous foundries, is a problem in brass and bronze ingot production as well.

The benefits of transfer of technology include the avoidance of duplication of effort in developing and testing controls, reductions in the costs of compliance, increases in the chances of achieving successful emission control, and reductions in employee exposures.

Prevention of Cross Contamination and Cross Drafts. In non-ferrous foundries two of the major sources of cross contamination are furnace operations and pouring. Furnace operations and pouring in ingot production are very similar to those in non-ferrous foundries. These operations therefore have similar potentials for cross contamination. There is, moreover, nothing in the record to suggest that the level of controls or applied industrial hygiene currently is materially different in ingot production than in non-ferrous foundries. OSHA therefore assumes that the problem of cross contamination is at least as severe in some ingot production facilities as it is in some non-ferrous foundries. This assumption is supported by evidence of high background levels and cross contamination in brass and bronze facilities at which NIOSH conducted in-depth surveys (e.g., Ex. 568, pp. 195, 200).

The Agency notes that the typical increment to exposure levels attributed to cross contamination in non-ferrous foundries is at least 20 $\mu g/m^3$ This cross contamination can be eliminated in ingot production in the same manner and to the same extent that it can be controlled in non-ferrous foundries. Consequently, OSHA hereby incorporates into this assessment of ingot production on how to control cross contamination that appears in the non-ferrous foundry section of this preamble.

OSHA wishes to emphasize two points from that analysis. First, it is vital in controlling cross contamination to contain cross drafts, which not only spread contamination from one operation to another but also compromise local exhaust ventilation, preventing exhaust hoods from operating at maximum effectiveness (Ex. 583-13, p. 7-2). Second, to remedy the problem of cross contamination, as well as other problems, OSHA believes that the first thing ingot producers must do is obtain the services of experienced industrial hygienists. These professionals can perform plant-wide industrial hygiene studies that focus on a task-by-task analysis of sources of exposure and can analyze cross drafts and cross contamination as a basis for designing cross draft barriers and other measures to eliminate them.

OSHA is confident that such studies are essential to the systematic control of air lead levels in inadequately controlled plants in this industry. Such studies are a precondition for employers instituting effective, regular programs to identify the precise sources of exposure and reasons for upset conditions in order to determine how best to reduce them to a minimum (Ex. 686A, pp. 40-41). OSHA believes, as Meridian stated in connection with non-ferrous foundries, that no control measure is as likely to produce such dramatic results in controlling air lead levels in ingot production as the relatively low-cost approach of obtaining the services of an industrial hygienist (Exs. 686A, p. 41; 689-3, p. 1).

If undertaking plant-wide hygiene surveys and preventing cross contamination are among the most important steps that can be taken to reduce exposure levels generally throughout this industry, other conventional controls that are applicable to many operations also should be implemented broadly to reduce exposure levels. Implementation of effective conventional controls already has dramatically reduced exposure levels in various operations throughout this industry (e.g., Exs. 574. p. 70; 686D, pp. 7–8; 568, pp. 177–82). The controls recommended by OSHA include better exhaust ventilation, enclosure, isolation, automation of the production process, and better work practices (e.g., housekeeping and preventive maintenance).

Ventilation. The presence of excessive lead in the work environments of some ingot producing facilities indicates that existing engineering controls like local exhaust ventilation (LEV) and general dilution ventilation are not doing the job. Although much more quantitative and other information than industry has provided would be needed to state with any precision how great a reduction of any particular exposure level could be achieved by enhancing specific ventilation systems, OSHA believes that in many operations improved or additional ventilation can achieve major reductions in worker exposure.

Such controls have been developed, tested, and where found effective, manufactured and applied widely for many years throughout industry to control specific contaminants. Conventional controls for nearly every operation in ingot production, secondary copper smelters and foundries have been described in detail and often depicted in photographs or diagrams by industrial hygienists and engineers from the American Conference of Governmental Industrial Hygienists (e.g., Exs. 583–13, pp. 5–4 to 5–20, 5–41, 5–48 to 5–60), the American Foundrymen's Society (AFS) (Exs. 689–3; 689–4), NIOSH (Ex. 645), American National Standards Institute (ANSI) (Exs. 689–13A, 13B, 13C), and many consultants who have worked for OSHA or industry (e.g., Exs. 689–6; 689–7· 689–8; 689–9; 689–10; 689–11; 689–12). The ventilation controls applicable to ingot production are basically the same as those applicable to comparable operations in secondary copper smelting and non-ferrous foundries.

Improved or additional ventilation can achieve major reductions in air lead levels, for example, at briquetting (Exs. 568, p. 177· 574, pp. 19–20) and in furnace operations (Ex. 574, p. 20). More generally, OSHA believes that in many ingot producing facilities, as in many non-ferrous foundries, ventilation capacity often may be inadequate and may have to be increased (e.g., Exs. 689–3, p. 26; 689–4D, fig. 19). OSHA anticipates that increasing ventilation capacity to satisfy generally accepted criteria (e.g., Exs. 689–3; 689–4D, fig. 19) should result in nearly total capture of emissions by any properly designed hood.

As indicated in OSHA's discussion of non-ferrous foundries and incorporated here by reference, it is imperative that improvements to existing ventilation and newly-installed ventilation be properly designed and installed. In addition, ventilation systems must be maintained regularly to assure their effectiveness.

Enclosure and Isolation. Enclosure and isolation are two alternative methods of separating workers from air contaminants. In the case of isolation, the employee is physically separated from contaminants in the air, for example, by working in a filtered, ventilated control booth (e.g., Exs. 684D, p. 15; 689–4D, fig. 32). With enclosure, the source of the contaminant is physically contained and separated from the rest of the work environment to prevent contamination of the air (e.g.. Exs. 586–18, figs. 1, 2; 583–13, p. 4–14).

Docket entries generally describe standard enclosure techniques that are in use, or can be readily implemented in industry (e.g., blast furnace charging door enclosure, casting operation enclosure; Exs. 568, p. 54; 590, p. 22). Simple isolation techniques that have been successfully used in plants in this and other lead industries are applicable throughout this industry (e.g., providing employees with filtered, ventilated cabs for mobile equipment, fresh air islands, isolation booths for rotary furnace tapping, and control rooms; Exs. 568, p. 114; 590, p. 11; 684f, p. 13; 689–4D, p. 7–14, figs. 31, 32).

Isolating workers even for a portion of their shift can significantly reduce exposure levels. For example, a Radian study of a secondary lead smelter demonstrates that employee exposures can be reduced by 23–77% even when employees spend only a portion of the workday in an isolation booth (Ex. 583–16, p. 30). A second Radian study (Ex. 568, p. 217) reported that use of a fresh air island for a casting wheel operator in a brass and bronze ingot producing facility effectively reduced employee exposure to fumes migrating from the tapping/pouring operation. Another study, by NIOSH, investigating the effectiveness of various control technologies in secondary lead smelters, reports that workers spending even one-quarter of their time in a supplied air island would experience a 20% reduction in their 8-hour TWA exposure levels (Ex. 590, p. 40). Consequently, in ingot production supplied air islands could be installed near the furnace, for example, to reduce remaining excess exposures for operators after other controls are implemented.

Housekeeping, Work Practices, and Preventive Maintenance. Housekeeping, work practices, and preventive maintenance are essential controls whose importance frequently is not adequately recognized by employers. Failure to develop and use rigorous housekeeping, good work practices, and preventive maintenance can destroy the effectiveness of otherwise adequate engineering controls.

It is impossible to overemphasize the importance of good housekeeping and work practices (e.g., Exs. 475–32D, H-004H; 607 p. 6). Each ingot producer should thoroughly clean its entire facility, including rafters, at least annually. Moreover, to the extent that ingot producers rely upon dry sweeping, the practice should be eliminated and be replaced to the extent practicable by wet cleaning or vacuuming. Such straight-forward improvements in housekeeping as these have been estimated by Meridian to be likely to reduce worker exposures in general by 10–25% in the non-ferrous foundry industry (Ex. 686a, p. 22).

Detailed housekeeping instructions also should be prepared and adherence to them enforced by employers, with scheduling and checkoff of regular cleaning of all areas of the plant where dust can collect. If necessary, housekeeping instructions should list individual sites, pieces of equipment, parts of equipment, and obscure corners (e.g., under screw conveyors) to assure that they are cleaned regularly.

Implementing appropriate work practice controls is also vital to achieving exposure levels at or below 50 $\mu g/m^3$ Many engineering controls often can only be as effective as the associated work practices that determine how they are used and where the employee locates himself or herself relative to the controls (Ex. 607 p. 6). For example, scrap preparation for charging and charging itself should be done in a manner that minimizes the probability of jams in the throat of the charging hopper, which subject the charger needlessly to exposure to lead fumes and dust by requiring him or her to climb the charging deck to dislodge the jam (Ex. 568, p. 247).

Work practices also should be written to prescribe correct procedures for all tasks that might result in increased employee exposure. Such procedures should dictate, for example, that employees remove themselves from proximity to a source of exposure whenever possible and, to the extent possible, isolate themselves from contaminants by standing in a fresh-air island or booth. Similarly, the storage of slag in open bins should be prohibited. Care also should be taken to assure that covers or exhaust hoods are kept on ladles filled with molten metal whenever possible (Exs. 568, p. 48; 607 p. 4).

OSHA also notes the importance of maintenance programs to assure that all systems function as cleanly and as efficiently as practicable (e.g., Ex. 689–3, p. 74, Table 8–1; and see *Safety in Metal Casting*, Des Plaines, IL, Vol. 6, 1970, p. 172). Exhaust systems lose their capacity because belts and pulleys slip, duct branches become clogged, duct couplings become loose and develop holes that leak air, filters become occluded, and fan blades become corroded or unbalanced. Thus, the effectiveness of engineering controls can be severely limited by poor maintenance.

OSHA also recommends the following controls operation by operation.

Scrap Preparation. The main source of lead exposure in scrap preparation is lead oxide that forms on scrap, which is emitted as dust when the scrap is handled. This source of dust is most difficult to control in briquetting, where scrap of varying sizes and shapes is mechanically compressed. Nonetheless, with proper engineering controls briquetting can be controlled to below 50 $\mu g/m^3$ For example, by implementing local exhaust ventilation at briquetting machines, area samples indicate that exposure levels have been reduced to between 32–43 $\mu g/m^3$ Alternatively, employers may install a briquetting machine of the type described by NIOSH, which reduced the briquetter operators' average 8-hour, TWA to 38 $\mu g/m^3$ (Ex. 568, p. 177).

In addition, to control air lead levels in the scrapyard in general, OSHA recommends the wetting of scrap before handling to suppress lead dust. JACA reported in 1982 that some brass and bronze ingot producers used water spray to reduce dust in the scrapyard and on scrap going to the briquetter (Ex. 553–4, p. 1–3). OSHA recognizes that where scrap is moistened it cannot safely be charged directly into the furnace and therefore also recommends that, prior to charging, all wet scrap be pre-heated. OSHA believes that its recommendation to preheat scrap should not pose any additional burden on ingot facilities since most scrap must be preheated because it is stored outside, exposed to weather. Where only a few of the combined controls OSHA recommends for the scrapyard were implemented in the scrapyard of a large secondary copper smelter, 60% of the exposures were below 50 $\mu g/m^3$ (Ex. 684d, p. 14).

Additional measures that could be implemented by ingot producers whose exposures in the scrapyard continue to be excessive even after scrap wetting is introduced include enclosing the scrapyard, installing a cement floor for ease of washing, and installation of effective exhaust systems in briquetters (Ex. 568, p. 177).

Furnaces. The furnaces are the primary emission source for the entire facility, particularly during such activities as charging, slagging, and tapping. Local exhaust hoods installed over all furnace openings, like tapping and charging ports, constitute the most effective control for metal fume emissions from the furnaces. These hoods are available in close-capture, fixed, mobile and telescopic forms, which can be adapted to various circumstances and multiple operations (Ex. 583–13).

The effectiveness of such controls in reducing air lead levels in furnace operations is manifested in area and breathing zone exposure data collected by NIOSH as part of an in-depth survey it carried out at an unnamed ingot plant. Both breathing zone and area sample results there uniformly indicate exposure levels well below 50 $\mu g/m^3$ (Ex. 568, p. 249, Table 13). This ingot manufacturer achieved such levels by operating the furnace at negative pressure during charging and providing local exhaust at the tapping port (Ex. 568, p. 236). The effectiveness of these controls on melting furnaces is also demonstrated by the exposure levels achieved at Company K, where air lead samples consistently are below 50 $\mu g/m^3$ (Ex. 583–48).

In addition to implementing additional controls that capture emissions at their sources, other engineering controls can be implemented in the furnace area to isolate workers from lead fume and dust. As discussed above in the subsection describing isolation of workers, devices such as isolation booths, control rooms, and fresh-air islands can provide additional means to further reduce furnace employees' exposures even if employees can spend only a portion of their time isolated from contaminants.

Pouring. Several controls are available in pouring to achieve 50 $\mu g/m^3$ where it is not now consistently being achieved. These include implementing local exhaust ventilation at the tap hole and the ladle. This technology was employed at one brass and bronze ingot plant, and employee exposure levels in the pouring area were reduced to 36 $\mu g/m^3$ (Ex. 568, p. 249). To achieve additional exposure reductions in the pouring area, local exhaust ventilation also should be implemented in the ingot cooling area, as was done at a second unnamed ingot facility (Ex. 568, pp. 217–18). Supplied air islands can be provided to ladlemen and pourers, as well, as they were in one ingot facility (Ex. 568, pp. 215–16). The combination of exhaustingthe cooling area and providing fresh air islands for the pouring area achieved exposure levels of 16–17 $\mu g/m^3$ for the pourer and 23–29 $\mu g/m^3$ for the ladleman in one ingot plant (Ex. 568, p. 208).

Baghouse and Dust Control. Control measures for baghouses and dust handling include establishing proper work practices to be followed, repairing and maintaining baghouses to eliminate leaks and ensure proper functioning of cleaning mechanisms, shielding baghouses from wind by erecting barriers, providing ventilation at dust-packaging operations, and installing an automatic dust-packaging system that uses mechanized material handling equipment such as a screw conveyor.

Repair and maintenance of the baghouse is an intermittent maintenance activity. During that activity baghouse operators traditionally use respirators to perform their duties where engineering controls are not feasible. OSHA acknowledges that in such situations respirators are needed to supplement available engineering controls to adequately protect employees.

Technological Feasibility. Based upon the above analysis of the evidence in the record and OSHA's experience and expertise, the Agency determines that achieving a PEL of 50 $\mu g/m^3$ by engineering and work practice controls is technologically feasible in the brass and bronze ingot production industry as a whole.

To sum up, OSHA has shown the following. As long ago as 1979–81, nearly three-quarters (74%) of all employees in ingot production were reported to be exposed at levels below 50 $\mu g/m^3$ Indeed, according to these industry-supplied data, nearly one-half (44%) of all employees were exposed below 30 $\mu g/m^3$ At Plant K, for example, 94% of the 68 employees were exposed below 50 $\mu g/m^3$ in 1981, and the only operation where exposure levels were above 50 $\mu g/m^3$ was the baghouse, essentially a maintenance operation. Recent OSHA inspection data confirm this general picture, with average exposure levels in all operations for the inspected plants already at, below, or not far above 50 μg/m³ (Ex. 553-4, p. 1-4; 583-48; 574, p. 4).

These results have been achieved with existing controls, before OSHA's recommended additional controls have been implemented and before cross contamination has been controlled. With the implementation of additional controls and the control of cross contamination, OSHA anticipates that exposure levels in all operations, with the possible exception of baghouse maintenance, will be consistently controlled to or below 50 μg/m³

This conclusion is supported by OSHA's feasibility assessments in the other pyrometallurgical industries, secondary copper smelting and non-ferrous foundries, the relevant portions of which are hereby incorporated into this assessment. For both these industries, OSHA has determined that it is technologically feasible to achieve 50 μg/m³ by means of engineering and work practice controls alone. OSHA is confident that the controls available to achieve the PEL in those industries are applicable, with no more than modest modifications, to those facilities in brass and bronze ingot production that still have inadequate controls.

With regard to the controls needed to achieve 50 μg/m³ in ingot production, OSHA wishes to point out that all of its recommended controls are conventional and readily available. OSHA has not needed to exercise its statutory authority to force the development of new technology in this industry to justify the Agency's finding of feasibility.

In reaching its conclusion, OSHA does not purport to have recommended an exhaustive list of additional controls. The Agency is certain that industry will be capable of devising and fine-tuning various controls to further reduce exposure levels. Consequently, OSHA anticipates that industry will be able to consistently achieve exposure levels at or below 50 μg/m³ in virtually every phase of production.

OSHA believes that achieving the PEL requires implementing an integrated system of controls. The basic element of that system is an industrial hygiene study. Each ingot producer is required by paragraph (e)(3) of the lead standard (29 CFR 1910.1025) to establish and implement a written compliance program that includes an in-depth job/task analysis and a plant-wide survey. This survey and analysis should be performed by an experienced industrial hygienist who shall identify sources of emission in each task and sources of cross drafts and cross contamination. Such an analysis should also recommend appropriate engineering and work practice controls to control emissions, control cross drafts and cross contamination, and generally minimize employee exposures. If, after implementing these recommendations, reductions in air lead levels deviate substantially from what was anticipated, a followup industrial hygiene survey should be conducted and necessary corrections made.

The second element in that system is the development of good, written housekeeping and work practice programs, as required by paragraph (e)(3)(ii)(F) of the lead standard (29 CFR 1910.1025), that are systematically implemented so that proper work procedures are routinely and meticulously followed. For example, wall-to-wall cleanups should be conducted at least annually.

The final element of an integrated system of controls is a preventive maintenance program to assure that all systems are maintained in clean, efficient, and effective condition.

The brass and bronze ingot production industry does not agree that a PEL of 50 μg/m³ is achievable. Industry's disagreement is based upon six main arguments. The six main arguments are: A prior OSHA contractor and OSHA itself previously concluded that 50 μg/m³ is not feasible; Meridian's report is incorrect, incompetent and unsupported; in any event, the evidence in the remand record does not support a determination that 50 μg/m³ is technologically feasible; factors unique to ingot production make it impossible to consistently achieve 50 μg/m³; technology does not exist to control exposure levels to 50 μg/m³ in particular operations; and even if it were feasible to consistently achieve 50 μg/m³ in newly constructed plants, that PEL cannot be achieved by retrofitting older plants.

First, industry asserts that OSHA's contractor, JACA, previously concluded that it was not technologically feasible to achieve 50 μg/m³ without substantially rebuilding plants. Industry further asserts that in 1983 OSHA itself found 50 μg/m³ technologically infeasible in brass and bronze ingot production (Exs. 582-85, pp. 14-17; 582-89, pp. 39-40; 680, pp. 4-6 and 10).

In response, OSHA agrees that JACA did conclude that 50 μg/m³ was technologically infeasible without substantial rebuilding of plants. However, even if JACA were correct, this does not mean that the PEL is technologically infeasible. On the contrary, JACA's point is that the PEL is technologically feasible, but, by implication, that achieving it is likely to be expensive.

OSHA agrees with JACA that the PEL is technologically feasible but rejects the rest of JACA's conclusion as inconsistent with, and unsupported by the very data upon which it is based. JACA's own data show that nearly three-fourths of employees in ingot production already were exposed below 50 μg/m³ by the years 1977-81 (Ex. 553-4, p. 1-4). The data further show that nearly one-half of all employees were exposed below 30 μg/m³ which is nearly twice the percentage exposed above 50 μg/m³ Moreover, JACA does not explain how it reached its conclusion about the supposed need for substantial rebuilding.

In fact, the focus in the JACA report is almost exclusively on economic, rather than technological feasibility. There is no industrial hygiene analysis in the report, and the report does not present substantial arguments or conduct meaningful analysis of data in support of any conclusion about technological feasibility.

In any event, the determination of feasibility is for the Agency alone to make. Industry asserts that OSHA has already made that determination, finding that 50 μg/m³ is infeasible in this industry. Industry is incorrect. In 1983 some members of OSHA's staff did draft a document that included a finding of infeasibility for brass and bronze ingot production (Ex. 570). However, that draft never received Agency approval. In addition, the draft finding appears to have been based exclusively upon the JACA conclusion and is therefore vulnerable to the same criticisms. Furthermore, OSHA had previously informed the court that it needed more information to determine feasibility for this industry. Since then, OSHA has received considerably more information about this and similar industries, which the Agency has relied upon in this assessment of feasibility.

Second, industry argues that Meridian's report is incorrect, incompetent and unsupported by record evidence (Exs. 582-85, pp. 20-23, 31 and 37; 582-89, pp. 38-41; 664, p. 1; 680, pp. 18-19; and 683, p. 10). On the whole, OSHA rejects these criticisms and believes that Meridian did a creditable job, given time and resource constraints.

Meridian has had extensive experience and possesses very broad competence in the area of industrial hygiene, the principles of which are universally applicable to all industries. It also has broad expertise and experience in assessing factors relevant to technological feasibility. Physically, there is nothing unique about lead dust and lead fume or about brass and bronze ingot production that would make Meridian's extensive expertise and competence in evaluating engineering and work practice controls across many industries irrelevant to this industry. The control technologies recommended here are conventional and transferrable from similar industries, and the anticipated effectiveness of these controls in reducing air lead levels also is the same across industries.

Of course, notwithstanding its experience and expertise, Meridian may have drawn some incorrect conclusions and made certain mistakes of fact. This is almost inevitable when a contractor can devote only limited time and resources to examining a complex industry and record. Such mistakes are also more likely to occur where, as here, the industry has declined to testify and subject itself to any questioning at the public hearing and has declined to arrange site visits to its plants. OSHA actively sought to set up site visits in this industry similar to those OSHA carried out in four other lead industries after the 1987 hearing, but representatives of ingot producers did not make such sites available (Ex. 690B).

OSHA concludes that Meridian's reports and its conclusions are based upon the best available evidence. Meridian s reports, including revisions to its preliminary report based upon industry comments, generally are firmly grounded in the record, and its conclusions are based on numerous sources in that record. These include data, other evidence, and comments submitted by employers, trade associations and other interested parties.

In any event, OSHA has independently assessed the record, reviewed Meridian's final report for accuracy, taken account of industry's comments on that report, and relied only in part upon the Meridian reports for the Agency's determination of technological feasibility. In contrast to Meridian, for example, the Agency has found the data submitted by ABBIM not to be useful and has placed greater emphasis on the JACA data.

Third, industry argues that the evidence in the remand record does not support a determination that 50 $\mu g/m^3$ is technologically feasible. OSHA, of course, disagrees, as this feasibility assessment would indicate. The Agency further notes that industry has failed to present data and contextual information to show that 50 $\mu g/m^3$ cannot be technologically achieved by engineering and work practice controls alone.

OSHA s statutory obligation is to make its feasibility determination based on the best available evidence in the record. OSHA has actively sought to collect and develop a full and accurate record. OSHA is persuaded that it has more than enough information and data in the record upon which to base its determination of technological feasibility.

However, OSHA recognizes that there would be substantially more useable information and data in the record had the brass and bronze ingot production industry been cooperative in developing that record. For example, since 1979 the lead industries have been required by the lead standard to conduct quarterly monitoring of all employees exposed above the PEL, that is, they have been required to regularly monitor all operations in which there might conceiveably be technological feasibility problems. Thus a wealth of exposure monitoring data exists on this topic.

Nonetheless industry representatives provided very little of that data to the record, despite frequent requests by OSHA. In fact, no ingot producer directly submitted air lead monitoring results to the record in the recent proceedings. The single industry submission of exposure data is from an industry trade association, is limited to 64 selected data points in three plants, and is unaccompanied by any substantial description of associated controls (Ex. 665). OSHA also is certain that the record in this rulemaking would be much richer had industry not declined to participate in site visits and declined to testify at the public hearing and to subject itself to cross examination by OSHA and others.

In arguing that the record does not support the feasibility of 50 $\mu g/m^3$ industry has asserted that 150 $\mu g/m^3$ is the lowest level technologically achieveable (e.g., Ex. 680, p. 9). Industry has failed to present data and information to support this position. In fact, even the sparse data it chose to provide consistently show not only that 150 $\mu g/m^3$ is achieveable but also that it already has been achieved (e.g., only two of the 64 monitoring results provided by ABBIM are above 150; nearly two-thirds are below 100 $\mu g/m^3$. Ex. 665).

OSHA therefore finds industry's argument that the evidence in the record is insufficient to prove the technological feasibility of a PEL of 50 $\mu g/m^3$ unpersuasive.

Fourth, industry argues that certain factors in ingot production, like the varying amounts of lead used in particular alloys and the variability of the weather, make it impossible to consistently achieve 50 $\mu g/m^3$ (e.g., Exs. 581-14, pp. 2, 9; 664, pp. 1-2; 665; 668D). OSHA disagrees. Such factors, as well as any variability in exposure levels that may result from them, are typical of many lead-using industries for which the feasibility of the PEL of 50 $\mu g/m^3$ already has been determined by OSHA and approved by the courts (Ex. 686D, pp. 11-12).

Variability in exposure levels above and below an average over time has long been recognized by industrial hygienists. However, as employers in other lead industries have reported, part of this apparent variability may be caused by contamination of the sampling process (e.g., Ex. 684e, p. 7).

Eliminating the factor of sample contamination, most variability in exposure levels is the result of factors that are within the control of the employer (e.g., poor work practices, inadequate housekeeping, and most upset conditions; Ex. 686D, p. 11). OSHA strongly believes that if production and engineering and work practice controls are properly and consistently carried out, the factors causing variability will be largely controlled and the range of variability will be substantially narrowed. OSHA therefore considers evidence of repeated, wide-ranging variability in exposure levels as evidence of the inadequacy of controls. That inadequacy, of course, hardly constitutes evidence of infeasibility.

However, OSHA recognizes that some variability is random and beyond the employer's control. As discussed earlier in this preamble, OSHA has determined that this random variability does not make it technologically infeasible for brass and bronze ingot producers to achieve the PEL. Moreover, as indicated above, OSHA has built some flexibility into its enforcement policy to take account of random variability.

Once the range of variability has been narrowed by effective controls, the degree of latitude for variability that is built into OSHA's determination that the PEL is feasible should prove sufficient. This latitude is implicit in OSHA's determination that in most operations ingot producers will be able to reduce exposures to levels that are reasonably below 50 $\mu g/m^3$ For example, JACA data show that as long as seven years ago nearly half of all employees already were exposed below 30 $\mu g/m^3$ (Ex. 553-4, p. 1-4).

Nonetheless, OSHA understands that from time to time peak exposures due to unforeseeable upsets or other aberrational events will exceed the latitude for variability. OSHA believes that the notion of technological feasibility adopted by the courts—capable of being achieved in most operations most of the time—takes such realities into account. OSHA further believes that the Agency's Field Operations Manual (FOM), which suggests that OSHA inspectors re-monitor exposure levels in cases where OSHA's monitoring shows results that are unusually high relative to those in the employers' exposure records, also takes account of such realities in OSHA's enforcement activities. As a result, OSHA does not believe that such excursions are relevant to this feasibility determination.

Fifth, industry argues that the technology does not exist to control exposure levels to 50 μg/m³ in particular operations. OSHA does not agree. Industry at best has shown that certain plants, in certain operations like briquetting and baghouse maintenance are not achieving 50 μg/m³ with existing controls. However, ingot producers have made no showing, and have scarcely argued that these plants have implemented state-of-the-art technology in these problem operations. Based upon OSHA's analysis of several, relatively advanced non-ferrous foundries with similar operations and exposure problems, OSHA is certain that no ingot producer has approached the level of technology at which no additional controls can be implemented to further reduce exposure levels.

Moreover, there is no evidence in the record to show that any plant in this industry sector has conducted the kind of in-depth industrial hygiene survey of plant conditions that OSHA considers necessary to identify sources of emissions and appropriate controls. Such a survey is necessary for implementing effective controls. It is the foundation for the kind of integrated control program that is capable of consistently achieving the 50 μg/m³ PEL of the lead standard. Without such a survey, industry's claim that it has already done all that it can to control exposure levels simply is not credible.

In any event, OSHA has already shown that for each and every operation, with the possible exception of baghouse maintenance, at least some plants in this industry have been able to achieve exposure levels below 50 μg/m³

Sixth, industry argues that even if it were feasible to consistently achieve 50 μg/m³ in newly constructed plants, that PEL cannot be achieved by retrofitting older plants (Exs. 582–85, pp. 26–27· 664, p. 5; 694–11, p. 4). Essentially, industry appears to be arguing that existing ingot plants would have to be rebuilt to achieve 50 μg/m³ OSHA does not accept this broad assertion, for which industry has failed to present any supporting evidence. OSHA believes that the record itself demonstrates that existing plants in this sector can achieve this level without being rebuilt, as evidenced by the exposure data from industry in 1982 (Exs. 583–48; 553–4, p. 1–4).

Other record evidence also suggests that this assertion is incorrect. As the NIOSH/Radian study has shown, industry can implement many additional controls within existing plants (Ex. 568). Moreover, industry's contention that the level of baseline (existing) controls assumed by Meridian is too high (Exs. 582–85, p. 23; 664, p. 5; 694–11, p. 6) would seem to concede that much more can be done to control exposure levels within existing plants.

In fact, as previously stated, OSHA has shown that nearly 10 years ago most employees in the industry already were reported to be exposed to air lead levels below 50 μg/m³ (Exs. 553–4, p. 1–4; 583–48). OSHA has no reason to believe that these workers were employed only in newly constructed plants. Industry makes no allegation to that effect, and JACA has given no such indication.

Finally, the breadth of industry's assertion regarding rebuilding is similar to the broad scope of industry's claim that 150 μg/m³ is the lowest feasible level. Based upon industry's own recent data submission (Ex. 665), OSHA has shown that assertion to be incorrect, unfounded and therefore not credible. OSHA also finds not credible industry's broad assertion that rebuilding of plants generally will be required to achieve the PEL. OSHA believes it previously has shown that the PEL can be achieved most of the time in most operations without rebuilding.

Thus, for all the the above reasons, OSHA is unpersuaded by industry's arguments that the PEL cannot be achieved by means of engineering and work practice controls. Based upon its own expertise, experience and the record evidence, the Agency concludes that a PEL of 50 μg/m³ is achieveable in the brass and bronze ingot production industry by means of engineering and work practice controls.

Industry Profile. Brass and bronze ingot producers primarily melt copper and copper-based scrap, and cast it into blocks and bars. These facilities are classified under SIC code 3341, Secondary Smelting and Refining of Nonferrous Metals.

Information submitted to the docket indicates that there are 16 ingot manufacturers active in the business today [Ex. 666d. p. 1]. Total production employment is estimated at approximately 800 [Ex. 666d, p. 1].

Recent data show ingot production increased about 4 and one-half percent between 1986 and 1987 [1987 Minerals Yearbook, Bureau of Mines, U.S. Department of Interior]. Between 1981 and 1982, production dropped 22 percent, from 239,423 short tons to 187,126 short tons, and has fluctuated between 185,000 and 217,000 short tons since that time [Ex. 574, p. 5].

The two leading types of ingots produced between 1980 and 1986 were leaded red brass and semi-red brass, with the former containing 5 to 7 percent lead; high-leaded tin brass, the third leading type of ingot shipped, contains 7 to 24 percent lead [Ex. 574, p. 2]. In 1985, these three ingot types accounted for over 74 percent of the 199,147 short tons produced by the industry [Ex. 574. p. 6].

The major market for brass and bronze ingots is the foundry industry, which uses about 70 percent of all ingots produced. In 1987 brass ingot constituted 66 percent of all copper materials consumed at U.S. foundries [Bureau of Mines, U.S. Department of the Interior]. Other users of brass and bronze ingots include brass mills, powder plants, and miscellaneous copper and copper-alloy using industries [Ex. 574, p. 7].

Over 97 percent of the copper used to make brass and bronze ingots comes from scrap [Ex. 574, p. 7]. The brass and bronze ingot industry competes with brass mills and foreign bidders for this scrap.

Comparisons have been made between quoted prices of the ingot producers' final product and that of the scrap input. Meridian collected data for the years 1967 through 1985 and reported that:

> [b]oth red brass scrap and leaded red brass ingots reached a current dollar price high in 1980. By 1985, red brass scrap prices had declined by 38 percent, while scrap red brass ingot had declined by 23 percent. When prices are measured in real 1982 dollars both scrap and ingot prices show declines from 1974 peaks. However, the price differential between scrap and ingots has only varied between 37 and 47 cents per pound since 1981, despite significant changes in the prices of both scrap and ingots over the same period [Ex. 574. p. 11].

The Association of Brass and Bronze Ingot Manufacturers (ABBIM) and the Brass and Bronze Ingot Institute (BBII) commented that the actual price differential was on the order of 15 to 17 cents per pound in 1987 [Ex. 582–85, p. 23]. According to the commenters, this was because virtually all ingot is sold at a discount below the list price.

Financial information submitted to the docket by the ABBIM was obtained from

11 brass and bronze ingot manufacturers and was aggregated and averaged [Ex. 582–85. Attachment]. This information indicated financial distress. Average return on assets (ROA) for these 11 firms for the year 1986 was 0.4 percent. It was not clear from this information whether a few firms were doing very poorly or whether all firms were realizing very low rates of return.

Publicly available data from Dialog Information Services (Duns Financial Records Plus (DFRP)) provided additional information which OSHA found useful in assessing the financial status of this sector. These data included sales figures for six brass and bronze ingot producers. Two of these producers, each employing over 150 workers in SIC 3341, realized annual sales of $40 million in 1987 Another producer whose primary activities under SIC 3341 employed 40 workers and realized annual sales of $9 million in 1986. This firm had an ROA of 2.2 percent and a rate of return on sales (ROS) of 0.7 percent. For three additional firms, activities under SIC 3341 were secondary in nature. Two of these firms, each with 60 employees, realized annual sales of $10 million and $18 million, respectively, in 1987 The third, employing over 160 workers, realized annual sales of $38 million in 1987

These sales data are inconsistent with the sales data reported by the ABBIM. The Dialog data confirm information in the public record which suggested that some brass and bronze ingot producers engage in other activities, which may take place at the same location [Ex. 574, p. 15]. For the three firms noted above for which activities classified under SIC 3341 are secondary in nature, primary activities are classified under SICs 3334 (Primary Production of Aluminum) and 3339 (Primary Metal Mills). The latest information available from Dun and Bradstreet [Industry Norms and Key Business Ratios, 1987] indicates that firms in these SIC codes realized rates of return on sales (ROS) of 4.6 percent. The ABBIM data failed to address these additional activities; thus, it is not clear whether the ABBIM average sales estimate of $6 million per facility is an estimate of total sales or sales related solely to the production of brass and bronze ingots. In either case, the average sales figure provided by the ABBIM appears to substantially underrepresent sales activity in this sector. Additionally, recent price increases (see below) indicate demand for ingots has strengthened since 1986, a year when prices of alloyed brass ingot fell over 4 and one-half percent [Ex. 661].

Based on the above discussion, OSHA's economic feasibility assessment is based on Dun and Bradstreet industry statistics. The ROS reported for SIC 3341 in 1988 was 1.7 percent. This rate was based on information obtained from 60 firms, representing about 25 percent of the total number of firms in SIC 3341.

Costs of Compliance. Compliance costs for the Brass and Bronze Ingot sector were estimated by Meridian Research in its 1987 report [Ex. 574]. These cost estimates were based on the number of emission sources found in a typical facility and the extent of controls already believed to be in place.

Comments were received regarding these cost estimates. ABBIM and BBII stated that Meridian failed to cost a travel vent for hand pouring and the make-up air required for proper functioning of ventilation systems [Ex. 582–85, p. 21]. In its August, 1987 report, Meridian estimated costs for ventilating the pouring ladle and for fresh air islands for the ladleman and pourer; costs for hand pouring were estimated to be similar. With regard to make up air, Meridian stated in its Addendum to the August, 1987 report that make up air was taken into account in the $15 per cfm unit cost [Ex. 686d, p. 13]. These commenters also asserted that Meridian failed to include costs for materials handling at the briquettor [Ex. 582–85, p. 22]. Costs for agglomerating devices (briquettors) were identified by Meridian, but OSHA believes that additional costs may be required to provide this ventilation. Accordingly, OSHA has revised the Meridian estimate of $39,000 per agglomerating device to $70,000. OSHA also adjusted Meridian's estimates to include costs for a scrap pre-heating system, supplied air islands for the furnace area, ventilation for the ingot cooling area, dust packaging controls, isolation barriers, and housekeeping costs, which include portable vacuum sweepers. These adjustments are detailed below. Additionally, OSHA adjusted downward the Meridian assumption of four furnaces per plant to two, based on information in the public record [Ex. 568, pp. 174–221].

Costs for the pre-heating of wetted scrap were estimated to be approximately $400,000 [Ex. 694–11, p. 7]. Annual costs would include annualized capital costs, assuming a twelve year useful life and a 10 percent cost of financing, of $58,720 and operating and maintenance (O&M) expenses of $40,000. Total annual costs for the pre-heating of scrap were thus estimated to be $98,720.

A supplied air island for the furnace area would require a $10,000 capital outlay. Annualized capital costs would be $1,468 and O&M expenses would be $1,000. Estimated total annual costs for this booth were thus $2,468 [Ex. 574, p. 23].

Costs for ventilating the ingot cooling area were based on the costs of an isolated cooling chamber. The cost of such a chamber with a capacity of approximately 45,000 cfm is estimated to be $50,000 [Ex. 582–81]. Annualized costs are $5,875 based on a useful life of 20 years. (The 20 year period reflects the structural nature of this control). O&M expenditures would be $5,000. Total annual costs were thus estimated to be $10,875.

Costs for isolation barriers and partitioning (which may include structural or flexible materials) to prevent cross-contamination within the facility are assumed to be $50,000. Annualized costs, computed using a 20 year useful life, will be $5,875. (Since it was anticipated that the majority of these costs would be for structural materials, a 20 year useful life was used to compute annualized capital costs). No operating cost was estimated to be required.

Additional costs for housekeeping were also estimated. An annual cleaning, which may be performed by a contractor, was estimated to cost $22,000 for a brass and bronze ingot facility [Ex. 686c, p. 32]. Costs for daily labor were estimated to be $4,235, based on one man-hour per day at $12.10, 7 days per week and 50 weeks per year.

OSHA also estimated the costs for a portable vacuum sweeper. Costs were estimated to be $3,900 each [Ex. 579, p. 29]. Annual costs, including annualized capital costs of $573 and O&M expenses, which include HEPA filter replacement, of $2,390, were estimated to be $2,963.

The cost of the industrial hygiene survey was estimated to be $1,000, based on one hygienist working for two days at $500 per day. The first day would be required for a survey of the site and the second day would be required for actual monitoring and for the evaluation of mechanical equipment. Recurring costs were not estimated to be required; thus, no annual costs were estimated.

Finally, costs for wind barriers and ventilation of dust packaging (or automation, if necessary) at the baghouse are expected to be at least $75,000 for facilities of this size [Ex. 668E]. Annual costs would be $18,510.

Commenters indicated that the baseline level of control in the brass and bronze ingot sector is lower than the baseline assumed by Meridian (50%) in its August 1987 report [Ex. 574]. Other evidence suggests that the 50 percent baseline may underestimate current compliance in this industry [Exs. 582–89, p. 35; 553–4; 583–48]. However, no information was submitted by industry that would allow OSHA to calculate a revised baseline. Thus, in calculating the average incremental costs for this sector it was assumed that 50 percent of the controls needed were already in place.

Meridian's annual cost estimate of $98,597 per plant was adjusted to include a scrap pre-heating system, two fresh air islands for furnace areas, ventilation of the ingot cooling area, dust packaging controls, isolation barriers, and housekeeping costs, which include costs for two portable vacuum sweepers. Since some plants may incur higher operating expenses in cold weather [Ex. 582–89, p. 351], an increase in average operating expenses for ventilation of 2.5 percent of capital costs has also been added. The average incremental annual cost estimate was thus $181,000 per plant.

In sum, total incremental annual costs for this industry are estimated to be approximately $2.9 million.

Economic Feasibility. Price increases required to pass through the costs of compliance were estimated by computing the ratio of costs to sales. Sales for the brass and bronze ingot industry were estimated by multiplying industry production by price.

Industry production was estimated to be about 175,000 metric tons, or 386,000,000 pounds, in 1986 [Ex. 582–85, Attachment] and the list price of leaded red brass ingot (a major industry product) was about 75 cents per pound for the same year [Ex. 574, p. 12A]. It was reported, however, that ingot is rarely sold at the list price [Ex. 582–85, p. 23]. Assuming the selling price of this product to be 10 percent below its list, yields a price of 67¢ per pound. This price was then adjusted to 87¢ per pound to reflect recent increases in ingot prices (see below). Industry sales were thus estimated to be $336 million.

Using this sales figure and the total incremental annual cost figure of $2.9 million, price increases were estimated. The cost/sales ratio indicates that average price increases of 0.9 percent will be required to pass through the costs of compliance.

Alloyed brass ingot prices increased by more than 30 percent in 1988 [Producer Price Index, Bureau of Labor Statistics, November, 1988]; production levels also increased somewhat during the same period, according to data from the Bureau of Mines. Since the users of ingot have the ability to perform alloying on site, and since some have the ability to process scrap, the ingot producers ability to raise prices is limited. (The 30 percent price increase in ingot noted above was paralleled by a 30 percent rise in the price of refined copper and a 36 percent rise in the price of copper base scrap, the input of the ingot maker).

Cost to profit ratios were also computed, and represented the impact upon profits assuming full absorption of compliance costs. Profit estimates were based on the sales figure developed above and the Dun and Bradstreet profitability estimate of 1.7 percent for SIC 3341. Total profits for brass and bronze ingot activities were thus estimated to be $5.7 million. To estimate profit impact, the tax-deductibility of compliance costs was taken into account. That is, care was taken to compute before-tax profit before subtracting annual costs. After subtracting annual costs, the appropriate average tax rate was then reapplied to determine after-tax profit net of costs. For this sector, an average tax rate of 0.34 was used. Compliance costs were found to represent 34 percent of industry profits. This impact would result in a drop in ROS 0.6 percent, from 1.7 to 1.1 percent.

However, OSHA estimates that roughly one-half of the firms in this sector are engaged in activities other than the production of brass and bronze ingots. Available data indicate that these activities are profitable (see discussion above) and firms should be able to absorb compliance costs from overall profits. Based on the average sales figure of $25 million and the ROS rates presented in the industry profile, total profits per firm were estimated to average $775,000. (This value was computed using an average of the 1.7 and 4.6 ROS rates, or 3.2 percent.) Since the average cost per plant was estimated to be $181,000, the cost to profit ratio, using the same tax considerations as described above, was 0.15. ROS would dip from 3.2 percent to 2.6 percent. Normal rates of return on sales for firms in SIC 33 range from 3 to 3.5 percent.

Annual costs as a percentage of fixed assets was also computed. Using financial data from Dun and Bradstreet (Ex. 574, p. 31), and based on an average sales figure of $21 million per plant, fixed assets for a brass and bronze ingot manufacturer were computed to be approximately $1.7 million. Since annual costs were estimated to be $181,000, annual costs as a percentage of fixed assets would be 10.6 percent. Historical data on capital expenditures were not available for brass and bronze ingot manufacturers; therefore, OSHA examined data for SIC 3341. Capital investment as a percentage of gross fixed assets for SIC 3341 averaged 11.5 percent over the fifteen year period between 1963 and 1977 and was about 8.7 percent in 1982, according to Census data.

OSHA recognizes that rates of return are modest for this sector. OSHA also recognizes that the brass and bronze ingot manufacturing industry has experienced a major contraction over the past twenty five years. Since the 1950's, thirty-two brass and bronze ingot plants have closed or have stopped producing ingot (Ex. 582–85, p. 7). This contraction reflected the long term decline in the nonferrous foundries.

It is clear, however, that demand for brass and bronze ingots will continue. This is evident from data which show, as noted above, that in 1987 66 percent of copper materials consumed at U.S. foundries consisted of ingots (Bureau of Mines, U.S. Department of Interior). All 1,300 foundries use brass and bronze ingots as raw material. Data from the Commerce Department indicate that production of copper-based castings has increased substantially since the recession of the early 1980s and now approximates 1979 levels (1989 U.S. Industrial Outlook, U.S. Department of Commerce. p. 18–13). While OSHA estimates that some brass, bronze, and copper foundries will exit the casting market over the next five years, total casting production is expected to remain constant. Demand for ingots will shift away from foundries which cease production and shift to foundries which remain in business. Total nonferrous foundry demand for the brass and bronze ingots is expected to remain constant throughout this shift. No decline in production for any brass and bronze ingot manufacturer is expected to occur. Currently each ingot manufacturer supplies, on average, over 80 individual foundries. This large number of buyers should ameliorate the potential disruption from the consolidation in demand.

Based on the computed profit impact ratios, evidence of recent demand for ingots, and evidence that demand for ingots will continue, this analysis indicates that this sector should be able to withstand the impacts of this rule with an extended schedule of five years. The five year schedule is required due to the limited ability of firms in this sector to raise prices and to allow firms to phase in engineering controls.

OSHA concludes that the 50 $\mu g/m^3$ PEL is economically feasible for the brass and bronze ingot manufacturers. At the end of the five year period, profit impacts are not expected to be of sufficient magnitude to threaten industry existence or structure. Further, evidence of domestic demand for ingots, as indicated by recent product price rises and increases in production volume, strongly suggests that some plants will be able to expand sales and improve profitability.

2. Independent Battery Breaking

Process Description. Independent battery breakers process used batteries to recover lead for sale to secondary smelters. Although independent battery breaking facilities do not engage in secondary lead smelting operations, independent battery breakers do utilize the same battery breaking process and production technology as captive battery breakers in secondary lead smelters, an industry segment in which OSHA has found it feasible to achieve a PEL of 50 $\mu g/m^3$ by means of engineering and work practice controls. In both industry segments, batteries are broken or cracked to separate, recycle, and/or dispose of the various materials of which they are composed. Those components include hard and soft lead, lead oxide/sulfate and salts, sulfuric acid, paper or plastic cell separators, and rubber or polypropylene encasing materials (Exs. 553-7 p. 1-1; 605).

Independent battery breakers process various kinds of batteries, including automotive, junk, odd-size, damaged, small lot and sometimes large industrial batteries. On the other hand, generally captive battery breakers process only automotive batteries (Ex. 694-1, p. 2). However, Delatte Metals Company (Delatte), an independent battery breaker that recently acquired a smelter and is now classified as a secondary smelter, still handles large industrial batteries in its battery breaking facility (Ex. 687-13).

Many battery breaking operations are automated, (e.g., sawing, dumping, crushing, shredding) (Exs. 553-7 p. 1-7· 686F p. 6). However, at some facilities, dumping the cells and loading the washed lead cells for shipment to smelters may also be performed manually. In addition, unloading automotive batteries and cutting large industrial batteries are performed manually.

In a typical battery breaking operation, employees unload batteries from trucks onto roller conveyors which carry the batteries to the cutting saw. At Ashland Metals Company (Ashland), for example, the conveyor system automatically turns batteries on their side to go through the saw. Low-speed saws (40 rpm), with blade dimensions of approximately 1 inch by 36 inches, typically are used to cut off the tops of battery cases (Ex. 583-52, p. 3). To cut batteries, Ashland, Delatte and the Battery Salvage Division of Ace Battery, Inc. (Ace) all use low-speed saws, which generate less lead oxide dust (Exs. 583-52, p. 3; 694-1, p. 11; 687-13). Battery tops may also be cut off using high-speed saws, guillotines and shears, or the whole battery may be crushed in a hammermill or shredder. Cutting batteries with high-speed saws and guillotines scatters more lead dust, so these production methods may result in greater exposure levels (Ex. 694-1, p. 11).

After passing through the saw, the battery top drops below the saw and the case, which contains the cells and other lead-bearing materials, continues on the conveyor to the dumping station (Exs. 553-7 p. 1-1; 694-1, pp. 3-4) and uses manual shakeout to dump the internal components from batteries (Ex. 687-1), while Ace and Delatte utilize automatic dumping equipment to separate the cases from the cells (Exs. 583-52, p. 1; 694-1, p. 3). An automatic dumper, also called a tumbler, consists of a stainless steel rotating drum that receives the batteries as they are discharged from the conveyor. By the action of stainless steel bars within the tumbler drum, the tumbler separates the case from the "groups" or cells, which consist of hard lead grids covered by a paste of lead oxide/sulfate. The groups drop through the slots in the tumbler and are deposited into product collection bins. Typically, front end loaders remove the groups from the dumping area for shipment to lead smelters (Exs. 553-7 p. 1-1; 583-52, p. 3; 694-1).

The empty battery cases, both tops and bottoms, are often further processed to recover additional lead oxides and polypropylene. The cases are conveyed from the tumbler or moved by a front-end loader to a crusher, called a hammermill. At this point the tops are merged with the cases for crushing. The hammermill grinds the cases and tops, while the batteries are sprayed with water (Exs. 583-52, p. 3; 694-1, p. 7).

Lead oxide/sulfate is removed from the crushed pieces by various methods. In one method, the crushed pieces are washed and lead oxides and residue from the wastewater treatment are collected and placed into the groups pile for shipment. In another method, the slurry of crushed pieces and water moves through a series of screw conveyors to settling tanks to separate the plastic and rubber from the lead oxide/sulfate. The materials are separated by gravity separation, called a sink/float process. In this process the lead-bearing materials sink to the bottom of the settling tanks and are removed by conveyors while the crushed case pieces remain afloat and are skimmed off the tank surface (Ex. 605).

Entire batteries may also be processed by crushing, which generates much less dust than sawing. One method involves feeding whole batteries into a heavy-duty hammermill. After the battery is crushed, the lead materials, plastic, rubber and acid are separated from each other by the sink/float process (Ex. 605, p. 4).

Batteries may also be crushed using an automated shredder, such as the Saturn Shredder. The operating principle of the Saturn Shredder is the high torque and low-speed revolution of two counter-rotating shafts, each equipped with stainless steel teeth, to slowly shred whole batteries into pieces. No hammering, pounding, ripping, or other high-energy breaking force is employed, as is done with the hammermill (Ex. 592); thus the Saturn shredder generates less dust than sawing or crushing in a hammermill.

Large industrial batteries, because of their size and steel casing, are manually broken. These batteries, weighing from several hundred pounds to several tons, consist of a dozen or more closed plastic cells contained in a large steel casing. First the steel casing is cut and removed with a torch, a pneumatic cutting device or a hand-held gas-powered saw. Then the lead-bearing materials are recovered from the cells (called "jars" in an industrial battery) through the processes described above or the cells can be broken by either a saw or hand axe (Exs. 553-7 p. 1-2; 605, p. 4; 687-1).

Sources of Exposure. While the data are unclear, it appears that there are at least two independent battery breaking facilities and possibly as many as 12 facilities in operation currently, with each facility having a maximum of 10 lead-exposed employees. Thus, the independent battery breaking industry and total lead-exposed workforce is very small (Exs. 694-1, pp. 1, 4).

Because of the small size of independent battery breakers, such as Ace, employees perform various tasks interchangeably and therefore all employees potentially may be exposed to lead. However, since many battery breaking operations are automated and enclosed or performed with wet controls, they do not pose high lead exposure problems (Exs. 583-52, p. 1; 694-1). JACA reported back in 1982 that ordinarily sawing and dumping operations were already automated and enclosed, and therefore that employees are not exposed to lead while these operations are in process (Ex. 553–7 p. 1–7). In those few cases where automated processing equipment has not been enclosed, employee exposure levels may be high for employees working in close proximity to the equipment (Ex. 553–7 p. 1–7).

Generally, employee exposure problems are limited to tasks that are performed manually (Ex. 605; p. 3). In processing automotive batteries, manual tasks generally are limited to unloading used batteries as they enter the facility and to loading cleaned and wetted cells for delivery to secondary smelters (Exs. 583–52, p. 3; 694–1, p. 2–3). However, at Ashland the groups are manually dumped from the battery cases after the top is sawed off (Ex. 687–1).

Unloading batteries generally does not result in high exposure levels since most automotive batteries arrive at battery breaking facilities "wet" (i.e., still containing the sulfuric acid electrolytes). This condition can aid in reducing air lead levels associated with battery breaking. Some junk automotive batteries, such as factory rejects or drained batteries, may be received "dry" (i.e., lead-bearing grids have dried). When batteries are handled dry (e.g., manual unloading, manual dumping), the dried lead oxide/sulfate may become airborne and employee exposure may be greater (Ex. 605).

Loading the washed lead cells for delivery also does not pose exposure problems where the cells are kept wet. At Delatte even large industrial batteries are loaded and shipped wet (Ex. 687–13). In addition, at some independent battery breaking facilities manual loading has been replaced with loading by front-end loaders (Ex. 583–52, p. 3).

In processing large industrial batteries, the sources of high lead exposure are manually cutting the steel casing off of the battery and manually breaking and dumping the cells from the battery. Cutting off the tops of large industrial batteries may result in potentially high exposure levels because workers wielding cutting devices such as torches can only be separated from the lead acid and mist generated by their action by approximately three feet (Exs. 553–7 p. 1–12; 668F). Employee exposure to lead from manually breaking and processing the cells is eliminated if they are processed in the automated and enclosed automotive battery breaking equipment.

Processing of large industrial batteries and resulting lead exposure appears to be only intermittent. A task is considered to be intermittent if it is not performed every day or if it is not performed continuously throughout a shift. Both forms of intermittency are compounded in the processing of large industrial batteries. For example, a consultant for Ashland, Martha J. Guimond, of Joseph A. Guimond & Associates, Inc., stated that "the cutting of large industrial batteries [is] not done every day, but [is] scheduled as there [are] enough batteries to cut for about one to two hours" (Ex. 668F letter dated Jan. 5, 1988). In addition, Delatte, which had the highest battery breaking capacity in 1988 when it was part of this sector, reports that it "only occasionally handles industrial batteries" (Ex. 687–13).

In addition to exposures connected to certain specific manual operations, employees may also be exposed to lead dust when movement of heavy equipment or local truck and forklift traffic causes spilled and dried lead oxide/sulfate to become airborne (Ex. 605).

Exposure Date. An overview of existing exposure levels reveals that by 1986 one independent battery breaking facility, Ashland, already was controlling exposure levels to or close to 50 $\mu g/m^3$ in all operations. The most recent data (1986) from Ashland show that the overall arithmetic average exposure was 51 $\mu g/m^3$ that one-half of the sampling results were below 50 $\mu g/m^3$ and that 83% of the results were below 56 $\mu g/m^3$ Indeed, at Ashland in 1986 no sampling result was above 63 $\mu g/m^3$

A second independent battery breaker, Ace, also submitted some personal and area monitoring results for 1985–87 For reasons set out below, OSHA believes the Ace data have only limited use in determining technological feasibility, and the Agency relies on these data only to confirm OSHA's conclusions drawn from its analysis of the Ashland data. For example, the overall average for Ace's most recent personal monitoring results (61.7 $\mu g/m^3$) is consistent with the most recent monitoring results at Ashland.

In addition, at Delatte, which is now classified as a secondary lead smelter with a captive battery breaking operation, the president reported that previously the company had controlled exposure levels to 50 $\mu g/m^3$ and had "no trouble" meeting a PEL of 50 $\mu g/m^3$ even in industrial battery breaking (Ex. 687–13) Other captive battery breaking operations also are controlling exposures to or below 50 $\mu g/m^3$ solely by means of engineering and work practice controls (Tr. 175, 192).

The exposure data in the record include three data sets: data from Ashland, submitted by the Institute of Scrap Recycling Industries (ISRI) (Ex. 582–88, App. C, Tables 1 and 2, below); data submitted by Ace (Ex. 694–1, App. A; Table 3, below); and summary data included in the JACA report (Ex. 553–7· Table 4, below). In general, these data sets tend to be incomplete regarding monitoring results, job categories, and associated control information. However, in combination with other information in the record, the Ashland and JACA data and the submissions from Delatte, Ace, and the Battery Recycling Association (BRA) provide sufficient evidence to allow OSHA to assess the technological feasibility of achieving a PEL of 50 $\mu g/m^3$ in this industry sector.

The first data set is from Ashland (see Tables 1 and 2, below). The most recent data from Ashland shows that by 1986 exposure levels in all operations were already at or only slightly above 50 $\mu g/m^3$ The overall arithmetic average in 1986 was 51 $\mu g/m^3$ and the highest sample result was only 63 $\mu g/m^3$ Even in the battery chopping operation, for example, which involves the manual cutting of large industrial batteries and which industry maintains is the most difficult operation in which to achieve 50 $\mu g/m^3$ the average exposure level was 50 $\mu g/m^3$ Two of three employees in that operation were exposed below 50 $\mu g/m^3$ and the remaining one was only exposed to 63 $\mu g/m^3$

TABLE 1.—EXPOSURE DATA FOR ASHLAND METALS COMPANY 1986

Job title	8-hour TWA ($\mu g/m^3$)
Large loader/cutter	[1]56
Large loader/chopper	[1]48
Battery chopper	40
Do	63
Do	48
Rubber room (hammermill)	53
Overall average	51

OSHA had to calculate 8-hour TWAs for some of the individual monitoring results. OSHA calculated the 8-hour TWAs using two assumptions: (1) That the employee was not exposed to any lead during the remainder of the shift, and (2) that the employee was exposed to the same concentration of lead during the unsampled time as during the sampled time. OSHA then took the midpoint of this range to represent the employee's full-shift exposure.

The 1986 Ashland data are significantly lower than the 1985 data. In 1985, the overall average exposure was 103 $\mu g/m^3$· only three operations had average exposures at or below 50 $\mu g/m^3$ (see Table 2, below). In addition, only 26% of the sampling results were at or below 50 $\mu g/m^3$ while 64% of the samples were below 100 $\mu g/m^3$

The improvement from 1985 to 1986 is most apparent by comparing similar operations. For example, in 1985 large industrial battery cutter/loader accounted for a majority of sample results above 200 $\mu g/m^3$ and had an average exposure level of 359 $\mu g/m^3$ while in 1986 the average for this operation was 52 $\mu g/m^3$ OSHA notes that during 1985–86 Ashland implemented a special ventilation system and modified the cutting torch to reduce exposure levels for the industrial battery cutter (Ex. 668F). The 1986 data appear to indicate that these controls have been successful in significantly reducing the exposure levels of industrial battery cutters.

TABLE 2.— SUMMARY EXPOSURE DATA FOR ASHLAND METALS COMPANY, 1985

Job title	Avg. exp. levels ($\mu g/m^3$ 8-hr. TWA)[1]
Truck unloader	78
Saw operator	110
Shakeout operator/laborer	143
Rubber room (hammermill)	69
Front end loader	38
Laborer	18
Maintenance/cleanup/equipment	8
Industrial battery cutter/loader	359
Overall average	103

OSHA had to calculate 8-hour TWAs for some of the individual monitoring results. OSHA calculated the 8-hour TWAs using two assumptions: (1) That the employee was not exposed to any lead during the remainder of the shift, and (2) that the employee was exposed to the same concentration of lead during the unsampled time as during the sampled time. OSHA then took the midpoint of this range to represent the employee's full-shift exposure.

An industry consultant, Martha Guimond, argues that Ashland's 1986 data are not representative of the exposure levels of employees at this facility because production levels were greatly reduced in 1986 because the company had made a decision to cease battery breaking production. Guimond argues that the low exposure levels in most operations in 1986 are due to low production levels since the only engineering controls implemented during that time were limited to the industrial battery cutting area (Ex. 668F p. 1).

For several reasons OSHA does not believe that lower production levels solely account for the lower exposure levels in 1986.

First, the most recent exposure data from Ace and information from Delatte and the Battery Recycling Association (BRA) indicate that low exposure levels are currently being achieved at other facilities (Exs. 583–52; 687–13; 694–1) (see discussion of data and information below).

Second, other information in the record submitted by industry appears to indicate that increased production levels are not necessarily correlated with higher exposure levels. For example, when Delatte was still an independent battery breaker, it had the highest volume of batteries per day (18,000) of any independent breaker; yet the plant had "no trouble" controlling exposure levels below 50 $\mu g/m^3$ (Ex. 583–52, p. 3).

Third, most facilities respond to lower production levels by reducing the number of their employees or by operating fewer shifts. As a result it is reasonable to assume that the employees who continue to work are dealing with approximately the same sources of emissions and exposure levels as in the past. For these reasons, OSHA believes that the 1986 Ashland data are representative of current exposure levels at that facility and in the industry in general.

A second data set was submitted by the Battery Salvage Division of Ace Battery, Inc. (Ex. 694–1, App. A). For several reasons, OSHA believes that these data, which include results from both personal and area sampling, have only limited utility. First, the personal sampling data are not broken down according to job categories. Second, the most recent data, from 1987 were obtained exclusively by area sampling, which is not necessarily a good indication of employee exposure levels. Nonetheless, if, as OSHA assumes, Ace was following good industrial hygiene principles and sampling areas where air lead levels were likely to be highest, that data may have some value as a conservative indication of employee exposures. In any event, OSHA does not rely on the Ace data as an independent source of analysis but uses it only to broadly confirm Agency conclusions derived from other sources.

Like the data from Ashland, the Ace data show a reduction in exposure levels since 1985. For example, in 1985, the plant-wide average exposure level obtained from personal sampling was 247 $\mu g/m^3$ with none of the personal sample results below 50 $\mu g/m^3$ By 1986, that average had been reduced to 62 $\mu g/m^3$ and 40% of the personal sample results were below 50 $\mu g/m^3$ Similar reductions were reflected in area sampling results between 1985–87

Other information in the record also corroborates OSHA's analysis of the Ashland data. Delatte, according to its company president, has had no difficulty controlling exposure levels to below 50 $\mu g/m^3$ (Ex. 687–13). Moreover, according to Lee Norman, of BRA, generally across the industry employees performing manual unloading of batteries, operating front-end loaders to load the washed cells for shipment and monitoring the battery tipping process on the sawing conveyor all typically have exposure levels below 50 $\mu g/m^3$ (Ex. 583–52, p. 3; see Table 3).

TABLE 3.—TYPICAL EXPOSURE LEVELS IN INDEPENDENT BATTERY BREAKING OPERATIONS, BATTERY RECYCLING ASSOCIATION

Job Title	Average exposure level ($\mu g/m^3$ 8-hr TWA)
Truck unloaders (manual)	10–20 $\mu g/m^3$
Conveyor monitor, tipper	10–20 $\mu g/m^3$
Front-end loader (loading)	30–50 $\mu g/m^3$
Cleanup (vacuum sweeper)	40–50 $\mu g/m^3$

Source: (Ex. 583–52, p 3).

Furthermore, OSHA's expert witness Mr. Mel Cassady, who has been in 50–75% of all secondary lead smelters, testified that most captive battery breaking operations in those smelters are controlling employee exposure levels to or below 50 $\mu g/m^3$ in most operations most of the time by means of engineering and work practice controls (Tr. 175, 192). Mr. Cassady also testified that there was nothing to indicate that it would be technologically more difficult to achieve 50 $\mu g/m^3$ in independent battery breaking than in captive battery breaking operations (Tr. 189).

The final data set is from the 1982 JACA report (Ex. 553–7). That report does not provide any raw sampling data on air lead levels in independent battery breakers. Rather, the report provides estimated ranges of typical exposure levels in various operations when no controls are in place and estimated resulting exposure levels after controls have been implemented in those operations. The report also contains an estimate of the total number of lead-exposed employees in the industry, 140, nearly all of whom JACA believes were exposed above 50 $\mu g/m^3$ (Ex. 553–7 p. 1–11). Without individual monitoring results and other information, the JACA report has only limited utility in assessing current exposure levels. Moreover, these estimates, OSHA believes, are too high, because they are predicated on the counter-factual assumption of zero controls.

Current Controls. OSHA's discussion of current exposure levels in the previous section indicates that 50 $\mu g/m^3$ already is being achieved or is close to being achieved in many operations by independent battery breaking facilities and in most operations by captive battery breaking operations in secondary lead smelters. The primary methods currently used to control air lead levels in independent battery breaking are wet controls and automation and enclosure of processing equipment. Ashland and Delatte are controlling exposure levels through a combination of wet process technology and automating and enclosing equipment, while Ace appears to have generally achieved employee exposure levels only "somewhat above 50 μg/m³" primarily by the use of wet control technology (Ex. 694-1, pp. 4, 6, 7 8).

Automation and Enclosure. In order to meet Environmental Protection Agency regulations and to increase productivity, several battery breaking facilities have chosen to replace manual operations, where there may be potentially high exposure levels and contamination of the environment, with automated and enclosed shredding and recycling equipment (Ex. 576, p. 3). When process equipment is enclosed and automated it reduces employee exposure to lead by preventing employees from coming into direct contact with lead oxide/sulfate dust generated during processing of the battery. At least by 1982, high speed saws and automated dumping operations at independent battery breakers already were ordinarily enclosed (Ex. 553-7 p. 1-7).

Automation and enclosure can have a dramatic effect on employee exposure levels by allowing employees to distance themselves from the sources of lead emissions. For example, JACA reported that when dumping (shakeout) components was performed manually and controls were not in use, exposure levels ranged from 150-500 μg/m³ However, when dumping is automated and enclosed, JACA estimates that exposure levels can be controlled to below 50 μg/m³ (Ex. 553-7 pp. 1-8, 1-12). Similarly, at Delatte, where sawing, dumping and crushing equipment are automated and enclosed, the company reports that it has no trouble controlling exposure levels to below 50 μg/m³ (Ex. 687-13).

Wet Controls. Some independent battery breakers control exposure levels throughout their facilities primarily by use of wet controls. The most common practice is either to keep the entire work area wet with water or to keep the lead oxide wet with recycled battery acid (Ex. 553-7 p. 1-7). Ace practices wet control by spraying and maintaining the wet condition of the entire battery breaking area (Ex. 694-1, p. 7). To control employee exposure levels in the battery cutting area, Ashland uses a wet system. Ashland also uses a water spray system in the hammermill to keep air lead levels low (Ex. 583-52, p. 3).

Maintenance and Housekeeping. Lead oxide/sulfate that is spilled and allowed to dry may become airborne due to agitation and vibration from front-end loaders and other local traffic or due to dry sweeping of the area. Typically, independent battery breakers clean these spills by wet sweeping, squeegeeing, and vacuuming (Exs. 553-7 p. 1-7· 583-52. p. 3).

Work Practices. Industry has not provided much specific information on what work practice controls are currently used in this industry. Ace reports that it utilizes various work practice controls to reduce employee exposure levels. For example, Ace trains employees in precision handling of materials through proper use of equipment (Ex. 694-1, p. 7). In addition, Ashland reports that it trains its employees in the appropriate work practices (Ex. 668F letter dated June 8, 1987).

In addition to these general control methods, independent battery breakers use the following controls operation by operation.

Unloading. Unloading whole batteries from delivery trucks, even though performed manually at some facilities, is typically controlled to below 50 μg/m³ because the batteries are received wet and do not generate lead oxide/sulfate dust as they are being moved (Exs. 553-7 p. 1-8; 583-52, p. 3). Employee exposures are maintained this low in part because batteries are usually unloaded onto conveyors that feed the saw, so unloaders are separated from that potential source of cross contamination by the length of the conveyor.

Sawing/Cutting. Ashland and Ace both control exposure levels in the cutting and sawing operation by using automated low-speed saws (40 rpm) to cut off the tops of batteries (Exs. 687-1, 694-1, p. 11). Low-speed saws emit less lead dust and acid mist than high-speed saws or guillotines, and thus are associated with lower air lead levels (Ex. 605, pp. 3, 4). In 1982 JACA reported that there was a 20-fold difference in the exposure levels in cutting batteries with low-speed rather than high-speed saws even if no other controls are used. Without controls, cutting with low-speed saws typically results in air lead levels of 50-100 μg/m³ while cutting with high-speed saws generates exposure levels of 1,000-2,000 μg/m³ (Ex. 553-7 p. 1-8). Delatte also controls employee exposure levels below 50 μg/m³ in cutting and sawing in part by using low-speed saws (Ex. 687-13).

In addition to controlling employee exposure levels by automating the cutting process with low-speed saws, some independent battery breakers have further reduced exposure levels by enclosing or ventilating the low-speed saw (Exs. 553-7 p. 1-7· 605, p. 3). Ace has not enclosed or ventilated its low-speed saw and conveyor system (Ex. 694-1, p. 5).

Battery breaking facilities also control exposure levels in cutting and sawing by keeping the batteries wet. For example, Delatte keeps employee exposures low in this area by maintaining the entire process wet (Ex. 687-13). Ace also uses a water spray system in the cutting area to maintain the wet condition of the batteries (Ex. 694-1, p. 7).

Finally, Ace has controlled employee exposure levels in the battery tipping operation, which precedes sawing, by automating that operation as well. Automation of the tipping process reduces exposures to 10-20 μg/m³ (Ex. 583-52, p. 3). According to JACA, even manually tipping batteries without controls results in typical air lead levels of only 50 μg/m³ (Ex. 553-7 p. 1-8).

Dumping. Most independent battery breaking facilities control exposure levels in dumping of the lead-bearing cells from battery cases by automating and enclosing this operation. Both Ace and Delatte have automated dumping equipment, however Ace indicates that its dumping equipment is not enclosed or ventilated (Ex. 694-1, p. 5). Ashland still uses manual shakeout of cells from battery cases (Ex. 687-1).

Crushing and Separating. Independent battery breakers control employee exposure in crushing operations primarily by enclosing the crusher (hammermill) and using water spray systems to maintain the batteries wet. Ace and Ashland both control exposure levels in this operation with water spray systems. Ace's water spray system also washes off lead residue from the crushed battery cases so there is little exposure to lead when the crushed cases are loaded for shipment (Ex. 694-1, p. 3).

Some independent battery breakers have replaced cutting off battery tops with crushing whole batteries in a hammermill or shredder, which has the result of reducing employee exposure levels because sources of exposure associated with tipping, cutting and dumping batteries are eliminated (Exs. 553-7 p. 1-3; 605. p. 2). Those sources of exposure can be significant when batteries are manually tipped and dumped (Exs. 553-7 p. 1-2; 605, p. 2).

After whole batteries or battery cases are crushed, some independent battery breakers separate leaded cells and lead oxide residue from battery case pieces by a sink/float process (Ex. 605, p. 3-4). From the viewpoint of exposure control, the wet nature of this process itself is the key control. The lead-bearing materials sink to the bottom of the settling tank and are still wet when moved to collection bins or loaded onto trucks for shipment. When the groups are saturated with water, lead dust is not generated (Ex. 605, p. 4). The sink/float process also effectively reduces exposure levels in certain downstream operations because lead oxide is washed off of the battery case pieces during this process. Thus, when employees load the case pieces for shipment, they are not exposed to lead.

Loading. Some independent battery breakers have controlled exposure levels by replacing manual loading of washed cells and cases on trucks for shipment with loading by front-end loaders. Ace states that it loads the washed groups for shipment with front-end loaders because the saturated groups do not move well on conveyors (Ex. 694-1, p. 12). Where loading is done with front-end loaders, typical air lead levels are between 30-50 $\mu g/m^3$ (Ex. 583-52, p. 3).

Large Industrial Batteries. In processing large industrial batteries the steel casings are removed manually by a worker holding a gas torch or a pneumatic cutter (Ex. 553-7 p. 1-2). To reduce exposure levels during this task Ashland has implemented a ventilation system and modified the cutting torch (Ex. 668F pp. 3-4).

Some independent battery breakers have eliminated exposures associated with manually breaking the cells with saws or hand axes by processing the cells in the facility's automotive battery breaking equipment (Ex. 553-7 p. 1-2). In addition, in order to control exposure levels generated from the lead oxide in the industrial battery cells, Delatte loads and ships the cells wet (Ex. 687-13).

Additional Controls.—Overview— With the existing controls described in the previous section, OSHA has found that one former and two current independent battery breaking facilities already have achieved 50 $\mu g/m^3$ in many operations and many captive battery breakers have achieved that level in most operations. With the additional controls recommended by OSHA implemented, the Agency anticipates that exposure levels will be controlled below 50 $\mu g/m^3$ in all operations, except perhaps the task of manually cutting the steel cases of industrial batteries.

OSHA's analysis of the record in the previous sections indicates that by 1986 Ashland had achieved air lead levels close to or below 50 $\mu g/m^3$ in almost all operations through a combination of wet process technology, automation of equipment and enclosure. Ace has achieved low exposure levels in almost all operations primarily by wet process technology and work practices. OSHA concludes from these data and information on current controls that a limited number of additional controls are needed to consistently maintain exposure levels at or below 50 $\mu g/m^3$ at these two facilities in every operation except industrial battery cutting. OSHA also notes that Delatte has achieved 50 $\mu g/m^3$ in all operations, including industrial battery breaking, with the same or similar combination of controls.

On the whole, the same sorts of readily available, conventional controls that have successfully reduced exposure levels to below 50 $\mu g/m^3$ in Delatte's facility and in many captive battery breaking operations are precisely the kinds of additional controls that OSHA recommends to other independent battery breakers to reduce employee air lead levels to below 50 $\mu g/m^3$ These engineering controls consist primarily of enclosure and automation of process equipment, improvement in ventilation systems, enclosure of conveyor systems, use of low-speed saws, use of low-energy shredders and installation of additional water spray systems.

OSHA believes that most independent battery breakers will not need to implement all of these recommended additional controls to control exposure levels below 50 $\mu g/m^3$ Some independent battery breakers should be able to consistently control exposure levels below 50 $\mu g/m^3$ solely by improving work practices and keeping the batteries and work area wet. If further additional controls are needed, independent battery breakers may be able to achieve 50 $\mu g/m^3$ by implementing simple enclosure and isolation techniques such as enclosing the cabs of mobile equipment or enclosing automated equipment.

OSHA's discussion of additional controls and expected reductions in air lead levels relies in part upon OSHA s independent analysis of processes and controls in captive battery breaking operations in secondary lead smelting, an industry sector for which the court has already found it feasible to meet a PEL of 50 $\mu g/m^3$ by means of engineering and work practice controls. For several reasons OSHA believes this reliance to be reasonable.

First, the production processes utilized by captive battery breakers are virtually identical to those in use in independent facilities and captive operations are controlling exposure levels below 50 $\mu g/m^3$ using conventional rather than "unique" technology. For example, Delatte is achieving a PEL of 50 $\mu g/m^3$ with the same production and control technology it used as an independent facility. As such, there is nothing to suggest that the control technologies employed by captive operations would not be directly applicable and transferrable to independent facilities.

Second, as Mr. Cassady points out, on the average, captive battery breaking operations and independent battery breakers are about the same size; two to five employees in captive operations and five employees in independent facilities (Tr. 190). Delatte, which was an independent battery breaker until 1988, employs approximately the same number of workers in its captive facility as does Ashland. Consequently, OSHA agrees with Mr. Cassady that there is nothing about battery breaking in an independent facility that would make it technologically more difficult to control exposure levels below 50 $\mu g/m^3$ than it is in a battery breaking operation in a secondary smelter (Tr. 189-98).

Before discussing additional controls specifically, OSHA notes that the first step any company should take to systematically reduce exposure levels is to conduct an industrial hygiene survey that includes an in-depth job/task analysis, plant-wide survey and identification of sources of emission in each task and area. For some independent battery breakers it may be clear what the exposure problems are and how those problems can be remedied. These facilities may be able, without extensive surveying, to go through a series of controls and identify the more or less easy and inexpensive controls which may be sufficient to achieve exposure levels below 50 $\mu g/m^3$ Still other facilities may need an industrial hygiene study in order to develop an integrated system of controls that will consistently control exposure levels below 50 $\mu g/m^3$

Wet Controls. Independent battery breakers may be able to control exposure levels below 50 $\mu g/m^3$ in every operation except industrial battery cutting by implementing or improving water spray systems for all equipment and conveyor systems and utilizing other wet control techniques to maintain the wet condition of the batteries at all times. For example, Delatte states it has had no trouble controlling exposure levels below 50 $\mu g/m^3$ because it keeps the batteries wet (Ex. 687-1). Ace, which also relies primarily on wet control technology, reported that its exposure levels were only somewhat above 50 $\mu g/m^3$ (Ex. 694-1, p. 4). In addition, Ace states that wet control technology is the most effective control system for independent battery breakers. Since batteries are already saturated with water and sulfuric acid, little additional water is necessary to maintain the wet condition of the battery (Ex. 694-1, p. 9).

In addition to installing water spray systems on all equipment, there are other simple wet control methods that independent battery breakers should implement. For example, wetting cracked or damaged batteries that have lost their electrolytes will prevent leaded plates from drying out and dispersing lead oxide into the air during unloading and loading. To the extent practicable groups should be loaded and shipped wet, as is done at Delatte (Ex. 687-13). In addition, floors and other surfaces should be kept wet to suppress dust and to prevent spilled lead oxide from drying and becoming airborne. Finally, floors and surfaces throughout the plant should be wet mopped or squeegeed as often as necessary, but not less than once per shift (Ex. 605).

Automation and Enclosure/Isolation. To the extent that wet control technology cannot reduce exposure levels below 50 $\mu g/m^3$ in all operations, automation of process equipment and enclosure of process and mobile equipment should be implemented to control exposure levels to below 50 $\mu g/m^3$ Some battery breakers who have automated and/or enclosed equipment have achieved significant reductions in exposure levels (Ex. 583-52; see discussion, above, under Current Controls).

Although automation alone may not reduce exposure levels in every operation, some battery breakers have dramatically reduced exposure levels simply by automating various processes. For example, Delatte has eliminated exposure levels associated with battery tipping by automating that process (Ex. 583-52, p. 1). In addition, General Battery Corporation (GBC), a captive battery breaker, has reduced its exposure levels by more than 50% by installing automated process equipment (Ex. 592).

Where automation alone does not sufficiently reduce employee exposure levels, automated equipment used in cutting, dumping and crushing operations should be enclosed to reduce exposure levels below 50 $\mu g/m^3$ For example, in shakeout Ashland should be able to control exposure levels below 50 $\mu g/m^3$ by replacing manual shakeout with automated, enclosed and ventilated dumping equipment. JACA reported back in 1982 this combination of controls would reduce exposure levels to below 50 $\mu g/m^3$ in dumping operations. In addition, JACA reported that enclosing high-speed saws, which had exposure levels of 1,000-2,000 $\mu g/m^3$ would reduce typical air lead levels to below 50 $\mu g/m^3$ (Ex. 553-7 p. 1-8). Enclosing low-speed saws would also result in substantial reductions.

Ace has automated but not enclosed its automotive battery processing equipment. Ace contends that it cannot enclose its equipment or conveyor because too many adjustments would be required for odd-sized batteries. However, when Delatte was an independent battery breaker, the company implemented state-of-the-art automated and enclosed equipment to process various sizes of batteries and has successfully controlled exposure levels to below 50 $\mu g/m^3$ Ace has not explained why it would be technologically infeasible for the company to implement the same sorts of automation and enclosure employed by Delatte and other battery breakers.

Finally, one of the simplest methods to isolate employees from lead emissions that should be implemented by independent battery breakers is to provide all mobile equipment operators with enclosed cabs equipped with HEPA filters and tempered air. This control technology is readily available and in use in other industries.

Ventilation. OSHA believes that in many battery breaking operations, including industrial battery cutting, implementing or improving ventilation can achieve major reductions in exposure levels. Such controls have been developed, tested and, where found effective, manufactured and applied widely for many years throughout industry to control specific contaminants. The ventilation controls applicable to captive battery breaking are the same as those applicable to independent battery breaking.

Implementing or improving ventilation can achieve major reductions in air lead levels in even the most difficult operations to control, such as industrial battery cutting. At Ashland use of a special ventilation system to push the fume away from the industrial battery cutter's breathing zone significantly reduced the operator's exposure level (Ex. 668F p. 1). In 1986, Ashland also reported that it was working with exhaust system manufacturers to develop an exhaust system that is actually part of the industrial battery cutting torch.

As indicated in OSHA's discussion in other areas of this preamble and incorporated here by reference, it is imperative that improvements to existing ventilation and newly-installed ventilation be properly designed, installed and maintained.

Housekeeping, Work Practices and Preventive Maintenance. Housekeeping, work practices and preventive maintenance are critically important controls in independent battery breaking (Tr. 176), whose importance frequently is not adequately recognized by employers. Failure to develop and use rigorous housekeeping, good work practices and preventive maintenance can destroy the effectiveness of otherwise adequate engineering controls.

Meticulous housekeeping is essential to ensure that exposure levels are consistently controlled below 50 $\mu g/m^3$ To the extent that any independent battery breaker still relies upon dry sweeping in some operations, that practice should be eliminated and should be replaced by vacuum sweeping or wetting and squeegeeing spilled material to prevent the reentrainment of lead oxides (Exs. 553-7 p. 1-7· Ex. 694-1). Equipment should be washed down daily, as GBC does, to control exposure levels (Ex. 592). Batteries should be stored on paved platforms or yards so that the surface can be easily washed down.

Preventive maintenance of battery breaking equipment should consist of daily inspection and cleaning. Sharpening saw blades and lubricating equipment bearings regularly are all part of a proper maintenance program.

Implementing appropriate work practice controls is also vital to achieving exposure levels below 50 $\mu g/m^3$ and to reducing exposure levels for industrial battery cutters. For example, Ashland reports that industrial battery cutters must be trained to properly position gas torches in a manner so that the fume flows away from the clean air stream or the efficiency of this ventilation system will be reduced (Ex. 668F p. 2). It also is important to train maintenance workers who must enter enclosed areas, where exposures may be high, to not enter these areas more frequently than is necessary.

Ace asserts that work practices cannot be improved because it would decrease productivity and because there would be significant resistance among employees to improving work practices.

Specifically, Ace argues that there would be resistance among employees because of additional training and concentration required for precision handling of equipment. Also, Ace argues that the educational level of its employees is not compatible with precision training. Ace, however, provides no evidence to support its assertion that work habits cannot be changed and poor work practices cannot be corrected. OSHA considers Ace's view unacceptable, especially since it is likely to become a self-fulfilling prophecy. OSHA, along with the industrial hygiene community, believes that good work practices should be taught to workers and retaught as often as necessary. If the work practices are sensible and the company communicates to workers its seriousness in requiring that such work practices be followed, OSHA has no doubt that workers will follow them. No matter what efforts a company may make to implement effective engineering controls, if its work practices are poor those controls are likely to be rendered ineffective.

OSHA also recommends the following controls operation by operation.

Unloading. Unloading of batteries from delivery trucks can be accomplished by various methods: manually, with mobile equipment or by automation. Currently some independent battery breakers, including Ashland and Ace, manually unload batteries from delivery trucks and place them on conveyors that go to the sawing area. BRA reports that typical exposure levels for manual unloading already are below 50 μg/m³ (Ex. 583–52, p. 3). To the extent that exposure levels may exceed 50 μg/m³ unloading can either be automated or, as discussed above, controlled by enclosing cabs of mobile equipment used for unloading.

One method of automating unloading would be to implement an automated conveyor system. The use of conveyors rather than front-end loaders to move broken battery scrap not only would reduce lead dust, but also would increase production efficiency by requiring less manpower and allowing faster unloading of batteries (Ex. 592, p. 33). GBC has reduced exposure levels by palletizing battery unloading (Ex. 592). The palletized batteries, which can then be handled by fork-lift trucks, eliminate workers' manual contact with batteries at this stage and also eliminate exposure that results when employees handle dry batteries or accidentally drop batteries.

Cutting and Sawing. Information in the record indicates that battery breakers that are controlling exposure levels below 50 μg/m³ in cutting and sawing utilize low-speed saws. Those independent battery breakers that might still use high-speed saws or guillotines should replace them with low-speed saws to reduce exposure levels. Where exposure levels exceed 50 μg/m³ in the cutting area, the automated sawing equipment should also be enclosed and ventilated. This combination of controls should reduce exposure levels below 50 μg/m³ (Ex. 553–7 p. 1–8).

Dumping. To control exposure levels below 50 μg/m³ independent battery breakers should install automated and enclosed dumping equipment. This combination of controls should reduce exposure levels below 50 μg/m³ (Ex. 553–7 p. 1–8). Delatte already has achieved exposure levels below 50 μg/m³ by using such equipment (Exs. 583–52, p. 3; 687–13).

Crushing and Separating. Information in the record indicates that battery breaking facilities that are controlling exposure levels below or close to 50 μg/m³ are using wet controls in the hammermill. Enclosing the hammermill should reduce exposure levels to consistently below 50 μg/m³ (Ex. 553–7 p. 1–8).

To the extent that exposure levels may still exceed 50 μg/m³ independent battery breakers might replace their saws, dumpers and hammermills with automatic shredders, such as the Saturn shredder. At least five captive battery breakers have installed Saturn shredders to process batteries (Ex. 605). The Saturn shredder is a low-enargy machine that shreds batteries into pieces with two low-speed shafts with teeth. This system slowly shreds batteries into separable pieces without hammering, pounding, ripping or using any other high-energy force. Consequently, the generation of acid mist and lead particulate is low, which results in low exposure levels. If the use of a Saturn shredder does not reduce exposure levels consistently to below 50 μg/m³ the shredder may need to be enclosed and ventilated (Tr. 179).

Where Saturn shredders are already being used by battery breakers, additional improvements can be implemented to further reduce exposure levels. For example, the capture point of the hood could be repositioned to more effectively exhaust lead dust. Enclosing the hopper more completely, moving the crushed battery scrap by conveyor rather than front-end loader, and installing a ramp or slide gate under the shredder to avoid falling and splashing emissions will also reduce exposure levels in the shredding operation (Ex. 592, p. 33).

Loading. Independent battery breakers can reduce exposure levels in loading the washed cells on trucks for shipment to secondary smelters by replacing manual loading with front-end loaders. This should reduce exposure levels, even if the cabs are not enclosed (Ex. 582–52. p. 3). Where exposure levels exceed 50 μg/m³ the cabs of front-end loaders should be enclosed and equipped with a HEPA filter and tempered air. With such controls, typical air lead levels will be controlled to or below 50 μg/m³ (Ex. 553–7 p. 1–8).

Large Industrial Batteries. There are several readily available controls that should be able to significantly reduce exposure levels in industrial battery cutting. These controls include using a low-speed, rather than a high-speed saw, providing local exhaust ventilation, installing supplied-air islands for the cutter, using alternative cutting methods, modifying cutting torches, using a saw, rather than a hand axe to cut the cells and limiting the amount of time an employee cuts industrial batteries (Exs. 605; 668F pp. 3–4).

There are several ventilation systems available to capture lead dust emitted during industrial battery cutting. For example, Ashland reduced exposure levels significantly by implementing a special ventilation system in the cutting area to push fume away from the operator s breathing area (Ex. 668F pp. 3–4). In 1986 Ashland also reported that it was working to adapt a special welding exhaust system on the cutting torch itself (Ex. 668F pp. 3–4). For these exhaust systems to operate efficiently, it is important that employees also be trained to properly position cutting devices and themselves so as not to contaminate fresh air streams (Ex. 668F pp. 3–4).

Other available exhaust systems include downdraft or sidedraft ventilation welding tables, portable high velocity/low volume local exhaust systems, with a turntable used as a work platform. such as that commonly used in large painting booths (Ex. 605). Another technology that has proven effective in wide industrial use is the supplied-air island. Such an island could be installed specifically for the industrial battery breaker (Ex. 605) and would reduce exposures by as much as 23–77% (Ex. 583–16, p. 30).

There are also available alternative methods for cutting off the cases of industrial batteries. These methods should reduce the amount of lead dust generated and thus reduce exposure levels. For example, there is a 20-fold decrease in typical exposure levels when high-speed saws are replaced with low-speed saws (Ex. 553–7 p. 1–8). Gas torches that create a great amount of air turbulence and thus push lead fumes into the employee's breathing zone can be replaced with cutting devices which do not produce such air turbulence (Ex. 668F p. 4).

To the extent practicable, independent battery breakers should eliminate manual breaking of industrial battery cells with saws or hand axes and process the cells in the facility's automotive battery breaking equipment (Ex. 553-7 p. 1-2).

Technological Feasibility Conclusion. Based upon the above analysis of the evidence in the record and OSHA's experience and expertise, the Agency determines that achieving a PEL of 50 $\mu g/m^3$ by engineering and work practice controls is technologically feasible for the independent battery breaking industry as a whole. Indeed, OSHA finds it feasible in every operation, with the possible exception of the cutting of industrial batteries. Since OSHA has found the 50 $\mu g/m^3$ PEL feasible for the industry, employers will be required in the task of industrial battery cutting, as well, to implement engineering and work practice controls to control exposure levels to the PEL or to the lowest feasible level. If employers cannot achieve the 50 $\mu g/m^3$ PEL by means of engineering and work practice controls for workers performing this task, they are required to provide workers with respirators for supplemental protection.

To sum up, OSHA has shown the following: One former and two current independent battery breaking facilities already have achieved 50 $\mu g/m^3$ in many operations and many captive battery breakers have achieved that level in most operations. These results have been achieved in independent facilities with existing controls, before OSHA's recommended additional controls have been implemented. With implementation of such additional controls, the Agency anticipates that exposure levels will be consistently controlled to or below 50 $\mu g/m^3$ in all operations, except perhaps the task of manually cutting industrial batteries.

OSHA believes that for operations where most sampling results or average exposure levels already are close to or below 50 $\mu g/m^3$ relatively modest improvements in controls, such as improved housekeeping or better preventive maintenance, will be sufficient to reduce air lead levels consistently to below 50 $\mu g/m^3$ Similarly, for operations where most of the sampling results or average exposure levels are below 100 $\mu g/m^3$ OSHA believes that a combination of limited, additional and improved controls, such as extending wet control technology to all process areas, will be sufficient to control exposure levels to 50 $\mu g/m^3$

OSHA s feasibility conclusion for the industrial battery breaking industry is supported by OSHA's previous determination that the 50 $\mu g/m^3$ PEL is feasible in captive battery breaking and by the court's upholding of that determination. *USWA* v. *Marshall*, 647 F.2d 1189. The process and control technology available and in use in captive battery breaking operations is conventional and readily applicable and transferrable to independent facilities with little, if any, modification.

Thus the controls needed to achieve 50 $\mu g/m^3$ in independent battery breaking all are conventional and readily available. OSHA has not needed to exercise its statutory authority to force the development of new technology in this industry in order to justify the Agency's finding of technological feasibility.

OSHA believes that its technological feasibility determination is conservative in at least two respects. On the one hand, as indicated above, most independent battery breakers will not need to implement all of the recommended additional controls to control exposure levels below 50 $\mu g/m^3$ Some independent battery breakers should be able to consistently control exposure levels below 50 $\mu g/m^3$ solely by improving work practices and keeping the batteries and work area wet.

On the other hand, in reaching its conclusion, OSHA does not purport to have recommended an exhaustive list of additional controls. The Agency is certain that industry will be capable of devising and fine-tuning various other controls to further reduce exposure levels. Consequently, OSHA anticipates that industry will be able to consistently achieve exposure levels at or below 50 $\mu g/m^3$ in virtually every phase of battery processing.

OSHA believes that achieving the PEL requires implementing an integrated system of controls. The basic element of that system is an industrial hygiene study. Each independent battery breaker will be required by paragraph (e)(3) of the lead standard (29 CFR 1910.1025) to establish and implement a written compliance program that includes an in-depth job/task analysis and a plant-wide survey. This survey and analysis should be performed by an experienced industrial hygienist who shall identify sources of emission in each task and sources of cross drafts and cross contamination. Such an analysis should also recommend appropriate engineering and work practice controls to control emissions, control cross drafts and cross contamination, and generally to minimize employee exposures. If, after implementing these recommendations, reductions in air lead levels deviate substantially from what was anticipated, a followup industrial hygiene survey should be conducted and necessary corrections made.

The second element in that system is the development of good, written housekeeping and work practice programs, as required by paragraph (e)(3)(ii)(F) of the lead standard, that are systematically implemented so that proper work procedures are routinely and meticulously followed. For example, equipment should be washed down daily.

The final element of an integrated system of controls is a preventive maintenance program to assure that all systems are maintained in clean and efficient condition.

The independent battery breaking industry does not agree that a PEL of 50 $\mu g/m^3$ is achievable. Industry's disagreement is based upon four main arguments. The four main arguments are: a prior OSHA contractor concluded that 50 $\mu g/m^3$ is not feasible; Ashland cannot achieve 50 $\mu g/m^3$ even though it has implemented state-of-the-art controls and further technology does not exist to control exposure levels to 50 $\mu g/m^3$. Meridian s report is incorrect, incompetent and unsupported; and the evidence in the remand record does not support a determination that 50 $\mu g/m^3$ is technologically feasible.

First, industry asserts that OSHA's contractor, JACA, previously concluded that it was not technologically feasible to achieve 50 $\mu g/m^3$ by means of engineering and work practice controls (Ex. 582-88, pp. 6-8). Industry asserts that JACA found that even after implementing additional controls exposure levels would be in excess of 50 $\mu g/m^3$ in cutting and sawing, dumping and loading with front-end loaders; and that JACA advised OSHA that respirator utilization would continue to be required to achieve 50 $\mu g/m^3$

OSHA does not agree. JACA stated that "[a] strong case can be made for [the] technological feasibility" of achieving a PEL of 50 $\mu g/m^3$ by means of engineering and work practice controls:

> Although the precise achievable exposure levels cannot be determined in advance for any one plant, there is no known physical reason why exposure levels could not be brought into compliance with [50 $\mu g/m^3$]. (Ex. 553-7 p. 1-13)

JACA s conclusion of technological feasibility is predicated on its express findings that with controls typical air lead levels could be controlled to or below 50 $\mu g/m^3$ in almost every operation: unloading, tipping, cutting and sawing, dumping, crushing, separating and loading (Ex. 553-7 p. 1-8). As to these operations, industry simply misunderstands JACA's report. In three other operations, grinding, paste drying and furnace, JACA did find that exposure levels would be in excess of 50 $\mu g/m^3$ even with controls. However, there is no evidence in the remand record nor any assertion by industry that independent battery breakers continue to perform these three operations.

Industry also misunderstands JACA s report when it asserts that JACA found that respirators would still be required to achieve 50 $\mu g/m^3$ While JACA did note that the industry as a whole was quite far from compliance in 1982 without regard to use of respirators, JACA did find that "numerous technological innovations are available for implementation to reduce exposure levels" (Ex. 553-7 p. 1-13). This point is especially important today because JACA s list of control technologies available to the industry did not include certain recent control technologies, such as Saturn shredders, cutting torch ventilation and wet shipment of groups.

Finally, industry also asserts that the JACA report effectively concluded that a PEL of 50 $\mu g/m^3$ was infeasible when JACA said "evidence suggests that a combination of automation/isolation, with controls on work practices (particularly housekeeping) should be able to bring exposure levels quite *close to* the PEL of 50 $\mu g/m^3$ (emphasis added). Far from being a conclusion that 50 $\mu g/m^3$ is technologically infeasible, JACA's finding was that independent battery breakers can almost achieve 50 $\mu g/m^3$ solely by automating and enclosing equipment and implementing good work practices. OSHA agrees with JACA's finding, as far as it goes.

OSHA also believes that these controls in combination with implementation and improvements in process equipment (e.g., Saturn shredder), water spray systems and/or ventilation will bring exposure levels in this industry consistently to or below 50 $\mu g/m^3$ In addition, OSHA's believes that, with the implementation of good work practices and ventilation, the industry can bring exposure levels in industrial battery cutting close to 50 $\mu g/m^3$

Second, industry argues that Ashland cannot achieve 50 $\mu g/m^3$ even though it has implemented state-of-the-art controls and that further technology does not exist to control exposure levels at Ashland and Ace to 50 $\mu g/m^3$ (Exs. 582-88, p. 14; 680, p. 2; 694-1, pp. 4-5, 13, 16). While OSHA concedes that, based on data submitted by Ashland, the company is not achieving 50 $\mu g/m^3$ in all operations all of the time, the Agency does not agree that Ashland has not been able, or is presently unable to achieve 50 $\mu g/m^3$ OSHA maintains that, despite the characterization of Ashland as "state-of-the-art, there are many additional controls and improvements that can be implemented there. For example, Ashland still has not replaced manual shakeout of batteries with automated and enclosed dumping equipment, a control technology that has been implemented successfully at least since 1982 (Exs. 553-7 p. 1-7· 687-1). Also, at Ashland batteries are still manually unloaded from delivery trucks. Nonetheless, OSHA has shown that at Ashland by 1986 sampling results and average exposure levels already were close to or below 50 $\mu g/m^3$ in all operations.

Ace argues that no technology exists to further reduce exposure levels at its facility. However, Ace has not enclosed any of its production equipment, another control technology that most independent battery breakers had already implemented on cutting and dumping equipment by 1982 (Ex. 553-7 p. 1-7). Like Ashland, batteries also are still manually unloaded at Ace.

Thus, the reason that Ashland and Ace are not achieving 50 $\mu g/m^3$ consistently is not because they have reached the limits of technological feasibility. Rather, it is because they have not implemented readily available, conventional controls that other battery breaking facilities have found successful in reducing exposure levels. Consequently, OSHA is unpersuaded by industry's argument that Ace and Ashland have "state-of-the-art" technology, have been unable to achieve 50 $\mu g/m^3$ and that therefore the PEL is unachievable by engineering and work practice controls.

Third, industry asserts that Meridian's report is incorrect, incompetent and unsupported by the record (Exs. 582-88, p. 16; 694-39, p. 3). On the whole, OSHA rejects these criticisms and believes that Meridian did a creditable job, particularly given the time and resource constraints under which it was operating.

Meridian has had extensive experience and possesses very broad competence in the area of industrial hygiene, the principles of which are universally applicable to all industries. It also has broad expertise and experience in assessing factors relevant to technological feasibility. Physically, there is nothing unique about lead dust or about independent battery breaking that would make Meridian's extensive expertise and competence in evaluating engineering and work practice controls across many industries irrelevant to this industry. The control technologies recommended here to achieve 50 $\mu g/m^3$ are conventional and transferrable from similar industries and from captive battery breaking, and the effectiveness of these controls in reducing air lead levels also is the same across industries.

OSHA concludes that Meridian's reports and its conclusions are based upon the best available evidence. Meridian's reports, including revisions to its preliminary report based upon industry comments, generally are firmly grounded in the record and its conclusions are based on numerous sources in that record. These include data, other evidence and comments submitted by employers, trade associations and other interested parties.

In any event, OSHA has independently assessed the record, reviewed Meridian's final report for accuracy, taken account of industry's comments on that report, and relied only in part upon the Meridian reports for the Agency's determination of technological feasibility

Fourth, industry asserts that the evidence in the remand record does not support a determination that 50 $\mu g/m^3$ is technologically feasible. OSHA disagrees with this argument, as this feasibility assessment indicates.

OSHA's statutory obligation is to make its feasibility determination based on the best available evidence in the record. OSHA has actively sought to collect and develop a full and accurate record. OSHA is persuaded that it has more than enough information and data in the record upon which to base its determination of technological feasibility.

In arguing that the record does not support the feasibility of 50 $\mu g/m^3$ the Institute of Scrap Recycling Industries, Inc. (ISRI), asserts that 200 $\mu g/m^3$ is the lowest feasible level technologically achievable (Ex. 582-88, pp. 6, 21) and Ace asserts that a level of 100-125 $\mu g/m^3$ in five years is the lowest feasible level (Ex. 694-1, p. 10). Both ISRI and Ace have failed to present data and information to support their positions. In fact, the data supplied by ISRI for Ashland shows that, by 1986, 50 $\mu g/m^3$ already is being achieved or is close to being achieved in every operation.

OSHA therefore finds unpersuasive industry's argument that the evidence in the record is insufficient to prove the technological feasibility of a PEL of 50 $\mu g/m^3$

Thus, for all the above reasons, OSHA is unpersuaded by industry's arguments that the PEL cannot be achieved by means of engineering and work practice controls. Based upon its own expertise, experience and the record evidence, OSHA concludes that a PEL of 50 $\mu g/m^3$ is achievable in the independent battery breaking industry by means of engineering and work practice controls, with the possible exception of large industrial battery cutting. In that operation it may be necessary for employers to rely upon respirators for supplemental protection.

Industry Profile. This sector is comprised of establishments which break down used batteries into various components, including used lead cells, polypropylene and other plastics, and sulfuric acid. Firms in the independent battery breaking sector own facilities that process batteries but do not engage in secondary lead smelting; instead, these companies sell the recovered lead to secondary smelters.

It is believed that at least three independent battery breakers are in operation today, with the total lead exposed workforce estimated at approximately 30 employees. This represents a dramatic decline from the estimated 250 independent battery breaking firms operating in 1978.

For most of the current decade, economic conditions have not been favorable for independent battery breaking. Prices of pig lead and scrap lead, while peaking in 1979, declined substantially through 1985 at which point they approached historic lows [Ex. 576, p. 5]. Additionally, many battery breaking facilities had accumulated large piles of used battery casings and disposal of this hazardous waste required substantial financial outlays [Ex. 576, p. 2]. Recently prices have risen significantly and the current price is about 37 cents per pound. In response to the increase in the price of lead, one independent battery breaker, Ashland Metals Company, which ceased operations in July 1986, has reopened under new ownership to conduct "limited operations. [Ex. 686f, p. 1]. Another indication that financial conditions for battery breakers are improving is the reported opening of a new facility [Ex. 686f, p. 2].

Secondary smelters purchase the lead product produced by the independent breaker. It is reported by the industry that the independent breaker is forced to produce its product at the price being paid by the smelter [Ex. 694-1, p. 7].

Financial information was received from one independent battery breaker [Ex. 694-1]. Rates of return on assets (ROA), equity, and net worth were presented for the years 1983 through 1987 and reflect both the recent increase in lead prices and the preceding lows; rates were negative in 1986 but positive in 1987 The ROA for this firm in 1987 was 22.06 percent, with all returns lead related. Since resuming operations, Ashland Metals is also believed to be profitable [Ex. 686f, p. 8]. No information has been submitted with regard to other independent breakers.

Costs of Compliance. The costs to be borne by an independent battery breaker have been based on the incremental costs which are estimated to be incurred by two independent breakers, Ashland Metals and Ace Battery.

Independent battery breakers may be able to control exposure levels in every operation except industrial battery cutting through the use of wet controls. Incremental costs for a water spray system were estimated to be about $14,000 (based on Means Site Work Cost Data, 1987). Annualized capital costs would be $2,054 and O&M costs would be $1,399. Total annual costs for the water system are estimated to be $3,453.

Ace Battery, however, already primarily relies on wet control technology; thus, incremental costs for improvements to this facility's wet control system were assumed to be minimal.

Ventilation costs for industrial battery cutting operations are estimated to be $17,500, based on air volume requirements of 2,500 cfm and a unit cost of $7 per cfm [Exs. 686f; 643]. Annualized capital costs would be $2,569 and O&M costs would be $1,750. The total annual cost for ventilation was $4,319. Costs were not estimated for ventilation of the industrial battery cutter for Ashland since information in the public record indicated that this facility had already implemented some ventilation at this operation and that further improvements were being investigated [Ex. 668F].

Thus, annual costs for Ashland Metals for the technology described above would be $3,453 (for water controls) while annual costs for Ace would be $4,319 (for ventilation of the industrial battery cutter).

To the extent that water control technology cannot reduce exposure levels below 50 $\mu g/m^3$ in all operations, costs for additional controls may be incurred as described below; it is unlikely, however, that either facility will require each control.

Additional costs for the Ashland facility could include costs for an automated, enclosed dumper; enclosure of the hammermill; ventilation of the low speed saw; enclosing and ventilating cabs of payloaders; and additional housekeeping.

Costs for an automatic dumper are estimated to be $57,000 [Ex. 686f, p. 7]. (It is assumed that this cost includes enclosure.) Annualized capital costs would be $8,368, based on a twelve year useful life and a 10 percent cost of capital. Operating and maintenance (O&M) expenses would be approximately 10 percent of capital costs, or $5,700. Total annual costs for this equipment are thus estimated to be $14,068.

OSHA assumes the costs of enclosing the hammermill to be $10,000. Annualized capital costs are estimated to be $1,468. O&M costs are estimated to be negligible, as this control would require little or no maintenance.

Costs for ventilation of the low speed saw were estimated to be $17,500, based on an air volume requirement of 2,500 cfm and a unit cost of $7 per cfm [Exs. 686f; 643]. Annualized capital costs would be $2,569 and O&M costs would be $1,750. The total annual cost for this system was thus estimated to be $4,319.

Costs for cab enclosures were estimated to be $5,000 per unit [Ex. 686c, pp. 32-33.] Annualized capital costs would be $734 per unit, and annual O&M expenses would be $3,600, including HEPA filter replacement. Assuming four such cabs are required for the Ashland facility, total annual costs for cab enclosures were estimated to be $17,336.

Finally, costs incurred for additional housekeeping will be $975. (This estimate assumes that one-half hour of labor per day will be required 5 days per week for 50 weeks at an hourly wage of $7.80).

Thus, total annual incremental costs for the Ashland Metals plant were estimated to range from $3,453 to $41,619.

Additional costs for the Ace Battery plant could include costs for enclosure of the automatic dumper; enclosure of the hammermill; ventilation of the low speed saw; enclosing and ventilating cabs of payloaders; and additional housekeeping.

Costs for enclosure of the hammermill, enclosing and ventilating cabs of payloaders, ventilation of the low speed saw, and additional housekeeping were computed above for the Ashland Metals facility. Annual costs for enclosure of the automatic dumper are estimated to be the same as those assumed for enclosure of the hammermill, $1,468.

Total annual costs for the Ace Battery facility were thus estimated to range from $4,319 to $29,885.

The initial costs of an industrial hygiene survey were estimated to be

$1,000. Such a survey would require one day to survey the work area and one day to collect exposure data and to evaluate existing controls. No recurring costs would be required.

Compliance costs for the new facility reported to be opening were assumed to be negligible, as this facility will be using fully automated equipment [Ex. 686f, p. 2].

Based on evidence in the public record which indicates the existence of three independent battery breakers, total annual incremental costs for this industry were estimated to range from $7,772 to $71,504. (OSHA does not have sufficient information to suggest that there are more than three independent breakers).

Economic Feasibility. The financial data submitted by the Battery Salvage Division of Ace Battery, Inc., along with information provided to OSHA by its contractor, Meridian Research, indicate that profitability for the independent battery breakers is highly dependent upon the price of lead. Ace Battery also provided production volume data [Ex. 694–1, p. 15]. No financial information was submitted into the record regarding Ashland.

Ace battery processes approximately 1.3 million batteries per year [Ex. 694–1, p. 15]. To the recycler, these batteries represent about $2 in revenue each. Thus, revenues for this facility are estimated to have been about $2.6 million, necessitating a price increase of about 0.2 to 1.1 percent to offset the costs of compliance. Ashland was reported to have the capacity to process 10,000 batteries per day [Ex. 576]. After ceasing operations in 1986, however, it reopened under new management one year later and began limited operations [Ex. 686f], and OSHA assumes that at least 5,000 batteries are currently processed per day at this facility. Thus, price increases required for full pass-through for Ashland would be about 0.1 to 1.6 percent.

The ability to pass costs forward is reported by industry to be limited, as the independent breaker must take the price offered by the secondary smelter [Ex. 694–1, p. 7]. However, as smelter demand for lead battery plates exceeds their capacity to produce these plates themselves, strong demand may allow the independent breakers to increase prices.

Inventory and seasonal fluctuations affect battery breaking operations. A smelter with a two or three month stock of plates will not be inclined to buy plates from an independent breaker. Also, battery disposal slacks off during the summer months. Both of these situations result in the battery breaker having to periodically cut back its operations which in turn limits its ability to pass costs forward to smelters or backward to suppliers.

Though no estimates of profit levels were provided by the independent battery breakers, evidence suggests that 1987 prices allowed at least one independent breaker, Ace Battery, to realize revenues and rates of return sufficient to allow the annual costs to be absorbed [Ex. 694–1]. (It was reported that a strike at a major lead mine and smelter in Canada was probably responsible for higher prices; while this increase could be temporary, prices have not yet fallen). Based on the revenue estimates developed above, OSHA computed profit impacts based on an assumed rate of return on sales (ROS) of 5 percent. OSHA believes this rate of return to be a reasonable estimate, since return on assets for Ace was over 22 percent in 1987 This ROS would result in profits of $130,000 for both Ace and Ashland. Associated profit impacts were estimated to fall between 2.3 and 16.1 percent for Ace and 1.9 and 22.4 for Ashland. It should be noted that the tax deductibility of compliance costs was taken into account in computing profit impacts. That is, care was taken to compute before-tax profit before subtracting annual costs. After subtracting annual costs, the appropriate average tax rate (30 percent) was then reapplied to determine after-tax profit net of costs. OSHA s estimates of post-compliance ROS range from 4.2 to 4.9 percent for Ace, 3.9 to 4.9 percent for Ashland. Since Ace realized an ROA of over 22 percent in 1987 as noted above, indications are that compliance costs can be absorbed without undue burden on profitability

OSHA does not feel that the structure of the battery breaking industry will be further disrupted by regulating independent breakers. There are now 18 secondary smelters with breaking operations (these are already required to meet the 50 microgram per cubic meter standard and are reported to be complying) as well as the 3 independent breakers documented in the record. The regional nature of the supply and demand relationship in the secondary lead industry is such that it is doubtful that many of these facilities compete directly with one another.

OSHA finds that the 50 $\mu g/m^3$ PEL is economically feasible for the Independent Battery Breaking Industry within a two and one-half year compliance period. One firm is estimated to incur no cost. For two other firms, impacts are not projected to place undue burden on profitability. Thus, this rulemaking will not disrupt the battery breaking industry in the U.S., and it may accelerate the shift to more environmentally sound technology and plant design. Also, the decision to open a new independent battery breaking facility indicates industry confidence in continued profitability.

3. Lead Chemicals—Process Description. Lead oxides are the major product produced by the lead chemical industry, accounting for approximately 85% of total industry production by weight (Ex. 575, pp. 7–9). Thus, the production of lead chemicals is largely the production of lead oxides. Lead oxides are produced exclusively by a dry process, which essentially involves the creation and collection of oxidized lead dust. Lead oxides are interacted with appropriate acids in a wet process to produce other lead chemicals like lead soaps and stabilizers.

Dry Process. Overview: The manufacturing process of lead oxide begins with the melting of pig lead in a melt pot. From the melt pot, the molten metal flows into a Barton kettle, where it is oxidized by aeration. The resulting lead oxide is then collected as dust, which can either be sold as product (high-metallic lead oxide ("HM")) or be further oxidized in other furnaces to form red lead or litharge, the main products of the industry.

a. Production of High-Metallic Lead Oxide: HM lead oxide is approximately 70% to 80% lead oxide (PbO); the balance is metallic lead. HM lead oxide is produced from elemental lead pigs and ingots, which are received at plants aboard rail cars and transported by fork lift trucks to the melt areas as needed. The lead is then fed by hoist or conveyor into a heated pot a few feet in diameter to be melted. The melt must be drossed to remove impurities on the average of once a day (Ex. 684b, p. 2). Drossing takes 5 to 15 minutes (Exs. 684b, p. 2 and 694–9, p. 23).

From the melt, molten lead flows down a trough or is pumped to an adjacent Barton kettle. To produce lead oxide, the molten lead in the Barton is agitated and exposed to an air stream created by an exhaust fan associated with a dust collector, which pulls air into the Barton. The air stream then draws the lead oxide and lead fume off from the Barton through cooling and settling chambers and cyclones into a bag-filter dust collector. The filtered air is exhausted to the outside atmosphere.

As the air stream moves from the Barton kettle through the process, lead oxide particles are collected in settling chambers, cyclone separators and bag houses. The product is then transferred by screw conveyors, bucket elevators and/or pneumatic conveying systems to storage hoppers. Thereafter, the HM oxide may be milled to produce a finer product or fed by mechanized or pneumatic material transfer systems to the calcining furnaces for further oxidation, to produce red lead or litharge.

b. Calcining: Both litharge (PbO) and red lead (Pb_3O_4) are made by heating and further oxidizing HM lead oxide in a calcining furnace. The process takes place at high temperatures, with continuous mixing for hours. In older plants, red lead and litharge are produced in "rake" furnaces, where the lead oxide is continuously turned over by rakes to oxidize it. At the end of these oxidation processes, the lead oxides are cooled and transferred by mechanized or pneumatic material transfer systems to hoppers for storage prior to milling and/or bulk loading or packaging.

c. Grinding and Blending: Some portion of lead oxides are milled or ground to size, commonly in hammermills. The entire process occurs in a closed system operated under negative pressure. The finished material is collected in bag houses and gravity fed or conveyed to hoppers for storage. Milled products stored from different batches are sometimes blended to meet product specifications. These processes and connecting conveying systems generally are mechanized.

d. Packaging and Shipping: Over 85% of all lead oxides are shipped from the producing plants in bulk by truck or rail car (See Additional Controls, below). Another portion of the product is shipped in semi-bulk containers, like superbags and air pallets. The remaining portion is packaged for shipment in much smaller containers like drums and 20- and 50-pound paper or plastic bags.

In bulk and semi-bulk shipping, the containers are usually filled through a pipe from an overhead hopper. Smaller containers, like drums, are filled in a similar manner, except that some manual adjustment of product weight to meet customer specifications may be required at times.

The industry continues to package some of its product in bags because of customer demand for a variety of weights and package types. Some customers, for example, require that accurately-weighed contents be in plastic bags, so the bags with their contents can be thrown directly into the customers' chemical processes.

The bags are packed on bagging machines, which are fed lead oxide by gravity from overhead hoppers. The bagging operator places the valve of a bag over the machine's filling spout, and the machine fills the bag to the set cut-off weight. As the bag is being filled, the machine exhausts the displaced air from the bag. When the bag is filled, the operator removes it and places it on a scale beside the bagging machine. If the customer requires accurately-weighed contents and the bag is underweight or overweight, the operator uses a trowel and a bucket to add or remove small amounts of lead oxide. The packager then seals the bag and places it on a pallet.

Wet Processes. In wet chemical processes, lead oxide (litharge) is slurried with water and then reacted with appropriate acids to form one of numerous lead soaps and stabilizers. The manufacturing processes for these lead chemicals commonly are automated, with mechanized material transfer between hoppers and reaction tanks and remote control of the transfer, makeup, and reaction operations by operators in air-conditioned control rooms. During these processes, the product precipitates out of the reaction liquor, is separated by filtration or centrifugation, dried, and conveyed to storage hoppers. The dried product is milled and stored in hoppers again before blending, packaging, and shipping. A higher proportion of these products is shipped in non-bulk form.

Sources of Exposure. Since a lead oxide plant may produce thousands of pounds a day of fine, dust-like lead oxides and since it does not take much lead dust dispersed throughout a building to equal 50 $\mu g/m^3$ it is obvious that it is essential to prevent the escape of dust from process equipment. Although lead is present in every operation in the production of lead oxides, to the extent that the production process is entirely enclosed, mechanized and operated under negative pressure, the sources of lead exposure can be quite limited (Exs. 582–90, p. 12; 694–9, Att. 6, p. 5).

As industry sources have indicated, the production of lead oxide is highly automated. After the operator loads lead ingots into the melt kettle, the product is not handled until the product is packaged or loaded into bulk trucks (Exs. 582–90, p. 12; 694–9. Att. 6, p. 5). Consequently, except for leaks and breakdowns, there is no direct source of lead exposure for workers during that process unless they are performing periodic manual tasks that require interaction with the process (e.g., quality control sampling; Ex. 684b, p. 10). On the other hand, to the extent that portions of the production process are not fully enclosed, mechanized or operated under negative pressure, potential sources of lead emission increase. Across the industry, packaging and maintenance are generally considered the two operations that contribute most to high air lead levels (Exs. 582–90, p. 7· 694–9, Att. 2–4; Tr. 1266).

Feeding the melt pot with lead at the beginning of the production process does not appear to create substantial employee exposure to lead, in part because mechanical means are commonly used to feed the lead pigs into the melt pot and in part because the lead at this stage is still in solid form. In contrast, packaging the product at the end of the process in bags (and to a lesser extent in drums) undoubtedly contributes more than any other single operation to high employee exposure levels. At process points in between, some manual operations like drossing and product quality control sampling may also contribute to employee lead exposure.

In addition, the extensive mechanized system for transferring materials throughout the process can be a substantial source of lead exposure if it is not completely enclosed. Even where the material transfer system is completely enclosed (e.g., screw conveyors), product leaks from various points on the conveyor can be a major source of lead emission. If the source of the leak is not promptly repaired and the spilled materials promptly cleaned up, employees throughout the area can be exposed.

Aside from potential sources of exposure associated directly with production processes, employees may also be exposed to high air lead levels during maintenance, which is performed intermittently. When equipment that regularly handles large amounts of lead dust periodically has to be opened to be repaired or cleaned, the employee performing the job and others in the area may encounter air lead levels in excess of 50 $\mu g/m^3$ A very high proportion of maintenance appears to be devoted to upkeep of mechanized material transfer systems (MMTS), like bucket elevators and screw conveyors (Ex. 684c, p. 5).

As indicated, packaging is the operation that contributes most to employee exposure levels. While there may be some potential lead exposure associated with all forms of non-bulk packaging (e.g., cleaning superbags if used bags are returned), packaging in small bags generally poses the major problem.

The bagging process currently in use in the lead chemicals industry, including the handling of filled bags, involves a number of manual interventions by the operator, all of which constitute potential sources of lead emission. For example, operators place the bag on the machine spout and remove it when the machine stops the flow of lead oxide at the desired weight. In addition, when customer specifications for product weight in the bag are precise, the operator weighs the bag and, if the weight is incorrect, manually adds or removes product to achieve the correct weight. In some cases, these tolerances can be as narrow as plus or minus 1.5 ounces for a 50-pound bag (.2%) (Tr. 1282). Furthermore, when the bag is filled, it must be closed, surface dust must be removed, and the bag must be stacked on a pallet along with other bags.

The physical attributes of lead oxide and of the bags used in packaging contribute to the exposure problems in this operation. For example, because lead oxides and many lead chemicals are sticky and may flow erratically (e.g., like flour), these substances may back up in the filling spout and then drop down unexpectedly when the operator touches the spout to attach or detach the bag. In addition, generally the bags used in this industry breathe when handled. When a bag breathes out, it emits a puff of air that may contain lead dust. Such puffs may be emitted when the bag is closed, when it is transported to and stacked on a pallet, and when other bags are stacked on top of it.

Concerning operations and exposures of workers involved in producing lead chemicals other than oxides, there is little or no information in the record of this industry. Production of these lead chemicals is largely by wet process, which tends to minimize lead emissions. However, drying, blending, and packaging of the product at the end of the process do constitute potential sources of lead exposure, as do spills of lead slurries that have been allowed to dry.

Existing Exposure Levels— The Data Sets. There are eight data sets on employee lead exposures in the record. Most of these were submitted by employers in response to a letter request from OSHA. The employer is required to collect these data and to make them available to OSHA under the lead standard (29 CFR 1910.1025(n)).

The eight data sets include data collected in 1981 by OSHA's former contractor, JACA (Exs. 553–1; 575, pp. 3–5); data from Plant A (Exs. 686E, p. 19; 688c); data from Plant B (Exs. 686E, p. 20; 684b); data from Plant C (Exs. 686E, p. 19; 684c); data from Plant X (Exs. 686E, p. 19; 688b); data from Plant M (Exs. 686E, p. 20; 688d); data from OSHA inspections (Ex. 583–4); and aggregate data from an unspecified number of plants submitted by the Oxide and Chemicals Committee of the lead industry's main trade association, the Lead Industries Association ("LIA") (Ex. 582–90, App. A).

Following the methodology for evaluating data described in the introduction to technological feasibility. OSHA reviewed these eight data sets for their applicability to feasibility analysis. Of the eight, six are useable. Of these, the data submitted by Plant A, in conjunction with OSHA's 1988 site visit to that facility, constitute the most reliable evidence for assessing technological feasibility in the record.

Plant A has supplied OSHA with the most extensive set of useable data in this proceeding (Ex. 688c). The data are recent and complete for four years. The data also are effectively annotated to aid in interpretation. For example, unusually high exposure levels are typically identified by annotation, and when the causes are known they too are noted. Annotations also typically identify job tasks and work areas involved during monitoring. In addition, OSHA's site visit enables the Agency to concretely appreciate the production and control context in which these exposures have occurred, including the existing controls and production processes associated with particular exposure levels, as well as general conditions in the plant (Ex. 684a). All of this allows OSHA to effectively use the data and information made available by Plant A in making a comprehensive and well-informed assessment of technological feasibility.

For these reasons, OSHA intends to rely heavily on the record data and information made available by Plant A. OSHA believes this reliance is especially justified because technological feasibility judgments based on Plant A should be conservative for the industry as a whole. Plant A is old and not modernized. Additional, conventional engineering controls can be implemented there to reduce existing air lead levels. In addition, from the site visit it was apparent that the plant was quite dirty and that housekeeping and other work practices also can be substantially improved to further reduce air lead levels (Ex. 684a. pp. 12–13).

However, some question might be raised as to whether data and information concerning the packaging operation at Plant A can be taken as representative of the industry. Packer/blender/dryer operators (PBDs) at Plant A perform other lead-exposed operations in addition to packaging (Ex. 684a, p. 4). Nevertheless, for purposes of determining feasibility, OSHA does not consider that this fact, absent any information in the record to the contrary, makes Plant A s monitoring results for PBDs unrepresentative of packers in other plants in the industry There are several reasons for this.

First, Plant A is not the only plant where workers who pack also perform other duties. Indeed, at Plant B, for example, there is not a category called "packer (Ex. 684b). Workers in other named job classifications simply spend part of their time in the plant packing. Second, since Plant A appears to package a much higher proportion of its product in bags than is typical throughout the industry (see discussion below), the amount of time workers spend packaging at Plant A may actually be more, rather than less, than is typical throughout the industry. Thus, the lead exposures of Plant A's PBD operators are likely to overstate, rather than understate, exposures of operators in other plants. Finally, OSHA knows that drying and blending operations also are sources of potentially high air lead levels (see discussion of drying and blending in OSHA's technological feasibility assessment for the lead pigments industry). As a consequence, the overall lead exposure of PBDs at Plant A may also be high precisely because some of their time is allocated to drying and blending.

Consequently, OSHA's reliance on the exposure data for Plant A's PBDs as the starting point in an analysis of the feasibility of achieving 50 $\mu g/m^3$ in packaging may be conservative in that these data are likely to overstate the extent of the problem of controlling employee exposures during packaging. At worst, such reliance is unlikely to be prejudicial to the industry because it is unlikely that this approach understates the extent of the problem.

The second useable data set is from Plant B (Ex. 684b). Plant B's data also are quite extensive and recent. However, the data are not annotated to explain, where necessary, the conditions under which monitoring occurred. Thus, for example, OSHA cannot tell why in 1987 the range of 19 monitoring results for the job category of operator extends all the way from 8–579 $\mu g/m^3$ why three (259, 295, and 579 $\mu g/m^3$) of these results are unaccountably much higher than the others and why the 579 $\mu g/m^3$ result is more than three times as high as the highest of the 16 other monitoring results. Nevertheless, because OSHA gathered useful contextual information on its 1988 site visit to Plant B (Ex. 684b), OSHA finds Plant B's data set also useful for assessing technological feasibility.

The third useable data set is from Plant X (Exs. 686E, p. 19; 688e). The data in this set also are quite complete and recent. But again, the data set is not annotated to explain, where necessary, the conditions under which monitoring occurred. More importantly, the remand rulemaking record is devoid of the contextual information concerning existing controls, production processes, and general plant conditions that is so important to make sense of the data. This information is not in the record because a report of OSHA's 1987 site visit to Plant X was withdrawn from the record at the company's insistence. OSHA therefore finds the Plant X data less useful than the Plant A and Plant B data.

The fourth useable data set is from Plant M (Ex. 688d). The data provided for that plant are incomplete, especially for the three years prior to 1987 Like Plant X, no annotations to the data are provided, and OSHA's report on its site visit to the plant was removed from the record at the company's request. Moreover, Plant M uses wet and dry processes to produce lead stabilizers; it does not produce lead oxides. Generally, the data from Plant M are useable to represent the production of lead chemicals other than lead oxides. In addition, exposure data from Plant M for specific operations that are common to both oxide and non-oxide production, like packaging, are useable to represent exposure levels that are achievable throughout the industry when modernized equipment is used in such operations. The fact that the Agency cannot determine from the record precisely which among the array of conventional engineering and work practice controls are being implemented at Plant M to achieve its relatively low levels in packaging does not vitiate the reality that these levels are already being achieved there in what all concede to be among the dirtiest operations in the industry (Exs. 582-90, p. 7· 694-9, Att. 2-4; Tr. 1266-67).

The fifth useable data set is company-supplied data provided in the 1982 JACA report (Exs. 553-1; 575, pp. 3-5). OSHA concludes this report and the data in it are of only limited utility for several reasons. The data are seven years or more old. Some significant improvements to controls have been made in operations in certain plants since the time the data were collected (Ex. 585-90, pp. 12, 19). Moreover, JACA did not supply the detailed, contextual information concerning associated engineering and work practice controls, production processes and general plant conditions so important to meaningfully interpret the data. Mostly, the data and the report are useful simply to confirm the broad outlines of industry exposure patterns. For example, then as now, the highest exposure levels occur in packing, and employees who work in other operations appear to suffer higher levels of exposure due to cross contamination from lead emissions in the packaging operation and in material transfers (Ex. 684a, p. 13).

The sixth useable data set is comprised of data from OSHA inspections between June 1979 and March 1987 which is contained in OSHA's Integrated Management Information System ("IMIS"· Ex. 583-4). Because this data set may include some monitoring results from unrelated industry sectors, and because the number of total samples is small and is dispersed among a number of plants, and because little associated, contextual information is provided, OSHA finds this data set of only minimal utility. The IMIS data demonstrate that, for the plants inspected, more than 40% of all employee monitoring results were below 50 $\mu g/m^3$

The remaining two data sets have very limited value. One, the LIA data set (Ex. 582-90, Appendix A and pp. 7-8), does not identify which plants are represented and, more importantly, is not organized according to plants. The participating plants' data for a period ranging from January 1985 to August 1987 are pooled and then divided according to five job classifications. Thus, OSHA cannot determine exposure levels operation by operation in each plant. Moreover, regarding existing controls. LIA provides nothing that can be used to establish which controls were in place when monitoring was conducted. As a result, OSHA cannot determine from the LIA submission what controls are associated with particular exposure levels.

Moreover, although LIA provides what it claims to be typical ranges of exposure data for the five job categories, the ranges do not accurately reflect much of the raw data LIA submits for these very categories. No explanation of the apparent discrepancy is provided. LIA also does not distinguish between exposure levels in new and old plants or between exposure levels in lead oxide production (dry process) and in other lead chemical production (mostly wet process). Thus, monitoring results from potentially very different plants and operations are inextricably mixed together in this data set.

In addition, based upon the data discussed below, OSHA knows that the extremely wide range of monitoring results for each job classification (e.g., packer, from 22 $\mu g/m^3$ to 2,009 $\mu g/m^3$) and the high averages for nearly all job classifications (e.g., leadman, 338 $\mu g/m^3$) reflected in this data set are not representative of the current best operations in the industry or of what can be achieved. For all the above reasons, OSHA finds the LIA data of very limited use for purposes of determining technological feasibility in this rulemaking. Fortunately, the three largest companies in the industry, which were the industry employers who were most active in the rulemaking, independently submitted data plant by plant and provided other information that are much more detailed and useful than what LIA provided.

The other data set that has very limited value is provided by Plant C. Although OSHA made a site visit to this plant and thus was able to obtain the kind of contextual information about controls and processes that is important in interpreting exposure data, the actual exposure data provided by the company are sparse (Ex. 684c). In fact, many fewer employee sampling results were submitted than are required by the lead standard. In 1987 for example, only eight personal samples are reported to have been collected for the entire plant, all on two days near the end of the year. Moreover, the data consist primarily of area samples, which are of only limited use in determining actual employee exposure levels, and include very few personal monitoring results.

In addition, the data are not broken down according to named job classifications or named operations. Plant C also does not provide notations concerning operating conditions that existed on the two days that employee sampling was carried out, despite the fact that three of the eight sampling results are as high as 737 $\mu g/m^3$ 633 $\mu g/m^3$ and 514 $\mu g/m^3$ Consequently, OSHA cannot correlate information concerning existing controls with adequate data reflecting employee exposure levels operation by operation. OSHA therefore finds Plant C's data set provides very little useful information for assessing technological feasibility.

Analyzing the Data. As indicated, the Plant A data are the most useable. Plant A submitted data for the years 1984-87 in nine job classifications: chemical operator, general laborer, oxide operator, packer/blender/dryer (PBD), sanitary worker, warehouseman, machinist, electrician, and maintenance (Ex. 688c; Table 1, below). OSHA has combined data for electricians with data for maintenance, because electricians perform maintenance work. OSHA treats another category, machinist, as having air lead levels below 50 $\mu g/m^3$

There are no monitoring data for machinist in 1986 and 1987 presumably because no sampling was conducted in those years due to the fact that monitoring results in 1984 and 1985 were below the action level. In any event, the available data for machinists at Plant A show air lead levels below the action level.

As of 1987 a majority of all sampling results at Plant A already are below 50 $\mu g/m^3$ In the same year, geometric mean exposure levels in six of eight job classifications also are below 50 $\mu g/m^3$ and geometric means in all eight are at or below 65 $\mu g/m^3$ Moreover, in five of the seven job classifications for which data are provided in 1987 geometric mean exposure levels are lower than they were in 1984. In addition, the average geometric mean for each job classification over the four years also are quite low; they are at or below 50 $\mu g/m^3$ in 5 of the 8 job classifications. In two of the remaining jobs the geometric mean for the four years is only 55 $\mu g/m^3$ and 59 $\mu g/m^3$ In the other, PBD, the geometric mean for the four years is 84 $\mu g/m^3$

TABLE 1.—SUMMARY OF EXPOSURE DATA FOR PLANT A, 1984–87

Job classification	Annual geometric mean exposure level				Combined years
	1984	1985	1986	1987	
Chemical Operator	34	30	44	35	35
Oxide Operator	38	51	95	62	59
Packer/Blender/Dryer Operator (PBD)	68	79	121	65	84
Warehouseman	22	36	40	6	25
General Laborer	47	78	95	19	55
Sanitary Worker	54	26	61	8	36
Maintenance	34	27	82	22	46
Combined Jobs	42	44	80	34	49

The job classification of "machinist" was not included in this table.
For purposes of calculating geometric means, exposure monitoring results of 0 $\mu g/m^3$ were treated as 1 $\mu g/m^3$ which is approximately one-half the level of detectability.
The geometric mean for "Combined Jobs" is the geometric mean for all observations across all job categories for that year.
The geometric mean for "Combined Years" is the geometric mean for all observations across all years.

Data from Plant M confirm that by 1987 levels at or around 50 $\mu g/m^3$ already are being achieved in packaging at plants with better controls in the industry (Ex. 688d; see Table 2, below). These data further indicate that exposure levels for all other job classifications in this lead stabilizer plant also are being controlled fairly consistently to below 50 $\mu g/m^3$ For example, in both 1986 and 1987 two-thirds of all sampling results were below 50 $\mu g/m^3$ This represents a doubling of the proportion of sampling results below 50 $\mu g/m^3$ since 1984. Moreover, in 1987 geometric mean exposure levels in all job classifications were at or below 50 $\mu g/m^3$ and the geometric mean for all lead-exposed jobs was only 18 $\mu g/m^3$ In 1986, geometric mean exposure levels in all jobs except packer were below 50 $\mu g/m^3$ and the geometric mean for all lead-exposed jobs was 15 $\mu g/m^3$ In 1986, the packer had a geometric mean exposure level of 83 $\mu g/m^3$

TABLE 2.— SUMMARY OF EXPOSURE DATA FOR PLANT M IN 1986–87

Job classification	Annual geometric mean exposure level		Combined Years
	1986	1987	
Production operator	18	23	20
Production foreman	5	6	6
Packer	83	50	64
Packing foreman	6	15	10
Warehouse worker	8	15	10
Maintenance	46	32	39
Combined jobs	15	18	17

For purposes of calculating geometric means, exposure monitoring results of 0 $\mu g/m^3$ were treated as 1 $\mu g/m^3$ which is approximately one-half the level of detectability.
The geometric mean for "Combined Jobs" is the geometric mean for all observations across all job categories for that year.
The geometric mean for "Combined Years" is the geometric mean for all observations across all years.

At Plant B, like Plant M, a much newer plant than Plant A, exposure levels unaccountably tend to be considerably higher than at either of the other two (Ex. 684b). Nonetheless, from 1985 through 1987 in 3 of the 4 job classifications geometric mean exposure levels are all below 100 $\mu g/m^3$ Only the job classification of operator has a geometric mean that is over 100 $\mu g/m^3$ in most years. Moreover, there is a striking trend at Plant B for all four job classifications: the geometric mean exposure levels have been reduced dramatically since 1984. On the average, exposure levels have been halved, with reductions ranging from 27% in maintenance to 80% for leadman (See Table 3, below).

TABLE 3.— SUMMARY OF EXPOSURE DATA FOR PLANT B, 1984–87

Job classification	Annual Geometric Mean Exposure Level				Combined Years
	1984	1985	1986	1987	
Operator	176	119	84	103	115
Shipper	94	46	88	59	68
Maintenance	125	63	92	91	90
Leadman (Supervisor)	146	90	51	29	66
Combined Jobs	144	85	77	73	90

The geometric mean for "Combined Jobs" is the geometric mean for all observations across all job categories for that year.
[2] The geometric mean for "Combined Years" is the geometric mean for all observations across all years.

The most important point to make about the Plant B data is that exposure levels for operators are higher than they would otherwise be if operators performed only typical operator tasks. At Plant B operators are rotated into the packaging operation to pack out product in small bags and drums (Ex. 684b, p. 3), and packaging probably constitutes the main source of operators' lead exposure.

OSHA has reached this conclusion for the following reasons. Plant B has no separate job classification for packers. Yet the company concedes that approximately 15% of its product is packed out in bags and drums and that packaging is one of the two main sources of lead emissions in the plant (Ex. 684b, p. 9). Thus, employees not designated as packers must act as packers for a significant part of the time. The company also indicates that it rotates various employees into packaging to limit each employee's exposure to lead (e.g., Exs. 686E, p. 28; 694–9, Att. 6, p. 31). Since the company is unlikely to routinely rotate supervisors (i.e., leadmen) or maintenance workers into such a production job, packaging must be done by operators and/or shippers. Because operators usually have much higher average and geometric mean exposure levels than shippers, OSHA concludes that operators probably perform the bulk of the packaging. A substantial reduction in lead emissions from packaging, therefore, is likely to substantially reduce the exposures of all workers who pack, especially the exposures of operators, the workers with the highest lead exposures in the plant.

The final data set that OSHA wishes to discuss further is from Plant X. That plant's data reflect exposure levels that are extremely high. Monitoring results indicate that the plant frequently exceeds the applicable PEL of 200 μg/m³ For example, the average exposure level for all lead-exposed employees was 237 μg/m³ in 1987 (Ex. 688e).

Based upon its analysis of data, including data from Plant A, another older plant, OSHA believes that exposures in Plant X can be much more effectively controlled and concludes that the high exposure levels at Plant X can only be attributed to poor controls. OSHA, therefore, does not rely on Plant X data to determine the limits of technological feasibility. Rather, OSHA relies on the data from Plant A as indicative of what can be achieved even in old plants in the industry.

In addition to the data discussed above, OSHA also was informed by the president of the parent company of Plant C that at its three other plants the company already is achieving 50 μg/m³ in all operations except maintenance and packaging (Ex. 684c, p. 5). In the 3 plants achieving this level, all product is shipped in bulk and no packaging is carried out. The president further informed OSHA that, after moving Plant C into a new facility, he also expects to achieve 50 μg/m³ in all operations there, except for maintenance and packaging, since it is expected that 5% of the product will continue to be packaged in drums. The president also stated emphatically that in 5 years or less all of his employees, with the exception of maintenance workers and non-bulk packers, would have exposure levels at or below 50 μg/m³ (Ex. 684c, pp. 1 and 5).

Thus, in 6 of the 8 plants owned by the three major companies in the industry (i.e., Plant A, Plant M, and the four facilities operated by the owner of Plant C), exposure levels either already are, or in the foreseeable future will be controlled to 50 μg/m³ in almost all operations.

In its analysis of exposure levels, OSHA has relied to a considerable extent on the geometric mean. As indicated in the introduction to the assessment of technological feasibility, OSHA recognizes that there is no single number, or even range of numbers, that can perfectly characterize a data set. A mere range of exposure levels (e.g., from 8 μg/m³ to 579 μg/m³ for operator at Plant B in 1987· Ex. 684b), provides very little useful information about typical exposure levels. Similarly, the arithmetic mean, which is equivalent to the commonly used "average, provides little insight into the distribution of exposures and is subject to gross distortion by high or low numbers.

Thus, for example, at Plant A in 1987 more than 60% of the 31 sampling results for maintenance workers are below 50 μg/m³ but the arithmetic mean is 152 μg/m³ (Ex. 688c). This is simply because one result is 1,715. By contrast, the geometric mean is 22 μg/m³ which more accurately reflects routine exposure levels. Consequently, OSHA believes that where data sets are lognormally distributed, as is typically the case with exposure data, the geometric mean is the best single statistic to summarize the data set. The commenter for Company B appears to agree: "The geometric mean may be the best method to analyze the lead exposure data (Ex. 694–9, Comments by Company B, p. 15, and see p. 21).

OSHA is further assured of the reasonableness of relying upon a geometric mean by the fact that it appears to fit well with the court's definition of feasibility. *USWA* v. *Marshall*, 647 F.2d at 1272. For a PEL to be technologically feasible, the court does not require that all operations be able to achieve the PEL all of the time. Consequently, the mere existence of aberrant exposure readings does not constitute proof of infeasibility.

In using the geometric mean to characterize exposure data, the outliers that are discounted include both high and low monitoring results. Very high monitoring results can affect the mean more than low results, because on the low side monitoring results cannot fall below zero. Extremely high, atypical exposure levels often are caused by unusual events, like operation upsets and spills or monitoring problems, such as "a piece of particulate getting into the sample" (Ex. 684e, p. 7· Tr. 1176). Without knowing the cause of these extreme values, OSHA believes it is inappropriate to use the arithmetic mean. OSHA's use of the geometric mean is also supported by the opinions of some representatives of the lead industries and by Meridian (e.g., Exs. 581–4–B, p. 4; 694–6. p. 2; 686A, p. 12–13). Therefore, OSHA primarily uses the geometric mean in its feasibility analysis.

Current Controls. OSHA's discussion of current exposure levels in the previous section indicates that in 1987 with existing controls Plant A, an old plant, already had a majority of all sampling results below 50 μg/m³ and geometric mean exposure levels in 6 of 8 job classifications below 50 μg/m³ It also indicates that in 6 of 8 plants owned by the three major producers in the industry, which represent over 80% of all production, exposure levels already have been, or in the foreseeable future will be controlled with existing controls to or below 50 μg/m³ most of the time in most operations.

The primary methods currently used to control air lead levels to these exposure levels are dust collection systems, ventilation, housekeeping, and replacement of packaging product in bags and drums, which requires manual intervention, with bulk and semi-bulk shipment. In addition, at least Plant A has developed reduced-dust products that should reduce exposure levels in packaging and perhaps other operations (Ex. 684a, p. 14).

Meridian reports that in general the level of controls is considerably higher in relatively new plants than in old ones. For example, Meridian reports that in new plants housekeeping and preventive maintenance programs generally are better by a substantial margin. In addition, in relatively new plants most major pieces of equipment and packaging are ventilated and either fully or partially enclosed.

OSHA's best information on existing controls comes from its site visits to Plant A, Plant B and Plant C. OSHA believes the controls in place at all three companies are conventional in character and readily available in the marketplace. At Plant B, for example, the only relatively new plant among the three OSHA visited, prevailing engineering controls have been in place since 1974 and are therefore extremely likely to be part of common knowledge in the industry. Based upon this information, OSHA finds the following current controls in the various operations.

General Building. Both Plant A and Plant B provide general dilution ventilation with roof exhaust fans (Exs. C84a; 684b). This system is designed to provide a minimal level of air flow throughout the building and is not intended to provide control of lead contamination at specific locations. At Plant A makeup air for this system is provided by open building doors (Ex. 684a, p. 10). At Plant B the building, as well as the equipment, is maintained under negative pressure by exhaust fans, most of which are linked to the production equipment, which draws air in from surrounding areas (Ex. 684b, p. 5).

Dry Process. The primary method both for processing lead oxides and chemicals and for controlling lead emissions during production is a dust collection system. The system is designed to collect the dust product throughout the production process from most major pieces of equipment, conveyors and product packaging machines. At Plant A, for example, each major piece of equipment (e.g., Barton pots, calcining furnaces, weighing hoppers) is connected to exhaust and collection systems to draw dust through collection ducts surrounding the equipment to product collection vessels (e.g., cyclones). From the final collector, a baghouse, the air is exhausted to the outside atmosphere by an exhaust blower (Ex. 684a, pp. 10–11).

The dust collection system is in place over some equipment (e.g., Barton pots) primarily for production reasons, because it is part of the process by which lead oxide is produced from molten lead. However, since equipment connected to the system must be enclosed and ventilated for the system to work, the system simultaneously operates as a method for controlling air lead levels. In some instances (e.g., melting pot, weighing hoppers), the system is installed primarily for control reasons, to prevent traces of lead dust from escaping. The collection of product then is incidental and minor.

In addition, the process of producing lead oxide by a dust collection method is continuous and automated. No manual handling of lead-bearing materials is required after workers load pigs and ingots into the melting pots until the products are packaged or loaded for shipment. Thus, potentially high exposures associated with manual and batch processing are avoided.

a. Lead Oxide Production: Although there is relatively little information in the record on controls used in the receiving area, industry has not indicated that this operation poses an exposure problem. However, while the receiving operation does not generate lead dust directly, it may reentrain lead dust previously deposited in that work area from elsewhere. The facility at Plant B has been constructed to allow rail cars delivering lead pigs and ingots to park inside the production area near the lead oxide operation. This design reduces forklift traffic, which can reentrain and disperse dust. The pigs and ingots are unloaded on the floor near the melting pots. Plant B controls this potential for dispersing deposited dust by wet-scrubbing and vacuuming the floors daily (Ex. 684b, pp. 1–2).

Similarly, industry has not indicated that conveying lead ingots and pigs to melting pots poses any exposure problems. At Plant A, 100-pound pigs are manually loaded on open conveyors and continuously fed to the melting pots.

The melting pots at both Plant A and Plant B are at least partially enclosed and ventilated. At Plant A, the melting pots are provided with canopy hoods, which are connected to the dust collection system. The melting pots at Plant B are maintained at negative pressure, which is created by the exhaust from the dust collection system to facilitate capture of lead emissions. At Plant B, however, the enclosures around the melting pots are opened during charging (Ex. 684b, p. 8). The melting pots at Plant C are neither enclosed nor ventilated, but local side draft ventilation is provided (Ex. 684c, p. 3). Meridian reports that completely modernized plants have replaced melting pots with electric furnaces, which eliminates the need for drossing off impurities (Ex. 686E, p. 29).

For drossing the melting pots none of the site visit companies have implemented either engineering controls or automation. In addition, at Plant C there is no hood or cover on the dross pot.

To control lead emission during the transfer of molten lead from the melting pots to the Barton pots, Plant B has enclosed and ventilated the transfer troughs (Ex. 684b, p. 8). At both Plant A and Plant C the transfer troughs are open and not ventilated (Exs. 684a, p. 10; 684c, p. 3).

The Barton pots/reactors at all three site visit companies are completely enclosed and ventilated to the dust collection system. At C, however, the site visit team observed fumes escaping from the Barton pot. In addition to controlling employee exposures with point source ventilation, Plant C has an enclosed and heated control room near the furnaces (Ex. 684c, p. 3).

All three site-visited companies have fully enclosed and ventilated screw conveyors to transport the product to storage, milling and packaging. The screw conveyors at Plant A and Plant B are ventilated to the dust collection system. At Plant A, however, the site visit team observed dust emissions at the ends of conveyors, where worn out bearings had allowed lead oxide dust to spill out onto the floor (Ex. 684a, p. 10). Meridian reports that completely modernized plants have replaced screw conveyors with pneumatic conveyors to more completely control lead emissions (Sx. 686E, p. 29). Pneumatic conveyors, which use air to move materials through the conveyor, are fully enclosed and operate at negative pressure, have considerably fewer leaks and breakdowns, and require less repair and maintenance than screw conveyors and other mechanized material transfer systems.

b. Calcining Furnaces: Exposure levels at calcining furnaces at Plant A and Plant B are controlled by maintaining the furnace under negative pressure. At Plant A calcining furnaces operate at negative pressure because the flue gas from the furnace has to be exhausted to the atmosphere through baghouses.

No engineering controls have been implemented to control quality control sampling at the calcining furnaces. Plant A reports that all quality control samplers are thoroughly trained in sampling techniques.

c. Grinding and Blending: Exposure levels are controlled in grinding and blending because the grinding mills are enclosed and ventilated to the dust collection system. Thus, they also operate at negative pressure. In some plants bag dumping stations for loading blenders are also exhaust ventilated.

d. Packaging: In packaging, the most difficult exposure problem is limited to packaging the product in paper bags. To a very substantial extent lead chemical producers have eliminated this high exposure problem by switching from packaging in paper bags and drums, which requires extensive manual intervention, to bulk shipment. At Plant B, for instance, 85% of its product is bulk shipped (Ex. 684b, p. 3). At Plant C less than 5% of its product is packaged in drums, and at the company's three other plants all product is shipped exclusively in bulk. The company owning Plant C has successfully converted almost entirely to bulk shipment in part because the company has helped its customers to install bulk handling systems (Ex. 684c, pp. 2, 5).

In addition to bulk shipping a substantial portion of their product, plants also are controlling exposure levels in packaging by shipping a portion of product in semi-bulk form in superbags or supersacks, which can hold up to a few thousand pounds. Like bulk shipping, superbags do not require manual weight adjustment. To fill these containers a worker must place the clean bag opening around the fill spout and start the flow of material. At Plant A, lead emissions are controlled during filling because the connection between the bag and the fill spout is gasketed to achieve a tight seal (Ex. 684a, p. 4). In addition, the displaced air in the superbag is exhaust ventilated to the dust collection system. After the superbag is filled and sealed, it is removed from the area by a forklift truck. To control exposure levels during cleaning of reusable superbags, Plant B washes the bags in an isolated room (Ex. 684b, p. 9).

A portion of the product at the three visited companies is packaged in drums. Although this packaging method requires some manual intervention (e.g., skimming off the product from the drum), it does not have the high exposure problems associated with packaging in paper bags. During drum packaging at Plant A, the product is transferred from packaging hoppers to the drum in an enclosure that is exhaust ventilated to a bag filter. The enclosure draws air at a face velocity of 200 fpm and is open in front to allow drum placement and removal (Ex. 684a, pp. 3, 11). Drum packaging at Plant B is also enclosed and exhaust ventilated (Ex. 684b, p. 8).

Both Plant A and Plant B clean and reuse drums, an operation which poses additional exposure problems. Neither company cleans drums in an isolated room or building. Plant B, however, has targeted a program to isolate and control the cleaning of used drums as a part of its modernization project for that facility (Ex. 684b, p. 10). Currently, at Plant B dirty drums are cleaned with a high vacuum cleaning system in a reserved but open area of the plant. In the warehouse and production area at Plant A the site visit team observed drums waiting to be cleaned for reuse (Ex. 684a, p. 11). Plant A cleans the sides of drums with vacuums before replacing the lid and sealing the top of the drum. Plant C has eliminated this exposure problem by not reusing drums (Ex. 684c, p. 2).

Where packaging is done in paper bags, air lead levels are controlled by enclosing and ventilating the operation. At Plant A the enclosure is ventilated at a face velocity of 200 fpm and the scale for weighing bag contents is within the enclosure (Ex. 684a, p. 11). At Plant B, however, the filling station is only partially enclosed and the transfer between the filling and weighing stations is not exhaust ventilated. At both Plant A and Plant B the site visit team observed emissions from the paper bags during weighing, closing and placing the bags on the pallets (Exs. 684a, p. 11; 684b, p. 8). In addition, at Plant A the site visit team observed workers dusting the paper bags, scales and filling stations with hand brooms Ex. 684a, p. 12).

Among plants, there are wide variations in bagging machines and ventilation for bagging machines (Ex. 582–90, App. C). Some bagging machines allow for reversal of the rotation of the filling auger when bag weight is reached to prevent material dropping from the filling spout when the bag is removed. Other bagging machines have an exhaust line into the bag to remove displaced air as the bag is filled to prevent puffs when the bag is removed from the filling spout. Some companies have modified bagging machines to improve the precision of delivered weight in order to reduce the need for manual weight adjustment. Other companies have experimented with design and installation of small local exhaust hoods and slots around filling spouts to capture dust generated from the bagging machine.

Wet Process. In wet processing, according to Plant A representatives, wetting tanks, reactors and storage tanks do not require exhaust ventilation because the wet product does not cause exposure to lead dust or fume. Plant A stated, nonetheless, that the reactor is fully enclosed and the door is removed only for taking quality control samples. At Plant A, the site visit team observed some dry residue in the reactor area that was probably the result of quality control sampling. In the dry end of the wet process at Plant A, screw conveyors, weighing hoppers, dryers and mills are equipped with exhaust ventilation and dust collection devices (Ex. 684a, p. 11).

Maintenance and Housekeeping. To prevent reentrainment of lead dust, Plant A's production area is cleaned twice a week with a central vacuum system and mobile vacuum units. In addition, each employee is responsible for routine housekeeping in his work area. Several times per week, each employee also performs general housekeeping, which includes mopping and vacuuming the floor and other surfaces in his work station (Ex. 684a, p. 12). At Plant B, wet scrubbers and stationary vacuums are used to clean work areas (Ex. 684b, p. 9).

In addition to routine housekeeping, both Plant A and Plant B have scheduled programs for plant-wide housekeeping. Plant B now conducts an annual plant cleanup, which includes rafters, during its shutdown time (Ex. 684b, p. 9). Plant A performs biannual plant-wide cleanups, which are not, however, "rafters-to-basement" cleanups. Plant A does not have an effective regular dust pile inspection program to identify problems with equipment or maintenance that needs attention (Ex. 684a, pp. 12–13).

Additional Controls—Introduction. In the previous sections, OSHA has shown that with existing controls in 6 of the 8 plants owned by the three major producers in the industry, exposure levels already have been, or in the foreseeable future will be controlled to or below 50 $\mu g/m^3$ most of the time in most of the operations.

More specifically, OSHA has shown that at Plant A, an old plant, in 1987 a majority of all sampling results already are below 50 $\mu g/m^3$ and geometric mean exposure levels in six of eight job classifications also are below 50 $\mu g/m^3$ In the most difficult operation to control to 50 $\mu g/m^3$ PBD, the geometric mean is only 65 $\mu g/m^3$ Although the data for 1987 are somewhat lower than for previous years, geometric means for the past four years also are quite low. In 5 of 8 job classifications, the geometric mean for 5 of 8 job classifications over the four years are at or below 50 $\mu g/m^3$. in two of the remaining three they are 55 $\mu g/m^3$ and 59 $\mu g/m^3$. and none is above 84 $\mu g/m^3$ (PBD).

OSHA also has shown that at Plant M, a newer plant manufacturing lead stabilizers, geometric mean exposure levels by 1987 had been controlled to 50 μg/m³ or below in all job classifications.

OSHA believes that for job classifications and operations where most sampling results or geometric means already are near or below 50 μg/m³, relatively modest improvements in controls (e.g., improved housekeeping, better preventive maintenance, installing baffles to stop cross drafts, or covering dross buckets) will be sufficient to consistently control air lead levels to below 50 μg/m³ Similarly, for operations where most of the sampling results or geometric means already are below 100 μg/m³ OSHA believes that a combination of limited additional and improved controls (e.g., improving the efficiency of the ventilation system), will be sufficient to control exposure levels to 50 μg/m³

The Agency's discussion of the reductions in air lead levels expected to be achieved by implementing recommended controls relies in part on assessments made by a panel of three certified industrial hygienists established by OSHA's contractor, Meridian (Ex. 686E, pp. 23–30 and App. A). The panel's assessments are based upon data in the record; site visits to three plants; and the members' extensive experience and expertise as industrial hygienists. Although quantification of the estimated reductions involves a substantial amount of expert judgment, OSHA believes that the panel's assessments, on the whole, are the best available evidence in the record concerning the reductions in exposure levels that reasonably can be expected from implementing recommended additional and improved controls.

OSHA, based on its own experience and expertise, therefore believes that reliance in part upon the panel and Meridian for the Agency's feasibility determination is entirely reasonable. In any event, OSHA has independently evaluated the record evidence and does not always concur with their judgments. For example, OSHA in its own analysis places greater emphasis than Meridian does on modernizing the packaging operation and replacing mechanical materials transfer conveyors with pneumatic material transfer systems. Contrary to Meridian, OSHA also has concluded from the record that, notwithstanding substantial differences between newer and older plants, the age of existing plants is not determinative of a plant's ability to achieve 50 μg/m³ For example, as OSHA has already shown, Plant A, an older plant, is already controlling air lead levels to below 50 μg/m³ while the relatively newer Plant B plant has not yet reduced its lead exposures to those levels.

On the whole, the same sorts of controls that have been successfully utilized to achieve exposure levels below 50 μg/m³ at Plant A and Plant M and elsewhere are precisely the kinds of additional controls that OSHA recommends to reduce remaining excess air lead levels to or below 50 μg/m³

Recommended Integrated System of Controls. As discussed at greater length below in the concluding section on technological feasibility, OSHA believes that effectively controlling air lead levels involves more than piecemeal efforts at implementing individual additional controls. It involves implementing an integrated system of controls. That system is composed of three elements. The basic element is an industrial hygiene study. The second element is the development of good written housekeeping and work practice programs that are systematically implemented so that proper procedures are routinely and meticulously followed. The final element of an integrated system of controls is a preventive maintenance program to assure that all systems are maintained in clean and efficient condition.

To understand the nature of exposure problems in a plant and to design and implement effective methods to control lead emissions, OSHA believes that an effective control program would include as a first step obtaining the services of a competent industrial hygienist to perform a plant-wide industrial hygiene study. The study should focus on a task-by-task analysis of sources of lead emission in the plant and an analysis of cross drafts as potential sources of cross contamination in order to design measures to control and/or eliminate these sources.

Site visits in early 1988 to Plant A, to Plant B, to Plant C and discussions on site with industry representatives made OSHA and Meridian aware of the need for such studies. As Meridian has pointed out, at each plant the site visit team found plant personnel who were extremely knowledgeable about production-related matters but were "surprisingly uninformed about industrial hygiene" (Ex. 686E, p. 29).

At Plant C, for example, the president of the company insisted that area samples were preferable to personal samples because they are "more reliable" (Ex. 686E, p. 29). Moreover, at no visited plant was air lead monitoring being conducted by people trained in industrial hygiene, and at no visited plant had any systematic task analysis been performed to determine the contribution of various task elements to employee lead exposure.

At Plant B, company representatives reported that no industrial hygiene task analysis sampling had ever been performed at any of the company's facilities (Ex. 684b, p. 4). (This statement was subsequently partially qualified when the company stated that task analysis sampling had been performed at another, unidentified lead chemicals plant owned by the company (Ex. 694–9, Att. 6, p. 33).

Similarly, it appears that no industrial hygiene survey had been initiated at Plant A until just prior to the November 1987 public hearing in this rulemaking. Then, the company apparently consulted an industrial hygienist (IH), who reportedly recommended that the company have a job/task analysis performed. Although the company did not submit a copy of any of the IH's preliminary analyses or recommendations to the record, Plant A indicates it was undergoing a plant-wide task analysis in the spring of 1988 (Ex. 694–9, Att. 5, pp. 7–8). OSHA applauds this effort and considers it likely to be very helpful in further reducing employee exposure to lead.

OSHA believes that, to the extent feasible, each source contributing more than an insignificant amount to workers lead exposures must be controlled, because the combined effect of controlling a number of sources of limited exposure can be very significant. For example, during OSHA's visit to Plant A, one of the certified industrial hygienists on the site visit team commented that he saw "more than a hundred industrial hygiene opportunities" to reduce workers' air lead levels (Ex. 686E, p. 25). OSHA notes that if only half of those opportunities (50) were investigated and pursued and only half of that number (25) each resulted in a mere 1 μg/m³ reduction in TWA exposure levels, then total plant-wide emissions at Plant A could be reduced by 25 μg/m³ in any eight-hour period. OSHA does not believe that the TWAs of any workers would be reduced to the full extent of the multiple reductions. Workers who were affected to lesser degrees would have their TWAs proportionally reduced.

OSHA is confident that an industrial hygiene study is essential to systematically control air lead levels in this industry. It is a precondition for instituting an effective, regular program to identify the precise sources of exposure and reasons for upset conditions and to control them.

Meridian has stated it believes that hiring a certified industrial hygienist to perform such a full-plant survey is a "relatively low-cost approach to the problem of over exposure" which "could produce dramatic reductions in these exposures" (Ex. 686E, p. 29). OSHA agrees.

A simple example should suffice to show how useful such a survey can be. Cross contamination appears to be a problem in the lead chemicals industry (e.g., Ex. 684a, p. 13), although the extent of the problem in individual plants is unknown. It is not surprising that cross contamination is a problem since operations throughout the industry generally are in large open buildings and are not separately enclosed. Cross contamination exists where plants have failed to adequately contain lead exposures at their primary source and cross drafts disperse escaping lead fume and/or dust into other areas or throughout the plant. By implementing proper controls, cross contamination can be eliminated or at least dramatically reduced.

Cross drafts are caused by a variety of factors. Windows or doors left open, use of man-cooling fans, and reliance upon natural ventilation with seasonal variation, especially in open plants, all can create cross drafts. However, even in plants that have eliminated these obvious sources of cross drafts, cross drafts still can be produced by air transfers between hot and cold operations and imbalances in the mechanical ventilation system.

Cross drafts spread contamination from one operation to another. In addition, and less obviously, they also compromise local exhaust ventilation, preventing exhaust hoods from operating at maximum capacity. OSHA's evaluation of the complex, plant-wide problems that cross drafts create is substantiated by the American Conference of Governmental Industrial Hygienists' book, *Industrial Ventilation*, which states that "[c]ross drafts not only interfere with the proper operation of exhaust hoods, but also may disperse contaminated air from one section of the building into another and can interfere with the proper operation of process equipment" (Ex. 583–13, p. 7–2).

To control cross contamination simple steps may be effective. For example, fully enclosing and ventilating a potential source of cross contamination, like the packaging operation, will prevent the dispersion of lead. Erecting cross barriers at proper locations, eliminating windows, and using air locks for entryways not only will decrease cross contamination, but also will increase the efficiency of exhaust hoods. An industrial hygiene survey can identify the source and nature of cross contamination and can locate the proper sites to locate barriers and other controls.

OSHA's conclusion that an industrial hygiene study is needed is supported by Mr. Knowlton Caplan, a well-known engineering consultant to the lead industry. Mr. Caplan has said that engineering controls should be designed with industrial hygiene problems in mind (Ex. 582–89, Appendix).

An industrial hygiene study will indicate which controls need to be implemented in particular plants. The main controls are local exhaust ventilation, enclosure and isolation, plant design, automation built into the production process, and work practices, including housekeeping and maintenance.

Ventilation. The presence of excessive lead in the work environments of lead chemical plants indicates that existing engineering controls like local exhaust ventilation (LEV) and general ventilation are not doing the job. Much more quantitative and other information than are available in the record would be needed to state with any precision how great a reduction in any particular exposure level could be achieved by enhancing specific ventilation systems. Nonetheless, OSHA has no doubt that in many operations improved or additional ventilation can achieve major reductions in worker exposure.

Such controls have been developed, tested, and where found effective, manufactured and applied widely for many years throughout industry to control specific contaminants. Conventional controls for various operations in the lead industries have been described in detail and often depicted in photographs or diagrams by industrial hygienists and engineers from the American Conference of Governmental Industrial Hygienists (Ex. 583–13, pp. 5–34 to 5–37 5–102, 5–105), AFS (Exs. 689–4A; 689–4F), American National Standards Institute (Exs. 689–13A, 13B, 13C). Many consultants who have worked for OSHA or industry also have recommended such controls (Exs. 689–6; 689–7· 689–8; 689–9; 689–10; 689–11; 689–12). LIA agrees that ventilation controls used in the lead chemicals industry are basically the same as those used in other industries (Ex. 582–90, p. 9). Thus, in terms of ventilation, there is nothing unique about lead chemical production.

Specifically, improved or additional ventilation can achieve major reductions in air lead levels in packaging operations throughout the lead chemicals industry. At Plant A, for example, enclosing the packaging, weighing and palletizing elements of the operation in a properly designed and maintained side-ventilated booth could dramatically reduce air lead levels (Ex. 686E, p. 24).

Enclosure and Isolation. Enclosure and isolation are two alternative methods of separating workers from air contaminants. In the case of isolation, the employee is physically separated from contaminants in the air; e.g., by working in a filtered, ventilated control booth (Ex. 689–4D, fig. 32). This method is being applied by Company C at one site visited by OSHA in the construction of their new plant (Ex. 684c, p. 6). With enclosure, the source of the contaminant is physically contained and separated from the rest of the work environment to prevent contamination of the air (e.g., Ex. 586–18, figs. 1 and 2). Sometimes, enclosures consist simply of tops installed on vessels containing molten metal (e.g., covering dross buckets; Ex. 583–16, p. 24).

Docket entries describe standard enclosure techniques that are in use in the industry or can be readily implemented (e.g., enclosing the transfer trough from the melt pot to the kettle or enclosing conveyors; Ex. 684b, p. 8). Simple isolation techniques that have been successfully used in certain plants in this and other lead industries also are applicable throughout this industry (e.g., providing employees with filtered, ventilated cabs for mobile equipment, isolation booths and control rooms; Exs. 684c. p. 6; 689–4D, p. 7–14, figs. 31, 32).

Isolating workers for even a portion of their shift can significantly reduce exposure levels. For example, a Radian study of a secondary lead smelter demonstrates that employee exposures can be reduced by 23–77% even when employees spend only a portion of the workday in an isolation booth (Ex. 583–16, p. 30). Another study, by the National Institute for Occupational Safety and Health (NIOSH), investigating the effectiveness of various control technologies in secondary lead smelters, reports that workers spending even one-quarter of their time in a supplied air island would experience a 20% reduction in their 8-hour TWA exposure levels (Ex. 590, p. 40).

Housekeeping, Work Practices, and Preventive Maintenance. Housekeeping, work practices, and preventive maintenance are critically important controls, the importance of which frequently is not adequately recognized by employers. Failure to develop and use rigorous housekeeping, good work practices, and preventive maintenance can destroy the effectiveness of otherwise adequate engineering controls. OSHA believes that improved work practices, housekeeping, and more rigorous maintenance practices are among the principal tools for achieving compliance with the 50 $\mu g/m^3$ PEL in existing lead chemical plants.

The importance of housekeeping measures in general was stressed in a report prepared by the Cadre Corporation for a secondary copper smelter (Ex. 475-32D). The Cadre report states,

[Housekeeping] is definitely the most underrated aspect of any fume abatement program. In any industrial facility there will be some amount of particulate in the air. Sooner or later this particulate is going to settle out on the plant floor, equipment and materials. If this dust is not collected and disposed of then it will become airborne again due to building drafts, mobile machinery traffic and numerous other disturbances. The housekeeping component of the abatement plan is a vital link in the success of the project. By neglecting to properly control settled particulate any gains made by capturing fugitive emissions will be minimal.

OSHA agrees. It is impossible to overemphasize the importance of good housekeeping and work practices. Lead oxide products, which are fine dusts with average particle sizes of a few microns, are readily dispersed by air currents. A small amount of lead dispersed throughout a building's air space may raise the airborne level over the PEL. Obviously, to avoid exceeding the PEL, process operations not only must be tightly enclosed, but emissions or spills from equipment breakdowns, maintenance operations, broken bags or any other sources also must be promptly contained and cleaned up to minimize dispersion throughout the workplace.

Housekeeping in lead chemical plants needs to be improved. For example, Plant A has never had a complete rafters-to-basement cleaning (Ex. 684a, p. 12). It should have one and repeat it at least annually. Moreover, small piles of dust were observed in many places on floors at Plant A, especially under MMTS, and on other surfaces (Ex. 684a, p. 13). The housekeeping program should prevent the accumulation of such piles of dust and effectively provide for their prompt removal if they nonetheless occur. In addition, the packer was observed using a hand broom to sweep product dust off a bag and off the work station (Ex. 684a, p. 12). This practice, which contributes to the packer's own exposure to lead and may also disperse lead dust more broadly, should be discontinued. Thus, in practice Plant A's housekeeping program appears to be seriously inadequate.

Similarly, at Plant C housekeeping also was poor. The site visit team observed extensive accumulations of lead-containing dust on the floor, in gutters and on conveying and other equipment. Lead ingots were covered with oxide dust. There was no regularly scheduled program of housekeeping (Ex. 686E, p. 25).

In contrast, housekeeping at Plant B generally appeared to be considerably better than at the other two plants. The company reportedly had recently instituted a documented, scheduled program of housekeeping, including cleaning the rafters (Ex. 684b, p. 9). Nevertheless, the company apparently continued to clean used, product-contaminated drums returned by customers in the open production area. This practice, the team judged, added directly to the plant's background level of contamination and thereby to the exposures of all employees in the area (Ex. 686E, p. 27).

By implementing strict housekeeping proceedures, segregating housekeeping activities and assigning them to a trained housekeeping staff, and by effectively implmenting a regular spill detection program and periodic cleanup program, the expert industrial hygiene panel estimated that exposure levels of all production employees at Plant A could be reduced by over 60% (Ex. 686E, App. A, A-1). By implementing a similar, strict program of regular housekeeping at Plant C, the panel estimated that workers exposure to lead could be reduced by 24% (Ex. 686E, App. A, A-3). With the new-rafter cleaning program at Plant B and by ceasing to accept returned, contaminated drums or by automating their cleaning or at least by fully enclosing and locally exhausting the cleaning process, the expert panel anticipated a reduction in workers' exposure at Plant B of from 23 to 35% (Ex. 686E, App. A, A-2).

In all plants in the industry detailed housekeeping instructions should be prepared and adherence to them enforced by employers, with scheduling and checkoff of regular cleaning of all areas of the plant where dust can collect. If necessary, housekeeping instructions should list individual sites, pieces of equipment, parts of equipment, and obscure corners (e.g., under conveyors) to assure that they are cleaned regularly. Where necessary, a trained housekeeping staff should be hired or perhaps housekeeping should be contracted out.

Implementing appropriate work practice controls is also vital to achieving exposure levels at or below 50 $\mu g/m^3$ No matter how good engineering controls may be, they often can only be as effective as the associated work practices that determine how they are used and where the employee locates himself relative to the controls. For example, when packers at Plant A perform manual activities outside the effective capture zone of the hood, they expose themselves to lead and disperse lead dust into the air. In doing so, the local exhaust ventilation is rendered ineffective. OSHA finds this work practice unacceptable.

Work practices also should be written to prescribe correct procedures for all tasks that might result in increased employee exposure. Such procedures should dictate, for example, that an employee not use a broom to dry sweep lead dust. These procedures might also prohibit production employees who perform some maintenance tasks from doing so where they already have excess exposure to lead. Good work practice rules also should require that covers be kept on quality sampling containers. They should minimize the manual handling of bags filled with product and, when some manual handling is necessary, assure that it is performed with care. Good work practices are particularly important in packaging, for example, to minimize dust released when bags breathe and to minimize loose dust in the stacks of bags on pallets. Improved work practices are very important since much of workers' daily exposure may come from brief lapses in performing their tasks. One industry spokesperson, for example, estimated that as much as 80% of a worker's daily exposure might come from intermittent, high-exposure, short-term activity (Ex. 684b, p. 10).

OSHA also notes the importance of maintenance programs to assure that all systems function as cleanly and as efficiently as practicable. The capacity for ventilation systems to protect air quality depends not only on proper design and installation, but also on proper maintenance and availability of sufficient makeup air. Exhaust systems lose their capacity because belts and pulleys slip, duct branches become clogged, duct couplings become loose and develop holes that leak air, filters become occluded, and fan blades become corroded or unbalanced. Thus, the effectiveness of engineering controls can be severely limited by poor maintenance (Exs. 582-13, pp. 10-16; 689-3, p. 74, Table 8-1; and see *Safety in Metal Casting*, Des Plaines, IL, Vol. 6, 1970, p. 172).

Two basic principles should be applied in maintenance work. First, extreme care must be taken when doing maintenance to prevent emissions into the workplace. Second, foreseeable equipment failures that could contribute to emissions should be minimized through a preventive maintenance program.

Opening up equipment for repair may release large amounts of dust. Therefore, it is imperative to remove this dust before it permeates the workplace. Floor vacuum cleaners may not be adequate. Plant-wide vacuum systems may be required with outlets widely distributed and hoses available so that workers can clean up dust any place with minimum effort immediately after it is discovered. Maintenance workers can use the hoses as small ad hoc hoods to capture dust when they must break connections on lines, open up conveyors, etc. Work practices must be developed to cover the use of the vacuum system and workers must be trained to strictly follow correct practices. Maintenance workers should be trained, for example, to trap dust at connections they are going to break by setting up hoses before, not after the dust inside has dropped to the floor.

Preventive maintenance minimizes emissions. It is much better to shut down equipment in a controlled fashion, with lines, conveyors, vessels, etc., cooled or emptied to make it easier to open them up with minimum contamination of the workplace, than to have equipment fail while in operation. Better maintenance and better controls should reduce major housekeeping problems.

In addition to the above controls, OSHA specifically recommends additional controls operation by operation. On the whole, the same sorts of controls that have been successfully utilized to achieve exposure levels at or below 50 $\mu g/m^3$ at Plant A, Plant M and elsewhere in the industry are precisely the kinds of controls that OSHA recommends here as additional controls to reduce remaining air lead levels to or below 50 $\mu g/m^3$ In its operation-by-operation analysis, OSHA focuses on the two operations/job classifications that are generally regarded by industry to be the most difficult to consistently control to 50 $\mu g/m^3$ packaging and maintenance (Exs. 582–90, p. 7· 684b, p. 9; 694–9, Att. 2–4; Tr. 1266).

Packaging. "Packaging" refers exclusively to filling drums and paper or plastic bags with product. Bulk shipment by railcar or truck and semi-bulk shipment in superbags and other large containers are not considered packaging by industry. Packaging is viewed by industry to constitute one of the single most difficult sources of lead to control (Exs. 582–90, p. 7· 694–9, Att. 2–4; Tr. 1266).

Within packaging, the main problem is limited to packing bags. Packing drums presents much less of an exposure problem. For example, the air in drums or bags, which initially fluidizes the product as the container is filled, slowly rises carrying dust with it as the material settles. However, with drums, the closing of the drum contains the escape of dust-laden air from the compacting solids. With bags, on the other hand, the escape of air remains a major problem for packagers. Because a bag is flexible, not rigid, any pressure applied to the bag in handling causes it to breathe and may result in the emission of a puff of dust-containing air. Typically in the industry, bags that require precise weight specifications have been manually filled, manually weight adjusted, and manually closed. When such manual intervention is required, employees may be exposed to relatively high air lead levels. Similarly, when closed bags are manually moved, workers also may be exposed to lead dust.

The problem with successfully controlling packaging needs to be put in proper perspective. First, some plants already are effectively controlling air lead levels in packaging. As shown in the previous section, by 1987 in packaging Plant M achieved a geometric mean exposure level of 50 $\mu g/m^3$ while Plant A had a geometric mean exposure level of 65 $\mu g/m^3$

Second, the amount of product being bagged already is quite limited. Currently across the industry, based on OSHA's site visit observations, it appears that no more than 15% of product is packaged in bags and drums. Plant B is typical, packaging 15% of product (Ex. 684b, p. 3). Plant C is well below that average, packing less than 5% of its product in drums and nothing in bags Moreover, Plant C is the only one among four plants owned by its parent company that packages in drums or bags at all (Ex. 684c, pp. 2 and 5). By contrast, at Plant A "a substantial amount of its product, apparently more than 15%, is reported to be packaged in bags (Ex. 684a, p. 3). The LIA confirms that bulk shipping "is the principal means of shipment" in the industry (Ex. 582–90, p. 12).

Of the approximately 15% of product packaged in bags and drums across the industry, obviously only a part is packaged in bags. At Plant B, for example, only one-third of the packaged product is in bags (5%). Furthermore, in the bagged segment, apparently only some customers require precise weight specifications. OSHA therefore estimates that considerably less than 10%, and probably less than 5% of total product has to be packed in bags with precise weight specifications.

For that small proportion of product that currently continues to be packaged in bags, as well as for the portion of the product packaged in drums, OSHA recommends three methods for controlling existing lead emissions. They are: further reducing or eliminating packaging, and shipping still more product in bulk or semi-bulk form; purchasing and installing the new highly accurate packaging machines and appropriately reducing the variety of packages provided customers; or enclosing each packing and palletizing station with a side-ventilated booth (Ex. 686E, p. 24). These control methods can be employed independently or in combination to achieve employee exposure levels lower than 50 $\mu g/m^3$ However, OSHA believes it is unlikely that any facility would have to implement more than one of these recommended controls to achieve this level.

OSHA s preferred method for controlling exposures associated with packaging is to encourage the lead chemical industry to further reduce the amount of product that is packaged by shifting increasingly to bulk and semi-bulk shipping. The parent company of Plant C is a leader in the industry in successfully moving in this direction, in no small part by persuading its customers to shift to bulk purchases and by helping them with the shift (Ex. 684c, p. 2). OSHA applauds this achievement. OSHA believes that other large producers in the industry can persuade more of their customers to accept bulk and semi-bulk shipment, as well. However, OSHA recognizes that there may be some portion of product that will have to continue to be packaged. For that portion, OSHA recommends that industry implement either, or a combination of the two following control methods.

The first is to mechanize and automate packaging and subsequent bag handling. For bags that do not have to be packed to precise weight specifications, conventional automatic packaging machines that fill and seal bags have been available and in use in many plants for years. Today, even for bags that require filling to precise weight specifications, automatic packaging machines are available that, according to LIA, "can easily achieve accuracies of 0.25% and sometimes even 0.1% (Ex. 582–90, App. C. p. 3). This means that for a 50-pound bag, the machine can automatically fill accurately to within 2 ounces and less and can seal, all routinely without manual intervention. Based upon industry statements regarding the weight tolerances required by some customers (e.g., Tr., p. 1282), OSHA concludes that nearly all orders can be bagged on these more accurate packaging machines. The number of bags that would still require manual weight adjustment, therefore, should be extremely small.

Consequently, if achieving precise weight specifications were the only problem in bagging, emissions associated with manual interventions could be strictly controlled or effectively eliminated by mechanization. However, customers are reported to also seek different kinds of packages (e.g., plastic bags, paper bags, 20-pound bags, 50-pound bags). This causes a problem, because no single machine can handle a wide variety of packages. The industry, of course, could satisfy all the packaging demands of customers and fully automate packaging by purchasing and installing a sufficient number of the more advanced bagging machines. The problem is not technological. The technology exists and is available. The problem is cost. Industry admits as much: "Packaging could be automated if industry had unlimited resources"(Ex. 582–90, p. 13).

In OSHA's view, "unlimited resources" are not required to resolve this problem. Industry, for example, could provide customers with a more limited variety of bags and thereby reduce the number of advanced automatic bagging machines necessary to accommodate that range.

With regard to handling the bags after they have been filled and sealed, OSHA believes that such handling can be mechanized as well. Bags can be mechanically flattened and conveyed (Tr. 1283). Mechanization of this phase of bag handling should substantially reduce worker exposure from breathing bags, because workers can be removed from proximity to these emission sources. The emissions from flattening, for example, then can be controlled by local exhaust ventilation.

The last recommended method for controlling employee exposure levels in this operation to below 50 $\mu g/m^3$ is simply to improve the capture of emissions at the existing level of production mechanization by isolating the entire operation and providing effective local exhaust ventilation. This control strategy needs to be accompanied by the implementation of strict work practices and preventive maintenance to assure that local exhaust ventilation is effective.

To be effective, this control strategy has to take account of a number of factors. Each of the manual tasks in packaging provides a potential source of lead exposure. These tasks extend all the way from placing the bag on the bagging machine, through weighing the bag contents, adjusting content weight, and sealing the bag, to cleaning the outside of the bag and then stacking it on a pallet. Each of these tasks must be effectively exhausted, and the worker must be trained to carry out each within the capture range of the ventilation and in a manner likely to minimize the amount of lead emission. Obviously, the local exhaust also must be properly designed, installed, and maintained. It also must be properly located and have sufficient capacity to handle the job.

The independent panel of expert industrial hygienists gathered by Meridian has analyzed the additional controls needed at Plant A and Plant B and has estimated the reduction in air lead levels to be expected from implementing them.

At Plant A, where the site visit team observed small plumes of lead dust generated during the performance of several manual packaging tasks and observed emissions from work done outside the ventilation enclosure (Ex. 684a, p. 11), the expert panel recommended improving work practice controls and enclosing each packaging, weighing and palletizing station within a side-ventilated booth (Ex. 686E, p. 24). With this booth, the panel estimated that exposure levels of the PBD would be reduced by approximately 43% (Ex. 686E, pp. 24 and App. A, A–1).

For Plant A, the panel further recommended that panels on ventilation ducts be maintained, to effect enclosure and maximize capture velocity, and estimated that a similar reduction of 43% in worker exposure could be expected from that simple control. However, the company has challenged the factual basis for this recommendation, saying that panels were missing only on ventilation systems that were undergoing repair or no longer in use (Ex. 694–9, Att. 5). Although the company's claim is at variance with the site visit team's observations, and OSHA believes that this potential for reduction does exist, nonetheless the Agency's feasibility determination does not take this into account.

Nonetheless, with an anticipated reduction of 43% in exposure levels associated with installation of the ventilated booth, air lead levels for the packager should be reduced to a geometric mean of 37 $\mu g/m^3$ if the geometric mean for 1987 is used as the base. (Air lead levels would be reduced to a geometric mean of 47 $\mu g/m^3$ if the four-year average geometric mean were used as the base). In addition, OSHA believes that exposure levels would be considerably further reduced if the needed improvements in work practice controls, which also have not been factored in to these calculations, are implemented as well. Workers, for example, should not toss bags onto the pallet; they should not use brooms to dust off bags or their equipment. Bags, pallets, and equipment should be regularly vacuumed. Improved housekeeping should dramatically and relatively inexpensively further reduce air lead levels at Plant A at the packaging and other operations where the site visit team observed poor housekeeping. With the implementation of all of these controls, OSHA concludes that air lead levels at Plant A can be reduced to consistently below 50 $\mu g/m^3$ in the packaging operation.

Plant B also should be able to reduce exposure levels in packaging to below 50 $\mu g/m^3$ by implementing additional controls. As indicated in the section on current exposure levels, there is no job classification at Plant B denominated "packer. Operators and shippers apparently rotate to perform packaging tasks. Thus, exposure levels for employees in both job classifications should be substantially reduced by additional controls in packaging.

At Plant B the site visit team observed small spills of lead chemicals and dusting during the manual weight adjustment of bag and drum contents and small amounts of dust coming from closed, breathing bags on the pallet when the product in them settled. To capture these and other emissions, the expert panel recommends improved ventilation of point sources and better enclosure of the packaging, weighing and palletizing operation.

From implementing these recommended additional controls, the expert panel anticipates a reduction in exposure levels for operators and shippers of 75–95% (Ex. 686E, p. 28 and App. A, A–2). With geometric mean exposure levels in 1987 of 103 $\mu g/m^3$ for operators and 59 $\mu g/m^3$ for shippers, resulting geometric mean exposure levels would be reduced to 5–26 $\mu g/m^3$ and 3–15 $\mu g/m^3$ respectively.

However, since the panel's anticipated reductions appear to be based upon the assumption that all of the relevant workers' lead exposure is derived from packaging, and since both shippers and operators perform other tasks that are likely to subject the worker to lead exposure, and in the case of operators to not insignificant lead exposure, OSHA believes that the panel's estimates may overstate the expected reduction.

OSHA believes operators do most packaging, because under the circumstances the Agency judges the geometric mean exposure levels for shippers (e.g., 59 $\mu g/m^3$ in 1987 and 68 $\mu g/m^3$ for the four-year average geometric mean) to be too low to incorporate much time in packaging. Operators typically have exposure levels that are almost twice as high as shippers. The percentage reduction in air lead levels expected from implementing recommended additional controls in packaging can be applied only to that portion of workers' exposure attributable to packaging.

OSHA calculates the expected reduction for operators under two different assumptions. OSHA assumes that either two-thirds or three-quarters of the operators' exposure levels come from packaging. OSHA believes that both of these assumptions are reasonable, because, on the one hand, packaging is one of the two main sources of lead exposure at Plant B according to the company (Ex. 684b, p. 9) and, on the other, representatives of Plant B have indicated that, with few exceptions, operators are basically engaged in monitoring an automated process that is fully enclosed and operated under negative pressure (Exs. 532–90. p. 12 and 694–9, Att. 6, p. 20) and which therefore should not subject operators to high exposure to lead.

If two-thirds of the operators lead exposure comes from packaging, the resulting geometric mean achieved by implementing recommended controls in packaging would range from 37 to 51 $\mu g/m^3$ with a midpoint of 44 $\mu g/m^3$ If three-quarters of the operators' lead exposure comes from packaging, the resulting geometric mean would range from 30 to 45 $\mu g/m^3$ with a midpoint of 37.5 $\mu g/m^3$ Under both assumptions, the midpoint would be below 50 $\mu g/m^3$

OSHA wishes to emphasize that these levels would be achieved by implementing the recommended engineering controls for the packaging, weighing and palletizing operation. Further reductions in operators' air lead levels also can be expected by implementing the additional controls recommended by Meridian to reduce exposures associated with typical operators' tasks like drossing. Improving work practice controls and housekeeping in the area and throughout the plant also will reduce exposure levels.

Additional reductions in this operation also can be anticipated from conducting the plant-wide industrial hygiene survey to identify sources of lead emission task-by-task and cross winds around the plant and from implementing recommendations for methods to control them. With the realization of such multiple reductions in lead emissions, OSHA is confident that the air lead levels in the packaging operation (including weighing and palletizing) can be consistently controlled to below 50 $\mu g/m^3$ at Plant B.

OSHA has determined that exposure levels in packaging can be controlled consistently to below 50 $\mu ug/m^3$ at Plant A, an older plant that bags a higher proportion of its product than the industry average. OSHA also has determined that exposure levels can be controlled consistently to below 50 $\mu g/m^3$ at Plant B, a newer plant. A third plant, Plant M, by 1987 had already achieved a geometric mean of 50 $\mu g/m^3$ Consequently, the Agency concludes that packaging can be controlled to below 50 $\mu g/m^3$ generally throughout the lead chemicals industry.

Maintenance

According to industry representatives, the other operation that most contributes to high air lead levels among workers in plants is maintenance. Maintenance work is intermittent, highly varied, and may subject maintenance workers in certain tasks to very high exposure levels, especially when they must open up dust-filled or dust-encrusted equipment. Certain maintenance tasks are very difficult to control to 50 $\mu g/m^3$ (Ex. 582–90, p. 7); others already are controlled to below 50 $\mu g/m^3$ as evidenced by the low geometric mean exposures of maintenance employees at Plants A and M (see Tables 1 and 2, above).

A very high proportion of maintenance work is currently devoted to maintaining mechanized material transfer systems (MMTS), like bucket elevators and screw conveyors, which have many bearings, joints, and failure points that "require constant maintenance and upkeep, according to industry representatives (Ex. 684b, p. 10 and p. 9; and see Exs. 684a. p. 13 and 684c, p. 5). Maintenance workers in some plants spend fully 80% of their time repairing and maintaining MMTS (Ex. 684c. p. 5). Maintenance of these systems is reported to constitute the major exposure problem at Plant C (Ex. 684c, p. 5).

MMTS not only are potential sources of high lead exposure for maintenance workers. They also are potential sources of fugitive emissions, both when they leak and while they are being serviced or repaired (Ex. 684b, p. 10). In fact, mechanical conveyor systems like screw conveyors and bucket elevators appear to constitute a major source of workers exposure throughout the plants (e.g., Ex. 684c, p. 5).

This major source of lead exposure for maintenance and other workers is likely to be dramatically reduced in the next few years. The decided trend in the industry is to replace MMTS with pneumatic conveyance systems. The latter require much less maintenance and are considerably less likely to leak (Exs. 684a, p. 14; 684c, p. 5). This should also significantly reduce background levels, especially in plants where they are high.

Nevertheless, OSHA recognizes that in certain maintenance tasks exposure levels may continue to exceed 50 $\mu g/m^3$ If in those operations it is not feasible to use engineering and work practice controls to reduce air lead levels to the PEL, OSHA recognizes that employers, as they traditionally have done, will continue to rely on supplementary respirator use to protect workers.

Operator. The only other job classification that might present some problems in achieving 50 $\mu g/m^3$ is operator. Operators typically engage in two quite different sorts of tasks. First, operators monitor the lead oxide production process, which is largely automated, enclosed and operated under negative pressure. Second, operators manually perform certain periodic duties that cause them to intervene in that system.

Operators, for example, dross the melt pot and take product quality control samples at several points during the production process (Ex. 582–90, p. 4). In addition, at Plant A and Plant C, operators, like other employees, perform minor maintenance. In some plants like Plant A and Plant B, operators also perform tasks like packaging that are atypical of the job classification. Leaving aside considerations of cross contamination and lead exposure attributable to atypical tasks, the nearly exclusive source of a typical operator's lead exposure is the set of tasks that involve manual intervention in the otherwise largely automated production system. Consequently, any additional controls intended to reduce operators' exposure to lead must be directed at reducing or eliminating these tasks or at more efficiently capturing the lead emissions associated with them.

As indicated earlier, operators at Plant B, in addition to performing typical operator tasks, also perform packaging, which constitutes their primary source of exposure. Controlling operators' exposure levels in packaging to below 50 $\mu g/m^3$ will significantly reduce their exposure levels. Properly controlling the melt pot and the tasks of drossing and quality sampling that operators perform will further reduce these levels. At Plant B, for example, the drossing task is essentially uncontrolled (Ex. 686E, p. 27). Although company representatives at Plant B concede this (Ex. 694-9, Att. 6, p. 28), they did identify improved drossing technology as one of the items the company was exploring to reduce exposure levels (Ex. 684b, p. 10), and they do plan to install drossing chutes to contain emissions during drossing. Nevertheless, the company maintains that emissions from drossing contribute insignificantly to operators' lead exposure, approximately 1.5 μg/m^3 during an eight-hour period (Ex. 694-9, Att. 6, p. 7).

OSHA disagrees with this estimate, because it appears to only consider an operator's exposure during the time drossing is being performed and does not seem to account, for example, for any lead emissions from the dross after drossing is completed. OSHA believes that with proper controls exposure levels for operators can be reduced consistently to below 50 μg/m^3 even in Plant B.

At Plant A, where the oxide operators' geometric mean exposure level in 1987 already is 62 μg/m^3 and the geometric mean for the entire 1984-87 period is also 62 μg/m^3 the task of reducing air lead levels to consistently below 50 μg/m^3 is relatively easy. With improvements in the drossing task, improvements to the hoods over the melting pots and better work practices in performing quality control sampling, OSHA has no doubt that exposure levels there can be reduced to consistently below 50 μg/m^3 Further reductions, not here accounted for, also can be expected from the implementation of additional controls elsewhere in the plant, like controlling cross contamination, that may impact on the exposure of operators to lead.

OSHA wishes to make one final, general point about additional controls. OSHA believes that it is feasible to control exposure levels to below 50 μg/m^3 for workers involved in producing lead chemicals other than oxides. Plant M represents a successful approach to controlling exposures in this segment of the industry (Ex. 688d; see Table 2, above). To the extent that problems in controlling air lead levels to 50 μg/m^3 may continue to exist in non-oxide production, OSHA determines that they can be resolved by following the recommendations OSHA made in its feasibility assessment of the lead pigments industry. The production processes for lead chemicals other than lead oxides are sufficiently similar to those used in the production of lead pigments that the controls recommended and the reductions anticipated for that industry are broadly applicable here. Conventional technology is all that is needed.

Since industry has not provided any data indicating the infeasibility of controlling exposure levels in non-oxide production to 50 μg/m^3 OSHA has not made a separate, detailed analysis of this part of the industry. OSHA concludes, however, that the recommended controls and anticipated exposure reductions for the lead chemicals and lead pigments industries in general are broadly applicable to this segment of the industry as well.

Technological Feasibility Conclusions. Based upon OSHA's independent analysis of the best available evidence in the record and OSHA's expertise and experience, the Agency determines that achieving a PEL of 50 μg/m^3 by implementing readily available engineering and work practice controls is technologically feasible for the lead chemicals industry as a whole.

Nevertheless, the Agency recognizes that it may not be possible to consistently achieve the PEL by these controls for the very limited amount of packaging that continues to require manual weight adjustment even after state-of-the-art, automated packaging machines have been installed. Since OSHA has found the 50 μg/m^3 PEL feasible for the industry, employers will be required to implement engineering and work practice controls to control exposure levels to the PEL or the lowest feasible level to protect workers engaged in this sort of packaging, as well. Where all feasible engineering and work practice controls have been implemented and employees performing these tasks are still exposed above the PEL as an 8-hour TWA, employers will be allowed to provide them with respirators for supplemental protection while they are performing such packaging.

To sum up, OSHA has shown that in six of the eight plants owned by the three major producers in the industry, exposure levels already have been, or in the foreseeable future will be controlled to or below 50 μg/m^3 most of the time in most of the operations. At Plant A, for example, an older plant, OSHA has shown that in 1987 a majority of all sampling results already are below 50 μg/m^3 and that in six of eight job classifications geometric mean exposure levels also are below 50 μg/m^3 OSHA has further shown that in the operation that generally is considered by industry to be impossible to control to 50 μg/m^3 packaging, geometric mean exposure levels in 1987 already were controlled to 50 μg/m^3 in one plant and to 65 μg/m^3 in another.

Furthermore, by implementing recommended additional controls, OSHA also has shown that air lead levels in packaging and other production processes can be reduced to consistently below 50 μg/m^3

For all operations where the geometric mean exposure level or a majority of sampling results already is near or below 50 μg/m^3 OSHA believes that a modest improvement in controls, such as improved housekeeping, better work practices, better preventive maintenance and perhaps the addition of simple engineering controls (e.g., putting a lid on a dross pot) will assure that exposure levels are consistently controlled to or below 50 μg/m^3 OSHA also believes that, where the geometric mean exposure level or a majority of sampling results is above 50 μg/m^3 and at or below 100 μg/m^3 a relatively limited improvement in controls, like improving the efficiency of a ventilation system, will generally suffice to bring geometric mean exposure levels to or below 50 μg/m^3

Meridian and OSHA have recommended a wide variety of additional controls, to be implemented as appropriate, to achieve the PEL. OSHA wishes to point out that all of its recommendations for achieving 50 μg/m^3 rely exclusively upon conventional and readily available controls. OSHA has not needed to exercise its statutory authority to force the development of new technology to justify its finding of feasibility in this industry. OSHA also wishes to point out that to the extent it has relied upon the concept of geometric mean, it has done so because the Agency believes it is the most accurate and convenient way to simply depict the array of monitoring results. OSHA is assured that it would have reached the same feasibility determination whether geometric means or another statistical methodology had been employed.

In determining that 50 μg/m^3 is achievable most of the time in most of the operations in the lead chemicals industry, OSHA does not purport to have recommended an exhaustive list of additional controls. The Agency is certain that industry will be capable of devising and fine tuning various controls to further reduce exposure levels. In many cases industry already knows much of what it has to do and has begun to modernize its operations. At Plant B, for example, plans exist to modernize the packaging operations and to reduce exposure levels in drossing by installing drossing chutes. Consequently, OSHA anticipates that industry will be able to consistently achieve exposure levels at or below 50 $\mu g/m^3$ in nearly every phase of production.

OSHA believes that these levels will be attained by implementing an integrated system of controls. The basic element in that system is an industrial hygiene study. Each plant should have an experienced industrial hygienist perform an in-depth task analysis and plant-wide survey. This analysis and survey should identify sources of emission in each task and sources of cross drafts and cross contamination. Such an analysis should also recommend appropriate engineering and work practice controls to reduce emissions and minimize employee exposures. If, after implementing these recommendations, reductions in air lead levels deviate substantially from what was anticipated, a followup industrial hygiene evaluation should be conducted and necessary corrections made.

The second element in that system is the development of good written housekeeping and work practice programs that are systematically implemented so that proper procedures are routinely and meticulously followed. For example, wall-to-wall cleanings should be conducted at least annually.

The final element of an integrated system of controls is a preventive maintenance program to assure that all systems are maintained in clean and efficient condition.

Based on the site visits and other information in the record, OSHA does not believe that any company in the industry at present has thoroughly implemented an integrated system of controls. While control programs at various plants in the industry have certain strengths, key elements of an integrated system are missing, even at a plant like Plant B, which claims to be state of the art.

The lead chemicals industry does not agree that a PEL of 50 $\mu g/m^3$ is technologically feasible. Industry's disagreement is based upon seven main points. First and most generally, industry claims the 50 $\mu g/m^3$ PEL cannot be achieved "on a consistent basis" in any operation in the lead chemicals industry (e.g., Ex. 694–9, Att. 2–4). Second, industry argues that even 200 $\mu g/m^3$ cannot be achieved "on a consistent basis" in maintenance operations and 100 $\mu g/m^3$ cannot be achieved "on a consistent basis" in packaging (e.g., Ex. 694–9, Att. 2–4). Third, industry asserts the efforts of Meridian and the expert panel are based upon mistaken determinations of facts, and are unsubstantiated, biased, and methodologically defective (e.g., Ex. 694–9, Att. 1, pp. 2–3, 5–6; Att. 5, pp. 3, 6–7, and Att. 6, pp. 11, 23). Fourth, industry alleges there is insufficient information in the record to support a finding of feasibility (Exs. 582–90, pp. 20–21; 694–9, Att. 6, p. 2). Fifth, industry asserts that for a PEL to be feasible it must effectively be achievable all the time in all operations (e.g., Ex. 694–9, Att. 5, p. 6, Att. 6, p. 32; Tr. 1276, 1278). Sixth, industry argues that use of the geometric mean is inappropriate in assessing feasibility both because compliance is judged on the basis of single-day's sampling (not on a mean of various days' TWAs) and because the geometric mean is downwardly biased. Seventh, industry argues that the Meridian addendum violates a confidentiality agreement between LIA and OSHA and therefore should be removed from the record.

First, industry asserts that 50 $\mu g/m^3$ cannot be achieved in any operation on a consistent basis. This assertion is the centerpiece of signed, sworn affidavits submitted by LIA from William J. Duffin, identified as the Environmental Manager of Anzon (Ex. 694–9, Att. 2); Benjamin Franklin McKinney, identified as the president of Oxide and Chemical Corportation (Ex. 694–9, Att. 3; and William P Wilke, IV identified as vice president of Hammond Lead Products, Inc (Ex. 694–9, Att. 4). Based upon the evidence in the record, OSHA does not find affiants' assertion persuasive.

OSHA has analyzed record data and information from the very plants upon which affiants base their claim of infeasibility and has concluded the PEL can be achieved by engineering and work practice controls. Affiants' position also is contradicted by an earlier statement by the president of one of affiants' companies, who said that, with the exception of maintenance and non-bulk packaging (of which his company does almost none), his company already is achieving 50 $\mu g/m^3$ at its other plants and that he expected to do so at the visited location, as well, after moving into a new facility (Ex. 684c, p. 5). Affiants' position also is not consistent with record evidence and other statements made elsewhere in this remand rulemaking by affiants and their companies. For example, although the affiant from Anzon asserts that 50 $\mu g/m^3$ is not achievable in any operation in his plant, exposure data from his plant shows that in 1987 for example, before any further improvements are made to work practice and engineering controls, a majority of monitoring results already are below 50 $\mu g/m^3$ OSHA's analysis of these data further shows that in 1987 geometric means in all operations but two also are below 50 $\mu g/m^3$ (OSHA omits supporting citations. See related discussion of confidentiality, below.)

As OSHA has previously shown, not only is the PEL of 50 $\mu g/m^3$ achievable, it already is being achieved most of the time in operations at plants owned by affiants' companies. At one of those plants, for example, 20 of 31 sampling results for maintenance workers in 1987 are below 50 $\mu g/m^3$ and their geometric mean is 22 $\mu g/m^3$ (OSHA omits supporting citations. See related discussion of confidentiality, below.)

More importantly, since the consideration of feasibility is not limited to a consideration of what an industry has already achieved, OSHA has shown that in every operation substantial, further reductions in air lead levels can be achieved by the implementation of recommended additional controls. Indeed, with a system of integrated and improved controls, OSHA has shown that 50 $\mu g/m^3$ can be achieved in all operations, with the possible exception of certain maintenance tasks.

In addition, the construction of new plants and the modernization of existing plants have major positive implications for reduced exposure levels, as Meridian has pointed out (Ex. 686E, pp. 6, 11, and 26). LIA seems to recognize these implications. Indeed, in its argument that 50 $\mu g/m^3$ is generally infeasible for the lead chemicals industry, LIA distinguishes between larger and older plants, on the one hand, and more modern plants. For the larger and older plants, LIA asserts that 50 $\mu g/m^3$ is "not feasible for virtually all production processes However, for "the most modern plants" LIA says only that "the 50 $\mu g/m^3$ PEL cannot be technologically achieved in certain processes The only two operations LIA names as examples are maintenance and packing (Ex. 582–90, p. 25). This would seem to mean that at least in the most modern plants LIA recognizes that the 50 $\mu g/m^3$ PEL is achievable in all but these "certain" operations.

In new and modernized plants, the replacement of mechanical material conveyor systems by pneumatic systems will substantially reduce exposure levels for maintenance personnel and background levels in plants. Packaging will be more automated and more products will be shipped in bulk. With so many of the major producers modernizing, bringing new plants on line, or planning or constructing new plants, the issue of high employee exposure in certain of the older plants increasingly is becoming moot. Several of the older facilities are likely to be closed by the time the standard is applied to the lead chemicals industry. Industry criticisms of this main point are not persuasive (Ex. 694-9, Att. 6, pp. 5-9, 28).

Broad assertions by industry representatives that 50 μg/m³ is not achievable need to be carefully scrutinized. Based upon OSHA's three site visits to lead chemical plants in 1988, for example, OSHA is certain that none of the plants examined is close to the limits of technological feasibility.

Only one of those plants, Plant B, even claims to be state of the art for oxide production (Ex. 684b, p. 11). If state of the art" means the highest level of available technology, and especially if it implies that no substantial technological improvements can be made with available, conventional technology, as OSHA believes it does, Plant B is far from state of the art.

In the two operations likely to be the main sources of lead emission in Plant B and industry wide, for example, packaging and maintenance, there is considerable room for improvement using available technology. More sophisticated packaging machines could be purchased and installed that would substantially reduce or perhaps eliminate several manual tasks that are important sources of packers' lead exposure. Plant B itself would seem to agree with this point, since it currently has plans to modernize its packaging operation (Ex. 694-9, Att. 6, p. 32). Where practical, mechanical material conveyor systems, like bucket elevators, also could be replaced by relatively cleaner pneumatic systems.

Moreover, since Plant B has never had a certified industrial hygienist perform a plant-wide job/task analysis to identify all sources of lead exposure and their relative contributions to workers' exposure levels, OSHA does not think the company has sufficient information to reach definitive conclusions concerning the limits of feasibility even in its own plant, let alone across the industry. By contrast, companies like the one that owns Plant C, which report they already have achieved 50 μg/m³ in most operations in most plants, have definitive experience that the 50 μg/m³ PEL is achievable.

In responding to this first industry argument, OSHA has tried to maintain the name confidentiality of site-visited plants, in accordance with OSHA's limited confidentiality agreement with LIA (Ex. 685A). This has been made very difficult by the fact that officials from the visited plants late in the rulemaking submitted affidavits in which they identify themselves and their company by name and indicate that their company has been recently visited by OSHA in connection with this rulemaking. OSHA believes that by submitting such affidavits these companies effectively waived any right they may have had to name confidentiality. Nonetheless, the Agency in responding to affiants' assertions has continued to maintain name confidentiality. To the extent the companies may believe that name confidentiality has been compromised, OSHA maintains this is attributable solely to the companies and their submission of such affidavits, which required a response from OSHA.

Industry's second main argument is that even 200 μg/m³ cannot be achieved on a consistent basis in maintenance operations and even 100 μg/m³ cannot be achieved on a consistent basis in packaging (e.g., Ex. 694-9, Att. 2-4). OSHA disagrees with industry's contention.

With regard to packaging, the assertion that 100 μg/m³ cannot be achieved in packaging is directly contradicted by Plant A's statement that 100 μg/m³ can be achieved in that operation (Ex. 694-9, Att. 5, p. 8). It also is in conflict with Plant A's exposure data, which in 1987 show that nearly 60% of all monitoring results that the plant considered typical for PBD operators already are below 100 μg/m³ (Ex. 686c). Similarly, at Plant M, 75% of all monitoring results in packaging in 1987 were below 100 μg/m³ (Ex. 686d). Moreover, since packaging operations across the industry generally do not incorporate state-of-the-art technology, current exposure levels in packaging can be substantially reduced by implementing additional controls, as OSHA has demonstrated above.

With regard to maintenance, exposure data show that levels well below 200 μg/m³ already are being achieved with considerable consistency. At Plant A, for example, in the years 1984-87 typically over 60% of monitoring results, adjusted in accordance with Plant A's annotations, were below 50 μg/m³ (Ex. 688c). In those years, approximately three-quarters of adjusted monitoring results also typically were below 100 μg/m³ In fact, only 4 of 111 monitoring results were over 200 μg/m³ (Ex. 688c).

Nevertheless, as OSHA stated above, the Agency recognizes that in some maintenance operations exposure levels may continue to exceed 50 μg/m³ If in a limited number of these maintenance operations it is not feasible to use engineering and work practice controls to reduce air lead levels, OSHA also recognizes that employers will have to continue to rely on supplementary use of respirators to protect workers, as they traditionally have done. This sort of maintenance operation is not really relevant to an assessment of technological feasibility since OSHA has consistently recognized that in certain limited maintenance operations sole reliance on engineering controls may be infeasible.

In any event, to establish technological feasibility the Agency need not prove the PEL is capable of being achieved all of the time or in all operations. Thus, for example, even if it were true that the PEL were not achievable in a single operation in many plants, that would not in itself mean the PEL was technologically infeasible for the industry.

Third, industry argues that the efforts of Meridian and the expert panel are based upon mistaken determinations of facts, and are unsubstantiated, biased, and methodologically defective (e.g., Ex. 694-9, Att. 1, pp. 2-3, 5-6, Att. 5, pp. 3, 6-7 Att. 6, pp. 11, 23). On the whole, OSHA rejects these criticisms and believes that Meridian did a creditable job within the given time and resource constraints.

Meridian has had extensive experience and possesses very broad competence in the area of industrial hygiene, the principles of which are generally applicable across industries. It also has expertise and broad experience in assessing factors relevant to technological feasibility. Physically, there is nothing unique about lead dust and lead fume or about the lead chemical industry that would make Meridian's extensive expertise and competence in evaluating engineering and work practice controls across many industries irrelevant to this industry. The control technologies recommended are conventional and transferrable from similar industries, and the anticipated effectiveness of these controls in reducing lead levels also is the same across industries (e.g., Ex. 582-90, p. 9). The expert panel established by Meridian also was composed of independent, broadly experienced, certified industrial hygienists, not themselves employees of Meridian.

Meridian s final report (Ex. 686E) and its conclusions are based on numerous sources in the record. These include data, other evidence and comments submitted by lead chemical companies, trade associations and other interested parties; site visits to three lead chemical plants, participated in by three experienced, certified industrial hygienists; and recommendations by the expert panel, two of whose members had been on one or more of the site visits.

Of course, notwithstanding their experience and expertise, Meridian and the expert panel may have made certain mistakes of fact and drawn some incorrect conclusions. This is almost inevitable when a contractor and experts can devote only limited time and resources to examining a complex industry and voluminous record. Nevertheless, some of the specific allegations that Meridian misstated facts themselves seem incorrect. For example, Plant A states (Ex. 694-9, Att. 5, p.. 7) that Meridian was mistaken in its April 1988 final report when it said that no industrial hygiene audit or task analysis had been performed at Plant A (Ex. 686 E, p. 29). As Plant A has pointed out, its plant was audited by an industrial hygienist in October 1987 just prior to the public hearing in this rulemaking, and task sampling in one department had been completed by March 1988. However, Plant A did not report these facts on the record until its comments in late May 1988, after Meridian's April report had been submitted to the record. Moreover, task sampling had not yet been completed by the May 1988 comments (Ex. 694-9, Att. 5, pp. 7-8). Meridian's point, thus, appears to accurately reflect the evidence in the record at the time.

Similarly, Plant B criticizes Meridian s methodology for including Plant A's packer/blender/dryer operator (PBD) in its analysis of exposure data for operators. Plant B argues that this violates the job classifications and job descriptions submitted by LIA, wherein "the operator category excludes packing (Ex. 694-9, Att. 6, p. 11; and see Ex. 582-90, p. 4). OSHA believes Plant B has a point and in deference to that point does not in its own assessment treat PBDs as operators, despite the fact that PBDs' other tasks are typical operators' tasks (wet process). Nonetheless, the fundamental problem lies not in Meridian's methodology but in the fit between LIA job classifications and actual job classifications in the industry. LIA sets up five general job classifications: operator, packer, leadman, maintenance and shipper. However, several of these classifications do not exist at a number of plants (e.g., there are no leadmen at Plant A or Plant X). Moreover, some plants have classifications not included in the five (e.g.. Plant A has general laborers).

More importantly, in two of the three plants OSHA visited in 1988, there is no distinct job category for packer. At Plant B, no job title includes the word "packer" (Ex. 684b). Packing there apparently is done by operators and shippers. By contrast, at Plant A one job title is PBD, which includes, but is not limited to packaging.

If data from PBD monitoring results cannot properly be analyzed as part of the exposure data for operators, as Plant B asserts, must it also be excluded from analysis of the data for packers, who typically do not perform tasks of drying and blending? OSHA does not think so. If it were excluded, the Plant A data would simply have to be discarded, since it fits no other job classification. Moreover, if OSHA could only rely on data collected from employees who exclusively do packing, the Agency would be left with no reliable data for packagers from the plants where it conducted site visits. OSHA therefore believes that Meridian's approach is a reasonable effort to make sense of data from various sources that do not all neatly fit into the typical job categories presented in good faith by industry.

Industry also claims that the expert panel's estimated reductions in exposure levels are meaningless, because they are unsubstantiated by engineering analysis. (Ex. 694-9, Att. 6, pp. 23-24, 30 and 31). OSHA disagrees. The anticipated reductions are meaningful because they are supported by the collective expert judgment of the three experienced, certified industrial hygienists who constitute the panel. OSHA is not required to support each of its estimates with substantial engineering analysis. Given OSHA s limited resources, to deny the value of expert judgment and to demand instead that OSHA conduct a "substantial engineering analysis" for each operation in an industry to prove technological feasibility would often preclude the Agency from being able to prove technological feasibility.

Furthermore, Plant B's alternative suggestion that a more meaningful estimate of the real reductions achievable in packaging could have been made if the expert panel had studied the best packaging operations and compared them with packaging operations in older facilities (Ex. 694-9, Att. 6, p. 24), is not acceptable. Plant B's suggestion would only be useful in assessing technological feasibility if the best packaging operations in the industry truly incorporated state-of-the-art technology. However, the evidence in the record does not show that any plant in the industry has a state-of-the-art packaging operation, and OSHA does not believe such an operation currently exists. Consequently, Plant B's suggestion cannot provide an estimate of the full extent of achievable reductions in exposure levels but instead would merely provide an estimate of reductions based on levels already achieved at one plant or another. However, OSHA's determination of what is technologically feasible is not confined to what has already been achieved.

Thus, OSHA concludes that Meridian's findings and conclusions generally are firmly grounded in the record and that its methodology generally represents a reasonable effort to make sense of, and use that record. In any event, OSHA has independently assessed the record, reviewed Meridian's final report for accuracy, taken account of industry's comments on that report, and relied only in part upon the Meridian report for the Agency's determination of technological feasibility.

Industry's fourth argument is that there is insufficient information in the record to support a finding of feasibility for the industry (Exs. 582-90, pp. 20-21; 694-9, Att. 6, p. 2). As indicated by the entire preceeding discussion of the record evidence in this document, OSHA disagrees. There is in the record substantial exposure data and information, including three site visit reports, concerning six of the eight plants owned by the three firms that together represent 80% of the industry's domestic production capacity. There is, as well, a final contractor's report that includes findings of facts, analyses, and specific estimates by an expert panel of anticipated reductions in exposure levels to be achieved operation-by-operation in three plants by employers' implementing recommended additional controls. OSHA believes the record evidence constitutes a firm basis for assessing technological feasibility and that the evidence supports the Agency's determination that the PEL of 50 $\mu g/m^3$ is achievable by engineering and work practice controls.

Industry's fifth argument is that for a PEL to be considered feasible it must effectively be achievable all the time in all operations (e.g., Ex, 694-9, Att. 5, p. 6, Att. 6, p. 32; Tr. 1276, 1278). Industry essentially argues that since it can be cited by OSHA for an employee's eight-hour TWA being in excess of the PEL in any operation on any single day, therefore OSHA must show an industry can achieve the PEL all of the time in all operations to prove technological feasibility.

This characterization of the issue of technological feasibility is nowhere clearer than in Plant B's closing comments in the record. There (Ex. 694-

9, Att. 6, p. 32). Plant B asserts that Meridian's statement that 50 $\mu g/m^3$ "can be achieved most of the time" in relatively new plants really means that 50 $\mu g/m^3$ is *not* feasible. Plant B explains that in enforcement "OSHA uses single samples to demonstrate compliance with the lead standard. Consequently, "*meeting the standard most of the time does not demonstrate feasibility.* Industry must meet the standard every time" (emphasis added).

This perspective is inherent, as well, in LIA's final comments (Ex. 694–9, Att. 1, p. 2). There, LIA criticizes Meridian's statement that employers can have reasonable confidence that their workers' exposure levels will not exceed 50 $\mu g/m^3$ "most of the time" as inadequate assurance. That assurance, LIA goes on to say, "does not mean that the industry can achieve such exposure levels for all tasks on a continuous basis [I]ndustry is not provided [by OSHA] with the opportunity to comply with a promulgated health standard 'most of the time'

Industry's assertions elsewhere that it is not feasible to achieve 50 $\mu g/m^3$ "on a consistent basis" (Exs. 694–9, Att. 2–4, Att. 6, pp. 19, 20) must be understood in terms of its perspective on technological feasibility. To industry, the ambiguous phrase "on a consistent basis" appears to mean all of the time, not most of the time. The former meaning alone is consonant with industry's position that, for a PEL to be considered technologically feasible, industry must be able to comply with it essentially 100% of the time.

If OSHA is correct in this understanding, then when affiants assert that "it is not feasible to achieve on a consistent basis a 50 $\mu g/m^3$ permissible exposure imit for the remaining processing areas under normal conditions" (Ex. 694–9, Att. 2–4), they mean it is not feasible to achieve 50 $\mu g/m^3$ *all of the time* in those operations under those conditions. Thus understood, OSHA can agree with industry's point without agreeing that that amounts to a proof of infeasibility.

In fact, OSHA believes that industry is confusing technological feasibility with compliance. The two are related but not the same. As the courts have said, to prove the technological feasibility of a PEL, OSHA is not required to prove that an industry can achieve the PEL in all of the operations all the time. *USWA* v. *Marshall*, 647 F.2d at 1270. Indeed, if a PEL is generally feasible across an industry, there may be an operation in which the PEL can never be achieved and in which industry's obligation is to engineer down to the lowest feasible level. Achieving that level, then, would constitute full compliance with paragraph (e)(1) of the lead standard. OSHA believes that industry's extreme interpretation of technological feasibility to mean achievable all of the time in all operations would effectively subvert OSHA s statutory mission to protect workers "to the extent feasible.

Industry's sixth argument is that use of the geometric mean is inappropriate in assessing feasibility both because compliance is judged on the basis of single-day's sampling not on a mean of various days' TWAs and because the geometric mean is downwardly biased (Ex. 694–9, Att. 5, p. 6, Att. 6, pp. 15, 21). The first part of this argument is essentially the same as industry's fifth argument and is unpersuasive for the reasons set out above and for the reasons stated in the introduction to technological feasibility in this preamble. The claim that the geometric mean is downwardly biased is based upon the fact that the geometric mean is generally lower than the arithmetic mean and the related fact that the geometric mean gives less weight to outlying monitoring results, especially, for all practical purposes, to high outlying results.

In response, OSHA notes that the geometric mean is widely accepted by the scientific community as the best single statistic to accurately represent an array of data that, like typical exposure monitoring results, is log normally distributed (Ex. 686E, pp. 16–17). The scientific validity of using the geometric mean to analyse exposure data is recognized by industry itself (e.g., Ex. 694–9, Att. 6, pp. 15, 21). The geometric mean is considered the best way to represent exposure data in part because it does give less weight to outliers. In giving less weight to outliers, the highest of which would otherwise tend to have a disproportionate effect on the mean, the geometric mean becomes lower than the arithmetic mean. Hence, the geometric mean is lower than the arithmetic mean for scientific reasons. OSHA's choice of the geometric mean as a tool of analysis is based upon its analytic power and empirical justification.

Industry's seventh argument is that the Meridian addendum violates the confidentiality agreements between LIA and OSHA and therefore should be removed from the record (Ex. 694–9, Att. 1, p. 5) LIA argues that the confidentiality agreement "clearly" states that "*the plant visits* were not designed to address the issue of economic and technical feasibility of the 50 $\mu g/m^3$ PEL (emphasis added). Rather, LIA contends, "*the plant visits* were designed specifically to gather information with respect to production processes and the application of engineering controls" (emphasis added).

In responding to LIA's argument, OSHA first notes that nothing LIA asserts is grounded in the language of the confidentiality agreement. On the contrary, the language of the confidentiality agreement provides no basis for distinguishing between addressing feasibility and gathering information with respect to production processes and the application of engineering controls. In any event, the Agency finds the meaning of LIA's point unclear and is not persuaded that a meaningful distinction exists. Even if the distinction were valid and relevant, OSHA would still reject the argument that the Agency breached the confidentiality agreement.

The issue is whether the confidentiality agreement prohibits OSHA from using any information gathered on the site visits in the Agency's final assessment of feasibility. The only provision of the confidentiality agreement dealing with feasibility conclusions is paragraph 5 (Ex. 685A). That paragraph is narrowly drawn. It says nothing about *plant visits* as such, but focuses exclusively on *plant visit reports*. The paragraph simply provides: "The plant visit *reports* will be factual in nature and will not draw any conclusions as to either the technological or economic feasibility of achieving the PEL (emphasis added). The agreement thus prohibits OSHA from drawing technological or economic feasibility conclusions in the plant visit *reports*. In fact, OSHA did not draw feasibility conclusions in those reports. LIA does not claim it did.

The agreement does not prohibit, and cannot be read to prohibit all subsequent use of information or data gathered on the plant visits in assessing feasibility. OSHA would not have conducted site visits under such restrictive conditions, which would have rendered the visits essentially useless. These visits were made late in the rulemaking. They were not visits made prior to a proposal for purposes of introducing OSHA staffers for the first time to conditions in the relevant industry. By December 1987 and January 1988, OSHA had no need to conduct introductory visits. The Agency repeatedly made these points, both orally and in writing, to LIA and other industry representatives in the negotiations leading up to the site visits. A letter of December 4, 1987 to Robert N. Steinwurtzel, Counsel for LIA, from

Richard M. Pfeffer, Project Attorney for OSHA in this rulemaking (Ex. 700), for example, concludes as follows:

Finally, let me reiterate that the Agency to date has not made a determination about the feasibility of implementing Section 1910.1025(e)(1) of the OSHA lead standard in the remand industries. The Agency believes the plant visits will be useful in reaching a determination OSHA's general approach to making the visits, as stated by Charles Adkins [, Director of the Office of Health Standards Programs,] at the November 23 meeting, is that if we cannot use what we see, there is no point in carrying out the visits. OSHA wishes to make the best informed decision possible.

Actions by company representatives and counsel for LIA during the site visits confirm that industry anticipated that the information gathered on the plant visits would be considered as part of OSHA's final assessment of feasibility. For example, during the visits company officials discussed, and made specific statements regarding the feasibility of achieving the 50 $\mu g/m^3$ PEL in their plants. These statements are incorporated in the site visit reports (e.g., Ex. 684b, p. 11). Yet, so far as the Agency is aware, neither LIA nor the companies visited objected that their inclusion violated the confidentiality agreement. If LIA and the companies believed the site visits were not designed to "address the issue of feasibility" at all, the Agency believes they would not have made such statements during the visits and, in any event, after the visits would have objected to their inclusion in the site visit reports.

Thus, the Agency is assured that the confidentiality agreement does not bar data and information gathered during the site visits from being used by OSHA in its assessment of feasibility. The Agency is further assured from the companies' and LIA's own actions that this was in fact, or in any event should have been understood by them. Thus, there is no justification for removing any document from the record on the basis of LIA's allegation of breach of confidentiality. Indeed, since the agreement does not bar OSHA from using such information, OSHA may well be under a statutory obligation to use the information where it constitutes the "best available evidence.

Consequently, OSHA is unpersuaded by industry's arguments. Based upon its own experience, expertise and the record evidence, OSHA concludes that a PEL of 50 $\mu g/m^3$ is technologically achievable by means of engineering and work practice controls in the lead chemicals industry.

Uses. Lead chemicals principally include lead oxides, lead silicates, and lead soaps. Uses include incorporation into products such as ceramics, paints, glass, plastics (mostly as stabilizers), and automotive batteries. They are also used in glazes for china and pottery.

Industry Profile. The Lead Chemicals Industry is part of SIC classification 2819, Industrial Inorganic Chemicals, and includes the production of lead oxides, lead silicates, and lead soaps, among other compounds.

There are 13 firms currently involved in the production of lead oxide and/or red lead (primary lead chemicals), 19 producers of lead chemicals other than lead oxides, and an additional 2 or 3 plants involved in the production of lead stabilizers [Ex. 686e, p. 2-4]. The Lead Industries Association (LIA) reports, however, that approximately 85 percent of the domestic production capacity of this industry is accounted for by just five producers [Ex. 582-90, p. 1], and all are primary lead chemical producers. Also, with regard to the 19 lead chemical producers mentioned above, "the amounts of lead involved are quite small in relation to the amounts involved in primary lead chemical production" [Ex. 686e, p. 4]. OSHA has therefore focused its analysis on primary lead chemicals.

Employment for the lead chemicals sector was estimated in 1982 at 700 total workers [Ex. 575, p. 2]. Information provided by the LIA indicates that there are currently 74 operators, 24 leadmen, 36 maintenance workers, 59 packers, and 10 shipping employees, or 203 total lead-exposed workers employed by the 5 LIA member firms [Ex. 582-90, p. 4].

Production data show that lead oxide production fluctuated during the period 1980 to 1985, with red lead shipments at a five year low in 1984 (12,815 short tons) and shipments of litharge at a six year high in 1985 (94,080 short tons). Combined shipments of these chemicals declined 28 percent in 1986, then increased over 13 percent in 1987 [1987 Minerals Yearbook, Bureau of Mines, U.S. Department of Interior].

In assessing price trends for lead oxide products, OSHA found the concept of unit value to be the accepted measure of value by both the industry and government agencies which collect and report data on lead chemicals. Unit value is derived as total value of product divided by total volume, expressed in cents per pound. For example, in 1987 the 80,568 metric tons (177,571,872 lbs.) of litharge and red lead shipped by U.S. producers had a total value of $72,292,620. (Litharge is estimated to constitute approximately 80 percent of the value of this combined product category and red lead is estimated to constitute the remaining 20 percent. OSHA believes, therefore, that the unit value for the combined product category is an appropriate proxy for the unit value of litharge [Ex. 575, p. 7]). Unit value for this product category was thus 40.7¢ per pound. This value must not be confused with quoted price, which is generally higher, as transactions generally do not take place at quoted price.

The LIA reported an average price for litharge in 1987 of 39¢ per pound [Ex 582-90, Appendix D, Table 3]. This value is consistent with the unit value derived above; OSHA concludes, then, that the LIA prices submitted are unit values and not price quotations. This value represents a 50 percent increase from the 1986 unit value of 26¢ per pound, according to LIA data. Unit values of battery oxide were also provided by the LIA. Unit values for this product increased from about 23¢ per pound in 1986 to about 36¢ per pound in 1987 a jump of approximately 56 percent [Ex. 582-90].

With regard to imports, the U.S. imported 24.8 million pounds of litharge in 1986. The unit value of these imports was 19¢ per pound [Ex. 582-90, Appendix D, Table 7]. In 1987 unit value of imported litharge rose to 33¢ per pound, an increase of 65 percent over the previous year's value. (In order to reduce tariffs, the value of imported shipments may be underreported.) Quantity increased over 26 percent during the same period [1987 Minerals Yearbook, Bureau of Mines, U.S. Department of Interior]. Imports of lead compounds other than oxides increased twofold from 1980 to 1985 [Ex. 575, p. 14].

Data on imports of some of the products which incorporate lead chemicals show that 27 million pounds of pigments and 9.2 million lead-acid storage batteries were imported in 1986. That same year, 2.3 million color television tubes and over 5 million pounds of paints were also imported. [Ex. 582-90, Appendix D, Tables 8-9D].

Demand for red lead is related to its use as a paint additive, its use in ceramics, and its use in storage batteries. Litharge is shipped for use in ceramics, chrome pigments, paints, rubber, and other uses. Demand for both of these chemicals in paints has decreased since the early 1980s; this use represents, however, only about 20-25 percent of red lead shipments and typically less than 10 percent of total litharge shipments [Ex. 575, pp. 10-11]. Demand for lead silicates is tied to the demand for pottery and china glazes while the demand for lead stabilizers is related to their use in plastics [Ex. 575,

p. 12]. One industry source reports that "lead demand is stagnant, if not declining" [Ex. 582–90, p. 19]. Another claimed that the "glass and plastics markets for lead chemicals are growing quite quickly; the battery oxide market is growing slowly; and the pigments market is declining" [Ex. 686e, p. 6]. The shipments and unit value data presented above indicate strong demand for both litharge and battery oxide.

Comparable substitutes for the lead chemicals in glass, ceramics, crystal, and stabilizers do not exist. There are, however, substitutes for the lead chemicals in paints [Ex. 575, pp. 13–14].

Financial data averaged for four of the five lead chemical producers represented by the LIA showed negative return on investment and return on net worth ratios for the years 1982, 1983, 1985, and 1986 and positive rates for 1984 [Ex. 582–90, Appendix D, Tables 1 and 2].

Primary lead price data (primary lead is the major input for lead chemicals) provided in the LIA submittal were consistent with the Bureau of Mines "U.S. Producer" and "North American Primary Producer Mean" (NAPPM) price quotations for lead [1987 Minerals Yearbook, Bureau of Mines, U.S. Department of Interior]. However, according to the Bureau, the quoted price is not the actual transaction price (actual price paid) of the metal. The transaction price more closely resembles the quoted price less a discount, and approximates the London Metal Exchange (LME) value, which averaged 18.4¢ in 1986, plus a 4¢ or 5¢ per pound transportation cost. Since the U.S. quoted price averaged about 22¢ in 1986, discounts were probably small or nonexistent that year (the quoted price and the transaction price were about the same). In 1985, discounts were also small or nonexistent.

In other years, however, quoted prices have diverged from transaction prices. For example, since the price of lead on the LME averaged 27¢ for 1987 the transaction price would have approximated 32¢ (27¢ plus 5¢ transportation cost), resulting in a discount of about 4¢ per pound for the year between the actual price paid for the metal and the quoted producer prices, which averaged 36¢. In 1984, the last year for which the LIA firms were reported to be profitable, this discount was about 1¢–2¢.

The LIA reported that U.S. lead chemicals producers "have not succeeded in increasing the conversion charge to the point where such charges cover total costs" [Ex. 582–90, Appendix D, p. 3]. (Conversion charge is defined by the LIA to be the difference between the price of primary lead and the price of the industry's product). The LIA submission compared the difference between litharge unit values and quoted primary lead prices and concluded that the conversion charge had been "modest relative to total product price, and confined within a narrow range over [the years 1984 to 1987]" [Ex 582–90, Appendix D, p. 3]. OSHA believes, however, that transaction prices rather than quoted prices of primary lead should be used in computing conversion charges. If transaction prices are used, based on the above discussion, conversion charges for the profitable year of 1984 (a year in which conversion charges exceeded total costs—see LIA quote above) would have exceeded conversion charges in 1985 and 1986, both reported to be unprofitable years, by as much as 2¢ per pound. This figure represents approximately 40 percent of the conversion charges reported for 1985 and 1986. Since the difference between litharge unit values and primary lead transaction prices appeared greatest in 1987 and since no evidence in the record suggests a corresponding increase in production costs between 1984 and 1987 OSHA concludes that profitability in 1987 was greater than 1984.

Additionally, OSHA notes that unit values for domestic products increased by as much as 56 percent in 1987 (see above). At the same time, the primary lead transaction price (i.e., input price) increased only about 45 percent.

OSHA also notes that the unit value of imported litharge (adjusted up by 5¢ per pound) increased by about 58 percent. This information suggests an improvement in price the competitiveness of domestic producers in 1987

Finally, the recent construction of two new plants in this sector [Ex. 694–9, Company B comments, p. 34] suggests that at least two firms are now profitable and/or expect to be profitable in the long run.

For these reasons, OSHA does not believe that the LIA profitability ratios for 1983 through 1986 accurately reflect the current financial condition of lead chemical producers. Instead the Dun and Bradstreet 1986 rate of return on sales for SIC 2816 of 4.9 percent was used to estimate the economic impact of the rule [Dun and Bradstreet Industry Norms, 1987].

Costs of Compliance. Costs to be incurred by the lead chemicals industry in order to achieve compliance with the 50 microgram per cubic meter standard are for additional ventilation, the implementation of improved packaging technology, and improved housekeeping. These costs will vary, however, depending on the age of the facility. Also, costs were estimated only for LIA member facilities which represent approximately 85 percent of primary lead chemicals production. The "users" of lead chemicals appear to manufacture lead chemicals as a minor part of their product lines, and there is no evidence in the record to suggest that workers employed in these operations are being exposed above the PEL of 50 micrograms per cubic meter [Ex. 686e, p. 2].

Among LIA member companies, two older plants will require additional ventilation in the melting and semi-automatic packaging areas (semi-automatic packaging refers to packaging in bags or drums with manual intervention). Costs were estimated based on the following judgements: ventilation costs will be incurred at the rate of $15 per cfm of air handling capacity for both areas, and this cost includes ductwork, additional baghouse capacity, fans, providing for makeup air, and installation; the required cfm capacity for ventilation in the melting area (melt pots, molten lead transfer system, and drossing operations) is estimated to be 4,500 and; the required cfm capacity for ventilation for semi-automatic packaging stations is estimated to be 4,000. It is estimated that there are two of each type of area per facility and each will require the appropriate system. Automated packaging units are also expected to be implemented. Since customer demand for various package sizes limits the use of automatic packaging units, it is assumed that only two such units will be implemented per facility. The capital costs of each unit are estimated to be $150,000, including bagger, palletizer, and associated ventilation [Ex. 582–17 p. 6].

Total incremental capital costs for melting area ventilation for the older plant category amount to $135,000 ($67,500 for each of two melt pots) and incremental capital costs for packaging amount to $420,000 (ventilation for two semi-automatic stations at $60,000 per ventilation system and two automated packagers at $150,000 per unit). Since many semi-automatic packaging stations already have some local ventilation in place, costs could be somewhat less than the $60,000 estimated in many cases. Annualized capital charges, based on a useful equipment life of 12 years and financing charges of 10%, will be $81,474. Operation and maintenance expenses are estimated to be 10% of capital costs and are therefore expected to be $55,500. Thus, total annual costs for this equipment are $136,974.

Costs attributable to improved housekeeping will also be incurred. Installation of a central vacuum system is estimated to cost $50,000 [Ex. 694-9, Company A response, p. 7]. Total annual costs, including annualized capital and O&M expenses, would be $12,340. Evidence in the record indicates that at least one of the two older facilities has already installed a central vacuum system [Ex. 694-9 Company A response, p. 6], and OSHA estimates that a 50 percent current compliance level estimate is reasonable. Total average incremental annual costs per plant for this equipment are thus $6,170. The cost of an annual cleaning is estimated to be $50,000 per year ($5,000 per day over ten days) [Ex. 694-9, Company A response, p. 7]. Finally, incremental costs for routine housekeeping will be incurred. OSHA estimates this cost to be $7,350 annually, based on an assumption of one and one-half person-hours of work per day, seven days per week, over 50 weeks at an average wage of approximately $14 per hour. Total incremental annual costs for housekeeping are $63,520.

In sum, total incremental annual costs for older facilities are estimated to be about $200,000.

Three relatively new plants will require similar controls in the packaging area but less extensive controls in the melting area, as only ventilation for the drossing operation is believed to be necessary for these plants. The judgments used to develop the costs for relatively new plants were the same as those used for older plants, except that the air handling capacity requirement for the melting area (where only the drossing operation requires ventilation) was 450 cfm.

As was the case for older plants, newer plants also have two of each type of area requiring ventilation. Total capital costs per facility are the sum of $120,000 for semi-automatic packaging ventilation (two systems at $60,000 each), $13,500 for drossing ventilation (two systems at $6,700 each), and $300,000 for automated packaging (two units at $150,000 each). Evidence indicates, however, that improvements in the packaging area are planned in at least one plant in this category [Ex. 684b, p. 11]; therefore, a baseline factor of 25 percent has been applied for packaging controls. Total incremental costs are thus estimated to average $328,500 per plant for this equipment. Total incremental annual costs, including annualized capital and O&M expenses, will be $81,074.

Costs for improved housekeeping will also be incurred by the three facilities in this category. These costs include $50,000 for a central vacuum system (annualized capital and O&M costs of $12,340), $7,350 for additional labor, and $50,000 for annual cleaning. Evidence in the record indicates that at least one facility has installed "large vacuum lines" [Ex. 694-9]; a baseline offset of 33 percent has been applied in computing the incremental costs of the vacuum system (i.e., the capital cost was reduced by one-third in order to account for current compliance levels). Total incremental annual costs for improved housekeeping are thus $65,618.

Total incremental annual costs for this facility category are thus estimated to average approximately $147,000 per facility.

Among a total of six modernized and new plants OSHA believes that no costs will be incurred by lead chemicals facilities which are packaging exclusively in bulk, and information in the record indicates that this is the case for three plants [Ex. 686e. p. 29]. It is reported that these plants have attained the 50 microgram per cubic meter standard in all operations [Ex. 686e. p. 34]. Two new facilities will still use semi-automatic units (packing in bags and/or drums) in response to customer demand [Ex. 694-9, company B comments, p. 34]. For these facilities, costs for the packaging area are based on an assumption of two semi-automatic packaging stations. (Evidence indicates that these new facilities will already have automated units for that portion of product suitable for automation [Ex. 686e, p. 30]). Total capital costs would be $120,000. Total incremental annual costs per facility for this equipment, which include annualized capital and O&M expenses, are estimated to be $29,616.

New plants packaging in bags will also require additional housekeeping. Incremental costs are estimated to be $2,450 per year, based on the requirement for one-half person-hour per day, seven days per week, 50 weeks per year at an average wage of about $14 per hour. (The one-half person-hour contrasts with the one and one-half person-hour estimate used for older facilities and appears justified based upon improved conditions in newer plants).

Total annual costs per facility for new plants are estimated to be $32,066. OSHA assumes that annual costs for the sixth plant in this category are similar to the $32,066 computed above for the two new plants.

Finally, isolation and barrier techniques may be required in some plants to reduce cross contamination. The necessity for these measures will depend upon the amount of manual packaging done at a particular facility and the effectiveness of other control strategies. However, the prevalence of manual packaging is low throughout the industry and the control strategies prescribed should be effective in controlling exposure levels when implemented properly as part of an integrated control system. Thus, no costs for barrier techniques have been estimated.

The costs of an industrial hygiene survey were estimated to be $1,000. The survey was estimated to require two days to complete. Though occasional reevaluation may be necessary, no recurring costs would be required.

It should be noted that to the extent that mechanical conveyance systems are replaced with pneumatic systems, housekeeping and maintenance costs will tend to be reduced. To the extent that some replacement takes place, OSHA's cost estimates will be overstated. Costs are also overestimated to the extent that producers are able to shift away from manual packaging.

Aggregate industry compliance costs are based on the existence of two older plants, three relatively new plants, four modernized plants (three of which will incur no costs), and two new plants. Total incremental annual costs are expected to be $937,000.

There are about 30 additional chemical firms which may be affected by this rulemaking but for which data were not available. OSHA believes that only limited expenditures will be incurred by these firms as each accounts for less than 1 percent of total industry volume of product [Ex. 686e. p. 2]. Since OSHA has estimated that, at most, $200,000 in annual costs will be required by any individual facility, an estimate of $2,000, or 1 percent of the cost to an older plant, provides a conservative estimate of the annual costs of compliance for each of the 30 additional firms. Total industry costs will thus increase by about $60,000 for the 30 additional chemical firms, or to $1 million for all lead chemical firms combined.

Economic Feasibility. Price increases required for full pass-through of compliance costs have been summarized in Table 4. The table lists estimated sales and compliance costs per facility. Impact ratios are also presented.

TABLE 4.—Summary of Price Impacts For Lead Chemical Producing Facilities

Type of plant	Number of facilities	Sales/[a] facility ($ thous.)	Profits/[b] facility ($ thous.)	Annual costs ($ thous.)	Ratio: costs/ sales	Ratio: costs/ profits [c]
Older	2	5567	273	200	0.03602	0.48514
Relatively New	3	5567	273	147	0.02635	0.35495
Modernized & New	3	5567	273	32	0.00576	0.07759
Modernized & New	3	5567	273	0	0.00000	0.00000

[a] Sales per facility were calculated to be 7.7 percent of the industry total (primary lead chemicals) of $72,292,620.
[b] Profits after taxes were based on an estimated rate of return on sales (ROS) of 0.049 [Dun & Bradstreet Industry Norms, 1987].
[c] See text for derivation. Profits impacts were determined using an average federal income tax rate of 0.34.
Source: Occupational Safety and Health Administration, Office of Regulatory Analysis.

Sales per facility were estimated to be 7.7 percent of total industry sales of primary lead chemicals. (This corresponds to a total sales figure of $61,448,727 for these firms, or 85 percent of the 1987 industry total of $72,292,620).

Price increases required for older plants to pass through the costs of this regulation appear to be about 3.6 percent while increases for relatively new plants will be about 2.6 percent and increases for modernized and new plants will be about 0.6 percent. (Three plants in the latter category will incur no costs and thus will require no price increases). Due to competition from newer, more efficient operations, it is unlikely that older facilities will be able to use full cost pass-through as a long term strategy [Ex. 686e, p. 39]. The ability of relatively new plants to increase prices will likewise depend on competition with more efficient operations. Any pass-through that does occur will also depend on the price of primary lead (the opportunity to pass costs through may arise when the price of primary lead falls and lead chemical producers realize increased margins) and the extent of foreign competition: information presented above suggests that U.S. producers are currently competitive with foreign producers. New plants would be in a better position to pass forward a larger portion of compliance costs, as required price increases are smaller and they are better able to cut production costs [Tr., pp.1301–2].

Estimated profit impacts also appear in Table 4. Profits were estimated using the 1986 Dun and Bradstreet rate of return on sales for SIC 2816 of 4.9 percent. It should be noted that the tax-deductibility of compliance costs was taken into account in computing profit impacts. That is, care was taken to compute before-tax profit before subtracting annual costs. After subtracting annual costs, the appropriate average tax rate (34 percent) was then reapplied to determine after-tax profit net of costs.

In the older and relatively new plant categories, these figures suggest that impacts will be about 49 and 35 percent. of profits, respectively. (For one relatively new plant, these impacts were believed to be overstated since this plant is a lead stabilizer facility utilizing wet processes). Associated post-compliance ROS rates were estimated to be 2.5 percent for older plants and 3.2 percent for relatively new plants. OSHA recognizes that these older facilities may have difficulty in financing the costs of the standard. However, an LIA economist emphasized the need for restructuring if the industry was to remain competitive:

> I think the alternatives of the lead chemical industry are pretty circumscribed here, and it is the alternative of cutting costs by building new plants and equipment, getting new efficiencies, getting new productivity, and lowering their costs [Tr., pp. 1301–1302].

Industry's recognition of the need to revitalize and replace obsolete equipment is also reflected in comments submitted by company "B" for the record, which indicate that, in addition to those firms constructing new plants, "[o]ne other company plans to modernize and modify two of its facilities [Ex. 694–9, company B comments, p. 34]. Company "B" also reported that "Eagle-Picher recently completed a major capital project to modernize its lead oxide and lead chemical manufacturing facilities" [Ex. 694–9, company B comments, p. 2]. Additionally, testimony was presented which indicated that each of the major lead chemicals producers had already committed in excess of $2 million to engineering control programs [Tr., p. 1285].

For the modernized and new plant category, the figures suggest that profits will decline less than 8 percent for three of the six facilities in this category. Associated post-compliance ROS was estimated to be 4.5 percent for these plants. Thus, these firms should be able to finance the costs of this rulemaking without particular difficulty.

OSHA notes that three of the five LIA member firms represent over 80 percent of the collective capacity of the LIA members. Each of these firms operates at least one facility for which profit impacts should be relatively low. The owner of one of the two older plants also operates a new facility; the owner of the second older plant also owns two relatively new plants, one of which is a lead chemical (as opposed to lead oxide) facility, and exposure data indicate that this plant is close to compliance [Ex. 686E]. The third firm operates four new and modernized facilities, three of which will incur no cost. For these three firms, the most severe impact at plant level could be mitigated by absorbing compliance costs from overall profits.

Based on this analysis, the Lead Chemicals industry should be able to withstand the impacts of this regulation with an extended compliance schedule of five years. This extended period is required due to the limited ability of firms to raise prices and the substantial impacts on profitability for older and relatively new plants. The extended schedule will provide opportunities to increase production efficiency and phase in engineering controls. As modernization activities progress, exposure levels can be expected to fall, thus reducing the need for capital investments solely for the purpose of controlling employee exposure to airborne lead.

OSHA concludes that this standard as it applies to the lead chemicals industry is economically feasible with a five year compliance schedule. Over one-half of the facilities in this sector fall into the categories of modernized and new plants. At least three of these plants package exclusively in bulk [Ex. 684c, p. 5], and will incur no costs. Evidence indicates that profit impacts on the remainder of the plants in this category should not place undue burden on their profitability. As modernization continues, older and relatively new plants will either be phased out or made more efficient. Both of these responses to prevailing economic trends will tend to reduce employee exposures and, hence, the annual costs associated with this rulemaking. Further, more efficient operations would be better able to absorb any costs of compliance. The impacts of this rulemaking should not threaten industry existence, though the phasing out of marginal, older operations could be accelerated.

4. Lead Chromate Pigments

Process Description—Overview. The principal pigment produced in this industry is lead chromate (chrome yellow), which is produced through a series of chemical reactions and physical processes. At the outset, lead nitrate and sodium chromate solutions are prepared and reacted to produce slurries and precipitate the pigment. The precipitate is then separated from the mother liquor, and washed, dried, ground, and sometimes blended with other compounds to produce particular colors. Finally, it is packaged for sale. These operations can be carried out in batch, continuous, or by a combination of the two (semi-continuous).

The specific colors obtainable with lead chromate pigments range from light yellow and greenish yellow through orange to red. Lighter shades of yellow are produced by coprecipitating lead sulfate with lead chromate. Orange/red pigments are produced by partially replacing sodium chromate with sodium molybdate to produce a mixture of lead chromate and lead molybdate. Alkaline conditions are used to produce basic lead chromate, called chrome orange. Chrome greens are blends of chrome yellow (lead chromate) and iron blues, which are non-chromium pigments.

Solution and Slurry Preparation. The first step in producing lead chromate is preparation of solutions and slurries to feed into the precipitation tanks. One of these solutions is lead nitrate, which can be made by reacting metallic lead or slurried lead oxide (litharge) with nitric acid (Ex. 684h and Tr. 1163). The other solutions, sodium chromate, sodium bichromate and sodium molybdate, can either be purchased as solutions or prepared from dry compounds.

Reaction. The second step in pigment production is the reaction of lead nitrate, sodium chromate and, depending upon the pigment to be produced, possibly other ingredients to produce lead chromate, sometimes with lead sulfate. The reactions can be conducted by a batch or continuous process. The reaction is complex and must be carefully controlled to yield the right types and sizes of crystals. The conditions under which reaction and crystallization occur, such as temperature, concentration, and length of time in the reactor, affect particle size, which in turn affects final color. The slurry of crystals produced by the reaction is then subjected to several physical operations intended to separate the crystals from the mother liquor.

Filtration and Washing. The slurry is pumped to filter presses, centrifuges, or drum filters, where the solids are separated from the liquor and washed. Only filter presses require manual handling.

Drying. After they have been filtered and washed. the wet solids are dried. However. in at least one plant, the wet solids are reslurried before being pumped into a spray dryer. Drying can be accomplished in belt dryers, spray dryers, and tray dryers. Of the three, tray drying is the only one that involves manual handling of the pigments.

Where spray dryers are used, the wet solids are reslurried and pumped into the spray dryer. The slurry is then sprayed into a hot gas stream, and the dried powder is collected for conveying to the next step in the process. In belt drying, the wet solids are automatically spread onto a conveyor belt, which passes through a drying oven. From the oven, the dried solids continue to be automatically conveyed to the next stage.

In tray drying, which is limited to batch processes, workers manually spread the wet solids onto trays and load the trays onto racks in cars. Workers then insert the cars into oven dryers. After the pigment is dry, workers remove the cars from the ovens and discharge the dry, lump pigment from the trays into interim containers for subsequent grinding, perhaps blending, and packaging (Ex. 640, pp. 1–2).

Grinding. The dry pigment is ground in pulverizing equipment, which generally is fed automatically, but in some batch processes pigment may be fed manually. Grinding is carried out to achieve certain shades to meet customer specifications.

Blending. Blending involves mixing different batches of dry pigment to meet product specifications (Ex. 582–16, Att. II, p.16: Tr. 1185). Dozens of pigment grades are produced. In the batch process, the pigments can be loaded manually or automatically into the blending equipment. Rotating or ribbon blenders are used to blend the dry pigment. In at least one plant, some blending is carried out prior to drying by adding dry pigment to the pigment slurry in a ventilated tank (Ex. 684h, p. 2).

Packaging. Most of the lead chromate pigment produced by this industry is in the form of a fine, dry powder. A limited amount of the final product may be sold as slurry or paste. The dry product is packaged in either paper bags, drums, or bulk shipping containers, such as air pallets. The majority of the product is packed on bagging machines into paper bags.

For packaging in paper bags, the pigment is automatically fed into a hopper located over the bagging machine, from which it flows by gravity to the machine below. The bagging operator places a bag on the filling spout, and the machine fills the bag to the set cut-off weight. As the bag is being filled, the machine exhausts the displaced air from the bag. When the bag is filled, the operator removes it and places it on a scale beside the bagging machine. If the bag is underweight or overweight. the operator uses a trowel and a bucket of pigment to manually add or remove small amounts of pigment to meet the tolerances, which can be as narrow as plus or minus 2 oz. for a 50-lb. bag (Tr. 1188). The operator then closes the bag by folding the bag valve into it, and stacks it on a pallet.

Cleanout. Cleanout involves opening up and reaching into and even getting inside production equipment to clean out accumulated lead pigment residues. With product changeovers, the equipment must be thoroughly cleaned before switching to a new product in order to prevent contamination of the new color by the old. The frequency or extent of cleanouts can be reduced by scheduling production in "campaigns. In campaigns, the order of production minimizes the changes in color from one product to the next by producing lighter shades first and moving progressively to production of darker shades of the same color. The need for cleanout is also eliminated or reduced by dedicating an entire production line to a single color or group of closely-related colors. In one plant, for example, one line is dedicated almost solely to production of traffic yellow, while another line is reserved for molybdate oranges (Ex. 684h, p.1).

When product changeover cleanout is required, the process vessels, conveyors, mills, dryers, product collection equipment, etc., must be manually opened up and cleaned. At Heubach, for example, cleanout includes high-pressure water cleaning of process tanks, vacuuming and washing out dryers, and vacuuming material transfer equipment, including screw conveyors and bucket elevators. Cleanout of the continuous production line at Heubach takes from 28–48 hours and is said to be carried out approximately 5 times every two months (Ex. 582–16, Att. II, p. 3).

The basic operations in pigment production can be organized batch by batch, by continuous process, or by various combinations of the two.

Batch Process. The batch process, which accounts for between 14–20% of total industry capacity, involves production of a fixed amount of a particular pigment in one or more batches (Exs. 694–5, p. 4; 694–8A, p. 3; and 686I, p. 2; Tr. 1169). The process has two basic uses. One is to produce small amounts of pigments in a relatively simple manner. The other is to provide the flexibility to produce a wide variety of distinct products to meet varying customer demands.

The customizing can begin at the reaction stage, where precisely measured quantities of ingredients are mixed, reacted and precipitated under carefully controlled conditions to produce particular pigments. Additional modifications of the properties of the product can be effected in the grinding and blending operations.

Because a limited amount of pigment is involved in each batch, industry normally uses filter presses and tray dryers in producing the dry pigment. These operations require considerable manual manipulation and transportation of the material, making them potential sources of high exposure to lead.

After the pigment is dried and ground, it frequently is blended with different batches to meet specifications.

Continuous Process. The continuous process is used for high volume production and is characterized by a continuous and steady flow of ingredients and products through the stages of production. Generally, manual material handling between the reactor and packaging stages is eliminated or minimized. With high volume production of a particular pigment, the number of product changeover cleanouts also is reduced.

In a fully continuous reaction process, ingredients are fed into the reactor at the beginning of the process at a carefully controlled rate. The slurry from the reactor is continuously pumped to centrifuges or drum filters to separate and wash the pigment precipitate. The dewatered pigment is discharged continuously to a dryer and automatically conveyed from the dryer to a grinder. From the grinder the pigment is conveyed to hoppers for subsequent packaging. With full automation of the production line to facilitate the continuous flow, continuous filters and dryers, for example, are used instead of filter presses and tray dryers. Thus, the product is no longer manually unloaded and transferred from the filters to the dryer trays or manually dumped from dryer trays.

Batch processing may be integrated into an otherwise continuous process at various stages. For example, at Harshaw/Filtrol the pigment is precipitated in a batch reaction and is thereafter continuously processed.

One major production advantage of continuous processing is that a relatively high-quality product can be produced in high volume continuously over an extended period of time because process conditions and ingredient flows can be continuously monitored and adjusted to keep the properties of the final product within specifications. The major health and safety advantage is that, by eliminating intermediate manual handling between process stages and by minimizing the number of cleanouts, potential sources of high exposure are greatly reduced or eliminated.

Sources of Exposure. Although some level of exposure to lead may be associated with nearly every operation in lead chromate pigment production, the Dry Color Manufacturers Association (DCMA), the industry's trade association, concedes that "it is feasible to meet 50 $\mu g/m^3$ through the use of engineering and work practice controls in most operations. DCMA broadly identifies the problem areas in which it asserts 50 $\mu g/m^3$ cannot be achieved as drying, blending, packaging, extraordinary maintenance operations, and product changeover cleanout (Ex. 694–8A, p.2. Ex. 582–18, p. 12–13).

In drying, the major source of exposure is tray drying, which is used only in batch processes. Employees are exposed to airborne lead in tray drying from dried residues on the trays dispersed during loading the press cake and moving the cars, and from dumping pigment from the trays.

In blending, the main problem again is limited to the batch process, where employees may be exposed to high air lead levels if dry pigment is manually dumped into the blender. In continuous processing, employees also may be exposed to airborne lead above the PEL if they manually dump bags of dry, off-grade product into slurry tanks (Ex. 694–5, p. 8).

In packaging, exposure problems may occur throughout the process of packaging pigment in paper bags. Puffs of pigment may escape when the bag is being filled, removed from the filling spout, closed, placed on the pallet, and pressed down by other bags stacked upon it. Lead dust also may be spilled when manual adjustment of bag weight is required to meet strict customer weight specifications. Finally, lead dust may be dispersed if a bag of pigment is ruptured during handling.

In addition to the potential sources of exposure associated with the particular production operations listed above, employees may be exposed to other possible sources of lead dust. Generally, for example, an employee may be exposed to lead if a spill or a leak occurs somewhere in the production process, the product is dry or dries, and something causes the lead dust to become airborne. For minor spills or leaks, exposure levels ordinarily should be below 50 $\mu g/m^3$

Maintenance and product changeover clean-out provide other potential sources of lead exposure. High exposures to lead may occur during these operations when the equipment is first opened if the residue accumulated inside is dry and becomes airborne. High exposures also may occur thereafter if cleanout is performed dry and part of the residue being removed becomes airborne.

Existing Exposure Levels. OSHA in the 1987–88 phase of this rulemaking received exposure data from only two of the five remaining companies in the industry, Heubach and Harshaw/Filtrol (HF). Their data are the most extensive and useable recent data OSHA has received. By contrast, DCMA did not provide any data to the record. Instead, without identifying its sources or explaining its methodology. DCMA simply characterizes as above or below 50 $\mu g/m^3$ unspecified air lead levels in six job categories (Ex. 582–18, p. 16).

Together, Heubach and Harshaw/Filtrol represent 88% of industry production capacity and account for approximately 69% of the lead-exposed employees in the industry (Ex. 686I, pp. 2, 12). As a result, OSHA, like Meridian, focuses its analysis of industry exposures on their data. Of the two, Heubach is by far the largest producer and employer, with more then one-half of total production and employment in the industry (Exs. 686I, pp. 2, 12; 582–16, Att. I, p. 5; and 694–5, p. 4).

In analyzing the data from Heubach and HF OSHA notes that job classifications are not defined uniformly across the industry. Consequently, for purposes of determining feasibility, the Agency has conducted its analysis in terms of common production operations employed by a "typical" facility. This approach is consistent with the requirements of the OSH Act. *USWA* v. *Marshall*, 647 F.2d at 1272.

OSHA also is conscious of the fact that the data from Heubach and Harshaw/Filtrol may be upwardly biased in several respects. First, to the extent that air lead monitoring is performed in accordance with the frequency requirements of the lead standard, the number of samples taken per year increases with exposure levels. According to the lead standard, if exposure levels are below 30 μg/m³ no further monitoring is required; if exposure levels are at or above 30 μg/m³ but at or below 50 μg/m³ monitoring is required semi-annually; and if exposure levels are above 50 μg/m³ quarterly monitoring is required. Thus, if everything else is equal, there will be twice as many sampling results for operations with exposure levels above 50 μg/m³ than for operations between 30 μg/m³ and 50 μg/m³

Second, at least with regard to the Heubach data, Heubach states that some very high exposure readings (e.g., 730 μg/m³) are attributable to monitoring problems, such as "a glob of pigment" falling on the personal monitor and being taken to represent air lead levels (Tr. 1176).

Third, although most measurements for a particular job may be below 50 μg/m³ the average for that job still may be above 50 μg/m³ because production workers do cleanout, during which very high exposures are experienced. Characteristically for these jobs, relatively moderate sampling results obtained during routine operations are submerged in calculations of average exposure levels by a few very high results obtained during periodic clean-out work, which is like a maintenance activity.

At Heubach, in the years 1984 through 1987 for which the company provided OSHA with exposure data, 71–75% of all employees and 66% of all sampling results are at or below 50 μg/m³ (Tr 1175; Ex. 686I, pp. 13–14). In addition, for the combined years 8 of 12 job classifications have 50% or more of their air lead samples at or below 50 μg/m³ (Ex. 686I, p. 14; see Table 1, below). In continuous processing, which accounts for 75% of Heubach's total production and within the next year or two is expected to account for nearly all production, Heubach reports that all employees are already at or below, or at least able to achieve 50 μg/m³ except those in packaging (e.g., chemical operator) and cleanout. In batch processing, which involves manual handling of the product at many points, Heubach also reports that all employees, except those in blending (inorganic finishing, the process operator), packaging (inorganic finishing, the unit operator) and cleanout (inorganic finishing, both the process and unit operators), already are at or below 50 μg/m³ or at least are able to achieve 50 μg/m³ (Tr. 1163–66 and 1168–70).

Thus, in two of the five operations in which, according to DCMA, 50 μg/m³ cannot be achieved (Ex. 694–8A, p. 2). Heubach already is achieving that level most of the time. In maintenance, 87% of the sampling results for maintenance workers are at or below 50 μg/m³ (see Table 1, below). Similarly, in drying, approximately 53% of all the samples are at or below 50 μg/m³ (see Table 1, below, exposure levels for Processing—Process Operator and Ex. 640, job description).

TABLE 1.—SUMMARY OF EXPOSURE DATA FOR HEUBACH INC., 1984-87

Job classification	Number of employees	Distribution of exposure level									
		1984 (percent)		1985 (percent)		1986 (percent)		1987 (percent)		Combined Years (percent)	
		<50	>50	<50	>50	<50	>50	<50	>50	<50	>50
Semi-Finished											
Chemical Operator	4	82	18	67	33	82	18	40	60	72	28
Continuous Process											
Senior Chemical Operator	5	58	42	50	50	69	31	0	100	50	50
Chemical Operator	4	9	91	10	90	47	53	0	100	26	74
Process Operator	8	46	54	46	54	58	42	0	100	41	59
Manufacturing											
Senior Chemical Operator	20	95	5	100	0	94	6	81	19	93	7
Process Operator	8	92	8	93	7	94	6	80	20	91	9
Processing											
Chemical Operator	4	100	0	100	0	100	0	78	22	94	6
Unit Operator	20	67	33	83	17	86	14	56	44	75	25
Process Operator	8	31	69	76	24	71	29	35	65	53	47
Inorganic Finishing											
Process Operator	6	7	93	13	88	0	100	0	100	5	95
Unit Operator	8	28	100	19	81	8	92	6	94	8	92
Maintenance											
General Mechanic	49	93	7	90	10	83	17	82	18	87	13
Total Employment/Total Distribution	144	65	35	73	27	71	29	54	46	66	34

Operator performs manual packing.
[2] Operator performs process equipment cleanout.
In 1987, owing to the exiting from the industry of one of the major producers, a significant and sudden increase in production levels apparently increased exposure levels substantially above the three preceding years. With this increase in production, existing controls appear to have been disrupted or their capacity exceeded (Ex. 582-16, Att. I, pp. 3–4). Consequently, OSHA believes that 1987 is not a typical year.

At HF geometric mean exposure levels during each of the two most recent years for which data was provided, 1986–87 were well below 50 μg/m³ for at least 69% of the lead-exposed employees. During those same years, for an additional 14% of lead-exposed employees, the geometric means were below 64 μg/m³ (Table 2, below; Ex. 613 B–7).

OSHA has derived these geometric means from the individual monitoring results provided by HF (Ex. 613 B–7· see Table 2, below). While these individual monitoring data cover fewer years than the data summary HF provided (Ex. 694–5), OSHA has found errors in the summary for the years 1984–87 for which HF also provided individual monitoring results. OSHA therefore does not feel it can rely on the summary.

The entire set of monitoring results includes only 46 samples taken over the years 1984–1987 and covers only five job classifications and 18 of the 36 employees identified by the company as exposed to lead (Ex. 694-5, p. 5). OSHA understands that the reason no data were submitted for the other job classifications is because HF was under no legal obligation to monitor other employees and did not do so. Monitoring is not required for employees whose exposure levels are below the action level, 30 μg/m³ (29 CFR 1910.1025 (d)(6)(i)). OSHA further understands that HF is complying with requirements of the lead standard for monitoring frequency and that the 18 employees for whom no monitoring data were provided were exposed below 30 μg/m³

Concerning the lead-exposed employees for whom data are provided, 7 of the 18 are color makers and utility workers. In 1984-87 80% of their sampling results were at or below 50 μg/m³ Only the 11 spray dryer operators working on production lines A, B, and C frequently had average annual exposure levels above 50 μg/m³ HF itself has stated that the only job category with frequent lead exposures over 50 μg/m³ is spray dryer operator (Ex. 582-17 p. 5). These operators run filters and spray dryers, clean clarification presses, dump pigment from bags into the slurry/holding tanks for blending, and fill bags on the packaging machines. Several of these tasks currently are associated with high exposure levels.

However, of the 11 spray dryer operators at HF 5 work on line A, where the geometric mean exposure levels for 1986 and 1987 were 28 μg/m³ and 63 μg/m³ respectively. OSHA notes that line A is almost exclusively dedicated to the production of traffic yellow, which is low-grade, may be coarser and less dusty, and involves long runs requiring relatively few cleanouts. Lines B and C, which each have three employees, are the dustiest lines in the company. Line B produces a variety of higher quality yellow pigments of different hues and more stringent quality specifications than line A, so the operator on line B must frequently perform blending and cleanout of equipment. Line C produces a molybdate chrome orange pigment, which the company admits is dustier than the other pigments. In addition, HF has recognized that the work practices of one of the spray dryer operators on line C account for his higher exposures and contribute to higher average exposure levels on line C. Nevertheless, even on lines B and C more than 66% of total sampling results from 1984-87 were below 100 μg/m³

TABLE 2.—Summary of Exposure Data for Harshaw-Filtrol, 1984-87 [2]

Job classification	Geometric mean lead exposures					Combined years [3]
	No. of employees	1984	1985	1986	1987	
Colormaker	5	28	66	24	14	33.3
Utility	2	52	26	22.9	25	28.2
Laborers	3	([1])	([1])	([1])	([1])	([1])
Lab. Technician	2	([1])	([1])	([1])	([1])	([1])
Supervisors	3	([1])	([1])	([1])	([1])	([1])
Maintenance Mechanics	10	([1])	([1])	([1])	([1])	([1])
Spray Dryer Operator A (Traffic Yellow)	5	80.5	95.9	28	63.1	77.3
Spray Dryer Operator B (all yellows, with changes)	3	101.3	55.4	....	108	86.4
Spray Dryer Operator C (Molybdate Orange)	3	198	79	50.3	192	109.2
Combined Jobs [4]	36	103.1	69	35	72.9	70.8

OSHA understands that no exposure data were provided to the record for these workers because their exposure levels are below the action level (30 μg/m₃) and therefore, in accordance with paragraph (d) of the lead standard, no monitoring was conducted.

Source: Ex. 613-B-7.

[3] The geometric mean for "Combined Years" is the geometric mean for all observations across all years.

The geometric mean for "Combined Jobs" is the geometric mean for all observations across all job categories for that year.

At another plant for which OSHA has fragmentary exposure data, Kikuchi, it appears that as early as 1980 all operations in the plant, except packaging, already were at or below 50 μg/m³ Even in the packaging operation, the exposure level was only 66 μg/m³ (Ex. 476-264). Moreover, the Kikuchi plant representative indicated at the time that the exhaust system for the packager was being upgraded and that he hoped levels would soon be below 50 μg/m³ in that operation as well (Ex. 476-264).

Kikuchi, built in 1979, is a highly automated plant with a single continuous line exclusively dedicated to the production of traffic yellow. Consequently, product-changeover cleanouts are not necessary. No dry blending is performed and all steps after the reactor stage are automated and enclosed. Under such conditions, it is clear that 50 μg/m³ not only can be, but is being achieved in all operations, with the possible exception of packaging.

Existing Controls. OSHA's discussion of current exposure levels in the previous section indicates that 50 μg/m³ already is being achieved most of the time with existing controls in most of the operations in the industry (See Table 1, above, Combined Years). The primary methods currently used to control air lead levels in lead pigment production are work practices and housekeeping, ventilation, and use of automated processing equipment. In addition, both Heubach and HF which account for 88% of total industry production, have developed reduced-dust pigments that reduce the dust-generating properties of their products up to eight-fold (Ex. 684h, p. 3; Tr. 1156).

Solution and Slurry Preparation. Although OSHA has obtained relatively little information on controls used in this area, industry has conceded that 50 μg/m³ is being achieved currently and that this operation is not a problem area (Ex. 694-8A, p. 2). Colormakers' exposure to lead in this operation is intermittent since they spend only 10 minutes in this area twice a day (Ex. 684h). HF has been able to maintain this operation at or below 50 μg/m³ by enclosing it in a separate building, segregating the lead oxide in closed bins outside that building, automatically conveying the lead oxide and the lead nitrate slurry without manual handling, and ventilating the weigh hopper (Ex. 684h). At Heubach, which melts lead ingots in electric furnaces to react with nitric acid, employee exposures are maintained below 50 μg/m³ during this operation (Tr. 1163).

Reaction. Industry also concedes that this is not a problem operation since at this stage the lead-bearing materials are wet. At Heubach, to control air lead levels the synthesis tanks have closed tops and are connected to a central exhaust system (Ex. 582-16, Att. II, p. 11; Tr. 1167).

Filtration and Washing. Industry acknowledges that exposure levels in filtration and washing already are being controlled to or below 50 μg/m³ The most effective engineering control for this operation is using continuous process equipment rather than batch process. To control air lead levels in this operation, HF and Kikuchi, for example, use drum filters and centrifuges, respectively, rather than filter presses, which require manual handling (Exs. 582-17, p. 2; 579, p. 21). This production equipment lends itself to a greater degree of enclosure and automation (Ex. 579, p. 21).

At HF the drum filters filter and wash the pigment automatically; thus the only manual handling required is cleaning the clarification presses. At HF, the presses and trays now are wetted down before opening, scraping and dumping to prevent dried pigment residue from becoming airborne (Ex. 694-5, p. 9).

Drying. DCMA identifies drying as an operation that cannot be controlled to 50 μg/m³ because manual loading and unloading is involved (Ex. 694-8A, p. 2). However, as OSHA has shown in the previous sections, the three largest lead pigment producers have almost completely replaced manual tray drying with belt or spray drying as part of their conversion to continuous process. Thus, manual handling in drying operations is limited to situations where pigment is being produced by the batch process, which amounts to less than 20% of total industry production (Exs. 694-5, p. 4; 694-8A, p. 3; and 686I, p. 2; Tr. 1169).

In the batch process at Heubach, where manual tray drying is used, air lead levels are controlled by locating tray dumping in a ventilated booth, which has a minimum 300 fpm face velocity (Ex. 582-16, Att. II, p. 13). A hoist system is used to raise or lower cars, providing better control of resulting exposures. A monorail system instead of manual labor is used to move and stage dryer cars. In addition, dryer cars are unloaded in a separate building area. Heubach also controls exposures by rotating employees with those doing non-lead pigment dumping in adjacent booths (Tr. 1164).

In the continuous process, exposure levels are controlled to or below 50 μg/m³ in the drying operation because spray and belt dryers run as closed systems that are automatically fed and discharged using conveyors or other mechanical transport systems. In addition, at Heubach the enclosed belt dryers are operated at negative pressure and exhausted to a wet scrubber (Ex. 582-16, Att. II, p. 13).

Grinding. DCMA concedes that in grinding 50 μg/m³ already is being achieved or can be achieved (Ex. 694-8A, p. 2). To control air lead levels at Heubach, pulverizing equipment is enclosed, exhausted and placed in a separate finishing area (Ex. 582-16, Att. II, p. 11). The entire finishing area, which includes grinding, blending and packaging operations, has a central exhaust system and dust collector. Heubach also has controlled employee exposures in this operation by installing separate grinding lines, each dedicated to different product groups (Ex. 582-16, Att. II, p. 2). This reduces the need for cleanout. Exposure levels in continuous processes are controlled by the pigment being automatically conveyed to and from the grinding equipment, which eliminates the need to manually load and unload the dry pigment (Ex. 582-16, Att. II, p. 3).

Blending. In blending, exposure problems are again limited to the batch process, where employees manually load dry pigment into blenders. At Heubach the blending operation is located, along with grinding and packaging operations, in a separate area of the plant. At the blending area exposure levels are controlled by local ventilation at loading stations, where the bags are slit and their contents charged into the blender (Ex. 582-16, Att. II, p. 12).

On continuous process lines, where dry, off-grade pigment is worked back in, exposure levels are controlled by ventilating the dumping stations, dumping the off-grade pigment into a slurry rather than dry pigment, and ventilating the slurry tank.

Packaging. In packaging, identified exposure problems are limited to packing the product in paper bags. To some extent pigment producers have eliminated this problem by switching to packaging pigment in bulk bags, air pallets and shipping pigment in slurry or paste form.

Where packaging is done in paper bags, air lead levels are controlled at Heubach's 7 packaging stations by using custom-designed auger packers, which minimize the need for manual weight adjustment. At the packer spout, air lead levels are controlled by point source ventilation and an exhausted catchpan, which picks up droppings from the spout. In addition, exposure levels at the check weigh scale are controlled with point source ventilation (Ex. 582-16, Att. II, p. 11).

At HF exposure levels are controlled by dedicating each of its three production lines to a different product group, thus reducing the number of necessary cleanouts in many operations including packaging. On line A, dedicated almost exclusively to production of traffic yellow, air lead levels at the delivery tube are controlled by a circular exhaust duct with a shroud hood. On line B, in which a variety of yellow lead pigments are produced in campaigns, the packaging machine is in a hood that surrounds it on three sides and has an overhead exhaust. In addition, the weighing station is partially ventilated. On line C, which is dedicated to production of molybdate oranges, a walk-in slot hood with exhaust slots at the back of the hood encloses the bagging and weighing station (Exs. 582-17 p. 5; 694-5, p. 7).

Cleanout. The major methods currently used to reduce high exposure levels in cleanout are elimination of cleanout and reduction in its frequency.

At Kikuchi and almost completely on line A at HF product changeover cleanouts have been eliminated by dedicating each production line to a single product, traffic yellow. HF and Heubach also are controlling exposure levels in cleanout by scheduling their production in campaigns.

Where cleanout must be done, Heubach and HF are controlling exposures in certain operations by doing wet cleaning. For example, at HF clarification presses are cleaned wet (Ex. 694-5, p. 9). At Heubach, process tanks are wet cleaned and a central vacuum system with portable wet sweepers is also used to perform cleanout.

Maintenance and Housekeeping. At HF to prevent reentrainment of lead dust, work areas are vacuumed daily with a HEPA vacuum, certain floors are washed down and some work areas are kept wet. HF reports that a floor scrubber has been purchased to assist in removing pigment residues. In addition, personal vacuums equipped with HEPA filters are stationed at various points in the plant so employees can decontaminate their clothing before going to the lunchroom or leaving the premises.

At Heubach portable floor scrubbers are used to remove pigment residues and spills in the batch process area. For the continuous-process area, a vacuum is located at the bagger to clean up spills.

Major Process Modification or Substitution. HF and in large part Heubach have switched production from batch processing to various forms of continuous processing. From the viewpoint of exposure control, the fully continuous nature of the process itself is the key control. Manual handling of product, where employee exposures are the greatest, has been replaced with automated and enclosed conveyors, or the operations requiring manual handling have been entirely eliminated, except for packaging.

At Kikuchi and HF continuous processing has been combined with dedicating a production line to a single product or product group. On these lines, blending of dry pigment has been eliminated and product changeover cleanouts have been significantly reduced or eliminated. Thus, employees are not exposed to the high air lead levels customarily encountered in these operations.

In addition to converting to continuous processing, Heubach and HF are controlling exposure levels by producing a dust-reduced product, which reduces the dust-generating properties of their products by up to eight-fold (Ex. 684h, Tr. 1138, 1156, 1179). HF's dust-reduced product accounts for 25% of the company's total production, and the company is working to broaden customer acceptance of the product. In November 1987 Heubach reported that 33% of its production had been converted to the dust-reduced product and that 50% of its sales in the two months preceding the hearing had been of that product (Tr. 1139).

Finally, Heubach lists other controls which it has implemented in the batch process operations. These include exhaust hoods at all pigment dumping locations, a conveyor system for removing pigment drums, and a separate tote bin storage area. However, Heubach has not identified where in its batch operation these controls have been installed.

Additional Controls. Based upon the discussion above, OSHA has demonstrated that the operations that currently present serious problems to the industry in consistently achieving 50 $\mu g/m^3$ are packaging and clean-out, which are common to both batch and continuous processing, and to a lesser extent, dry blending, which is exclusive to batch processing.

Packaging. Generally within the industry, the packaging operation is one of the main contributors to high exposure levels for employees for whom packaging is a major portion of their job. At HF for example, spray dryer operators average 20 minutes every hour packing bags (Ex. 684h, p. 4).

OSHA recommends four methods for controlling existing lead emissions in packaging. They are: Further reducing or eliminating packaging by shipping more product in bulk or semi-bulk form; converting product to the extent possible to dust-reduced product; where necessary, purchasing and installing the new and highly accurate packaging machines and appropriately reducing the variety of packages provided customers; or enclosing each packing and palletizing station with a side-ventilated booth (Exs. 582-16; 582-90, Appendix C, p. 3; 686I, pp. 24-25; Tr. 1139, 1156, 1283). These control methods can be employed independently or in combination to achieve employee exposure levels lower than 50 $\mu g/m^3$ However, OSHA believes it is unlikely that any facility would have to extensively implement more than one of these recommended controls to achieve this level.

OSHA's preferred method for controlling exposures associated with packaging is to encourage the lead pigments industry to further reduce the amount of product that is packaged by shifting increasingly to bulk and semi-bulk shipping. OSHA believes that large producers in the industry can persuade more of their customers to accept bulk and semi-bulk shipment. However, OSHA recognizes that there may be a substantial portion of product that will have to continue to be packaged. For that portion, OSHA recommends that industry implement any one, or a combination of the three following control methods.

The first is to fully convert all product to dust-reduced product. OSHA believes that this step alone would dramatically reduce exposure levels for packagers, and other employees, since dust-reduced products reduce dusting properties of products by up to eight-fold (Tr. 1156). Reduced-dust products, which HF is producing and to which Heubach stated it would convert all of its pigments by mid-1988 (Tr. 1139), should significantly reduce exposure levels in certain dry pigment operations, including at least blending and packaging (Tr. 1156).

The second method is to mechanize and automate packaging and subsequent bag handling. For bags that do not have to be packed to precise weight specifications, conventional automatic packaging machines that fill and seal bags have been available and in use in many plants for years. Today, even for bags that require filling to precise weight specifications, automatic packaging machines are available that "can easily achieve accuracies of 0.25% and sometimes even 0.1% *" (Ex. 582-90, Appendix C, p. 3). This means that for a 50-pound bag, the machine can automatically and accurately fill the bag to within 2 ounces and less and can then seal the bag, all routinely and without manual intervention. Based upon industry statements regarding the weight tolerances required by some customers (Tr. 1187), OSHA concludes that nearly all orders can be bagged on these more accurate packaging machines. The number of bags that might still require manual weight adjustment, therefore, should be extremely small.

Consequently, if achieving precise weight specifications is the only problem in bagging, emissions associated with manual interventions can be strictly controlled or effectively eliminated by mechanization. However, if customers seek many different kinds of packages, this may cause a problem, because no single machine can handle a wide variety of packages. The industry, of course, could satisfy all the packaging demands of customers and fully automate packaging by purchasing and installing a sufficient number of the more advanced bagging machines.

If the cost for such automation were too high, industry could reduce costs if it provided customers with a more limited variety of bags. This would reduce the number of advanced automatic bagging machines needed. In any event, the technology exists and is available.

With regard to handling the bags after they have been filled and sealed, OSHA believes that such handling can be mechanized as well. Bags can be mechanically flattened and conveyed (Tr. 1283). Mechanization of this phase of bag handling should substantially reduce worker exposure from breathing bags, because workers can be removed from proximity to these emission sources. The emissions from flattening, for example, then can be controlled by local exhaust ventilation.

The last recommended method for controlling employee exposure levels in this operation to below 50 $\mu g/m^3$ is simply to improve the capture of emissions at the existing level of mechanization of production by isolating the entire operation and providing effective local exhaust ventilation (Ex. 686I, pp. 24-25). This control strategy needs to be accompanied by the implementation of strict work practices and preventive maintenance to assure that local exhaust ventilation is effective.

Heubach agrees that better ventilation, among other things, is needed and suggests that an increase in local exhaust around each bag packing machine and enclosure of each packaging station in its own ventilated room in and of itself would reduce bagging operators' exposures to about 100 $\mu g/m^3$ (Ex. 582-16). But it also is important that practices that disrupt effective ventilation and disperse lead be corrected. At HF on line C, for example, a portable cooling fan, which could entrain dust generated by manual weight adjustments, was aimed to blow directly across the weighing station (Ex. 684h, p. 4).

To be effective, this control strategy has to take account of a number of factors. Each of the manual tasks in packaging provides a potential source of lead exposure. These tasks extend all the way from placing the bag on the bagging machine, through weighing the bag contents, adjusting content weight, and sealing the bag, to cleaning the outside of the bag and then stacking it on a pallet. Each of these tasks must be effectively exhausted, and the worker must be trained to carry out each task within the capture range of the ventilation and in a manner likely to minimize the amount of lead emission. Obviously, the local exhaust also must be properly designed, installed, and maintained. It also must be properly located and have sufficient capacity to handle the job.

Meridian agrees with OSHA that each of the industrial hygiene problems in packaging can be overcome by using an appropriately configured ventilation system and by avoiding certain work practices that tend to defeat ventilation (e.g., carrying pigment out of range of the ventilation in an open container or bag; not exercising care in weight adjustment, which can result in pigment being spilled; using a broom to sweep pigment away from the work station or off bags; or improperly using man-cooling fans) (Ex. 686I, pp. 24–25). Ventilation should be configured to encompass all packaging tasks, including bag filling, weighing, and manual weight adjustment (Ex. 686I, p. 24). Since these operations can be done in a relatively small space, a large side-ventilated booth could be configured to ventilate all of them. Such a booth would allow the operator to face into the booth at all times and to move from side to side while packing the bags.

This system should also include LEV slots to capture dust that escapes around the nozzle and an exhausted pan (grill) beneath and in front of the bag as it is being filled, to catch any dust which falls from the bag or the machine nozzle. The hood also should be designed to capture dust from bags on the pallet. There should be a vacuum hose for the operator to use to pick up spilled pigment.

According to Meridian, a system with the capacity of 4,000 cfm per packaging station should be sufficient to control the packers 8-hour TWA exposure to or below 50 $\mu g/m^3$ (Ex. 686I, p. 28). Such a system involves only conventional engineering technology and industrial hygiene practices (Ex. 583–13, Ex. 689–13). Numerous consultants and engineering firms are capable of providing the services necessary to implement such a system.

Several other available controls and work practices, which will be discussed at greater length below, can achieve additional further reductions in air lead levels at packaging stations and elsewhere. For example, strict implementation of improved housekeeping programs can further reduce air lead levels. In addition, Meridian's recommendation for installing automatic palletizing lines, as well as for several other controls and practices to reduce air lead levels in packaging (Ex. 686I, pp. 24–25), should be effective in at least some plants.

Cleanout. High exposure levels in product changeover cleanout can be significantly reduced by one or a combination of the following methods: completely eliminating cleanout, reducing its frequency, or improving its control.

The ideal way to handle the exposure problems associated with cleanout is to dedicate a production line to a single product and thereby eliminate the need for product changeover cleanout. HF examplifies this approach, with a line almost exclusively dedicated to traffic yellow (Ex. 684h, p. 3). The method may be applied more broadly throughout the industry if plants install more production lines with smaller capacities, each dedicated to a single product.

A second approach is to reduce the frequency of cleanout, which may involve scheduling longer runs of particular products between cleanouts to build up larger inventories between runs. It also may involve reducing the amount of product that is not produced by the campaign method. It also may be possible to achieve lower frequency by reducing the number of products produced and persuading customers to accept a more limited palette of hues and shades.

OSHA recognizes that these two approaches may not be feasible for small batch processes because of the need for frequent product changeover. For these processes, as well as for others, a third approach is available to improve the control of cleanout. This has two fundamental elements: designing new equipment so that it accumulates less residue and is easier to clean; and developing and implementing better and stricter work practices to minimize the escape of dust when equipment is first opened and thereafter during actual cleanout. New process equipment should be designed to eliminate crevices and corners from which it is difficult to remove material; one lead chemicals plant visited by OSHA reported that it already was taking this approach to facilitate housekeeping (Ex. 684b, p. 10). This design practice is also followed in the dairy, food and pharmaceutical industries. Water lines, air lines, vacuum lines, and possibly other devices should be built into the equipment to facilitate cleaning. Where possible, cleanout should be done by the mechanical action of water. Where that cannot be done, pigment residues to the extent possible should still be wetted and kept wet while cleanout is taking place. Improved work practices also may include the elimination of inappropriate tools. Thus, at HF, for example, the use of air lances, which rely upon compressed air for cleaning, should be discontinued (Ex. 686I, p. 25). If this final approach does not prove effective in reducing exposure levels to below 50 $\mu g/m^3$ in small batch processes, OSHA recognizes that employers may have to rely upon respirators for supplemental protection of employees.

Blending. In the batch process, and to a lesser degree in the continuous process, dry, finished pigments may be blended to meet product specifications. Blending in the batch process may produce high exposure levels (See Table 1, above, exposure levels for Inorganic Finishing—Process Operator and Ex. 640, job description). The best way to handle that exposure problem is, to the extent possible, to convert from batch to continuous processing. If production must remain by batch, Heubach recommends investigating the use of an automatic bag slitter and dumper to control the exposures (Ex. 582–16, Att. II, pp. 12, 17). Heubach once experimented unsuccessfully with such a unit, but has done nothing in this regard for 10 years. OSHA also recommends automating material transfers. Automatic bag slitters and automated material transfer equipment are available and have proven effective in reducing employee exposures to toxic substances such as asbestos (51 FR 22655; June 20, 1986).

In the continuous process at HF where pigment is reblended to work in off-grade product, the company has not reported exposure levels to be a substantial problem. Meridian believes that ventilation will be sufficient to adequately control exposures if bags are opened and dumped within the capture range of the ventilation system (Ex. 686I, p. 24). This has proven effective in the manual debagging of asbestos fibers (51 FR 22655; June 20, 1986).

In addition to the specific engineering and work practice controls directed at controlling exposure levels in the particular problem operations discussed above, lead pigment plants can and should take a number of more generalized steps to reduce exposures throughout the plant.

Housekeeping, Work Practices and Preventive Maintenance. Housekeeping, work practices, and preventive maintenance are critically important controls whose importance is frequently not adequately recognized by employers. Failure to develop and use rigorous housekeeping, good work practices, and preventive maintenance can destroy the effectiveness of otherwise adequate engineering controls.

Central vacuum systems should be installed with outlets widely and conveniently located and hoses always available so that both operators and maintenance personnel can promptly clean up any spills. When about to open equipment for inspection, cleanout, or maintenance, where escape of dust is likely, workers should have a hose ready to capture escaping dust. In addition, in high dust operations such as packaging and cleanout, employees should regularly use a vacuum hose to remove loose dust from their clothing before they contaminate themselves and other employees. To adequately control such loose dust, it may not be enough to only clean dust off employees before they enter the lunchroom, which is a specific requirement of the lead standard (29 CFR 1910.1025 (i) (4)(iv)).

In accordance with paragraph (e)(3)(ii)(F), written work practice programs, including housekeeping procedures, should be developed by each employer. Housekeeping instructions should be prepared and adherence to them enforced by employers, with scheduling and checkoff of regular cleaning of all areas of the plant where dust can collect. These instructions should be appropriately detailed. If necessary, hundreds of sites, pieces of equipment, parts of equipment, obscure corners, etc., should be listed in the instructions to assure that they are cleaned regularly. Written work practices should be developed for activities that could cause dust emission or later dust generation when spilled slurry dries.

It is impossible to overemphasize the importance of housekeeping and work practices. A small amount of dust dispersed throughout a building's air space can raise airborne levels.

Nevertheless, housekeeping at the HF plant visited by OSHA was poor (Ex. 684h, pp. 5–6). Floors, windows, equipment surfaces, and walls were covered with dried pigment, the colors of which matched the pigment colors being produced in the area. OSHA believes poor housekeeping may account for much of the plant's difficulty in controlling exposures and, more specifically, may account to a considerable extent for the plant's inability to hold levels consistently below 50 $\mu g/m^3$ for spray dryer operators.

In addition to implementing good work practices for housekeeping and cleanup of spills, written work practices should be developed to cover all tasks that might result in the escape of dust into the workplace. Key tasks requiring careful adherence to appropriate rules are packaging, clean-out, blending, batch operations where the operators work with filter presses and tray dryers, and maintenance work. OSHA believes that development and enforcement of good housekeeping and work practices are absolutely essential to meet the strict PEL of the lead standard.

Ventilation. Effective engineering controls, like total enclosure, local exhaust ventilation (LEV), and general ventilation, need to be applied to emission sources to contain and capture the contaminant and thereby reduce lead exposures. Although much more quantitative information is needed to state with any precision how much reduction of particular exposure levels would be achieved by enhancement of specific ventilation systems, OSHA has no doubt that ventilation can be improved in some operations to achieve major reductions in worker exposure. Where ventilation is inadequate, cross contamination can become a serious problem.

Enclosure. Enclosures, often operated at negative pressure, are constructed around single pieces of equipment or groups of equipment. Docket entries describe use of this standard engineering control technique by Kikuchi, Heubach, and HF (Exs. 476–264; 582–16; 582–17). Sometimes, enclosure consists simply of installing tops on vessels or closing up other openings to minimize the amount of air that will be drawn through the equipment when it is connected to an exhaust system in order to maintain negative pressure in the equipment. Reaction vessels, slurry tanks, screw conveyors and elevators can be handled in the latter fashion. In other cases, box-like enclosures are constructed around the equipment.

Prevention of Cross Contamination. Cross contamination of one area with airborne contaminant from another can be prevented by isolating either area to keep a contaminant in or out or by using local exhaust ventilation at the source to capture lead emissions before they can escape into the general work environment. DuPont, the prior owner of the Heubach plant, for example, isolated the grinding, blending and packaging operations in the batch process (the so-called "finishing" operations) in a separate building. Heubach has also suggested enclosing each of seven bag packing stations in separate ventilated rooms (Ex. 582–16, Att. II. p. 11).

Major Process Modification or Substitution. There also are several available processing alternatives that will substantially reduce exposure levels, most notably conversion to continuous processing and shifting production to reduced-dust pigments.

Some batch operations can be converted to continuous processing. Others, because of the small quantity of product involved, for all practical purposes cannot. However, some of these latter may be converted to semi-continuous processing, which may offer sufficient flexibility to produce smaller amounts of pigments than can be produced economically by fully continuous processing. In any event, the conversion provides opportunities to eliminate manual handling of the product and the high exposures associated with such handling.

Thus, the high exposures associated with a batch process that employs presses, tray dryers, containers for interim storage, manual transfer of product between operations, etc. can be eliminated and the frequency of clean-outs reduced by replacing these operations with more automated and continuous operations. HF for example, replaced batch filtration and tray drying with drum filtration and spray drying, continuous operations that do not require operators to manually load or unload product and transport it to the next operation (Ex. 476–244). HF however, retains the flexibility in this semi-continuous process to economically produce relatively small quantities of product without the startup losses typically associated with fully continuous processing. HF's approach is one route, short of adopting Heubach's fully continuous approach, for a company to avoid the exposure problems of batch processing, while retaining some of its flexibility. Heubach, on the other hand, expects to convert all of its production to continuous processing within the next year or two (Tr. p. 1187). This would mean that within 2 years approximately 95% of total industry production will be by some form of automated continuous processing.

In addition to converting to fully or semi-continuous processing, as indicated above, leading firms in the industry also are increasingly producing a dust-reduced product, which reduces dust generated up to eight-fold (Ex. 684h, Tr. 1156). This is a potentially major development, which should substantially reduce exposure levels in operations that are performed after the conversion to dust reduced product, like packaging, and probably during cleanout of these operations.

Heubach, as stated above, expected to produce only dust-reduced products before the end of 1988. Harshaw-Filtrol's dust-reduced product currently represents 25% of production, and the company is seeking to broaden customer acceptance so it too can further expand production of dust-reduced pigments.

Technological Feasibility Conclusion. Based upon its own independent analysis of the evidence in the record and the Agency's experience and expertise, OSHA determines that achieving the PEL of 50 μg/m³ is technologically feasible by engineering and work practice controls in the lead pigments industry as a whole. OSHA's determination is based upon the following elements.

OSHA has shown that air lead levels in most operations in the lead chromate pigments industry already are at or below 50 μg/m³ most of the time. This assessment is supported both by industry statements and Meridian's analysis. For example, in HF's final submission to the record, the company stated that "50 μg/m³ is generally achievable by engineering controls and work practices in areas of the manufacturing process except for the dry end of the process (the job classification designated as the 'Spray Dryer Operators' at our facility) and for maintenance or clean-out work"(Ex. 694-5, p. 34).

At the two major producers in the industry at least 69% of the lead exposed employees work in operations for which geometric mean exposures already are below 50 μg/m³ or a majority of sampling results already are at or below 50 μg/m³ These two plants account for approximately 88% of total production and 69% of total lead-exposed employees in the industry. In addition, in a third plant, Kikuchi, which produces only traffic yellow, as early as 1980 all operations were at or below 50 μg/m³ with the exception of packaging. In packaging, where exposures were not far above 50 μg/m³ Kikuchi management anticipated achieving 50 μg/m³ in the immediate future (Ex. 476-264). Thus, for 3 of 5 plants in the industry 50 μg/m³ is largely being achieved. The remaining 2 plants, which account for less than 10% of total industry production, chose not to participate in this rulemaking and did not submit any data to the record.

Industry has not disputed the feasibility of achieving 50 μg/m³ in a plant or production line dedicated to traffic yellow. This is important since approximately 20 million pounds, nearly one-third of total industry production, is traffic yellow, and Kikuchi produces only one-fifth of this (Tr. 1132-33). Consequently, other plants in the industry, notably including Heubach, also must be involved in significant production of traffic yellow, which is relatively easily controlled to 50 μg/m³

For all operations already at or near 50 μg/m³ OSHA believes that, if existing controls are not always adequate to routinely achieve air lead levels at or below 50 μg/m³ a modest improvement in controls such as improved housekeeping, better work practices, better preventive maintenance and perhaps the addition of simple engineering controls will assure that exposure levels are consistently controlled to or below 50 μg/m³ In addition, OSHA and Meridian have recommended a number of specific engineering controls, work practices, and preventive maintenance and housekeeping measures that OSHA believes will bring exposure levels down to or below 50 μg/m³ in all other operations, as well, with the probable exceptions of cleanout and extraordinary maintenance.

At various times DCMA has claimed that 50 μg/m³ is not technologically achievable by implementing engineering and work practice controls in a total of five production and maintenance operations. The five are drying, blending, packaging, extraordinary maintenance, and cleanout (Exs. 582-18. pp. 12-13; 694-8A. pp. 11-13). However, OSHA has demonstrated in previous sections that in two of these operations, drying and maintenance, 50 μg/m³ already is being achieved at Heubach. With regard to the limited number of maintenance operations where 50 μg/m cannot be achieved by means of engineering and work practice controls, which may be what DCMA refers to as "extraordinary maintenance. OSHA traditionally has recognized that such employees will have to rely on respirators for supplemental protection.

In a third operation, blending, OSHA also has shown that exposure levels at both Heubach and HF in continuous processing are not a problem.

As for packaging, OSHA has shown that nearly one-half of the employees at HF who perform packaging operations are spray dryer operators who package traffic yellow, which is the single largest-volume pigment produced in the industry. In 1986-87 the two-year average air lead level for these operators was 47 μg/m³ In light of similar sampling results from Kikuchi, this suggests that packaging traffic yellow pigment can be relatively easily controlled to 50 μg/m3. OSHA, for example, believes that HF can bring its line A into compliance by isolating it from the two other lines if further engineering controls are still necessary.

In light of these realities, OSHA has focused its analysis on the remaining "problem operations". blending when part of a batch process, other packaging, and cleanout.

With regard to blending in batch processing, OSHA has demonstrated that Heubach is solving the associated exposure problem by effectively eliminating batch processing in a shift of all production to continuous processing (Tr. 1187). HF apparently also does little or no dry batch blending. Elsewhere, where batch processing may continue to be performed, OSHA believes that the blending operation can be largely automated by installing automatic bag slitters and dumpers and automatic material transfer conveyors (Ex. 582-16, Att. II, pp. 12, 17. and see 51 FR 22655; June 20, 1986). Alternatively, OSHA has shown that some additional blending can be performed wet, as at HF to adequately control exposure levels (Ex. 684h, p. 2). With these modifications, OSHA believes exposure levels in blending can be controlled to or below 50 μg/m³

Concerning packaging in general, OSHA recognizes that this is a difficult operation to control and that effective control demands persistence in implementing strict work practices, including daily attention to proper housekeeping. Nevertheless, if industry implements the recommendations OSHA and Meridian have made for improved ventilation, work practices, and housekeeping, OSHA believes exposure levels can be brought to or close to 50 μg/m³ With the increasing use of low-dust pigments, which reduce dust generation by 8-fold, OSHA is confident that packaging can be controlled to or below 50 μg/m³

Finally, product changeover cleanout is probably the most difficult operation in the industry to control. Industry's shift to production of a low-dust product should dramatically reduce exposure levels in cleanout of downstream operations. In addition, OSHA has recommended that cleanout be eliminated where possible, or that its frequency be reduced and that the sources of exposure be better controlled while it is being done. Where it remains necessary to perform such cleanout, OSHA believes equipment must be carefully opened and cleaned. The use of compressed air for cleaning should be discontinued and employers should rely instead upon water cleaning methods and keeping the pigment wet to the extent possible, or upon alternative mechanical methods (Ex. 686I, p. 25). If these recommendations are implemented, OSHA believes that exposure levels associated with this operation will be significantly reduced, conceivably to 50 $\mu g/m^3$

For all of the above reasons, OSHA concludes that the PEL of 50 $\mu g/m^3$ is technologically feasible for the lead chromate pigments industry as a whole.

For product changeover cleanout and for the limited amount of packaging of pigment in bags that requires manual weight adjustment, OSHA recognizes that it may not be possible to reach 50 $\mu g/m^3$ on a consistent basis. Even if this is so, OSHA points out that the resulting percent of total employees exposed above 50 $\mu g/m^3$ would be quite small. At HF for example, less than 17% of employees would be exposed above 50 $\mu g/m^3$

In any event, since OSHA has found the 50 $\mu g/m^3$ PEL technologically feasible for the industry as a whole, employers will be required in product changeover cleanout and packaging that requires manual weight adjustment, as well, to control exposure levels to the PEL or the lowest feasible level by means of engineering and work practice controls. Where all feasible engineering and work practice controls have been implemented and employees performing these tasks are still exposed above the PEL as an 8-hour TWA, then, so long as all other sources contributing to the 8-hour TWA have also been controlled to 50 $\mu g/m^3$ or the lowest feasible level, employers will be required to provide these workers with respirators for supplemental protection while they are performing these tasks.

Industry does not agree with OSHA's determination that the 50 $\mu g/m^3$ PEL is technologically feasible.

Although all the industry representatives in the 1987–88 phase of this rulemaking have recognized that 50 $\mu g/m^3$ either is already being achieved or can be achieved in most of the operations most of the time by implementing engineering and work practice controls, nonetheless, DCMA, Heubach and HF persist in arguing that a PEL of 50 $\mu g/m^3$ is infeasible because it cannot be achieved in a few operations like cleanout and packaging. OSHA does not have to prove that the PEL has been or can be achieved in all operations all of the time. A standard is technologically feasible if it can be achieved in most of the operations most of the time. The Agency has demonstrated that 50 $\mu g/m^3$ either has been or can be achieved in all operations except perhaps cleanout and extraordinary maintenance, which, in any event, are types of operations in which OSHA has permitted respirator use to supplement engineering controls.

DCMA also argues that OSHA cannot guarantee that its recommended additional controls will work. However, with regard to some of the operations in which DCMA contends 50 $\mu g/m^3$ cannot be achieved, OSHA has shown 50 $\mu g/m^3$ already is being achieved (i.e., drying and maintenance). Further, current exposures for some of the remaining operations are not very high at some plants (i.e., less than 100 $\mu g/m^3$) and OSHA has pointed out feasible controls that have not yet been implemented which are capable of reducing exposure levels below 50 $\mu g/m^3$ In any case, the courts have ruled that the OSH Act does not require OSHA to prove to an absolute certainty that its recommendations will result in the PEL being achieved all the time. *USWA* v. *Marshall*, 647 F.2d at 1266. On the contrary, the courts have held that OSHA can require industry to meet PELs never attained anywhere. OSHA believes it has more than satisfied its burden of proving technological feasibility for the lead chromate pigments industry.

DCMA also has argued that cleanout should not be included in the calculation of the 8-hour, time-weighted average (TWA) for purposes of determining whether an employee is exposed above the PEL. OSHA is sympathetic to the notion that cleanout in some respects is similar to maintenance. OSHA traditionally has recognized that certain maintenance operations cannot always be controlled to the PEL by work practice and engineering controls alone. In such circumstances, OSHA has also recognized that supplemental reliance upon respirators to protect workers may be necessary.

Nonetheless, OSHA cannot exclude from the calculation of TWAs an operation like cleanout, which in this industry appears to be performed by production workers. For these employees, cleanout periodically constitutes an undifferentiated portion of their 8-hour TWAs. Under such circumstances, an exclusion of cleanout activities would make interpreting company exposure data and enforcing compliance with the PEL very difficult for those employees who perform cleanout. At HF for example, all production workers perform equipment cleanout during product changeovers and thus HF's entire workforce would qualify for such an exemption.

If it proves to be infeasible to consistently achieve 50 $\mu g/m^3$ in cleanout, industry must implement engineering and work practices to achieve the lowest level feasible in that operation. If exposures for employees who perform cleanout still exceed an 8-hour TWA of 50 $\mu g/m^3$ then, so long as all other sources contributing to the 8-hour TWA have also been controlled to 50 $\mu g/m^3$ or the lowest feasible level, employers will be required to provide these workers with respirators for supplemental protection while they are performing cleanout.

In addition, industry has criticized Meridian's estimates of reductions in exposure levels to be expected from recommended additional controls as not grounded in quantitative data. In fact, where useable quantitative data were available in the record, Meridian relied upon it. Meridian, for example, did analyze the data in the record and also participated in a recent site visit to HF Only after that did Meridian rely upon an expert panel of certified industrial hygienists to independently assess the expected reduction in exposure levels that would result from implementing certain recommended additional controls. Based upon all these factors, Meridian concluded that exposure levels in all operations could be controlled to or below 50 $\mu g/m^3$ except for cleanout and certain maintenance operations. In any event, OSHA believes it is appropriate to rely upon expert opinion and experience if better quantitative data are not available. Reliance upon expert opinion under such circumstances is not unique to this rulemaking. OSHA has previously relied upon expert opinion and experience under similar circumstances in all of its past rulemakings.

OSHA believes Meridian has made a reasonable assessment within prevailing time and resource constraints. In any event, OSHA has not primarily relied upon Meridian's analysis or estimates. Rather, OSHA has conducted an independent analysis of the data and looked to Meridian primarily for confirmation.

Finally, HF argues, first, that work practices cannot be improved, and second, that engineering controls are not correlated with exposure levels. OSHA rejects these arguments. The principles of industrial hygiene and the exposure data from the lead pigment and other industries indicate that this is not the case. OSHA is assured that if HF conducted an industrial hygiene survey, as recommended, the company would recognize specific ways in which its work practices can be improved and in which implementing additional engineering controls would reduce exposure levels.

For example, with regard to engineering controls, HF argues that exposure levels on line A, which has relatively crude engineering controls, are lower than on lines B and C, which have better engineering controls (Ex. 694-5, p. 9). The company, therefore, suggests that better engineering controls won't necessarily further reduce exposure levels. If everything else were equal, this might be a plausible argument. However, everything else is not equal. Line A produces traffic yellow, almost exclusively. Consequently, as OSHA indicated previously, there are fewer cleanouts on that line, the nature of the product apparently causes less generation of dust, and packaging probably requires less attention to meeting narrow weight specifications.

HF has also stated that the molybdate oranges being produced on line C, which has the highest average exposure levels, is a dustier product than either of the products produced on lines A or B. In addition, HF has recognized that the work practices of one of the spray dryer operators on line C accounts for his higher exposures and contributes to higher average exposure levels on line C (Ex. 684h, p. 7). Thus, neither the facts nor the principles of industrial hygiene support HF's position.

With regard to work practices, HF provides no evidence to support its assertion that work habits cannot be changed and poor work practices cannot be corrected. OSHA considers this view unacceptable, since it it likely to become a self-fulfilling prophecy. OSHA, along with the industrial hygiene community, believes that good work practices should be taught to workers and retaught as often as necessary. If the work practices are sensible, and the company communicates to workers its seriousness about requiring that such work practices be followed, OSHA has no doubt that workers will follow them. No matter what efforts a company may make to implement effective engineering controls, if its work practices are poor those controls are likely to be rendered ineffective. Indeed, HF has made this very point with regard to one of its employees on product line C.

For all of the above reasons, OSHA concludes that the PEL of 50 $\mu g/m^3$ is technologically feasible in the lead pigments industry.

Industry Profile. Lead Pigments fall under SIC classification 2816. The principal lead chromate pigments are chrome yellow, chrome orange, molybdate chrome orange, and chrome green.

There are five domestic producers of lead chromate pigments, following the withdrawal of two manufacturers, American Cyanamid and Ciba-Geigy, from the lead chromate industry [Ex. 582-161] and the announcement of another, NJZ Colors, that it will abandon its lead chromate production activities [Ex. 694-8, p. 3].

Lead chromate production represents 100 percent of corporate sales for Kikuchi, with about 4 million pounds of capacity. Lead chromates constitute 50 percent of sales for Heubach, with about 35 million pounds of capacity, 30 percent of sales for Harshaw/Filtrol Partnership, with about 20 million pounds of capacity, and 30 percent of sales for Wayne Chemical, with about 3 million pounds of capacity [Tr., p. 1132]. No information was given for the fifth producer, NL Chemicals; it is assumed that their lead chromate capacity is relatively small [Ex. 686i, p. 3]. All firms produce lead chromates in only one facility, though Harshaw/Filtrol and NL chemicals are multi-facility corporations.

The number of workers exposed to lead in the manufacture of lead pigments was reported to be 310 by the Dry Color Manufacturers Association (DCMA) [Ex. 582-18, pp. 14-15]. This total seems consistent with the 1982 estimate of 665 workers. The 1982 estimate was based on twelve producers.

In assessing price trends for lead pigments, OSHA found the concept of unit value to be the accepted measure of value by both the industry and government agencies which collect and report data on lead pigments. Unit value is derived as total value of product divided by total volume, expressed in cents per pound. For example, in 1987 the 3,354 metric tons (7,392,216 lbs.) of chrome yellow pigment which were imported for consumption had a total value of $5,573,000 [1987 Minerals Yearbook, Bureau of Mines, U.S. Department of Interior]. Unit value for this product was thus 75.4¢ per pound. OSHA compared unit value data as described below.

Published data indicate that both the average price of primary lead and the unit value of imported chrome yellow pigment increased from 1985 to 1987 [1987 Minerals Yearbook, Bureau of Mines, U.S. Department of Interior]. (Chrome yellow represents approximately one-third of industry capacity.) Unit value of imports were 70¢ per pound in 1985, 72¢ per pound in 1986, and 75¢ per pound in 1987 Commerce Department data indicate that domestic unit values of this pigment decreased from 1985 to 1986, from 91¢ per pound to 75¢ per pound, but then increased in 1987 rising to 78¢ per pound [Current Industrial Report, Inorganic Chemicals (MA28A), Bureau of the Census, U.S. Department of Commerce]. Data submitted by Heubach show unit values decreasing over the same three year period from 84¢ to 76¢ to 75¢ per pound [Ex. 582-16].

Unit value of molybdate chrome orange declined from $1.25 per pound in 1986 to $1.16 per pound in 1987 [Current Industrial Report, Inorganic Chemicals (MA28A), Bureau of the Census, U.S. Department of Commerce].

This pigment is produced in quantities about one-quarter to one-third that of chrome yellow.

Production of lead chromate pigments dropped off about 30 percent between 1981 and 1982 but remained stable through 1985 [Ex. 579, p. 7]. No data on production levels or shipments were provided by industry commenters at the public hearing. However, it was noted that five companies currently are operating at increased production levels [Ex. 582-16; Ex. 582-17 p. 7]. Domestic shipments of chrome yellow declined 7 percent in 1986 but improved by this same percentage in 1987 Shipments of molybdate chrome orange declined 6.5 percent in 1987 [Current Industrial Report, Inorganic Chemicals (MA28A), Bureau of the Census, U.S. Department of Commerce].

Imports of chrome yellow increased over 50% from 1980 to 1985 while imports of chrome green rose from 20 tons in 1983 to over 200 tons in 1985 [Ex. 579, pp. 10-12]. Heubach, Inc. noted, however, that "at the present time, the domestic chromate and molybdate industry is a net exporter" [Ex. 582-16, response 21]. This apparent conflict was addressed by Meridian:

> Meridian's analysis indicated that, as of 1985, the unit value of imports of chrome yellow had fallen to more than 20 percent below the unit value of domestic production, and that imports (especially chrome green) were increasing. 1985 was also a peak year for the value of the dollar relative to foreign currencies, which tended to increase import pressure. Since 1985, however, the value of the dollar has fallen by about 30 percent This should more than eliminate the price advantage of imports, and it should generally reduce the level of import penetration. [Ex. 686i, p. 9].

The effect of the devaluation of the dollar is apparent when unit values for imports and domestic shipments of chrome yellow are compared for the years 1985 through 1987 As noted above, the unit value of imports in 1985 was 70¢ while that of domestic shipments was 91¢. In 1987 the two values were practically the same, at 75¢ for imports and 75¢–78¢ for domestic shipments. Additionally, since it is believed that imports may be undervalued to avoid tariff, foreign producers apparently no longer enjoy a price advantage. This evidence, along with the fact that U.S. producers ship over two times the metric tonnage of chrome yellow that is consumed here, supports the claim by Heubach that the U.S. chrome pigment industry is a net exporter.

Demand for these pigments is "heavily dependent on activity in the automotive industry, construction, equipment manufacturing, and the plastics industry" [Ex. 582–17 p. 7]. These industries all experienced substantial cyclical decline in the 1982 recession [Ex. 579, p. 9]. At the public hearing, Mr. William M. Arnheim of Heubach, Inc. testified that lead chromates are used primarily for road marking, which consumes nearly 20 million pounds of lead chromate yellow each year [Tr., p. 1133]. (Mr. Arnheim also noted that the "vast majority of the paints and coatings used in these applications are purchased and applied at taxpayers' expense" [Tr., p. 1134]). Other major consumer markets identified were plastics coloring (over 10 million pounds annually), paints and coatings (about 10 million pounds annually), and inks (5 to 7 million pounds annually) [Tr., pp. 1135–1137].

Acceptable substitutes for lead chromate pigments are scarce, but they do exist and are generally more expensive, up to twenty five times more costly. One producer of lead chromates reported that its customers are looking for organic substitutes [Ex. 684h]. Substitutes have been criticized on appearance and quality [Ex. 582–16]. There do not appear to be substitutes for lead chromate pigments at any cost for industrial top coatings, traffic paints, and road markers [Ex. 579, p. 10].

While Meridian reported that demand can probably be expected to erode in the long run, the information presented above does not suggest a potential decline. For one-third of this industry's product, traffic paint, demand is high [582–17]. Further, the limited availability of substitutes and the use of lead chromates in the construction and automotive industries indicate continuing demand.

Commerce Department (Bureau of the Census) data indicate that the value of shipments of organic pigments, which are also produced by Heubach and Harshaw/Filtrol and do not contain lead, increased approximately 8 percent in 1986 [1986 Annual Survey of Manufactures, Bureau of the Census, U.S. Department of Commerce]. Prices increased by 3.8 percent that year [Producer Price Index, Bureau of Labor Statistics, U.S. Department of Labor, December, 1986]. Prices for these products increased approximately 9 percent in 1988 [Producer Price Index, Bureau of Labor Statistics, U.S. Department of Labor, November, 1988].

Financial information was available from Dun & Bradstreet for SIC 2816, the industry code which covers the lead chromate pigment producers [Ex. 579, p. 18]. However, Heubach, Inc. noted that statistics for SIC 2816 are not necessarily representative of the lead chromate pigments industry, as the lead pigment producers make up only a small portion of the SIC (Mr. William M. Arnheim, representing Heubach, Inc., testified at the informal hearing that "lead chromates can hardly constitute as much as 2 percent of the pounds or dollars sold under SIC 2816" [Tr., p. 1133]). Financial information offered by Heubach noted that "for the period 1984 through 1986, rates of return on assets and net worth declined by more than 55%" [Ex. 582–16]; however, no specific rates were provided by the company. Harshaw/Filtrol provided profit data at the facility level for the years 1984 through 1987 [Ex. 694–5, p. 6]. In each of the last three years for which data were available, losses were reportedly sustained by their lead chromate operations. In 1987 losses represented 5.6 percent of lead chromate sales. Losses for 1985 and 1986 were 10.2 percent and 11.0 percent of sales, respectively.

While the Harshaw/Filtrol information suggests low or non-existent profitability, OSHA does not believe that these data provide an accurate representation of the current financial condition of this industry. Heubach's decline in profitability from 1984 through 1986 was most likely due to the overvaluation of the dollar, but, as explained above, circumstances have changed. Additionally, while Heubach reported a decline in profitability of 55 percent, no indication was given that the firm was not profitable. Harshaw/Filtrol's data also indicate poor performance, but substantial improvement is indicated for 1987 The information presented above indicates continued demand for the products of this sector and domestic product prices which are internationally competitive.

Since financial data supplied by industry were not adequate to allow OSHA to estimate current rates of profitability for the lead chromate industry, Dun and Bradstreet financial statistics were used to compute economic impacts.

Costs of Compliance. In developing its cost estimates, OSHA found that information supplied by commenters made it possible to project compliance costs for four of the five plants in the industry. Kikuchi Color & Chemical Corporation should incur no incremental costs due to this regulation [Ex. 476–264]. Detailed annual costs for two facilities Heubach, Inc. and Harshaw/Filtrol (HF), are shown in Table 3. As noted in the table, certain estimates may be overstated due to the effect of dust reduced products. This effect is addressed below.

TABLE 3.—ESTIMATED COSTS OF COMPLIANCE FOR PLANTS IN THE LEAD CHROMATE PIGMENTS INDUSTRY

	Annualized capital [a]	Annual O&M	Total annual
Heubach			
Isolation—Belt dryer [b]	$9,400	$0	$119,400
Exhaust—Belt dryer [b]	2,936	2,000	4,936
Bagging [b]	199,550	153,000	352,550
Housekeeping	1,718	14,090	15,808
Annual cleaning		50,000	50,000
Total	213,603	219,090	432,693
Harshaw-Filtrol			
Blending [b]	17,616	12,000	29,616
Bagging [b]	63,858	43,500	107,358
Isol—packaging	35,250	0	35,250
Baghouses	26,424	18,000	44,424
Housekeeping	1,145	9,970	11,115
Annual cleaning		50,000	50,000
Central vacuum	7,340	5,000	12,340
Total	$151,633	$138,470	$290,103

[a] Capital costs were annualized using a 10% financing cost and a projected useful life of 12 years. For partitioning and isolation, a useful life of 20 years was estimated.

[b] Cost estimates may not reflect dust reduced products. See text.

Source: Occupational Safety and Health Administration, Office of Regulatory Analysis.

The Heubach facility will incur costs principally for the packaging of product and additional housekeeping measures. The Heubach facility has a total of seven packaging stations. Costs for bagging were estimated based on isolation and ventilation for five semi-automatic packers and on the purchase of two fully automated packers. Costs for ventilation and isolation for these stations were estimated to be $1.2 million ($175,000 each) [Ex. 582-16]. Automatic palletizing equipment was also recommended. Evidence in the public record indicates that the cost of such a device would be $25,000 [Ex. 582-17]. Total costs for palletizing equipment for five semi-automatic packaging stations would be $125,000. Automated packers were also recommended, and OSHA assumes that two such baggers will be implemented at this facility. Costs are estimated to be $85,000 per device, including packer and palletizer. [Ex. 582-17]. Total costs for automated baggers at this facility are thus estimated to be $170,000. Costs for housekeeping equipment were also included for this facility (three portable vacuum sweepers at $3,900 each [Ex. 686i, p. 30]. Since the company has expressed its intent to phase out batch operations within two years, no costs will be incurred for this portion of their facility [Tr., p. 1187]. Evidence in the public record also indicates that a central vacuum system is already in place in this facility [Ex. 582-16].

In addition, Heubach identified construction of a containment wall around the belt dryer as an additional control measure to reduce the exposure of the operator below the 50 $\mu g/m^3$ PEL (except during periodic leanout) [Ex. 582-16, p. 21]; in oral testimony, representatives of Heubach did not identify this as an area where employee exposures are consistently above 50 $\mu g/m^3$ [Tr., pp. 1165-1169]. It is not clear from this information whether the belt dryer is contributing to employee exposures above 50 $\mu g/m^3$. OSHA has, however, incorporated Heubach's cost estimates for this operation into its own cost estimates for this facility.

Heubach also provided cost estimates associated with reducing employee exposures to lead in the continuous centrifuge area of the plant. Heubach suggested that continuous centrifuges be partitioned from the rest of the work area; however, Heubach also noted that employees in this area are "generally below the 50 $\mu g/m^3$ PEL at this time" [Ex. 582-16, p. 19]. Because exposure levels are generally in compliance, OSHA has not included Heubach's estimated costs for this area in its own compliance cost estimates.

In the Harshaw/Filtrol facility, costs will be incurred for blending ($120,000), baghouses dedicated to separate colors ($180,000), and bagging equipment ($435,000) [Ex. 582-17]. (Costs for bagging include three local exhaust ventilation systems at $60,000 each, three automatic palletizers at $25,000 each, and three automated baggers at $60,000 each. Cost estimates for bagging systems required at the Harshaw/Filtrol facility were based on Ex. 582-17 Costs for housekeeping equipment (two portable vacuum sweepers at $3,900 each and a central vacuum system at $50,000) were also estimated. Isolation or partitioning of the packaging area could also be required, and additional capital costs would be estimated at $100,000.

The cost of regular cleaning (assumed to be done annually) was estimated to be $50,000 for the large facilities (Heubach and Harshaw/Filtrol) [Ex. 694-9].

Annualized capital costs were computed based on a projected useful life of twelve years, except in the cases of partitioning and isolation for which twenty years was used, and a ten percent financing cost. Operating and maintenance (O&M) expenses were calculated at ten percent of capital costs. O&M costs for housekeeping include HEPA filter replacement, at $2,000 per sweeper per year, and costs for additional labor, estimated to be $6,920 for the Heubach facility and $5,190 for Harshaw/Filtrol. (Incremental labor costs are based on an estimate of 2 person-hours for the Heubach facility and 1 and one-half person-hours for the Harshaw/Filtrol facility, performed at an average wage of $13.84 over fifty weeks, five days per week). Additional housekeeping will be particularly useful in removing from surfaces pigment released during the cleanout operation.

As shown in Table 3, total annual costs for the Heubach facility are estimated to be $432,693. Harshaw/Filtrol would be expected to incur annual costs of $290,103.

As noted in the table, these estimates may not reflect the effect of the dust reduced products used by these firms. Heubach testified that they expect to see "significant reductions in dust exposures during dry pigment handling operations, such as blending and packaging" [Tr., p. 1156]. In both facilities, bagging area operations accounted for a significant part of total costs. OSHA estimates that with dust reduced products the costs for bagging operations would be substantially reduced. For each of these firms, these products would most likely eliminate the need for isolation of the packaging areas resulting in an estimated reduction in annual costs of about $95,000 for Heubach and over $35,000 for Harshaw/Filtrol. Thus, annual costs would be expected to be reduced to $340,000 for Heubach and $255,000 for Harshaw/Filtrol.

The costs for these two plants were related to the types and quantity of certain pigment products and production equipment. In the absence of specific cost or process information pertaining to the remaining plants, OSHA has assigned costs based on the lead chromate capacity of these plants. Annual costs for the Heubach facility are equivalent to $12,363 per million pounds of capacity. At Harshaw/Filtrol, annual costs are equivalent to $14,505 per million pounds. Averaging these two values yields $13,434 per million pounds. The production capacities of the remaining plants are estimated to be 3 million and 1 million pounds. Annual costs for these plants are estimated to be $40,302 (Wayne Pigment) and $13,343 (NL Chemicals), respectively. (Due to economies of scale, this methodology may underestimate costs for smaller operations somewhat).

Total industry annual expenditures are expected to be about $777,000. These costs are exclusive of major process or product modification, such as converting batch processing to continuous or semi-continuous processing. Data in the public record submitted by Heubach [Ex. 582-16] indicate the magnitude of such additional costs. Heubach estimated total dryer replacement to cost $1.5 million to $2.0 million. A process conversion as completed by Harshaw/Filtrol [Ex. 476-244] would require at least $5.0 million in capital resources. Cost data were also reported regarding separate grinding lines dedicated to different product groups [Ex. 475-37]. Costs for this type of process modification were $4.3 million in 1975.

Economic Feasibility. The economic impacts of the 50 $\mu g/m^3$ lead standard on the lead chromate pigments industry are summarized in Table 4.

Lead related sales for the industry were determined by summing 1987 value of shipments of chrome yellow, chrome orange, and molybdate chrome orange, and 1984 value of shipments for chrome green (1984 was the last year for which the Census Bureau published data for chrome green). [Current Industrial Report, Inorganic Chemicals (MA28A), Bureau of the Census, U.S. Department of Commerce]. Total value of industry shipments ($58 million) were then apportioned among the five producers (four of which are expected to incur costs) on the basis of capacity, and are shown in column 1 of the Table. (NL Chemicals was assumed to account for about 1.6 percent of industry capacity). Percentages of total sales, shown in column 2, were obtained from information supplied during the public hearing [Tr., p. 1132] and were used to compute the estimates of total corporate sales shown in column 3. Total sales for Wayne Pigment were obtained from Dialog Information Services (Duns Financial Records Plus). Lead related profits appear in column 4. For three of the firms, corporate profits were estimated and appear in column 5. Based on the discussion of financial statistics provided above, profits were computed using the Dun and Bradstreet 1986 rate of return on sales (ROS) for SIC 2816 of 4.9 percent.

TABLE 4.—SUMMARY OF ECONOMIC IMPACTS FOR THE LEAD PIGMENTS INDUSTRY

Plant	Lead related sales ($ thous.)	% of total sales	Total sales ($ thous.)	Lead related profits ($ thous.) [a]	Total profits ($ thous.) [a]	Annual costs ($ thous.)	Ratio: costs/lead related sales	Ratio: costs/lead Rel. profits [b]	Ratio: costs/total profits [b]
Heubach	32222	50	64444	1579	3158	432.69	0.01343	0.18087	0.09044
Harshaw/Filtrol	18413	30	61376	902	3007	290.10	0.01576	0.21222	0.06367
Wayne Pigment	1520	30	5065	74	248	40.30	0.02652	0.35725	0.10717
NL Chemicals	921	[c]	[c]	45	[c]	13.43	0.01459	0.19655	[c]

[a] Profits after taxes were obtained using a rate of return on sales (ROS) of 0.049 [Dun and Bradstreet Industry Norms, 1987] [Ex. 579. p. 18].

[b] See text for derivation. Profit impacts were computed using the following federal income tax schedule: Heubach, Harshaw/Filtrol, Wayne Pigment, and NL Chemical: 0.34.

[c] Not available.

Source: Occupational Safety and Health Administration, Office of Regulatory Analysis.

Estimates of annual costs appear in column 6. OSHA used conservative estimates; that is, compliance costs were not adjusted for possible reductions due to dust reduced products. Impacts in columns 7 8, and 9 are thus overstated to this extent.

Cost to sales ratios for the five firms listed appear in column 7 of Table 4 and indicate that price increases of about 1½ percent will be required for Heubach, Harshaw/Filtrol, and NL Chemical to pass the costs of compliance through to customers. Wayne Pigment would require over a 2½ percent increase. OSHA believes that pass-through is possible for at least a portion of compliance costs.

First, as noted earlier, substitutes for these pigments are scarce and when they are available, they are expensive. The largest market for lead chromate pigments is traffic paint, a use for which, as noted above, no substitutes exist. This is also a use for which demand is high and which is produced primarily for public consumption; thus, full cost pass-through is likely, either in the form of local taxes or other revenue enhancement mechanisms such as municipal bonds [Ex. 582–17 p. 7]. Second, as demonstrated above, the price competitiveness of U.S. producers in the world market has improved due to the decline in the U.S. dollar. Import penetration, therefore, is not expected to be a major deterrent to U.S. producers increasing prices. The ability of this industry to pass through at least a portion of compliance costs was indicated by Heubach, as they noted "it is estimated that as little as 25 percent of the cost of meeting the PEL could be passed along through price increases" [Ex. 582–16].

Profit impacts appear in columns 8 and 9 of Table 4. (Information in the public record does not allow the calculation of corporate profits for NL Chemicals; therefore, profit impact on total sales has not been estimated.) It should be noted that the tax-deductibility of compliance costs was taken into account in computing profit impacts. That is, care was taken to compute before-tax profit before subtracting annual costs. After subtracting annual costs, the appropriate average tax rate (34 percent) was then reapplied to determine after-tax profit net of costs.

As shown in the table, impacts on lead related profits will range between 18.1 and 21.2 percent for all firms except Wayne, for which impacts will be about 36 percent. The ability of the firms in this industry to absorb the costs of compliance however, depends not only upon the profitability of their lead chromate operations but also on the extent to which they engage in activities other than the manufacture of lead pigments. OSHA has computed profit impact ratios with respect to total corporate profits and these figures are also presented in Table 4. Impacts on total profits range from about 6.4 percent for Harshaw/Filtrol to about 10.7 percent for Wayne.

In the case of full absorption (which OSHA believes should not be necessary), ROS for lead chromate operations could dip 0.9 percent for Heubach, from 4.9 percent to 4.0 percent, 1.0 percent for Harshaw/Filtrol, 0.9 percent for NL Chemical, and 1.8 percent for Wayne, for which ROS could drop to about 3.4 percent. Corporate ROS could dip as much as 0.6 percent, from 4.9 percent to 4.3 percent, for Wayne.

Based on this analysis, OSHA finds that the impact of this rulemaking action will not threaten industry existence or structure. OSHA's reasoning is as follows.

First, it is estimated that one of the five domestic producers, Kikuchi Color and Chemical, will incur no costs as a result of this rule. Another, NL Chemical, is a corporation in the $50 million asset size class and lead chromate production accounts for only a small proportion of total corporate sales [Ex. 579, p. 16]. It is estimated that this corporation produces less than 2 percent of total industry output. Costs of compliance are projected to be lowest for this firm, which may absorb into corporate profits all costs which cannot be passed through. Profit impact calculations for the remaining firms indicate that compliance costs can be absorbed.

Second, OSHA has shown that some cost pass through is possible, based on the large proportion of industry capacity represented by traffic paint, the unavailability of reasonably priced substitutes, and improved market conditions for U.S. producers.

Third, Heubach, with approximately one-half of total industry capacity, has announced that it will be converting exclusively to dust-reduced products. Representatives of the company testified that this product may offer up to an eight-fold reduction in the dusting level of the finished product [Tr., p. 1156]. Similarly, Harshaw/Filtrol has developed a proprietary treatment to reduce the dust-generating quality of its product [Ex. 684h, p. 3]. As consumer acceptance of dust-reduced products increases, exposures and, hence, control costs would be expected to be reduced.

As noted above OSHA's cost estimates and, hence, impacts are believed to be overstated.

Finally, OSHA observes that Heubach, Incorporated, purchased its chemical production facility in 1984 [Tr., p. 1138]. Since then, the company has invested in both process and product modification [Tr., p. 1187]. The purchase of this facility during pending regulation indicates investors' confidence in their ability to operate profitably in the pigment market.

Thus, with respect to current market structure and demand, OSHA concludes that the 50 $\mu g/m^3$ standard is economically feasible for the lead pigments industry within a 2½ year compliance schedule. All of the four producers expected to incur costs should be able to finance the costs of this rule through a combination of pass-through and absorption.

5. Leaded Steel

Process Description and Sources of Exposure—Overview. Molten steel is produced in furnaces, poured into ladles, and then cast. The casting can either be accomplished by a process known as teeming or by continuous casting. In either case, lead is first added to the product at the casting stage. Thus, unless the furnace has been charged with lead-containing scrap, or unless there is cross contamination from downstream operations, operations prior to the casting process should involve little or no lead exposure. After casting, the leaded steel is further shaped by rolling and surfaces are conditioned to customer specifications.

Furnace Operations. In the United States, steel is produced by either an electric arc furnace or a basic oxygen furnace. When the electric arc furnace is used, steel scrap is charged into the furnace, where it is melted. Iron oxide or oxygen is injected into the molten metal, which reacts to remove impurities. Flux and alloy materials are added to produce the specified molten steel. Molten steel is poured from the electric arc furnace into large ladles that transport the steel to the teeming aisle. The addition of lead to make leaded steel takes place at the teeming aisle. Currently, three leaded steel producers use electric arc furnaces.

When the basic oxygen furnace (BOF) is used, molten iron, which is produced in a blast furnace, is charged into the BOF Oxygen is blown into the BOF through a lance to remove excess carbon. Then flux (limestone) is added, which reacts to remove impurities. The injection of oxygen into the molten metal continues until the desired degree of purification is achieved. With the addition of alloying elements, molten steel is produced. The steel is poured from the BOF into large ladles that transport the steel to the teeming aisle, where lead is added in leaded steel production. Currently, two steel manufacturers use the basic oxygen process.

Teeming. After the molten metal is tapped into the ladle, the ladle is then carried by an overhead crane to a platform, where the molten steel is poured into ingot molds, a process known as teeming. Railroad cars adjacent to the teeming platform are used to bring ingot molds to the teeming area. A typical ingot mold has a capacity of 5 to 10 tons, and a typical heat produces enough molten steel to fill 15 to 40 molds (Ex. 582–87, p. 6).

The teeming process can be done by top pouring or bottom pouring of molten steel into the ingot molds. The top pouring process aligns the ladle over each individual mold and fills the mold with a controlled stream of steel from the bottom of the ladle. The bottom pouring process involves aligning the ladle over a refractory lined cast iron funnel, which is connected to the bottom of a series of molds with refractory tubes. The steel is then teemed into the funnel with a controlled stream which fills the complete series of connected molds at the same time (Ex. 582–87 p. 6).

In the production of leaded steel, lead is added during the teeming process. During top pour teeming, workers add lead into the top of the ingot mold as molten steel is poured, either by placing bags filled with lead shot or by pneumatic injection of lead shot using a lead gun comprised of a rubber hose and long steel pipe with a nozzle (Exs. 582–87 p. 8; 620X). During bottom pour teeming, lead shot is added to the stream of molten steel poured into the centrally located funnel. The process of adding lead lasts between 5 and 60 minutes, depending upon the size of the ingot, the lead content, and the number of ingot molds being filled. The quantity of lead added to each ingot mold varies between 40 and 110 pounds (Ex. 582–87 p. 8).

In the process of adding lead to the molten steel, the temperature of which is 2685° to 2750° F a substantial quantity of lead is volatilized. According to AISI, the amount of lead loss per ingot due to fuming ranges from 5–35 pounds (Ex. 582–87). The volatilization of lead contributes significantly to the amount of airborne lead in the plant.

Employees who work on or around the teeming platform experience high exposures to lead. They include workers who supervise the addition of lead to the ingot molds; workers who add lead to the molds with a pneumatic gun or by placing bags of lead shot into the molds; workers who operate or maintain the teeming ladle and ingot molds; workers who pour molten steel from the ladle into the ingot molds; and workers who monitor the addition of lead to ensure that the leaded steel has the appropriate metallurgical properties.

Stripping and Soaking. After the steel is solidified in the molds at the platform, which takes two to three hours, the railroad cars are moved to a stripper area where ingots are removed from the molds by giant tongs. Usually while still hot, the ingots are then charged into soaking pits, which are large, gas-fired, refractory-lined, covered furnaces used to heat the ingots up to approximately 2400° F the temperature required for rolling steel (Ex. 582–87 p. 7).

Because of the automation in this process, there appears to be little or no lead exposure for the employees.

Rolling Operations—Primary Mills and Bar Mills. The heated ingots are then removed from the soaking pits and sent to the primary rolling mills or roughing mills to be rolled into semifinished forms of steel such as: blooms (which are roughly square in cross-section); slabs (which are rectangular); and billets (which have smaller cross-section areas than blooms but are usually much longer) (Ex. 582–87, p. 7).

Companies typically begin the rolling cycle by rolling the largest sizes of steel products first, and then continue rolling sequentially smaller sizes of products until the smallest size is rolled. The cycle then begins anew. Leaded steel is rolled according to where its size fits in the cycle. Accordingly, rolling operations only produce intermittent employee exposures to lead.

In the primary mills, ingots are rolled into blooms which are then rolled into billets. Before reaching the bar mills where billets are rolled into final product, the steel is transferred to a reheat furnace and heated to proper rolling temperature. Depending on the final product dimensions, the steel is then rolled on bar mills of various sizes, ranging from 8-inch to 24-inch mills.

Employees who are potentially exposed to airborne lead during rolling operations include workers who operate the rolling mills, workers who assist the mill operators by adjusting the rolls and mill stands, workers who gauge leaded bars during bar mill operations for the precise dimensions required, workers who transport leaded steel between mill stands, and workers who chain bars to cranes so that the bars may be moved (Ex. 582–87 p. 15).

Surface Conditioning/Finishing. Following primary rolling or bar mill operations, leaded steel may be sent through surface conditioning or finishing operations. The conditioning removes any surface defects that might affect the final product. Conditioning can be accomplished by grinding or scarfing out the defects in the rolled steel. Grinding is performed by large, high speed, automatic grinding machines or manually by spot grinding. The scarfing process, which can be done automatically or manually, involves burning off surface imperfections with an oxy-fuel torch (Ex. 582–87).

Most surface conditioning is performed on billets, most often by grinding the surface with a grinding machine. Hand scarfing is required in certain limited circumstances to satisfy customer requirements and results in high lead levels when scarfing leaded steel. To meet certain quality standards, it may be necessary to have several rolling and conditioning steps before the steel is rolled into a finished product. Employees are potentially exposed to lead when performing surface conditioning on leaded steel products.

Continuous (Strand) Casting. There are several kinds of continuous (strand) casting machines used in steel production, such as slab, billet, or bloom casters. The kind of caster relevant to leaded steel production is a bloom caster. Currently one company is using this continuous casting method instead of the traditional teeming process to produce leaded steel (Ex. 694–41, p. 12).

In continuous casters, molten steel is poured from a ladle into a tundish, which is likened to the large open portion of a funnel. The stem portion of the funnel is the mold and its cross-sectional shape determines the type of product or continuous strand the caster can produce; i.e., square to produce blooms or rectangular to produce a slab. The bloom caster used to produce leaded steel has two strands, each of which produces a continuous strand of steel having the cross-sectional geometry of a bloom. Lead is added to the molten steel in the tundish. Fume can evolve from its surface when lead is added (Ex. 694–41). The area from which fume is emitted is much larger than the open surface area of an ingot mold on a teeming platform, and if not properly ventilated, can present a major source of employee exposure to lead. The molten metal is cooled and shaped as it is moved by rollers during the forming of the strand. Each strand can be several hundred feet long. At the end of the casting process, each strand of solidified steel is cut with a torch into the desired lengths to be reheated in furnaces and sent to a primary rolling operation. After primary rolling, the cast bloom is further processed in bar rolling mills and surface conditioning areas as needed. The ends of the strand and samples of the continuously cast steel are also cut with a torch. The burning of leaded steel with a torch generates lead fume and creates another source of exposure to the operator as well as the employees nearby (Ex. 694–41, p. 15).

Other Operations—Scrap Handling and Maintenance. Other areas of exposures to lead can be found in scrap operations and in the maintenance of baghouses. In scrap operations, scrap may be cut as well as stored (e.g., cobbles are cut with torches or hydraulic cutters). Whether done indoors or outdoors, all forms of cutting or burning leaded steel result in significant lead exposures. The extent of exposure depends in part on the amount of lead in the scrap metal. Maintenance personnel are subject to intermittent but high levels of airborne lead, especially in operations such as cleaning out baghouses.

Additionally, crane and ground mobile equipment operators working in the teeming area, the furnace area, the rolling mills, and in surface conditioning areas may also be exposed to high air lead levels.

Existing Exposure Levels. There are approximately 2,000 employees working in the production of leaded steel who are exposed to lead (Tr. 935). Of these, approximately 75% are only occasionally exposed to lead above 50 $\mu g/m^3$ and generally have average exposure levels well below 50 $\mu g/m^3$ (Ex. 681, p. 16). Thus, an estimated 495 employees are routinely exposed to air lead levels exceeding 50 $\mu g/m^3$ This constitutes 25% of the lead-exposed employees in leaded steel and less than one-half of 1% of all production employees in the steel industry.

Moreover, based on the best available evidence, exposure levels can be, and in at least one plant are controlled to below 50 $\mu g/m^3$ most of the time in every operation (see discussion below of LTV data). In the operation that appears most difficult to control to 50 $\mu g/m^3$ the pouring of leaded steel, conventional controls in teeming or continuous casting appear to be capable of controlling exposures to or below 50 $\mu g/m^3$

OSHA's analysis of the feasibility of achieving 50 $\mu g/m^3$ is based primarily on the raw exposure level data submitted to the docket by LTV one of the five leaded steel producers and a member of the American Iron and Steel Institute (AISI), the industry trade association. For several reasons, OSHA has determined that these data (Ex. 688a) are the best available evidence of existing exposure levels and of the feasibility of achieving 50 $\mu g/m^3$

First, all of the sampling at LTV was carried out when leaded steel was being produced. Second, LTV alone among all leaded steel producers, supplied OSHA with individual sampling results of recent air lead monitoring, which enabled OSHA to make its own evaluation of the data. Third, again alone among all leaded steel producers, LTV supplied OSHA with annotations explaining certain sampling results, enabling OSHA to better evaluate the meaning of the raw data. Fourth, LTV's data are very current, covering 1984–1988. Fifth, since the ultimate issue in this rulemaking involves the technological feasibility of achieving a PEL of 50 $\mu g/m^3$ the strongest evidence for such feasibility is that 50 $\mu g/m^3$ already is being achieved. Sixth, an LTV representative testified that his facility is typical in size and nature of operation to the other plants that produce leaded steel (Tr. 893). Finally, as suggested above, all of the data submitted by other sources are significantly less complete, useful and useable.

For example, AISI, which submitted two overlapping sets of data to the record, failed to provide OSHA with recent, individual sampling results, a description of associated control technologies, or any explanation of potentially aberrant sampling results. Indeed, until its second submission of data late in the rulemaking, AISI's sole submission of data incorporated only ranges of exposure levels in various job categories without any indication of the frequency of various distributions (Ex. 673, p. 3). Unfortunately, it is hardly useful for OSHA to know only that among steel pourers exposures ranged from 1–1,038 $\mu g/m^3$ or that among scarfers the range was 1–784 $\mu g/m^3$ Such data do not provide an adequate picture of typical exposure levels or provide any sense of the efficacy of existing controls. Moreover, AISI's data are not organized plant by plant and therefore are not amenable to serious analysis for purposes of determining feasibility. Similarly, OSHA cannot ascertain from such submissions why a particular result at some unidentified plant was as low as 1 $\mu g/m^3$ or why another was as high as 784 $\mu g/m^3$ Thus, OSHA cannot determine if a sampling result of 1 $\mu g/m^3$ is due to the existence of sophisticated controls in a particular plant or simply represents a sample collected when leaded steel was not being produced. OSHA cannot derive meaningful conclusions from such exposure data.

AISI's second submission of data (Ex. 694–41, p. 24) is more substantial than its first but is still of only limited use. This submission includes additional aggregate data on the frequency distribution of samples within certain ranges of exposure levels. However, the data are not broken down plant by plant; nor are the associated control measures described. As a result, OSHA still cannot determine what controls in a particular plant are associated with what exposure levels.

In addition, the job titles used in the earlier submission are absent in this submission. In each work area listed, exposure levels from many jobs apparently are mixed together (e.g., supervisors, crane operators, etc.) Consequently, OSHA also cannot ascertain the exposure levels for employees performing particular operations Thus, for example, where AISI data indicate that 47 out of the 103 samples in teeming are over 200 $\mu g/m^3$ OSHA cannot determine whether these results represent crane operators, leadmen who manually add bags of lead shot to molten steel, or other workers. Similarly, OSHA cannot ascertain how sampling results said to be within a specified range are distributed within that range. Thus, for example, where AISI data indicate that 107 samples are in the 50–99 $\mu g/m^3$ range, OSHA cannot determine whether some, many or even all may be close to 50 $\mu g/m^3$ OSHA therefore has concluded that little meaningful analysis can be made of AISI's second submission of data.

The failure to submit detailed data restricts OSHA's analysis. OSHA explicitly requested disaggregated information and data in the Federal Register notice announcing the 1987 hearing in this rulemaking (52 FR 28727· August 3, 1987). OSHA reiterated the request during the public hearing (Tr. 1040–42). Nevertheless, AISI and, with one exception, the industry as a whole did not provide OSHA with such data and information. Similarly, AISI declined to arrange site visits for OSHA after the November hearing.

Finally, the exposure levels summarily reported by AISI for 1986–87 are higher than exposure levels reported for 1977–81 (Exs. 489, H-004E; 553–6, p. 1–5). This is contrary to the lower levels that would be expected in recent years, because 8 to 12 years ago production levels were substantially higher and serious modernization of the steel plants had not yet begun (Ex. 578, p. 14). In this context, the Agency cannot accept at face value AISI's contentions and its incomplete, aggregated and unexplained data.

Consequently, OSHA agrees with Meridian's assessment that LTV data are the best and most detailed evidence of exposure levels in the record. The Agency therefore has relied primarily on the raw data submitted by LTV (Ex 688a).

Those data have been summarized on the record by Meridian (Ex. 686H, p. 12; see Table 2, below) and by AISI (Ex. 694–41, p. 20; see Table 1, below). OSHA has also independently analyzed the raw data. OSHA's analyses of the raw data and the two summaries all show that LTV is able to achieve exposure levels at or below 50 $\mu g/m^3$ in all, or nearly all of its operations. Although AISI has made much of an alleged distortion of the raw data in Meridian's summary, OSHA sees no significant difference in the import of the two summaries. Nonetheless, OSHA will rely upon industry's summary.

According to AISI's summary, 81% of all the sampling results are below 50 $\mu g/m^3$ (Ex. 694–41, p. 20; see Table 1, below). In addition, 66% are below the action level (30 $\mu g/m^3$), while 93% are below 100 $\mu g/m^3$ In all but one operation, the scrapyard, approximately two-thirds or more of the sampling results are below 50 $\mu g/m^3$ In the scrapyard, which AISI has not identified as a problem area for the industry (Tr. 941–42), there are only two sampling results. One is below 30 $\mu g/m^3$ and the other is between 50 $\mu g/m^3$ and 74 $\mu g/m^3$ In only two operations are any sampling results above 100 $\mu g/m^3$ In one of these two, crane operators, only two of 19 results are above 100 $\mu g/m^3$ One is 101 $\mu g/m^3$ and the other is 215 $\mu g/m^3$ However, LTV s annotation to the monitoring results indicates that the crane cab's windows were opened during pouring, when that second sample was taken (Ex. 688a).

AISI identifies three operations as problem areas for the industry—teeming, rolling and conditioning (Exs. 582–87 pp. 8–16; 681, pp. 6–15). In two of these operations, rolling and conditioning, 90% or more of the sampling results at LTV are less than 50 $\mu g/m^3$ (see table 1, below). Moreover, in these two, all results are below 100 $\mu g/m^3$ which suggests that high exposure levels have been eliminated by effective controls. In pouring, the third problem area identified by AISI, 65% of all sampling results are less than 50 $\mu g/m^3$ and only 21% are at or above 75 $\mu g/m^3$

TABLE 1.—AISI SUBMISSION OF REVISED SUMMARY OF LTV DATA (EX. 694–41)

Work area	N	<30	30–49	50–74	75–99	>99
Scrap yard	2	1	0	1	0	0
Pouring	38	9	16	5	1	7
Rolling	47	44	0	0	3	0
Conditioning	21	17	2	2	0	0
Crane oper	19	13	1	2	1	2
Total	127	84	19	10	5	9

TABLE 2.—MERIDIAN SUMMARY OF LTV DATA [1] (EX. 686H)

Work area	N	<30	30–50	50–75	75–100	<100
Scrap yard	2	1	1			
Pouring	14	9	2			3
Rolling	13	11			2	
Conditioning	5	3	1	1		
Crane Operator	9	5		2	1	1
Total	43	29	4	3	3	4

[1] Meridian's summary covers only 1987–88 exposure data and only data for employees working heats that were specifically labeled as leaded.

OSHA's own analysis of LTV's 1987–88 raw monitoring data confirms the conclusions drawn from the summaries above. This is most clearly demonstrated by focusing on the entire pouring operation, which is considered to be among the most difficult to control.

The average of all monitoring results in pouring at LTV in 1987–88 is 109 μg/m³ (see Table 3, below). However, within pouring there are five job classifications of employees who perform quite different tasks and experience different exposures to lead. These are: crane operator; pourer; moldman; metal observer, and recorder; Broken down into component job classifications, exposure levels for various categories of employees in the pouring operation look quite different from the overall average. For example, average exposures for moldman, metal observer and recorder are all below 40 μg/m³. The crane operator's average is 60 μg/m³. Only the average of pourers, who are generally considered to be among the employees who are exposed to the highest lead exposures, is higher than 60 μg/m³, at 179 μg/m³.

However, in the case of both the crane operator and the pourer these averages are greatly increased by what appear to be atypical events occurring on one particular day. For the crane operater, only one of seven monitoring results is above 67 μg/m³. That result, 215 μg/m³ was recorded on a day when, LTV notes, the crane cab's windows were left open during most of the sampling time. If that single result is not counted, the crane operator's average exposure level would drop from 60 μg/m³ to 35μg/m³. Even including this single high data point, the geometric mean exposure level for crane operators is 40 μg/m³.

Similarly, for the pourer, 10 of 13 monitoring results are below 40 μg/m³. The three exposure readings above 40 μg/m³ (309, 910, and 922 μg/m³) were all obtained on one day, apparently during one shift. Because these high levels were experienced at the same time and are atypical of most other exposure measurements obtained for this job category, OSHA assumes some unusual condition, like an upset, must have existed. If those results are not counted, the pourer's average exposure level is 20 μg/m³. In any event, even including the three high data points, the geometric mean for pourers is 40 μg/m³.

Looking at the LTV data for the entire pouring operation from a different perspective, 78% of all sampling results in 1987–88 from that operation are below 50 μg/m³. In the job classification of pourer, 77% of the sampling results are below 50 μg/m³. All other operations in the production of leaded steel are generally considered to be easier to control than pouring.

OSHA therefore concludes that air lead levels at or below 50 μg/m³ are being achieved most of the time in all operations at LTV. This conclusion is supported by AISI's and Meridian's independent summaries of the data.

TABLE 3.—OSHA'S SUMMARY OF EXPOSURE DATA FOR POURING AT LTV 1987–88

Job classification	No. of samples	Arithmetic mean	Geometric mean	Distribution of exposure data				
				<50	<75	<100	<200	200
Pourer	13	179	40	10 (77%)	10 (77%)	10 (77%)	10 (77%)	3 (23%)
Crane Operator	7	60	40	4 (57%)	6 (86%)	6 (86%)	6 (86%)	1 (14%)
Moldman	3	38		3 (100%)	3 (100%)	3 (100%)	3 (110%	0 (0%)
Met. Observe	3	24		3 (100%)	3 (100%)	3 (100%)	3 (100%	0 (0%)
Record	1	11		1 (100%)	1 (100%)	1 (100%)	1 (100%)	0 (0%)
Total	27	109		21 (78%)	23 (85%)	23 (85%)	23 (85%)	4 (15%)

One other producer has switched to continuous casting of leaded steel and no longer relies on teeming (Ex. 582–87 Att. A, p. 9). AISI contends that exposures in continuous casting "remain above 100 μg/m³" (Ex. 673, p. 5). However, data submitted by AISI for that one producer contradict AISI's assertion and show that a majority of 59 sampling results for continuous casting, are at or below 50 μg/m³ and 93% of the result are at or below 100 μg/m³ (Ex. 694–41, p. 16).

TABLE 4.—LEAD CONCENTRATION FREQUENCY DISTRIBUTION FOR CONTINUOUS CASTING, 1987–88

N	<50	<100	<200	>200
59	31 (53%)	55 (93%)	57 (97%)	2 (3%)

Source: Submitted by AISI (Ex. 694–41).

Data submitted by LTV concerning exposure levels during LTV's experiments with continuous casting also contradict AISI's contention; each of seven sampling results taken during that operation were below 50 μg/m³ (Ex. 688a).

There are two other data sets from earlier years in the record that OSHA finds consistent with the Agency's analysis of exposure levels. These data sets were submitted by a former OSHA contractor, JACA (Ex. 553–6, p. 1–5), and the United Steelworkers (USWA) for the years from 1977–81 (Exs. 489, H–004E; 578, p. 9). Both indicate exposure levels lower than AISI's 1986–87 data.

In the case of USWA's submission involving exposure levels at Republic Steel's Buffalo plant between 1979–80, a majority of sampling results in 6 of 8 operations were even then at or below 50 μg/m³. In one of the two operations (crane operator) with sampling results over 50 μg/m³ there is only a single monitoring result, 61 μg/m³. In the other operation over 50 μg/m³ the average exposure level is 86 μg/m³ and no result is over 200 μg/m³ (Ex. 578, p. 9).

With regard to the JACA report, which is based on data provided by AISI for 1977–81, 44% of the sampling results at that time were below 50 μg/m³ (Ex. 553–6, p. 1–5). However, AISI now reports that in 1986–87 only 38% of the sampling results are below 50 μg/m³ (Ex. 694–41, p. 21). AISI offers no explanation of why worker exposure levels are rising as production is falling and the industry is modernizing. OSHA questions whether exposure levels should be increasing under such conditions. AISI's data are also inconsistent with the exposure data from LTV which show the vast majority of exposure samples are at or below 50 μg/m³.

Existing Controls. In leaded steel production, local and general ventilation constitute the primary method for controlling air lead levels. In addition, filtered-air work stations and cabs regularly are used. In the three work areas that AISI has identified as problem areas, teeming, rolling, and conditioning, current controls are as follows:

Teeming. Leaded steel is poured on a teeming platform where local exhaust systems of different designs capture and exhaust the lead fumes generated after lead shot is added to the molten steel (Ex. 582-87 Att. A, p. 6). Generally, each ventilation system utilizes side-draft hoods or shrouds to capture the lead fume emitted during teeming. Exposure levels at the ingot molds and feed trumpet are controlled by side-draft hoods, which are part of a mobile exhaust system that is connected to the central teeming aisle fume collection system. Air volumes moved by ventilation systems vary among the five producers; evacuation rates at the teeming hoods vary from 5,000-55,000 cfm (Ex. 582-87 Att. A, p. 6).

Teeming employees manipulate the hoods and isolation dampers to provide for the removal of lead fume when the ingot mold is being filled. Appropriate work practices are essential to reduce exposure levels, as the production employee plays an important role in controlling the fume collection system (Ex. 681, pp. 8 9).

All five producers of leaded steel use various administrative controls, which they claim has limited the number of employees exposed to lead in teeming. For example, each producer has concentrated leaded steelmaking operations into a single facility and restricted teeming of leaded steel to a single aisle, where ventilation control systems are installed (Tr. 1019, 1031; Ex. 681, p. 10). OSHA believes that this consolidation, which may have improved productivity, probably has increased exposure levels for the particular employees involved in teeming leaded steel and thereby made it more difficult to control exposure levels to or below 50 $\mu g/m^3$ for those employees.

Rolling. When ingots are heated prior to rolling, the doors to the soaking pits are opened and closed by remote control from inside an air conditioned crane cab or by operators located in air-conditioned or ventilated control pulpits. The potential for employee exposure to lead fumes is substantially decreased due to the isolation of the employee from lead fumes (Ex. 582-87 Att. A, p. 9).

Exposures in primary rolling mills are reportedly lower than in bar mills because smaller surface areas of steel are exposed to heat and because employees are stationed farther away from the product (Ex. 582-87 p. 15). Operators of the mill generally work in booths (Tr. 901). Some specific tasks must be performed outside the booths: e.g., cleanup, maintenance, and crane helper. No methods of lead dust suppression are used at the primary rolling mills at any of the five facilities, according to Middough (Ex. 582-87 Att. A, p. 10). Although Middough in broad strokes seems to dismiss the possibility of controlling lead exposures in these mills, Meridian and OSHA are not persuaded that the nature of the process necessarily precludes implementing such controls as isolation and local exhaust to deal with specific emission sources. Other controls also may be appropriate. For example, the majority of bar mills use water to cool the mill rolls and provide for the suppression of lead dust. The water is sprayed or directed at the exit end of the mill stands" (Ex. 582-87 Att. A, p. 11).

Surface Finishing/Conditioning. Surface conditioning generally is performed by semi-automated grinding and scarfing machines that house the operator in an enclosed air-conditioned cab. The dust and fumes are collected in a combination evacuation hood/drop out box, with the evacuation capacity of the hoods ranging as high as 30,000 cfm. All five facilities have grinding stations. One of the five facilities still uses an older grinding station that has an open cab (582-87 Att. A, p.13). Occasionally chipping, grinding, and scarfing are done by hand to meet customer specifications (Ex. 582-87 p. 16). These operations are likely to result in exposures over 50 $\mu g/m^3$ But crews are reported to be rotated to administratively control employee exposures (Tr. 1027).

Additional Controls. OSHA's analysis of the record in a previous section indicates that engineering and work practice controls that are currently available and in use already have achieved air lead levels in at least one plant that are at or below 50 $\mu g/m^3$ most of the time in every operation (see Tables 1 and 2, above). More generally, across the industry, 75% of the steel employees exposed to lead are only occasionally exposed above 50 $\mu g/m^3$ and generally have averages well below 50 $\mu g/m^3$ (Ex. 681, p. 16; Tr. 935). OSHA believes that these exposure data alone are sufficient to demonstrate that the industry can reasonably be expected to achieve the 50 $\mu g/m^3$ PEL most of the time during all leaded steel operations. Nevertheless, as the following discussion shows, industry has not yet exhausted all of the opportunities available for improving its existing engineering and work practice controls. This was generally acknowledged by one representative of LTV who testified that his company has adopted a "philosophy of continuous improvement" in worker health and safety (Tr. 1027-28).

OSHA believes that for most operations in the industry few, if any, additional controls are needed. Nevertheless, in the three problem operations identified by AISI, implementation of additional controls may be necessary at certain plants to control exposure levels to or below 50 $\mu g/m^3$ Such controls are readily available.

OSHA believes that the additional engineering controls needed to achieve 50 $\mu g/m^3$ in the problem operations and in any other operation that needs some reduction in exposure levels consist primarily of improvement in existing ventilation systems, isolation and enclosure of workers, and use of remote controls. Improvements in engineering controls should be part of a system of integrated controls. Implementation of strict work practices, administrative controls and a good housekeeping program also are necessary. Proper maintenance of ventilation equipment is essential to assure the effective functioning of exhaust systems needed to achieve the intended reduction in worker exposure to lead.

Two of the simplest improvements to engineering controls are to provide all mobile equipment operators with completely enclosed cabs equipped with high efficiency particulate air (HEPA) filters and tempered air and to provide communication equipment. Communication equipment such as two-way radios should be provided to allow communication without opening cab windows; otherwise, the purpose of the ventilated enclosed cabs will be defeated. Both of these control technologies are readily available and in use in some plants in the steel industry and elsewhere (Ex. 604).

In its testimony and videotape, AISI acknowledges that some crane cabs are not enclosed and not provided with HEPA filters (Tr 965-66, 1043); Middough also observed that crane cabs in the steel industry are not ventilated or air conditioned (Ex. 582-87 p. 7). If such enclosures are accompanied by an integrated system of controls to assure that good work and maintenance practices are followed in the use of the cabs, the data confirm that enclosing cabs can substantially reduce exposure levels.

LTV's data, for example, show that one crane operator in the pouring area had an exposure of 215 $\mu g/m^3$ when the cab windows were open during most of the sampling time while another crane operator on the same shift had an exposure of 56 $\mu g/m^3$ with the cab windows closed during pouring, representing a 74% reduction in exposure due to cab enclosure and good work practices (Ex. 688a). OSHA does not know whether this crane operator was provided with communication equipment or whether the operator had to open the window for a time to communicate. AISI testified that use of filtered-air cabs, in conjunction with good work practices and communication equipment, will reduce exposures to below 50 $\mu g/m^3$ except in unusual or emergency situations (Tr. 1047).

Employees working in the teeming, rolling, and even surface conditioning areas also can be isolated from lead dust and fumes in enclosed air-conditioned, filtered booths and pulpits. Use of a pulpit by an employee even for 25% of a shift has been shown to significantly reduce employee exposure to lead (Ex. 590, p. 40). Thus, OSHA believes that the exposure of employees who must work in close proximity to emission sources can be reduced if the employee can spend at least some time in a filtered booth or pulpit.

Improvement in the collection efficiency of existing ventilation systems can be achieved by increasing the volume of air exhausted and the capture velocity. The efficiency of the exhaust system in certain operations like teeming often can be increased simply by the installation of barriers to reduce unpredictable air currents that disrupt local ventilation. A representative of Middough testified that the construction of such barriers was possible (Tr. 983–85). OSHA is aware that, because of the safety hazards involved in the pouring of steel, employees need to be able to exit the platform quickly in an emergency (Tr. 1094–95). However, OSHA also believes that use of such barriers in a manner that does not interfere with employee egress is an approach to reduce lead exposures that merits further exploration.

Cross drafts can easily occur in steelmaking facilities, which typically are housed in very large, open-ended buildings to allow for railroad traffic. Because of the large openings in the ends of the building and the constant traffic, these facilities are vulnerable to wind currents that can disperse contaminants that are not controlled at their sources to other parts of the building. OSHA does not recommend reliance on uncontrollable natural ventilation to reduce employee exposures.

Cross drafts not only reduce the efficiency of local exhaust ventilation but they also in some cases can cause cross contamination. OSHA believes that cross contamination may be a problem in some plants in the leaded steel industry. According to recent AISI submissions, background levels are generally in the range of 6–10 $\mu g/m^3$ (Ex. 681, p. 33; Tr. 937–38), and those levels reflect ambient lead levels in the general environment. OSHA considers a background level that contributes up to 20% of a 50 $\mu g/m^3$ PEL rather high and believes it is caused by cross contamination more than by ambient environmental levels. OSHA believes that cross contamination should be minimized by controlling emissions at their source. For example, the potential for cross contamination from teeming can be minimized, where practicable, by promptly covering ingot molds filled with fuming, molten leaded steel.

Engineering controls often can only be as effective as the work practices associated with them. Therefore good work practices are crucial to control exposure levels. For example, according to Middough, the efficient operation of the teeming exhaust system requires workers to open and close dampers as necessary (Ex. 582–87 Att. A). Inappropriate work practices could reduce the effectiveness of the system, because "too many open hoods ahead of the ingot poured reduces the rate of air flow through each hood and decreases the effectiveness of the hoods located at the sources of the fumes" (Ex. 602, p. 66).

OSHA believes there is considerable room for further improvement in work practices. According to one LTV spokesperson, for example, his facility has not, and never will exhaust the potential for improving work practices (Tr. 1028–29).

Administrative controls, which are a form of work practice controls, such as dispersed scheduling of pouring leaded heats and of rolling leaded alloys, also may need to be implemented to achieve reduced exposure levels for individual workers in teeming. For example, current practice in the industry is to pour no more than an average of two leaded heats per shift, with each heat producing 15 to 40 molds (Ex. 582–87 pp. 6, 8). In instances where a large number of molds or more than two heats are to be poured on a single shift, dispersing the heats across shifts or different teeming aisles should reduce emissions and resulting exposure levels by as much as 50% in teeming. Then, for example, the geometric mean exposure level for pourers at LTV the task in teeming with the highest exposure level, would presumably be reduced from 40 $\mu g/m^3$ to approximately 20 $\mu g/m^3$

Good housekeeping practices and preventive maintenance also are important components of the system of integrated controls necessary to maintain exposure levels at or below 50 $\mu g/m^3$ throughout the industry. Indeed, a representative of USWA has testified that the equipment now in place, if properly maintained, could significantly reduce existing exposure levels. USWA indicates that in many cases where ventilation is in place, maintenance of the equipment is badly neglected (Tr. 1123–24).

Similarly, with regard to implementing a good housekeeping program, regularly cleaning work areas to keep surfaces as free of lead dust as is practicable, for example, will help to achieve and maintain low background levels and facilitate controlling exposure levels to or below 50 $\mu g/m^3$ Vacuums equipped with high efficiency filters can be used, for example, to clean equipment surfaces prior to maintenance (Tr. 1126).

More specifically, for each of the problem areas described by industry—teeming, rolling, and surface conditioning—OSHA has determined that the additional controls necessary to achieve exposure levels at or below 50 $\mu g/m^3$ are readily available.

Teeming. Teeming is the most difficult operation to control to or below 50 $\mu g/m^3$ according to AISI. Within the teeming process, the operation that creates the highest exposures involves the addition of lead to the molten steel being cast. Exposure levels in teeming can be controlled down to or below 50 $\mu g/m^3$ using various methods, singly or in combination. These include adding lead shot by remote control, increasing the capture velocity of existing ventilation systems and changing the point at which lead is added to the molten metal. As an alternative to effectively controlling teeming, teeming itself can be replaced by continuous casting.

As indicated previously, currently some leaded steel producers still add lead by manually dropping canvas bags of lead shot into the molten steel. This is the major source of employees' excessive exposure. Other producers rely on a remote controlled injection gun to add the lead by pneumatic or injection feed (Ex. 582–87 p. 5). OSHA is certain that adding lead by remote control significantly reduces employees' exposure, since remote controls allow workers to work farther away from the source of the lead fumes and to be stationed in ventilated enclosures.

In addition, OSHA believes that in many instances a substantial increase in the collection efficiency of existing ventilation systems can be achieved through better design and proper maintenance. Collection efficiency can be increased, for example, by increasing capture velocity.

The industry has tried a number of experiments in which fume hood design was modified in an effort to increase capture velocity. These attempts have often resulted in fires within the ductwork, caused by molten sparks being drawn into the system (Ex. 673, Att. 1, 2, 3; Tr. 968). However, industry also acknowledges that they have not investigated the potential increase in capture efficiency that might be gained by increasing air flow (cfm) through the system rather than redesign of the hoods (Tr. 969–70).

OSHA notes that industry is currently using a wide range of airflow rates in teeming hoods (5,000–55,000 cfm; see Ex. 582–87 Att. A, p. 7), and believes that at least some facilities will realize lower employee exposures to lead as a result of increasing airflow rates through the teeming hoods. To the extent concern remains about the potential for fire due to sparks from the molten metal being drawn into the ventilation system, the system can be lined with refractory material to prevent accidental ignition. These refractory liners have been successfully used elsewhere in systems subjected to high temperatures (Ex. 689–4D).

OSHA further recommends the use of additional traveling local exhaust systems, which provide ventilation through a system of interconnecting flexible exhaust hoses and multiple hoods that can be maneuvered in the teeming area. Such a system has proven effective in reducing exposures in smelters (Ex. 604).

Adding lead directly to the ladle instead of to the mold or stream of molten metal is another means to reduce exposure levels in the teeming operation. Ventilation systems are available that can be modified to effectively exhaust the ladle (Ex. 631). OSHA is aware that this method has been used successfully in Japan and Europe (Ex. 633, p. 2). AISI has implicitly acknowledged the technological feasibility of using this technology for controlling workers' exposures (Ex. 681, p. 6).

An alternative process control method is the use of continuous casting instead of teeming. Available data demonstrate that air lead levels at or below 50 $\mu g/m^3$ have been achieved most of the time in plants that use, or have experimented with continuous casting of leaded steel (Exs. 688a, 694–41, p. 16). Since continuous casting bypasses teeming, stripping, etc., and since the strand of leaded steel is cooled continuously with water spray, employees are inherently less exposed to lead fumes due to the nature of the process. For employees who are exposed when the strand is torch cut, local exhaust systems can be used to reduce employees' exposure levels.

OSHA realizes that continuous casting cannot replace teeming in all cases of leaded steel production. However, a quantity of leaded steel already is being successfully produced in the United States using this technology. OSHA agrees with Meridian's independent judgment that the additional availability of continuous casting capacity for casting leaded steel will depend upon the extent of further modernization by the steel industry, which has been shifting to the continuous casting of steel in general (Ex. 686H, p. 14).

Rolling. Exposure levels in the rolling mills can be controlled to or below 50 $\mu g/m^3$ through implementing controls such as isolation of workers, remote control technology, additional ventilation, and water spray technology. The exposure problems in rolling are due to lead fumes and dust being generated from the surfaces of the hot leaded steel as it is being rolled.

The isolation of workers can effectively control exposure levels in the rolling process because most employees do not need to be in close proximity to the rolling steel except when performing certain limited tasks such as temperature monitoring and gauging. Even these operations can be performed remotely by remote temperature sensing and automatic gauging devices, which are available on the market and would virtually eliminate the need for workers to routinely remain close to the steel furnaces or rollers. Thus, as in the soaking pits operation, remote control technology in combination with isolation of workers in ventilated enclosed workstation can certainly reduce exposure levels down to or below 50 $\mu g/m^3$

In order to control exposures at their source, local exhaust ventilation also can be used. OSHA recognizes that ventilation systems, like other equipment, may be vulnerable to damage by cobble formation (Ex. 681, p. 13). However, OSHA believes that cobble formation does not occur in primary rolling mills and is only a rare occurrence in bar rolling mills (Tr. 1056). Moreover, since industry has managed to sustain its production systems despite cobble formation, OSHA believes industry can sustain its control systems as well. Consequently, the possibility of cobble formation cannot be used to justify a failure to implement necessary engineering controls.

Surface Conditioning. Grinding and scarfing generally can be performed with semi-automated grinders and scarfers by remote control from enclosed and ventilated workstations to reduce exposure levels to or below 50 $\mu g/m^3$ in surface conditioning. These machines are available and already in use in some plants in the industry (observed by JACA some years ago; Ex. 553–6, p.1–3; Tr. 741). The operator in the workstation directs the slab through a scarfing operation, for example, by rolling the slab through a series of automatic torches that burn away the surface imperfections. Middough has acknowledged that "the surface conditioning by semi-automated grinding machines, with properly maintained filtering and air conditioning systems, decreases the employee lead exposure" (Ex. 582–87, Att. A, p. 13). Middough also identified one facility that had an older grinding system in which the operator's cab was open (Ex. 582–87, Att. A, p. 13). OSHA believes that the operator's exposure to lead is minimal when the operator is isolated from the source of emission (Ex. 611, pp. 29–30).

With mechanization, manual operations can be minimized, significantly reducing employee exposure. In the limited number of circumstances where hand grinding or hand scarfing may be necessary, local exhaust is feasible and effective, although it may not be capable of maintaining air lead levels consistently at or below 50 $\mu g/m^3$ Where this results in employees being exposed above the PEL as an 8-hour TWA, employers will be allowed to provide employees with respirators for supplemental protection during hand grinding or hand scarfing.

Technological Feasibility Conclusion. Based upon the above analysis of the evidence in the record and OSHA's experience and expertise, the Agency determines that achieving a PEL of 50 $\mu g/m^3$ by implementing readily available engineering and work practice controls is technologically feasible for the leaded steel industry as a whole. Nevertheless, the Agency recognizes that it may not be possible to consistently achieve the PEL by these controls for the limited amount of hand scarfing and hand grinding that must be done.

Since OSHA has found the 50 $\mu g/m^3$ PEL feasible for the industry, employers will be required in hand grinding and hand scarfing, as well, to implement engineering and work practice controls to control exposures levels to the PEL or the lowest feasible level. Where all feasible engineering and work practice controls have been implemented and employees performing these tasks are still exposed above the PEL as an 8-hour

TWA, employers will be allowed to provide these workers with respirators for supplemental protection while they are performing hand grinding or hand scarfing.

Through its analysis of the record in the previous sections, OSHA has demonstrated that:

(1) At least 75% of the employees exposed to lead in the steel industry are exposed only on occasion above 50 $\mu g/m^3$ and have average exposure levels that generally are well below 50 $\mu g/m^3$ (Exs. 681, p. 16; 688a).

(2) At LTV's plant, 81% of all sampling results are below 50 $\mu g/m^3$ and 93% are below 100 $\mu g/m^3$ (see Table 1, above). In the operation in the industry that is most difficult to control, steel pouring, average exposure levels in three of the five job classifications at LTV are below 40 $\mu g/m^3$ In each of the remaining two job classifications geometric mean exposure levels are 40 $\mu g/m^3$ (Ex. 688a).

(3) With regard to teeming, rolling, and surface conditioning, the only areas in the industry identified by AISI as problems (Ex. 681, pp. 6–14), at LTV 90% of the sampling results in rolling and surface conditioning are below 50 $\mu g/m^3$ and in teeming 65% are below 50 $\mu g/m^3$ (Ex. 688a).

These results have been obtained before recommended additional controls have been implemented and before cross contamination is controlled. Consequently in most operations few, if any, additional controls are needed to bring exposure levels to or below 50 $\mu g/m^3$

OSHA believes that, for operations where most sampling results or geometric or arithmetic mean exposure levels already are below 50 $\mu g/m^3$ relatively modest improvements in controls, such as improved housekeeping or better preventive maintenance, will be sufficient to reduce air lead levels consistently to below 50 $\mu g/m^3$ Similarly, for operations where most of the sampling results or geometric or arithmetic means are below 100 $\mu g/m^3$ OSHA believes that a combination of limited additional and improved controls (e.g., improving the efficiency of the ventilation system), will be sufficient to control exposure levels to 50 $\mu g/m^3$

In the three areas in the industry identified by AISI as problems, where implementation of additional controls may be necessary at certain plants to control exposure levels to or below 50 $\mu g/m^3$ adequate controls are readily available.

In reaching the above conclusions, OSHA has relied in part on data provided by LTV However, OSHA does not believe that LTV is at the limits of technological feasibility, and LTV has testified to this effect (Tr. 1028–29). OSHA believes that additional reductions in workers' exposure levels can be achieved at LTV and that these reductions are generally achievable by the rest of the industry as well.

There is no evidence in the record to show that LTV is atypical. Indeed, although AISI was aware that Meridian relied heavily on LTV's data in concluding that the PEL is technologically feasible in leaded steel, at no time has AISI asserted that LTV is unrepresentative of the industry. In addition, LTV has testified that they are typical with regard to size and nature of operations (Tr. 893). OSHA therefore believes that it is reasonable to treat LTV's data as representative of existing exposures in the industry and/or as representative of what the industry can achieve technologically. OSHA has had to rely upon the LTV data set because no other recent data organized on a plant-by-plant basis were made available.

However, even if the LTV data were not representative of the industry and even if OSHA were to accept at face value AISI's final submission of data collected from various producers as reasonably representative, according to that data more than one-third of the sampling results are below 50 $\mu g/m^3$ and more than two-thirds are below 100 $\mu g/m^3$ AISI's data also suggests that approximately 41% of the sampling results in teeming are below 100 $\mu g/m^3$ 93% of the sampling results in casting are below 100 $\mu g/m^3$ 85% of the sampling results in rolling are below 100 $\mu g/m^3$ and 73% of the sampling results in conditioning are below 100 $\mu g/m^3$ (Ex. 694–41, p. 21). Thus, in all operations with the exception of teeming, at least 73% of the monitoring samples are below 100 $\mu g/m^3$ Based on these data, OSHA would still conclude that, with the application of available controls discussed above, controlling most leaded steel operations to or below 50 $\mu g/m^3$ most of the time is technologically feasible. OSHA has already indicated that implementing a combination of limited, additional and improved controls generally will be sufficient to reduce air lead levels to or below 50 $\mu g/m^3$ in operations where most sampling results already are below 100 $\mu g/m^3$

In concluding that the 50 $\mu g/m^3$ PEL is technologically feasible for the leaded steel industry, OSHA does not purport to have recommended an exhaustive list of additional controls. The Agency also has not needed to exercise its statutory authority to force the development of new technology to justify its finding. The Agency has relied exclusively upon conventional and readily available controls.

OSHA is certain that industry will be capable of devising and fine-tuning other conventional controls to further reduce exposure levels. Consequently, OSHA anticipates that industry will be able to consistently achieve exposure levels at or below 50 $\mu g/m^3$ in nearly every phase of production.

OSHA acknowledges that the lead standard is strict and believes that to achieve the PEL requires implementing an integrated system of controls. The basic element in that system is an industrial hygiene study. Each producer should have an experienced industrial hygienist perform an in-depth job/task analysis and a plant-wide survey. This survey and analysis should identify sources of emission in each task, sources of cross drafts or cross contamination, and appropriate sites for erecting cross contamination barriers. Such analysis should also recommend appropriate engineering and work practice controls to reduce emissions and minimize employee exposures. If, after implementing these recommendations, reductions in air lead levels deviate substantially from what was anticipated, a follow-up industrial hygiene survey should be conducted and necessary corrections made.

The second element in that system is the development of good, written housekeeping and work practice programs that are systematically implemented and enforced by employers so that proper procedures are routinely and meticulously followed. Testimony in the record indicates that housekeeping can be improved in the leaded steel industry (Tr. 1121–22).

The final element of an integrated system of controls is a preventive maintenance program to assure that all systems are maintained in clean and efficient condition.

AISI does not agree that it is technologically feasible to achieve a PEL of 50 $\mu g/m^3$ by means of engineering and work practice controls. AISI has raised a number of objections concerning the competence and conclusions of OSHA's contractor, Meridian, as well as broader objections concerning the feasibility of achieving the PEL in problem areas within the industry.

AISI's principal objections are as follows. (1) Meridian is not competent to assess technological feasibility in leaded steel, has been predisposed to finding the standard feasible, and has made numerous factual mistakes. (2) No technology exists to control exposure levels throughout the industry to or below 50 $\mu g/m^3$ and the industry already is implementing all feasible technology. (3) More specifically, continuous casting is not a realistic alternative to teeming as a method for controlling exposures to or below 50 $\mu g/m^3$ and within teeming no feasible engineering controls can reduce exposure levels to or below 50 $\mu g/m^3$ (4) OSHA also has been predisposed to find the PEL feasible regardless of the record evidence.

First, AISI has devoted an extraordinary amount of effort in its comments and at the hearing to impugning the competence and integrity of OSHA's contractor, Meridian. AISI has variously charged Meridian with a lack of necessary experience and training, repudiating its previous positions, grossly mistaken opinions, distortions of the data, and the like (Exs. 681, pp. 21–24; 694–41, pp. 4–9). On the whole, OSHA finds most of AISI's charges to be poorly founded, grossly exaggerated, or internally contradictory. In any event, OSHA has made independent evaluations of the data and evidence in reaching its conclusions and has relied on Meridian on certain limited occasions only to independently confirm OSHA's own conclusions.

Meridian has had very broad experience and possesses very broad competence in the area of industrial hygiene, the principles of which are universally applicable to all industries (Ex. 601). There is nothing unique about controlling lead dust and lead fume that would make Meridian's extensive expertise and competence in evaluating engineering and work practice controls irrelevant to the leaded steel industry. Contrary to AISI's allegations, controls that have been used in other industries generally are readily transferable to leaded steel, although some modifications may be necessary, as they would be almost anywhere, to adapt the controls to particular equipment or operations.

AISI criticizes Meridian for revising some of its conclusions in its final report. For example, AISI criticizes Meridian for its allegedly new emphasis in its final report on continuous casting as an alternative to teeming. On the other hand, elsewhere in its submissions AISI also criticizes previous findings and understandings in Meridian's preliminary assessment and in OSHA's preamble to the proposal (Ex. 582–87 pp. 11–14). AISI cannot have it both ways. Either OSHA and its contractors have to maintain their preliminary understandings and findings regardless of the evidence subsequently introduced into the record or they are entitled to revise their findings after taking the additional evidence into account.

Indeed, the latter is precisely what is contemplated by OSHA's rulemaking process. That process requires OSHA at the outset to make proposals on the basis of preliminary findings and understandings and then encourages the public and interested parties to present comments, information and data to correct and clarify the record. Thus, it is expected and entirely appropriate that the Agency and its contractors will revise their findings and understandings when newly introduced evidence in the record mandates such revisions. Courts have recognized that this is appropriate and necessary, so long as the revisions are logical outgrowths of the proposal. Such changes do not require OSHA to begin the hearing process all over again. *USWA* v. *Marshall*, 647 F.2d at 1221.

More specifically, with regard to AISI's claim that Meridian has crucially and erroneously relied upon continuous casting for its proof of feasibility, OSHA finds AISI's argument a misinterpretation of Meridian's position. Meridian does not rely heavily on continuous casting; nor does it say that continuous casting can be used everywhere in the near future to produce leaded steel (Ex. 686H, p. 14).

Many of AISI's charges that Meridian has prejudged and distorted the data are predicated upon AISI's own mischaracterization of Meridian's arguments. This is true, for example, of Meridian's argument concerning continuous casting and of its summary of the LTV data (see OSHA's discussion in the section of this preamble dealing with existing exposure levels).

Industry's second criticism is that it is not technologically feasible to achieve the PEL in the leaded steel industry. OSHA disagrees. As demonstrated previously not only is it technologically feasible to achieve the PEL in the leaded steel industry, but LTV, one of the five leaded steel producers, has already controlled exposure levels to or below 50 $\mu g/m^3$ most of the time in all, or nearly all of its operations. AISI does not allege that LTV is unrepresentative of the leaded steel industry, and OSHA is confident that LTV is reasonably representative.

Industry also asserts that it is not technologically feasible to achieve 50 $\mu g/m^3$ because industry has already done all that is feasible. However, in at least several areas AISI or its contractor have stated that additional controls could be implemented (e.g., enclosing cabs of mobile equipment and improving work practices) to further reduce exposure levels. If producers other than LTV have not controlled exposures in their facilities to achieve the PEL, it is not because they are already at the limits of technological feasibility but because they have failed to implement all feasible controls.

OSHA is not convinced by the feasibility assessment performed for industry by Middough Associates, an industry consultant (Ex. 582–87 Attachment A). In that assessment Middough concludes that leaded steel producers "could spend hundreds of millions of dollars trying to upgrade already adequate control facilities and not maintain employee lead exposure levels below 50 $\mu g/m^3$" (Ex. 582–87 Attachment A, p. 1). OSHA finds this assessment, including its conclusion, to be unpersuasive and unsubstantiated.

When questioned at the hearing about what Middough meant when it asserted 50 $\mu g/m^3$ was infeasible, the firm's representative said Middough meant it is "not possible to routinely attain that level, on a regular basis." When asked to further explain what was meant by "not possible to routinely attain that level," he responded, "There will always be excursions from that level * * *." Upon further questioning, he said there could be one or more excursions (Tr. 989–90).

OSHA accepts Middough's view that the leaded steel industry cannot achieve 50 $\mu g/m^3$ 100% of the time and that there will be some excursions above that level. However, OSHA believes that the existence of such "excursions" does not constitute evidence of technological infeasibility. Excursions can occur even as an industry controls exposure levels to 50 $\mu g/m^3$ most of the time in most of its operations.

In any event, the feasibility assessment submitted by Middough to the record lacks substantiation. In its report, Middough does not, for example, include a supporting analysis of exposure data at various plants throughout the industry. Middough also does not perform a systematic analysis, operation-by-operation and plant-by-plant, to show what existing controls are associated with current exposure levels and what additional controls could be implemented to lower those levels.

Third and more specifically, AISI contends that continuous casting is not a realistic alternative to teeming leaded steel and that it is technologically infeasible to achieve 50 $\mu g/m^3$ in teeming. With regard to continuous casting, AISI contends that this process cannot be used to cast all grades of leaded steel, that in any event 50 $\mu g/m^3$ cannot be achieved in continuous casting, that continuous casting requires extensive and extremely costly ventilation, and that adding continuous casters capable of producing leaded steel requires specially designing and installing bloom casters that cost hundreds of millions of dollars (Ex. 694-41, p. 5).

OSHA agrees in part and disagrees in part with AISI's contention. Neither Meridian nor OSHA has asserted that adopting continuous casting could provide an immediate solution for controlling excessive exposure levels in pouring and casting leaded steel. Indeed, both Meridian and OSHA expressly state that industry's capability to use continuous casting to produce leaded steel is dependent in part upon industry's further expansion of continuous casting capacity for producing steel in general (Ex. 686H, p. 14). On the other hand, two of the five plants in the industry already have continuous casters capable of producing leaded steel. In the case of one unnamed plant, leaded steel currently is routinely being produced by this method. In the case of LTV leaded steel has been experimentally produced by continuous casting. As OSHA has shown, when continuous casting has been utilized, whether routinely or experimentally, most sampling results have been at or below 50 $\mu g/m^3$ (Exs. 688a; 694-41, p. 16).

With regard to AISI's other assertions concerning continuous casting, while it might be true that not all grades of leaded steel can be continuously cast, AISI provides no information about which grades can and cannot be so cast or what proportion of leaded steel output they occupy. Consequently, even if AISI's claim is accurate, OSHA still cannot determine its significance. Finally, OSHA believes that the high costs associated with installing continuous casters and whatever ventilation may be needed to control exposure levels in that process are attributable to the broader modernization process the steel industry has been carrying out. Increased leaded steel production by continuous casting and the control of air lead levels in that process will have to piggyback on industry modernization, which has already been stimulated by market forces.

Concerning pouring, OSHA has already shown that at least at LTV 78% of all sampling results in that process in 1987-88 are below 50 $\mu g/m^3$ In addition, in three of the job classifications comprising pouring, average exposure levels are at or below 40 $\mu g/m^3$ In the two job classifications where the arithmetic mean is above 50 $\mu g/m^3$ the geometric mean in each case is 40 $\mu g/m^3$ In these classifications, the arithmetic mean is being driven upwards by the presence of a few atypically high exposure readings.

Lastly, AISI argues that OSHA, as well, as Meridian, was predisposed to finding feasibility regardless of record evidence (Ex. 694-41, pp. 3, 10). OSHA is under a statutory obligation to protect workers from a significant risk of material impairment to health to the extent feasible. OSHA has taken this obligation seriously and has carried out an assessment of technological feasibility based on the evidence and analyses included in the record. It is primarily due to the data that LTV submitted to the record, and not to any OSHA bias, that OSHA has concluded that it is feasible to achieve the PEL by means of engineering and work practice controls.

Consequently, OSHA is unpersuaded by industry arguments. Based upon its own expertise, experience and the record evidence, OSHA concludes that a PEL of 50 $\mu g/m^3$ is technologically feasible by means of engineering and work practice controls in the leaded steel industry.

Industry Profile. Leaded Steel is classified under SIC code 3312 and is currently manufactured at five sites by five producers, though further processing may occur at virtually any site [Ex. 583-54].

The five leaded steel producers manufactured approximately 667,000 net tons of leaded steel in 1986, accounting for 3 to 16 percent of the total net tonnage of steel manufactured at these sites [Ex. 582-87, p. 24]. About 80-85% of all leaded steel products consumed annually in this country are produced by these five integrated producers, while imports make up the balance [Ex. 582-87 p. 25]. (LTV Corporation reports that Voluntary Restraint Agreements had reduced the import market share to 21.3 percent [Ex. 694-41, Attachment 6, p. 4]).

During testimony at the informal public hearing, Mr. Terrence M. Civic of LTV Steel Company testified that

> [i]n the bar facilities throughout the industry, there are approximately 11,000 employees. Of those 11,000 employees, 18 percent have exposure to lead. Of those 18 percent with exposure to lead, 89 percent of those employees would have an occasion to be exposed to concentrations in excess of 50 micrograms per cubic meter on a time-weighted average. The percentage number of employees with average exposures that are greater than 50 micrograms per cubic meter on a time-weighted average is approximately 25 percent [Tr., p. 935].

This produces an estimate of 495 workers with average TWA exposures to lead in excess of 50 micrograms per cubic meter.

With regard to the possibility of substituting for the use of lead in steel,

> [i]n general, there is no one material or process that can be used economically to substitute for the lead in leaded steel. Any attempt to eliminate lead from steel would require metallurgical research, engineering design, retooling, and the development of substitutes for lead in specific applications [Ex. 578, p. 22].

Financial data based on the first three quarters of 1987 included data for the five individual producers of leaded steel [Ex. 686h, p. 7] and indicate improvement in the profitability of the steel industry as compared with 1986 data [Ex. 578, p. 34-35]. For company "a, data indicate an improvement in its rate of return on assets (ROA) from −0.08 to an estimated 1 percent. ROA for company "b" improved from −0.59 to an estimated 8.8 percent, while ROA for company "c" improved from −0.03 to an estimated 2.9 percent. Company "d, which was profitable in 1986, realized an improvement of ROA from 0.01 to an estimated 3.0 percent. Overall, profits of approximately $900 million were expected for the industry in 1987 as opposed to its $5.2 billion in losses the previous year. Factors which have contributed to the improved profitability of the steel industry are strengthening demand, tax benefits, firming of import prices, the ability to realize higher prices, the closing of antiquated facilities, and reduced labor costs [Ex. 686h, p. 6].

More recent data show that one firm, Copperweld, sustained a loss for the year. (Copperweld's loss was magnified by their inventory valuation method [Ex. 694-41, Attachment 7]). Also, though LTV continued its reorganization under Chapter 11 [Ex. 694-41, Attachment 6], the company's net income was approximately $500 million in 1987

While available information reflects the difficulties being experienced in bar manufacturing [Ex. 694-41, Attachment 6, p. 4], which is the segment of the steel industry where leaded steel is produced, certain manufacturers indicated their commitment to the bar market. For example, Inland is forming a new company for its shaped products, and they feel that they can be successful in the bar and structural steel market. One hundred million dollars could be invested in these facilities [Ex. 694-41, Attachment 5]. Copperweld Steel is also optimistic, as they are "totally committed to being the top quality bar producer in the United States" [Ex. 694-41, Attachment 7]. Copperweld has established a "working relationship" with Daido Steel Co., Ltd. of Japan and the companies have signed a three year technology exchange agreement.

These attitudes reflect the trend toward the major restructuring of the steel industry in the U.S..

[t]he steel industry is also making substantial investments in modernization. Continuous casting, for example, can reduce operating costs by $25 to $40 per ton. Although the U.S. steel industry lags behind most other developed countries in the adoption of continuous casting, more than 26 million tons of annual continuous casting capacity were added between 1983 and 1987, and at least 3 million tons more will be added by 1990. Between 1984 and 1987 the share of production done with continuous casting increased by more than 50 percent, and over three-fifths of all steel is now produced by this method For some companies, the modernization is even more pervasive. Bethlehem Steel, for example, has invested nearly $2 billion in modernization since 1981 and now has sufficient continuous casting capability to handle 70 percent of its raw steel production—up from 30 percent in 1982 [Ex. 686h, p. 3].

Cost of Compliance. The two methods used to produce leaded steel are continuous casting and teeming. For each method, costs will be incurred for automated weighing and dispensing of lead shot, enclosed pulpits for operators in rolling mill, automated gauging equipment, crane cab enclosures, portable vacuums, local exhaust ventilation, and housekeeping (annual cleaning). The continuous caster will also require an enclosed pulpit for the casting/tundish area while the facilities which teem will require automated mold covering systems. Costs for remote temperature sensing equipment were assumed to be negligible. Also, costs for automated surface conditioning equipment were not estimated, since evidence in the public record indicated that such equipment is currently in use by all manufacturers [Ex. 582–87 Attachment A]. Costs for each type of facility are summarized in Tables 5 and 6.

Costs of an automated system for weighing and dipensing lead shot are estimated to be $20,000 [Ex. 686h, p. 20]. Total annual costs for this equipment will be $4,936, including $2,936 in annualized capital costs and $2,000 in operation and maintenance (O&M) expenses. (Annualized costs for all equipment were based on a twelve year useful life and a 10 percent financing cost).

Enclosed pulpits for operators in the casting/tundish and rolling mill areas will be $20,000 each [Ex. 578, p. 44, footnote]. Total annual costs, including annualized capital costs and O&M expenses (which include HEPA filter replacement), are expected to be $5,186 for each pulpit, one of which is assumed to be required in each area.

TABLE 5.—SUMMARY OF COMPLIANCE COSTS—TEEMING

Control	Annualized capital costs	Annual O&M costs	Total annual costs
Vent. improvements	$71,565	$48,750	$120,315
Local vent.—Rolling mill	39,636	27,000	66,636
Surface conditioning	39,636	27,000	66,636
Automated dispensing—Lead shot	2,936	2,000	4,936
Mold covering system	2,936	2,000	4,936
Enclosed pulpit—Rolling mill	2,936	2,250	5,186
Automated gauging	7,340	5,000	12,340
Crane cab enclosures (2)	11,744	8,500	20,244
Portable vacuums (3)	1,718	7,170	8,888
Labor		15,488	15,488
Annual cleaning		50,000	50,000
Totals	180,447	195,158	375,604

Source: Occupational Safety and Health Administration, Office of Regulatory Analysis.

TABLE 6.—SUMMARY OF COMPLIANCE COSTS—CONTINUOUS CASTING

Control	Annualized capital costs	Annual O&M costs	Total annual costs
Vent. improvements	$286,260	$195,000	$481,260
Local vent.—Rolling mill	39,636	27,000	66,636
Surface conditioning	39,636	27,000	66,636
Automated dispensing—Lead shot	2,936	2,250	5,186
Enclosed pulpit—Rolling mill	2,936	2,250	5,186
Casting/Tundish area	2,936	2,250	5,180
Automated gauging	7,340	5,000	12,340
Crane cab enclosures (2)	11,744	8,500	20,244
Portable vacuums (3)	1,718	7,170	8,888
Labor		15,488	15,488
Annual cleaning		50,000	50,000
Totals	395,142	341,658	736,799

Source: Occupational Safety and Health Administration, Office of Regulatory Analysis.

Costs for automated gauging equipment are estimated to be $50,000. Annualized capital costs would be $7,340 and O&M expenses would be $5,000. Total annual costs for this equipment are estimated to be $12,340.

Costs for crane cab enclosures will be $40,000 each [Ex. 686e, p. 21]. Two cab enclosures are expected to be required per facility. Total capital costs are thus $80,000. The total annual costs of $20,244 include $11,744 in annualized capital costs and $8,500 in O&M expenses, which include HEPA filter replacement.

Costs for portable vacuums to clean surfaces are estimated to be $3,900 each [Ex. 579, p. 29]. It is estimated that three such vacuums will be required. Annual costs, including annualized capital costs of $1,718 for all three units and O&M expenses of $7,170, which include HEPA filter replacement, were estimated to be $8,888. Additional labor required was assumed to be 3 person-hours per day. Costs were estimated to be $15,488 per year, based on an average wage of $14.75 and a 7 day, 50 week annual housekeeping schedule.

Ventilation costs include improvement costs for ventilation systems in the teeming and tundish areas as well as costs for local exhaust ventilation for the rolling mill (primarily in the area of the mill stands) and for occasional exposures during manual surface conditioning.

Evidence compiled during the informal public hearing indicates that the manufacturers engaged in the teeming of leaded steel have already implemented certain ventilation controls in an attempt to limit exposure to lead. These controls were described by Middough Associates [Ex. 582–87 Attachment A] and AISI [Ex. 582–87 p. 10]. OSHA recommends that the manufacturers who teem leaded steel improve local and general ventilation and ensure that these systems are properly maintained. These improvements should also include any necessary barriers to prevent disruptive air currents. Ventilation improvement costs were estimated to be 50 percent of installation costs, based on information received by AISI in response to a 1981 questionnaire [Exs. 578, pp. 38–39]. For a typical system of 65,000 cfm, ventilation improvement costs were estimated to be $487,500. Annualized capital costs would be $71,565 and O&M expenses would be $48,750. Total annual costs were thus estimated to be $120,315. The continuous casting ventilation system described by AISI in their latest submission to the docket uses 144,000 cfm to ventilate the tundish area, 120,000 cfm to ventilate the area where steel is torch cut into bloom lengths, and 20,000 cfm for a torch cut-off station for samples. [Ex. 694-41, p. 15]. Total costs for this system were $3.9 million, according to AISI [Ex. 694-41, p. 7]. Improvement costs were estimated to be $1.95 million (one-half the cost of installing a $3.9 million system). Annualized capital costs would be $286,260. Operation and maintenance costs are expected to be $195,000 annually. Total annual costs were thus estimated to be $481,260 for this equipment.

The rolling mill and surface conditioning areas were assumed to require local exhaust ventilation systems with air handling capacities of 18,000 cfm. Applying a unit cost factor of $15/cfm, total capital costs for each system were estimated to be $270,000. Annualized capital costs would be $39,636 and O&M expenses would be $27,000. Thus, total annual costs for each system were estimated to be $66,636.

Costs for an annual cleaning were estimated to be $50,000 for each facility ($5,000 per day over 10 days) [Ex. 694-9, Company A response.]

Costs for a system to cover ingot molds by remote control were assumed to be similar to those required to implement automated dispensing of lead shot. Capital costs for this system were thus estimated to be $20,000. Annual costs would be $4,936.

Altering the process so that the lead shot is added directly to the ladle would be expected to increase ventilation costs sharply, and, therefore, would not be implemented unless absolutely necessary. (For this reason, these costs have not been included in Table 5). Additional expenditures would be required to provide exhaust ventilation for the ladle itself as well as for the associated travelling ductwork system and necessary baghouse capacity. Based on the cost requirements for the ventilation of the teeming aisle [Ex. 578], OSHA expects the additional costs for ladle ventilation to be at least $1 million. Annual costs, including annualized capital and O&M expenses, would be $246,800.

Total annual costs for those facilities teeming leaded steel are estimated to range from $375,604 to $622,404, depending upon whether a ladle ventilation system is implemented. Total annual costs for the continuous casting operation were estimated to be $736,799.

Only one of the five integrated producers is currently casting leaded steel [Ex. 582-87 Attachment A, p. 9]. OSHA computed total industry costs, and hence, impacts, based on the scenario of one continuous caster of leaded steel and four teemers. This combination produced a total annual cost range for the industry of $2.24 million to $3.23 million.

Economic Feasibility. In assessing economic feasibility for the leaded steel industry, OSHA compared the estimated costs of compliance with estimated profit and sales levels. Sales data for two of the five producers of leaded steel were provided for 1987 [Ex. 694-41, Attachments 6 and 7]. These data appear consistent with those reported by Meridian [Ex. 686h, p. 6-7]; therefore, OSHA based its analysis on the Meridian information with one exception. Company "e, though profitable in the third quarter of 1987 [Ex. 686h, p. 7], incurred a net loss for the year. This loss is reflected in Tables 7 and 8. The portion of sales attributable to the production of leaded steel has been estimated at 0.8 percent of total sales, which represents the fraction of total production tonnage that was leaded steel in 1987 [Ex. 686h, pp. 1-2].

In assessing the impacts of the costs of compliance, two sets of impact ratios had to be developed, since the leaded steel producers did not identify the continuous caster for the record. Table 7 contains ratios for each producer assuming each teems leaded steel and Table 8 contains ratios assuming each uses continuous casting.

As seen in Table 7 price increases required with respect to leaded steel products would range from about 0.3 percent to about 3.7 percent for firms "a" through "d" and could be between 25 and 41 percent for firm "e" assuming teeming is the method of casting used. Costs as a percentage of overall after-tax profits should range from 0.09 percent to 0.68 percent for firms "a" through "d" and could represent between 2.9 percent and 4.7 percent of losses for firm "e.

TABLE 7.—SUMMARY OF ECONOMIC IMPACTS FOR THE LEADED STEEL INDUSTRY—TEEMING

Company	Costs (range) ($ thous.)		Sales ($ thous.) [a]	Sales/lead rel. ($ thous.) [b]	Ratio: Costs lead rel./sales [c]		Total profits ($ thous.) [d]	Ratio: Costs total/profits [e]	
	Min.	Max.			Min.	Max.		Min.	Max.
a	376	622	14,836,000	118,688	0.00316	0.00524	219,000	0.00093	0.00188
b	376	622	7,461,066	59,689	0.00629	0.01043	482,667	0.00042	0.00085
c	376	622	4,553,866	36,431	0.01031	0.01708	137,067	0.00148	0.00300
d	376	622	2,107,443	16,860	0.02228	0.03692	60,017	0.00338	0.00684
e	376	622	191,445	1,532	0.24524	0.40639	(13,161)	−0.02854	−0.04729

[a] Overall, obtained from Ex. 686h, p. 7. Sales for firm "e" obtained from Exhibit 694-41.
[b] Lead related sales, obtained as 0.8% of overall sales.
[c] Costs divided by lead-related sales.
Total profits after taxes [Ex. 686h, p. 7].
[e] See text for derivation. Profit impacts were computed using the following federal income tax schedule: firms a, b, c, d: 0:34; firm e: 0.0.
Source: Occupational Safety and Health Administration, Office of Regulatory Analysis.

TABLE 8.—SUMMARY OF ECONOMIC IMPACTS FOR THE LEADED STEEL INDUSTRY—CONTINUOUS CASTING

Company	Costs ($ thous.)	Sales ($ thous.) [a]	Sales/lead rel. ($ thous.)	Ratio: costs lead rel./sales [c]	Total profits ($ thous.) [d]	Ratio: costs total/profits [e]
a	737	14,836,000	118,688	0.00621	219,000	0.00222
b	737	7,461,066	59,689	0.01234	482,667	0.00101
c	737	4,553,866	36,431	0.02022	137,067	0.00355
d	737	2,107 443	16,860	0.04370	60,017	0.00810
e	737	191,445	1,532	0.48094	(13,161)	−0.05598

[a] Overall, obtained from Ex. 686h, p. 7. Sales for firm "e" obtained from Exhibit 694-41.
[b] Lead related sales, obtained as 0.8% of overall sales.
[c] Costs divided by lead-related sales.
[d] Overall, after taxes [Ex. 686h, p. 7].
[e] See text for derivation. Profit impacts were computed using the following federal income tax schedule: firm a, b, c, d: 0.34; firm e, 0.0.
Source: Occupational Safety and Health Administration, Office of Regulatory Analysis.

Assuming that continuous casting is the manufacturing process yields price increases for firms "a" through "d" of between 0.6 and 4.4 percent while firm "e" 's prices would have to increase by 48 percent. Profit impacts would fall between 0.2 percent and 0.8 percent for firms "a" through "d" and would represent about 5.6 percent of losses for firm "e.

It should be noted that the tax-deductibility of compliance costs was taken into account in computing profit impacts. That is, care was taken to compute before-tax profit before subtracting annual costs. After subtracting annual costs, the appropriate average tax rate (either 0 or 34 percent) was then reapplied to determine after-tax profit net of costs.

These figures suggest that for most firms, a good portion of the costs of compliance could be passed through, as there is no general all-purpose substitute for leaded steel (demand for this product is estimated to be relatively inelastic) [Ex. 578, pp. 49–50] and U.S. producers are internationally competitive (see below).

The impact estimates computed above also indicate that for all firms profit impacts at the corporate level will be quite small, regardless of production scheme.

OSHA has based its calculations of profit impacts on overall profits for each firm. Though AISI noted that the profitability of steel is not uniform across all segments of the industry [Ex. 681, p. 36], no profit data specific to leaded steel operations were made available by AISI or by the leaded steel producers; however, since this product is estimated to constitute about 0.8 percent of total sales, it is clear that impacts on profits generated by leaded operations will necessarily be greater than the impacts on total profits shown in Tables 7 and 8. Information on bar and structural operations, which include the production of leaded steel, indicates that for at least three of the five producers, Copperweld, LTV and Inland, these operations were not profitable in 1987 [Ex. 694–41, Attachments 5, 6, 7]. For Copperweld, which produces only bar steel and reported losses of $13,161,000 in 1987 annual costs, which range from $376,000 to $737,000, represent about 2.9 to 5.6 percent of losses. For Inland, which reported losses of $31,000,000 for bar and structural operations in 1987 annual costs represent about 1.2 to 2.4 percent of losses. Thus, profit impacts with respect to bar and structural operations, while greater than those profit impacts indicated above with respect to overall corporate operations, are likely to be small.

Based on this analysis, OSHA has determined that the 50 $\mu g/m^3$ standard is economically feasible for the producers of leaded steel. OSHA's reasoning is as follows.

First, impact computations indicate that the costs of compliance can be financed through the combination of pass-through and absorption. Additionally, OSHA does not believe that compliance costs are of sufficient magnitude to force manufacturers to shift away from the product. (Should one or more firms choose this alternative, market share will increase for those firms remaining, though foreign competition could be a factor.)

Second, the most costly compliance scenario, that estimated for the continuous caster, will only be required for one manufacturer.

Third, as noted above, at least two of the five producers have expressed their commitment to the bar and structural steel markets. It is unlikely that the costs associated with this regulation would affect these corporations' decisions to continue to produce leaded steel. Also, though LTV is in reorganization and its ability to invest in controls may be limited, OSHA believes that cost estimates were greatly overstated for this firm, as exposure data indicate that LTV is very close to compliance.

Finally, in assessing this industry's ability to pass on and absorb costs, OSHA took into account the recent decline in the value of the dollar against foreign currencies. Under these conditions, which enable U.S. producers to be more price competitive with foreign producers, it is not surprising to see increased demand leading to reactivation of facilities, resulting in increasing sales and profit levels. (One U.S. producer recently activated an idle facility to handle increasing overseas demand). And, while employment costs have traditionally been high, production employment has been declining due to increased efficiency and modernization efforts. This trend increases the steel industry's ability to absorb the costs of compliance.

OSHA concludes that this standard is economically feasible for the leaded steel industry with a compliance schedule of two and one-half years. As noted above, industry profitability has improved recently. The industry has expressed its intent to invest in the bar segment of the market and compliance costs are not of sufficient magnitude to alter these commitments. With regard to production efficiency, OSHA believes that the costs imposed by this regulation are negligible compared to the investment required for modernization and will not have a significant impact on this industry. The impacts of this regulation will not threaten the existence of the leaded steel industry.

6. Non-Ferrous Foundry Industry

Process Description and Sources of Exposure—Overview. Non-ferrous foundries produce castings of various sizes and complexity. Generally, the castings are produced by melting copper-based ingots, pouring the molten metal into molds, usually made of sand, allowing the metal to cool, and removing the castings, which are then cleaned and finished. The main operations are moldmaking and coremaking; furnace operations, which include charging, melting, tapping, drossing and transferring molten metal; pouring molten metal into molds; shakeout of castings from molds; cleaning and finishing of castings, which include cutting and grinding; and handling sand (Exs. 689–5; 686A, pp. 26–40; and 581–2).

Lead is added to molten copper alloys to enhance pressure tightness, lubricity, and machinability of castings (Ex. and 582–84, p. 2). Lead is added in concentrations that range at the extremes from .02–42.5% (Exs. 475–3, p. 2; and 582–84, p. 2). Three of the most common lead-containing copper alloys are leaded red brass (5% lead), valve metal (7% lead), and bearing bronze (13–22% lead), which are used to produce castings for water works, plumbing equipment, and machine bearings, respectively (Ex. 689–5).

The typical sand-mold casting process involves the following operations.

Moldmaking and Coremaking. Sand molds are used to create external shapes of castings while cores, which are placed inside of molds, are used to create internal spaces in castings.

Sand molds are formed by automatic molding machines or jolt squeezers, which press and bind together prepared sand or other materials into particular patterns. Automatic molding machines dispense and pack sand into molds without employees coming into physical contact with sand. (Ex. 684f, p. 4). During automatic mold making at Foundry F for example, sand falls from a hopper over the work station into the mold press. Excess sand falls approximately four feet to the floor, and then falls into a collection grate. Sand missing the grate is swept into the grate with a broom. Cores are automatically placed inside the mold (Ex. 684f, pp. 4, 11).

When jolt squeezers are used, molds are made by hand. The moldmaker drops sand into the flask from an overhead hopper, and distributes it by hand throughout the flask. The employee then uses a squeezer molding machine to press the mold shape into the sand. Employees place cores by hand at appropriate places in individual molds. After molds are formed, they must be transported to the pouring area where they are filled with molten metal. For example, at Foundry E molds are transported by a pallet system. After the moldmaker has made enough molds to fill a pallet car, the pallet car carries the molds from the squeezer to the pouring area (Ex. 684e, pp. 2–3).

Furnace Operations. The primary function of the furnace is to melt metals. Furnace operations involve the following tasks: charging, melting, tapping, drossing and transferring molten metal.

Furnaces can be of various types. The most commonly used furnaces in the non-ferrous casting industry are crucible and induction furnaces (Exs. 645, p. 5 and 689–3, p. 28). Furnaces can be fueled by gas, oil or electricity and can be tapped in a stationary position or by tilting or lifting.

The composition of the charge to the furnace determines the kind of alloy produced. To make up the charge, most melters use ingots already containing the proper ratio of metals required for casting a particular alloy (Ex. 571, p. 1). Some plants, however, formulate their own alloys, for example, by using copper scrap or "raw" lead from bars. If scrap is used, ancillary scrap handling processes, like cutting, sawing, transferring and charging scrap to a scrap heater, may be involved (Ex. 609, pp. 6–7).

Metals are charged through an opening in the top or side of the furnace. The furnace can be charged by conveyor or crane. For example, at Foundry E the furnaces, which operate 365 days a year, are charged from the top with 1,800 pounds of metal and are capable of melting 3,000 pounds of brass an hour. A charging bucket filled with metal is moved to the top of the furnace with an electric hoist, and the bottom hatch of the bucket is then opened, allowing the charge to fall into the furnace. Charging takes place 10 times per shift, 20 times per day, consuming less than a minute each time (Ex. 684e, p. 2).

When the melt is ready, the molten metal is tapped (poured) from the furnace into vessels like ladles for transportation to the pouring area. The ladles, which are pushed or controlled by employees known as hot-metal dispatchers, are transported to hand-pouring stations or automatic pouring lines on overhead monorail tracks, overhead bridge cranes, overhead monorail cranes, or forklifts (Ex. 689–4D, p. 7–14).

Impurities that float on the surface of the molten metal are called slag or dross. The dross, containing lead, is manually skimmed from the furnace and/or the ladle to remove impurities from the molten metal. It is then stored in covered or uncovered dross hoppers adjacent to the furnace on the pouring line (Exs. 684e, p. 2; 684g, p. 11).

Pouring. When the ladles or kettles containing molten metal arrive at the pouring station, the temperature of the metal is taken, and cold metal may be added if the temperature is found to be too high. At many foundries, dross is then manually skimmed from the surface of the metal. The molten alloys are poured into molds as soon as possible to provide good casting quality.

At Foundry F the casting operation is performed on automated casting machines. Previously formed sand molds automatically rotate on a turntable to where the metal is automatically poured. The machine continually presents and then retrieves individual molds to and from the hot-pouring operation (Ex. 684f, p. 3).

Elsewhere, small castings (less than 50 pounds) may be produced in molds loaded on pallet decks. Special castings of large size or complexity may be poured in a variety of ways, using stationary floor molds, pit molds in fixed locations or molds on powered or manual roller conveyors (Ex. 581–2, Prepared Testimony of J. Guimond, pp. 8–9).

After molds are filled on the pouring deck, they are pushed or automatically moved through cooling courts to the shakeout area.

Shakeout. In the shakeout area, solidified castings are separated from sand molds. A wide variety of mechanical methods and equipment (e.g. tumbling mills), has been developed to handle various sizes and types of castings, alloys and different types of sand (Ex. 583–13, pp. 5–14 to 5–17). Some castings are removed simply by hand (e.g., from large floor molds), others are removed by automatic and enclosed equipment (Ex. 684f, p. 3).

In a typical automated shakeout operation, molds are turned over to dislodge and separate the castings and loose sand. The castings and sand drop to a vibrating conveyor which carries the casting to the sorting and cutting area and vibrates the loose sand off of the conveyor (Ex. 684f, p. 3).

Cleaning and Finishing. Before castings are finished by cutting and grinding, they are first sorted according to the subsequent finishing required. Finishing involves the removal of excess sand and metal from the casting. The removal can be accomplished by a variety of methods, like cutoff saws, grinders and buffers.

There are several sources of excess metal in the casting process. For example, the channel into which the molten metal is poured to form the casting, as well as the channels connecting various castings in a mold, create excess metal on the casting, known as gates, sprues, and risers. Some foundries design the shapes of these channels to facilitate their removal, with the result that they may be simply broken off by hand or removed by a mechanical press ("kiss-gating") and recycled to the furnace. At Company E, for example, kiss-gating techniques are used to the maximum extent possible to reduce the number of parts that must be sawed in the cutoff saw area (Ex. 684e, p 3). Company representatives state that, because of kiss-gating techniques, grinding is not usually needed for many of the small castings produced. However, foundries do not use kiss-gating for some larger or unusually shaped parts. Where kiss-gating is not used, excess metal must be removed by cutoff saws (Ex. 684e, p. 3). After removal, the surface of the casting may be finished by grinding and buffing.

Abrasive blasting, abrasive tools, cutting torches and other methods also may be used to remove finely burned-on sand and remaining excess metal from the casting. In many foundries, machine finishing such as grinding and cutoff is accomplished solely by abrasive wheels. Infrequently, a tumbling mill is used to dislodge sand by the impact of castings striking each other in a rotating drum.

Sand Handling. Some foundries recycle used sand; others do not. In foundries that do not recycle sand, sand handling consists of transporting new sand to the moldmaking and coremaking operations and disposing of used sand. In foundries that do recycle sand, sand handling involves additional steps to recondition and/or treat the used sand, to transport the reconditioned sand back to the moldmaking operation, and to mix it in proper proportions with new sand, water, and binders.

Foundries that recycle sand do so for two reasons. Recycling reduces costs and also is said to be necessary to properly condition the molds for certain castings (Exs. 669-5, pp. 155-58; 678, p. 2). With recycled sand, new sand is mixed with heat-fractured sand fines of proper sizes. The recycled sand is transported by conveyors, loaders and other sand movers from reconditioning areas to mixers and mullers for cooling and addition of new sand, binders and moisture (2-3%) to condition the sand.

If olivine sand, an expensive alternative to silica sand, is used, it is completely recycled and seldom discarded (Ex. 609, p. 12).

Sources of Exposure. The sources of high lead exposure in non-ferrous foundries are fume emitted in the furnace and pouring operations and dust generated in the cutoff saw operation. Lower levels of lead exposure are generated from fume and dust in shakeout, grinding and from any contaminated sand that is recycled and allowed to dry (Ex. 694-42, p. 5). However, Ford Meter Box has pointed out that the lead content of airborne foundry dust is 3 to 5 times higher than the lead content of recycled sand (Ex. 678, p. 2). In addition, lead exposures in many operations generally are increased by cross contamination from other operations (Exs. 571, p. 5; 694-42, p. 6).

For the vast majority of non-ferrous foundries that use preformulated alloy ingots as their basic raw material, the handling of such ingots is not a source of lead exposure. These ingots present no lead exposure problems until they are melted and processed. For those foundries that make up their own charges from scrap and/or raw lead ingots, low-level exposures may be produced. Raw lead stored in piles, bins, open containers or on pallets may be exposed to the weather, and moisture may cause oxidation, producing a powdery coating of lead oxide that can become airborne during handling In addition, if the raw lead is worked, as in cutting or sawing, lead exposures also may be generated (Ex. 609, pp. 6-7).

In the hot furnace and pouring operations, the tasks that contribute most to high exposure levels are charging, tapping, transferring, drossing (slagging), and pouring. These tasks are a source of high levels of lead fume for employees performing them and for other employees in the furnace and pouring areas. In addition, these tasks are a source of significantly increased exposure levels for employees elsewhere in the foundry who, because of proximity and/or cross drafts, are subjected to cross contamination from the furnace and pouring operations.

Once the molten alloy has been tapped from the furnace, the molten metal provides a continuing source of lead fumes while it is being transferred to the pouring area, while slagging is taking place, and even after pouring, until the melt cools sufficiently for its surface to solidify. Thus, the furnace filled with molten metal, the ladle into which the molten metal is tapped, and the mold into which the melt is poured all can provide continuing sources of lead exposure (Ex. 581-2, Prepared Testimony of J. Guimond, pp. 3, 5). In the pouring operation, employee exposures peak during the actual pouring of the mold (Ex. 581-2, p. 8). Where large molds are cast, the molds usually remain in place for some time to cool, so further exposure to lead can occur in unventilated areas.

The extent of lead emissions in these work areas also depends on the temperature of the melt, lead content of the charge, type of furnace, furnace firing rate, and, of course, upon the engineering and work practice controls employed to contain or avoid such emissions.

In shakeout, the major source of workers' exposure is the opening of molds, which causes steam, "smokes" fume and dust trapped in the molds to be emitted. This occurs because dehydration of the sand from the intense heat of the molten metal allows lead-containing dust to form and subsequently escape when the mold is broken.

During grinding and cutoff, the source of lead exposure is the lead contained in the cast alloy, which is abraded as dust during the process. The extent of workers' exposure to lead in grinding depends on the type of grinder used (e.g., snag grinder), the media of the abrasive wheel, the size and shape of the casting, the lead content of the alloy, the extent of automation, and how closely the operation is attended.

Sand that has been contaminated by lead in the pouring operation also provides a source of continuing lead exposures until the sand is properly moistened or treated to remove the contaminant. At Ford Meter Box, for example, where 80% of the sand is recycled and the recycled sand contains .2% lead, approximately 2,000 pounds of lead in 500 tons of sand are routed each day on conveyor belts to be reused (Exs. 582-81, p. 31; 663).

The accumulation of lead in the sand occurs because lead fumes are trapped in the walls of the porous sand molds and remain in the sand after shakeout (Exs. 581-2, Prepared Testimony of J. Guimond, p. 14). Exposures to lead-laden dust can occur at all points where dry, used sand is handled, for example, in the case of recycled sand, on route to the muller and after the muller wherever water-tempered sand containing lead is allowed to dry (e.g., tempered sand falls off a conveyor and collects on the floor). Thus, recycled sand also can provide a source of exposure to lead in an operation like moldmaking, which does not otherwise involve lead (Exs. 582-81, p. 31; 609, p.12; 663; 678, p. 3).

Aside from emissions from recycled, contaminated sand, the only other possible source of lead exposure in moldmaking is cross contamination from lead dust or fume emissions generated in adjacent operations (Ex. 571, p. 2). Moldmaking and coremaking do not necessarily require the use of lead or lead-containing substances in the processes. In the case of moldmaking, to the extent that new sand or substitutes can be used exclusively, there is no internal source of lead. In the case of coremaking, recycled sand is not used, and as a result there is no internal source of lead. In coremaking, there is only a single, external source of lead: cross contamination from other operations (Exs. 684f, pp. 4, 11; 694-42, p. 6).

Exposure Levels.—Overview. An overview of existing exposure levels reveals the following. Existing exposure levels, represented by geometric means, already are below 50 $\mu g/m^3$ in most operations at large non-ferrous foundries. In two foundries OSHA recently visited, for example, geometric mean exposure levels are below 50 $\mu g/m^3$ in 11 of 15 operations at one (Foundry F Ex. 686A, p. 14) and in 6 of 11 operations at the other (Foundry E, Ex. 686A, p. 13). Unless otherwise stated, these geometric means include airborne lead from cross contamination (see discussion below). They therefore overstate exposure levels caused directly by individual operations, because sampling results include cross contamination from other operations. The problem of cross contamination appears to affect all operations and extends industry wide, even in modern plants (Exs. 582-81, 1980 Report on Feasibility, p. 3).

As OSHA demonstrates below, once the data are adjusted to factor out the effects of cross contamination, geometric mean exposure levels are at or below 50 $\mu g/m^3$ in all but three operations at Foundry E. In those operations the geometric means are not far above 50 $\mu g/m^3$ Similarly at Foundry F adjusted exposure levels are below 50 $\mu g/m^3$ in 13 of 15 operations. In 1 of the remaining 2 operations the adjusted geometric mean is 78.7 $\mu g/m^3$ (see Table A).

At Central Brass Manufacturing Company ("Central Brass"), where the company president has fashioned rough, representative averages for each operation by eliminating atypical exposure results, a further adjustment (20 $\mu g/m^3$) [2] to eliminate the effects of cross contamination reveals that arithmetic average exposure levels would be at or below 50 $\mu g/m^3$ in 6 of 9 operations (Ex. 581-4, Att. B-2, B-3, B-4). In 1 of the remaining 3 operations the adjusted arithmetic average would be just slightly over 50 $\mu g/m^3$ [3] This confirms OSHA's understanding of exposure levels in non-ferrous foundries.

Summary data for a number of foundries supplied by a major industry trade association (Ex. 667) further confirm that in most operations geometric mean exposure levels adjusted for cross contamination already are below 50 $\mu g/m^3$

The Data. The above overview of exposure levels is based upon the best available evidence in the record. The record includes at least 13 sets of data, most of which do not provide significant, useable data. OSHA believes that for purposes of determining technological feasibility the data sets representing exposure levels in large foundries are by far the most useable, accurate and complete. In part, this is because some of these data sets are supplemented by vital contextual information gathered on OSHA site visits.

The data sets for large non-ferrous foundries were provided by Foundry E (Ex. 613b-1), Foundry F (Ex. 613b-6), Ford Meter Box (Exs. 582-81, 694-28, and 698), Central Brass (Ex. 581-4), and the American Foundrymen's Society, Inc. ("AFS, Ex. 667). These foundries provided OSHA with extensive and invaluable data, information and insights. Except for the fact that they declined to testify and answer questions at the remand hearing, they were quite cooperative. Ford Meter Box was especially forthcoming.

The best evidence is from Foundries E and F because their exposure data are supplemented by extensive information on plant conditions, processes, and controls largely gathered on recent OSHA site visits (Exs. 684e; 684f). That information enables OSHA to assess and interpret these exposure data more effectively than comparable data from other foundries, which have not chosen to provide similar contextual information as requested. The information and data from Foundries E and F further allows OSHA to better understand exposure data from other large foundries, like those represented by AFS' data. Central Brass and to a lesser extent AFS made some commendable efforts to help OSHA interpret their data.

Another group of data sets has been provided by small and medium-sized foundries. Those submitting data include Foundry G (Ex. 684G), AFS (Exs. 667 and 694-26), Foundry 1 (Ex. 613b-5), Foundry 2 (Ex. 613b-4), Prattsville (Ex. 583-14 and see Ex. 694-23), Hill Air Force Base Non-Ferrous Foundry (Exs. 582-94; 649), Aacco Foundry, Inc. (Ex. 582-7), and Federal-Mogul Corporation (Ex. 582-10). With the exception of the data from Foundry G and Hill Air Force Base, all of these data are incomplete. Further, OSHA's analyses of these sets reveals that much of the data is neither recent, well-defined by job classifications or operations, nor accompanied by information concerning underlying conditions, processes or controls.

For example, the submission from Federal-Mogul Corp. (Ex. 582-10), although reasonably complete in some respects, does not provide data operation by operation. This is because in Federal-Mogul's foundry (identified in the exhibit as Plant C), the same operators both melt and pour the alloy. In addition, exposure data for other operations such as mold making are not provided. Disaggregation of exposure data is useful and important in analyzing data for purposes of assessing technological feasibility. Lack of disaggregation effectively makes the data unuseable for comparing exposure levels in particular operations and their associated controls, if any.

The data set for small foundries provided by AFS is the best of this group. It consists of two submissions (Exs. 667· 694-26). In neither does AFS provide individual monitoring results or explanations of conditions, processes, and controls associated with particular operations. AFS also does not explain how it integrates exposure data from job classifications that vary widely across the industry into the five universal operations for which it provides data. Obviously, the way in which raw data are allocated to particular operations can influence results.

In the initial data submission, the data for each of the five operations consist of nothing more than a single number, which represents the average of arithmetic mean exposure levels in 25 foundries for that operation (Ex. 667 p. 2). In the second submission (Ex. 694-26, Attachment 1), AFS does provide the frequency distribution of monitoring results and the arithmetic and geometric means for each of the five operations, but the data still are not broken down foundry by foundry. This makes the data unreliable for assessing technological feasibility, because, to an unknown extent, high monitoring results in one or more plants with poor controls may dramatically affect the aggregate. Viewed together, these submissions are not only inadequate; they also appear to be inconsistent. For example, AFS does not explain why one job classification (centrifual casting) in the first submission is dropped in the second or why average exposure levels for furnace tending and cleaning/finishing are much higher in the second. Had AFS provided the Agency with the underlying raw data, OSHA could have independently analyzed the data. As such, OSHA does not rely on these submissions.

Another data set is from Hill Air Force Base (Ex. 582-94). Even though these data are quite complete and are supplemented by a recent OSHA site visit and even though this foundry has state-of-the-art engineering and work practice controls and consistently achieves extremely low air lead levels, OSHA does not generally rely on these data, because the Agency does not regard the foundry at Hill Air Force Base as typical. Its workforce is extremely small (only 2 workers); the level of production at the foundry is unusually low; and some processes and the alloys cast are not typical of conventional non-ferrous foundries in the private sector (Tr. 848-49, 859).

The final data set is from Foundry G. OSHA also finds it cannot treat these data as typical of the non-ferrous foundry industry (Ex. 684g). The combination of raw materials and processes at this foundry set it off from other foundries. For example, Foundry G does not rely upon preformulated alloy

[2] OSHA chooses 20 $\mu g/m^3$ as the measure of cross contamination at Central Brass, because that figure is just below the average exposure level for coremaker in the three data sets upon which OSHA relies to determine the extent of cross contamination in this industry sector (see Table A and the discussion of OSHA's use of exposure levels for coremaker to represent cross contamination, below).

[3] A submission to the record by the National Institute for Occupational Safety and Health (NIOSH) concerning a NIOSH in-plant study at Central Brass, which arrived too late for public comment and upon which OSHA therefore does not rely, indicates that by January 1987, geometric mean exposure levels at Central Brass generally had been reduced to below 50 $\mu g/m^3$ (Ex. 582-11, "Walk Through Survey Report of the Central Brass Manufacturing Company," p. 4; and see cover letter from T. Meinhardt to OSHA Docket Office). OSHA's analysis of the data from Central Brass, including the adjustment for cross contamination, thus, appears to be conservative.

ingots but instead makes up its own charge, relying heavily upon scrap. In addition, castings at this foundry are produced exclusively by continuous casting for brass and bronze rods and from permanent molds for other products. Thus, Foundry G does not utilize any sand or sand substitutes for molds or cores. In addition, the data from Foundry G are not useful for determining feasibility because, as Meridian points out, Foundry G lacks certain fundamental controls and existing controls are inadequately designed (Ex. 686A, p. 40). Further, exposure levels for several job categories are lacking.

Another data set consists of inspection data from OSHA's Integrated Management Information System (IMIS) (Ex. 583-1). This data set is supplemented with often informative case files, which provide some of the contextual information needed to interpret and assess the data (Ex. 585). Gary E. Mosher, the industrial hygienist for AFS, stated that this data set appears to reflect foundries in which the lead content of metals being poured is fairly low and therefore cannot be used to represent foundries that primarily and regularly pour brass and bronze with lead contents ranging from 5-22% (Ex. 582-84, p. 5).

Assuming, only for the purposes of argument, that Mr. Mosher's assertion is correct; more than one-half (675) of the total number (1,291) of non-ferrous foundries are secondary and tertiary foundries, which primarily produce castings that are not brass, bronze or copper (Ex. 581-2, Comments of J. Mallory, p. 2). These foundries employ an estimated 38% of the industry's total lead-exposed workforce (Exs. 571, p. 13; 686A. p. 2). Therefore, even if OSHA were to agree with Mr. Mosher's assertion, at least for this large number of non-ferrous foundries and employees, the IMIS data can be treated as representative. The IMIS data shows that more than 58% of the unadjusted sampling results already are below 50 μg/m³ (Ex. 583-1). Therefore, from the IMIS data OSHA concludes at the very least that in plants such as these, where leaded alloys are poured only intermittently and total lead emissions are lower than in primary foundries (which primarily produce brass, bronze or copper castings), controlling lead emissions to consistently below 50 μg/m³ should not pose any great difficulty. In any event, since OSHA concludes that it is feasible to control air lead levels to or below 50 μg/m³ by engineering and work practice controls in primary foundries (see below), it must be feasible in secondary and tertiary foundries, as well, to control lead exposures to or below 50 μg/m³

Of the total number of non-ferrous foundries (1,291), 736 (56%) are small, employing fewer than 20 employees (Ex. 582-84, p. 1). Of these, it is estimated that more than one-half, or 366, primarily produce castings that are not brass, bronze or copper. The remaining 370 small foundries, which primarily produce leaded alloys like brass and bronze, do have potentially high lead exposure levels in certain operations. However, it is estimated that these foundries employ only about 15% of the industry's total lead-exposed workforce (Exs. 571, p. 13; 686A, p. 2).

By contrast, large foundries that primarily produce brass and bronze castings each employ 20 or more employees and collectively account for almost one-half of lead-exposed total employment (49%) (Ex. 686a, p. 6). These large foundries are very important when considering exposure levels for the entire industry workforce. Thus, the exposure level data from these foundries, which is summarized at the beginning of this section, merit further analysis. Unless otherwise stated, the discussion of that data is in terms of geometric means.

OSHA's analysis of the large foundry data provided by AFS reveals that 64% of the unadjusted sampling results are below 50 μg/m³ and that the average geometric mean for all samples is 33.5 μg/m³ (Ex. 667). At Central Brass, more than two-thirds of the unadjusted sampling results are below 50 μg/m³ (Ex. 581-4, B-2, B-3, B-4). At Foundry E, a large facility visited by OSHA in 1988, unadjusted geometric mean exposure levels not only are below 50 μg/m³ in most of the operations, but are below 80 μg/m³ in all operations (Ex. 686A, p. 13). At Foundry F unadjusted geometric mean exposure levels are below 50 μg/m³ in over 73% of the operations, and are below 58 μg/m³ in over 86% of the operations (Ex. 686A, p. 14). In addition, at Foundry F in 11 of 15 operations 50% or more of sampling results are below 50 μg/m³ and in an additional two operations close to a majority of sampling results are below 50 μg/m³

In other words, at Foundry F there are only two operations in which either a majority or close to a majority of samples are not already below 50 μg/m³ Those two operations, pouring and gate saw operator (cutoff saw), also are the only operations at that foundry that have high geometric means. Although different foundries appear to have problems in different operations (e.g., charger), only the pouring and cutoff saw operations uniformly present a problem in every data set where they appear (Exs. 686A, pp. 10, 11, 13 and 14; and 581-4-B, pp. 2-4). Therefore, OSHA concludes that the pouring and cutoff saw operations are the most difficult to control to or below 50 μg/m³ (Ex. 684F p. 12).

In this discussion of exposure levels OSHA has relied to a considerable extent on the geometric mean to represent existing exposure levels and to provide the baseline for quantifying the reduction in exposure levels anticipated from plants implementing OSHA's recommended additional controls. OSHA has chosen to rely upon the geometric mean because, as indicated above in the introduction to the technological feasibility section of this preamble, it is widely accepted as the best statistic to characterize typical exposure data (cite NIOSH).

OSHA recognizes that there is no single number, or even range of numbers, that can perfectly characterize a data set. A mere range of exposure levels, for example, provides very little useful information about typical exposure levels (e.g., 47 to 2,893 μg/m³ for permanent mold furnace operator at Foundry G, Ex. 684g, p. 8). Similarly, the arithmetic mean, which is equivalent to the commonly used "average" provides little insight into the distribution of exposures and is subject to gross distortion by atypical events.

For example, of the 15 sampling results for permanent mold furnace operator at Foundry G, ¾ths are below 200 μg/m³ but the arithmetic mean is 345 μg/m³ (Ex. 684g, p. 10). This is because one sample is 2,893 μg/m³ By contrast, the geometric mean is 168.4 μg/m³ (Ex. 686A, p. 15), which more accurately reflects the routine distribution of exposure levels.

In addition, OSHA finds the geometric mean to be particularly appropriate as a basis for assessing technological feasibility under the court's definition of technological feasibility. The court does not require that for a PEL to be feasible industry must be able to achieve it in all operations all of the time. Rather, the court's definition of feasibility focuses on typical and routine exposure levels. *USWA* v. *Marshall*, 647 F.2d at 1270, 1272. Consequently, the mere existence of aberrant exposure levels does not constitute proof of infeasibility.

In using the geometric mean to characterize exposure data, the impact of outliers is minimized. This is necessary because there is no upper boundary on high outliers, which can be in the thousands of μg/m³ while there is a lower boundary on low outliers, the limits of detection or 0 $\mu g/m^3$ As indicated in company annotations to exposure data and in company comments (e.g., Ex. 581-4, p. B-3), extremely high, atypical exposure levels often are the result of unusual events like operational upsets and spills or monitoring problems, such as "a piece of particulate getting into the sample" (sample contamination) (Ex. 684E, p. 7). OSHA's use of the geometric mean to represent typical exposure levels is also supported by industry representatives (e.g., Exs. 581-4-B, p. 4; 694-6, p. 2) and by Meridian (Ex. 686A, p. 12-13).

OSHA therefore relies primarily on the geometric mean to characterize existing exposure levels. In addition, using a single figure rather than a range of figures (e.g., a frequency distribution) to represent existing exposures facilitates quantifying reductions in air lead levels to be expected from the implementation of recommended additional controls.

Thus far, the analysis of large foundry sampling results is based upon unadjusted data that include the effects of cross contamination. OSHA is convinced that cross contamination is a very serious problem in non-ferrous foundries. This conclusion is supported by exposure data (see Table A, below), testimony of a union health scientist (Ex. 694-42, p. 4; Tr. 826, 828), one of the few documented industrial hygiene surveys in the industry (Ex. 582-81, Letter from G. Mosher to R. Walther, p. 2), and statements of industry representatives, Exs. 581-2, Testimony of J. Guimond, p. 13; 667 p. 4).

The clearest and most irrefutable evidence of cross contamination lies in the fact that coremakers, whose operation does not itself involve lead or lead-contaminated sand, consistently have exposure levels across the industry that average around 20 $\mu g/m^3$ instead of being negligible, as would be expected.

For example, at Foundry E the geometric mean exposure level for coremaker is 27 $\mu g/m^3$ (Ex. 686A, p. 13). At Foundry F the geometric mean exposure level is 16.5 $\mu g/m^3$ and more than 10% of the samples are above 50 $\mu g/m^3$ (Ex. 686A, p. 14). At the large foundries represented in the AFS data, the average geometric mean is 20.7 $\mu g/m^3$ and more than 25% of the sampling results exceed 50 $\mu g/m^3$ (Ex. 686A, p. 11). Although small foundries have not provided sufficient data to enable OSHA to estimate exposure levels for coremakers, there is every reason to believe that, with fewer controls and less-modern facilities in general, small foundries face cross contamination problems that are at least as serious (Ex. 686A, p. 41).

Consequently, OSHA considers exposure levels in coremaking to represent the increment to exposure levels generally due to cross contamination in any given plant. Although the exposure level in coremaking and the derived estimate of cross contamination varies from plant to plant, OSHA believes that using levels in coremaking to represent cross contamination is conservative. Coremaking is often separated from high sources of lead emissions like cutoff saws, furnaces and pouring. For example, at both foundries E and F coremaking is separated by at least 50 feet and/or enclosures from such operations (Exs. 684e, p. 4; 684f, p. 4). This means that cross contamination is likely to be less in coremaking than in operations closer to sources of high air lead levels (Ex. 667 p. 4).

OSHA's position that exposure levels in coremaking represent the baseline for background exposure levels in these foundries is supported by a statement by Dr. Franklin E. Mirer, an experienced, certified industrial hygienist and toxicologist, who is director of the Health and Safety Department for the United Auto Workers Union (Ex. 694-42, p. 6). Dr. Mirer reported that coremaking "does not itself generate lead emissions.

Record evidence confirms that cross contamination also is a problem in operations other than coremaking. For example, in moldmaking, where the only direct exposure to lead comes from any sand that has been recycled and remains contaminated, geometric mean exposure levels are 45.7 $\mu g/m^3$ 39.9 $\mu g/m^3$ 27.4 $\mu g/m^3$ and 35.8 $\mu g/m^3$ at Foundry E, Foundry F AFS foundries (Table A, below), and Central Brass (Ex. 581-4), respectively. These levels, which average aproximately 38 $\mu g/m^3$ cannot simply be attributed to contaminated sand, especially since some industry representatives assert that lead-contaminated sand cannot cause exposure problems because of its moisture content (Ex. 689-3, p. 5). These levels, OSHA believes, confirm that Agency's use of exposure levels in coremaking to represent the increment attributable generally to cross contamination is conservative (Ex. 678).

In addition, industry itself has recognized cross contamination as a problem in foundries. For example, in a July 1980 report on prevailing conditions at Ford Meter Box based upon an on-site industrial hygiene survey carried out by Gary Mosher, the industrial hygienist for AFS, Mr. Mosher recognized cross contamination as a problem throughout the foundry. Otherwise praising Ford Meter Box's controls in the strongest terms—"no other brass foundry in the country uses State-of-the Art technology as much or as effectively as Ford Meter Box" Mr. Mosher nonetheless goes on to say that

> Smoke tube testing done in the foundry at the same time as the air sampling indicated that there seemed to be no uniform air flow patterns in the foundry. My guess is that with the negative pressure in the foundry and air blowing in through outside doors, windows and other parts of the building, there is a great deal of turbulent air throughout the whole foundry. This turbulent air serves to mix all materials which are emitted by the various foundry processes. What this implies is that the sources are going to have to be strictly controlled to eliminate the spreading of emissions throughout the foundry (Ex. 582-81, Letter from G. Mosher to R. Walther, p. 1).

Moreover, industry consultant Joseph A. Guimond of Joesph A. Guimond & Associates, Inc., an environmental consulting firm that has specialized for the past 14 years in controlling airborne contaminants in the foundry industry, agrees that cross contamination is a major problem in the non-ferrous foundry industry. Mr. Guimond has said that cross contamination "has in some cases been the major contributor to employee overexposure based on our experience" (Exs. 581-2, Prepared Testimony of J. Guimond, p. 14; 666, p.13). Similarly, Richard A. Chandler, the president of Central Brass, states that for such operations throughout his foundry as molding, coremaking, mulling, general laborers, towmotor operators, sprue cutters, break-off and others, exposures basically are attributable to cross contamination (Ex. 581-4-B, p. 3).

OSHA's position that cross contamination is an industry-wide problem is further supported by statements by OSHA's contractor, Meridian. Meridian's description of typical non-ferrous foundries illuminates why cross contamination is such a problem. These foundries are said to be generally housed in a single building with a variety of sources of lead fume and dust that, if uncontrolled, can release lead that can be spread throughout the plant (Ex. 571, p. ES 3).

The impact on employee exposures to lead due to eliminating cross contamination can be established by a simple calculation. Taking exposure levels in the coremaking operation as indicative of the extent of cross contamination, eliminating cross contamination would reduce exposure levels in most operations at Foundries E and F and at the foundries represented by the AFS data by 27 μg/m³ 16.5 μg/m ³ and 20.7 μg/m³ respectively. However, in the cutoff saw and pouring operations, which are the primary sources of cross contamination, the reductions would be proportionally less (see discussion below).

As shown in Table A, this would mean that at Foundry E, for example, by controlling cross contamination only the cutoff saw operator, at 65.1 μg/m³ the pourer, at 56.1 μg/m³ and the worker involved in sand treatment, at 50.6 μg/m³ would have geometric mean exposure levels above 50 μg/m³ All other operations would have geometric means below 40 μg/m³ At Foundry F the picture is similar. Only gate saw operators at 113.4 μg/m³ and pourers at 78.7 μg/m³ would have exposure levels over 50 μg/m³· all the other operations would have geometric means below 41 μg/m³ (see Table A). OSHA wishes to emphasize that these levels would be achieved without the implementation of other recommended additional controls.

TABLE A

Job classification	Company E		Company F		AFS	
	Unadjusted geom. mean	Geom. mean adjusted for cross contamination	Geom. mean	Geom. mean adjusted for cross contamination	Geom. mean	Geom. mean adjusted for cross contamination
Coremaker	27	0	16.5	0	20.7	0
Muller	35.6	8.6				
Moldmaker	45.7	18.7	39.9	23.4	27.4	6.7
Melter	47.6	20.6			36.6	15.9
Furnace tender			50.9	34.4	68.8	48.1
Charger deck					153.7	133
Hot metal dispatcher			33.9	17.4		
Pourer	69.6	56.1	86.9	78.7	83.3	[1] 72.9
Shakeout	61.7	34.7			88.9	68.2
Wheelabrator/tumbleblast operator					128.3	107.6
Cutoff/gate saw operator	78.6	65.1	121.6	113.4	112.7	102.3
Grinder	21.7	0	57	40.5	18.3	0
Cleaner/pangborn opr.	47	47	46.2	29.7		
Sorter	65.3	38.3	38.5	22		
Sand treatment	77.6	50.6				
Inspector			20.6	4.1		
Electrician			44.9	28.4		
Millwright			33	16.5		
Forklift-driver			32.3	15.8		
Laborer			26	9.5	33.5	12.8
Supervisor			23.2	6.7		

Because this operation is itself one of the sources of cross contamination, OSHA has only reduced exposure levels in this operation by one-half of OSHA's estimate of the increment due to cross contamination.

[2] Operation located in separate building and it is extremely unlikely this operation is affected by cross contamination from other operations, therefore OSHA has not reduced exposure levels in this operation by the estimate of the increment due to cross contamination.

Similarly, at Central Brass, adjusting for cross contamination results in exposure levels below 50 μg/m³ in almost all of the operations. Since Central Brass did not provide data on exposure levels in coremaking, OSHA has conservatively assumed the level to be 20 μg/m³ With that assumption, simply controlling cross contamination would bring geometric mean exposure levels to below 50 μg/m³ in seven of nine operations at Central Brass (Ex. 581-4, B-2, B-3, B-4).[4]

Current Controls. OSHA's analysis of the record in the previous section indicates that in the non-ferrous foundry industry the majority of sampling results in nearly all the useable data sets already are at or below 50 μg/m³ and that in nearly all operations there are geometric means already are at or below 50 μg/m³ This is true even before adjustments are made to eliminate the effects of cross contamination. In only two operations, pouring and cutoff saw, for example, were unadjusted geometric mean exposure levels above 50 μg/m³ at both foundries E and F This level of control has been achieved primarily by existing local exhaust ventilation, enclosure or isolation, plant design, automation of the production process, and work practices.

OSHA's best information on existing controls comes from its site visits to foundries E, F and G and the technical literature. As to foundries E and F OSHA believes that, although the extent of controls implemented there may exceed the industry norm, the controls are conventional in character and readily available in the marketplace (see discussion below). The fact that both of these foundries allow representatives from other foundries to visit and inspect their facilities confirms OSHA's belief that their controls are conventional (Exs. 684E, p. 7 and 684F p. 12). As to Foundry G, which uses permanent mold and continuous casting, OSHA has concluded that it is so atypical in its production processes and raw materials that it cannot be taken to represent other foundries in the industry. Based upon the information from foundries E and F OSHA finds the following existing controls in the various operations.

General Building. The production areas of both Foundries E and F are maintained at negative pressure to contain toxic substances in those areas. Both use mechanical, rather than natural ventilation. Foundry F has a central ventilation system, which maintains a minimal airflow throughout the building (Ex. 684f, p. 6). There are no windows in Foundry F and the main access door is

[4] That 20 μg/m³ is conservative estimate for exposure levels in coremaking is confirmed by the recent survey of Central Brass performed by NIOSH (Ex. 582-11, pp. 4-5). In that survey, the geometric mean exposure level in coremaking for 1985-86 was 27.6 μg/m³ For other operations at Central Brass, nearly all of NIOSH's unadjusted geometric means exposure levels for 1985-86 were somewhat lower than OSHA's. This again suggests OSHA is being conservative. As indicated above, OSHA does not rely on this NIOSH survey.

specially constructed to quickly and automatically raise and lower (Ex. 684f, p. 1). This minimizes cross currents and disruptions to the ventilation envelope in the foundry.

Foundry F is also computer controlled, which enables personnel in an isolated and enclosed control room to know immediately when there is any malfunction or problem in any area of the foundry (Ex. 694-25, p. 4).

Moldmaking and Coremaking. At Foundry F moldmaking is automated, which eliminates extensive employee contact with molding sand and thereby most employee exposures arising from the operation (Ex. 684f, p. 4). Consequently, exposure levels are below 50 $\mu g/m^3$ most of the time (Ex. 684f, p. 7). At Foundry E, which produces sand molds with a jolt squeezer, exposure levels are controlled to below 50 $\mu g/m^3$ by local exhaust ventilation installed at the sides of the moldmaking station, and sand that is not trapped in the flask during the process falls into grates below (Ex. 684e, p. 4). The sand itself is conditioned with water, which suppresses most of the respirable dust. Therefore, even where molds are made by hand, exposure to lead in the absence of cross contamination is typically low (Ex. 694-42, p. 7).

Foundry F carries out coremaking in partial isolation, with coremakers separated some distance from hot operations and surrounded on 3 sides by curtains (Ex. 684f, pp. 4, 11).

Furnaces. As described above, furnace operations involve 5 tasks: Charging, melting, tapping, drossing, and transferring molten metal. Exposure levels are partly controlled at both Foundries E and F by locating the furnaces on raised platforms. The selection of a suitable furnace is another method of controlling exposure levels in these hot tasks. For example, the induction furnaces at Foundries E and F are energy efficient during melting and also have lower emission rates than either arc or reverberatory furnaces (Ex. 684e, p. 2). In addition, these furnaces are provided with top-mounted exhaust systems equipped with air flow regulators to control exposure levels by varying the amount of local exhaust ventilation during particular furnace operations.

With regard to charging, the furnace at Foundry E has no charging enclosure (Ex. 684e, p. 4). To capture the release of lead fume during charging, the amount of exhaust in the close-capture furnace system is increased four-fold. Foundry E also has installed roof fans to remove fumes and heat that escape during charging. These controls, however, are not adequate since exposure levels of the melter are often well in excess of 50 $\mu g/m^3$ (Ex. 684e, p. 5). At Foundry E the OSHA site visit team observed a considerable amount of fumes coming from the furnace during charging and on two occasions the furnace operator was forced to leap back to get out of the way of sparks and fumes emanating from the furnace after charging (Ex. 684f, p. 11).

At Foundry F ventilation for the furnace is positioned over the charging port of the furnace (Ex. 684f, p. 6). However, charging is not provided with specific control equipment.

During tapping at Foundry F the furnace operator is supplied with a fresh air shower of outside ambient air (Ex. 684f, p. 6). In addition, air lead levels are controlled by Hawley Trav-L-Vents that exhaust fumes during pouring of molten metal from the furnace to the portable vessels (e.g., ladles, kettles, crucibles). During the site visit to Foundry F OSHA observed the furnace operator's breathing zone was within a few feet of the furnace opening and he was manually chipping material out of the tap hole (Ex. 684f, p. 11). At Foundry E, ladles are also equipped with Hawley Trav-L-Vent systems to capture fumes during tapping and ladle transfer (Ex. 684e, p. 6).

During drossing, which at Foundry F takes place after the molten metal is tapped into a ladle, employee exposure is controlled by two means. First, while the employee is drossing he is bathed in a stream of outside air by an air wash system. Second, the ladle or kettle itself is equipped with a Hawley Trav-L-Vent (Ex. 684f, p 10). However, when the worker is required to rake dross off the top of the kettle, emissions that normally would be captured and exhausted through the close-capture system are dispersed while the system is disconnected. At Foundry E, although the ladle is locally exhausted, the worker drossing the ladle does not have a fresh air shower nor is the slag bucket enclosed or ventilated (Ex. 684e, p. 6).

At Foundry F exposure levels during transfers of molten metal are controlled, except during transfer to the monorail siding, by a Hawley Trav-L-Vent system mounted on the ladle (Ex. 684f, pp. 6, 10). A similar set of controls exists at Foundry E. However, the OSHA site visit team observed that when the worker pulled the ladle along the track too quickly, fumes from the ladle escaped capture by the Hawley system (Ex. 684e, p. 2). Other foundries fit transfer ladles with stainless steel or refractory hoods to contain lead fumes during the transfer process (Ex. 586-18, p. 177).

Pouring. At Foundry F, the pourer's exposure levels are controlled in several ways. The pourer, while pouring molten metal into molds on the casting machine, is provided with a fresh air shower. In addition, a portable ventilation system may continue to exhaust the kettle from which the metal is poured. The casting machine itself is ventilated by a single-slot ventilation system positioned 8 to 12 inches over it (Ex. 684f, pp. 6, 10). At Foundry E, each mold pouring station is equipped with a side draft ventilation system (Ex. 684e, p. 6).

Shakeout. At both Foundries E and F cooling and shakeout are partially or fully enclosed and isolated. At Foundry F in the shakeout operation the equipment is fully enclosed, exhaust-ventilated, and designed to operate unattended (Ex. 684f, p. 3). The plant has been designed to isolate the cooling court and shakeout area below the foundry floor to contain lead emissions. At Foundry E, cooling and shakeout are partially isolated under the floor and the shakeout machine is equipped with local exhaust ventilation. At Foundry E, however, the shakeout conveyor is neither covered nor ventilated (Ex. 684e, p. 6).

Cleaning and Finishing. At Foundries E and F the methods used to control employee exposures in cleaning and finishing are basically similar, consisting of isolation, raised platforms, local exhaust ventilation, fresh air showers and replacing sawing and cutting with kiss-gating.

Cleaning and finishing operations at foundries E and F are separated from the hot operations by either distance or barriers. Foundry E has located its cleaning and finishing operations some distance from the furnace area, and these operations receive one-third of the foundry's fresh makeup air. At Foundry F, a canvas curtain separates cleaning and finishing from the furnace and pouring areas.

At foundries E and F cleaning and finishing operations are located on platforms elevated several feet off the foundry floor (Exs. 684e, p. 4; 684f, p. 4). The elevated platforms permit the foundries to utilize gravitational force to separate the employees from the lead dust which accumulates and falls to the foundry floor during cutting and grinding. At Foundry F, the platform floor is grated to further facilitate this separation.

The first step in cleaning and finishing, separating individual castings and cutting off sprues, gates, and risers, is accomplished with abrasive saws. Both foundries E and F to some extent have replaced cutting with kiss-gating (Exs. 684c, p. 3; 684f, p. 10). From the viewpoint of exposure control, kiss-gating itself is a control. Kiss-gating removes excess metal by a mechanical press that does not generate high velocity dust. Where kiss-gating is used, often it is not necessary for the casting to be ground or polished, a process that entails additional lead exposure. In addition to switching to kiss-gating, some foundries are designing casting molds so that excess metal may be simply broken off by hand. Where these techniques are not used, excess metal must be removed from a casting by cutoff saws or other means. These cutoff saws operate at high speed and disperse leaded dust at a velocity and in a stream of air that is difficult to capture.

At Foundry F kiss-gating is being used to the maximum extent possible to reduce cutting. Where cutting is still required (i.e., large and unusually-shaped castings), stationary cutoff saws are sometimes partially enclosed and usually equipped with ventilation over the saw and down-draft ventilation through a single slot on the saw table. In addition, the cutoff saw operator is provided with a fresh air shower to remove or dilute dust in the operator's breathing zone (Ex. 684f, p. 10). At Company E, cutoff saws are equipped with ventilation that encloses the blade of the saw. Ventilation is also supplied in the blade-slot area below the saw table and behind the cutting blade (Ex. 684e, p. 6). Elsewhere in the industry, foundries may use burning rather than abrasive cutting for certain castings. This produces higher exposure levels than cutting.

Where castings require grinding and polishing, local exhaust ventilation has been installed over the grinding surface at Foundry E. At Foundry F grinding stations are equipped with ventilated covers and downdraft ventilation.

Sand Handling. At both foundries E and F molding sand is treated to remove large lead particles before it is used again. At Foundry E, used sand is treated for reuse and disposal in a ventilated basement area isolated from other process operations (Ex. 684e, p. 6). The sand recovery system at Foundry F is automated. Sand from the the mold machines and other areas of the plant is conveyed to the recovery area where it is put through two screening systems to remove lead and other contaminants before reuse (Ex. 684f, p. 11).

Work Practices. The major work practice control used by both foundries E and F is routine housekeeping. Neither Foundry E or F has installed a central vacuum system.

At Foundry E, twice daily a worker with a HEPA-filtered portable vacuum cleans up the dust generated throughout the foundry. Each worker also is responsible for cleaning his own work station. Nevertheless, the OSHA site visit team observed dust on floors and work surfaces at Foundry E, especially in the vicinity of moldmaking and pouring. The site visit team also observed brooms at several work stations (Ex. 684e, p. 6).

Representatives from Foundry F state that housekeeping is also performed several times a day at their foundry using shovels, brooms and mobile HEPA-filtered vacuums. In addition, the night shift maintenance crew uses a forklift-mounted vacuum system. Nevertheless, during its site visit, OSHA observed considerable dust buildup on stairs, railings, floors and work stations and observed the automated moldmaking machine operators using brooms rather than vacuums to sweep excess sand that had fallen to the floor in the vicinity of the machine (Ex. 684f, p. 12).

In addition to daily housekeeping, Foundry E vacuum cleans the entire facility, including the rafters, on an annual basis. At Foundry F a similar complete plant cleanup has not been conducted since the summer of 1986.

Additional Controls. With the existing controls described in the previous section, OSHA has found that the majority of sampling results in the data sets upon which OSHA has relied already are at or below 50 $\mu g/m^3$ and that in nearly all operations the geometric mean already is at or below 50 $\mu g/m^3$ in one or more plants. These results were obtained without adjusting the data to eliminate the effects of cross contamination. In only two operations (pouring and cutoff saw) are unadjusted geometric mean exposure levels above 50 $\mu g/m^3$ at both foundries E and F (See Tables B and C, respectively, below). In a third operation, charging, some plants also have problems.

With the additional controls recommended by OSHA implemented and cross contamination controlled, OSHA anticipates that geometric mean exposure levels in all operations at Foundry E and in all but one operation at Foundry F will be at or below 50 $\mu g/m^3$ Indeed, OSHA expects that the geometric mean exposures in 19 of 26 job categories in these two foundries will be below 30 $\mu g/m^3$ after additional controls are implemented and cross contamination is controlled.

OSHA believes that for operations where most sampling results or the geometric means already are below 50 $\mu g/m^3$ relatively modest improvements in controls, such as improved housekeeping or better preventive maintenance (e.g., installing baffles to stop cross drafts or covering dross buckets), will be sufficient to reduce air lead levels of employees consistently below 50 $\mu g/m^3$ Similarly, for operations where most of the sampling results or geometric means are below 100 $\mu g/m^3$ OSHA believes that a combination of limited additional and improved controls (e.g., improving the efficiency of the ventilation system), will be sufficient to control exposure levels to 50 $\mu g/m^3$

On the whole, the same sorts of controls that have been successfully utilized to achieve exposure levels at or below 50 $\mu g/m^3$ at foundries E and F and elsewhere are precisely the kinds of additional controls that OSHA recommends to reduce remaining excess air lead levels to or below 50 $\mu g/m^3$ The controls are local exhaust ventilation, enclosure and isolation, plant design, automation built into the production process, and work practices.

The Agency's discussion of the reductions of air lead levels expected to be achieved by implementing recommended controls relies in part on assessments made by a panel of three certified industrial hygienists established by OSHA's contractor, Meridian (Ex. 686A, pp. 19–25). The panel's assessments are based upon data in the record; site visits to Foundries E, F and G; and the members' extensive experience and expertise as industrial hygienists. Although quantification of the estimated reductions involves a substantial amount of expert judgment, OSHA believes that the panel's assessment is the best available evidence in the record on the reduction in exposure levels that can be reasonably expected from implementing recommended additional and improved controls. However, while OSHA places substantial reliance upon Meridian as one among several bases for the Agency's feasibility determination, OSHA in its own analysis places greater emphasis than Meridian does on the problem of controlling cross contamination to reduce air lead levels to 50 $\mu g/m^3$ in non-ferrous foundries.

Prevention of Cross Contamination and Cross Drafts. As OSHA established in its analysis of cross contamination in the section on exposure levels, cross contamination appears to be a foundry-wide and industry-wide problem (see Table A above). For foundries that primarily produce leaded brass and bronze alloys, OSHA has conservatively estimated that exposure levels in coremaking represent the increment to exposure levels generally due to cross contamination in each plant. From its analysis, OSHA concludes that it is technologically feasible to eliminate cross contamination.

There are two main reasons for this cross contamination. First, foundries have failed to adequately contain lead exposures at their primary source. Second, cross drafts exist, which disperse throughout the foundry the escaping lead fume and dust.

These cross drafts occur for a variety of reasons. For example, windows or doors left open, use of man-cooling fans, and reliance upon natural ventilation with seasonal variation, especially in open plants, all create cross drafts (e.g., Ex. 582-81, Letter from G. Mosher to R. Walther). Concerning the problem caused by man-cooling fans, Mr. Mosher stated in an 1980 industrial hygiene report to Ford Meter Box, "If there is one point I would like to stress it is all man cooling fans in the foundry should be removed" (Ex. 582-81, Letter from G. Mosher to R Walther, p. 3). However, even in plants that have eliminated these obvious sources of cross drafts, cross drafts still can be produced by air transfers between hot and cold operations and imbalances in the mechanical ventilation system.

Not only do these cross drafts spread contamination from one operation to another, they also disturb the airflow of local exhaust ventilation, preventing exhaust hoods from operating effectively. OSHA's evaluation of the complex, plant-wide problems that cross drafts create is substantiated by the American Conference of Governmental Industrial Hygienists' book, *Industrial Ventilation*, which states that "[c]ross drafts not only interfere with the proper operation of exhaust hoods, but also may disperse contaminated air from one section of the building into another and can interfere with the proper operation of process equipment" (Ex. 583-13, p. 7-2).

OSHA assumes that air lead levels outside of plants generally are at least as low as required by the EPA, which limits ambient air lead levels to 1.5 $\mu g/m^3$ averaged over one quarter of a year (Ex. 601, p. 10). However, because this limit represents a quarterly average, there may be daily excursions to levels as high as 10 $\mu g/m^3$ (Ex. 601, p. 10). In addition, the fresh air supply may be contaminated by exhausted foundry air. Recirculating that air into the foundry will increase exposure levels in any foundry where makeup air quality is not maintained or where natural ventilation is used (Ex. 582-81, Letter from G. Mosher to R. Walther, pp. 1-2). In such cases, the makeup air supply constitutes another source of potential cross contamination, and without a filtration system workers' exposure to lead can never be lower than the concentration of lead in the supply air.

To the extent that these problems may exist at any foundry, foundries should exercise care to assure that supply air is not contaminated by greater than negligible levels of lead. Controlling this sort of contamination is very straight forward. All lead in the supply air should be removed by appropriate control methods (e.g., filtration) before delivery into the foundry.

To remedy the problem of cross contamination, as well as others, OSHA believes that the very first thing that non-ferrous foundries should do is to obtain the services of an experienced industrial hygienist to perform a foundry-wide industrial hygiene study that focuses on a task-by-task analysis of sources of exposure and analyzes cross drafts and cross contamination as a basis for designing cross draft barriers and other measures to eliminate them. Each foundry should undertake this kind of study in accordance with the requirements of paragraph (e)(3) of the lead standard (29 CFR 1910.1025), which requires employers to establish and implement written compliance programs.

OSHA is confident that such a study is essential to systematically control air lead levels in this industry. This is a precondition for employers instituting an effective, regular program to identify the precise sources of exposure and reasons for upset conditions in order to determine how best to reduce them to a minimum (Ex. 686A, pp. 40-41). The level of industrial hygiene understanding in foundries, especially at foundries F and G, is inadequate, according to Meridian. Meridian has further stated that it "can think of no control measure as likely to produce dramatic results as the relatively low-cost approach of obtaining the services of an industrial hygienist" (Ex. 686A, p. 41).

OSHA's conclusion that such a study is needed is supported by Mr. Knowlton Caplan, a well-known engineering consultant to the lead industry. Mr. Caplan has said that engineering controls should be designed with industrial hygiene problems in mind (Ex. 582-89, Appendix).

There appear to have been no recent attempts at foundries E and F to evaluate the significance of cross drafts or cross contamination on employee exposures to lead (Exs. 684e; 684f, respectively). Company representatives of Foundry F stated that there is no industrial hygienist on staff and that the company has not attempted to interpret its background sampling results (Ex. 684f, p. 13). Similarly, representatives of Foundry E stated that they do not employ an industrial hygienist, nor have they performed a recent task analysis or attempted to correlate background lead levels with employee exposure levels (Ex. 684e, p. 7). The only industrial hygiene study during the past 10 years that is documented in the remand record was carried out in 1980 at Ford Meter Box, prior to the installation of substantial additional controls at that facility. No similar industrial hygiene evaluation has been carried out since then to analyze the effectiveness of those controls.

OSHA believes that consultation with an industrial hygienist would help to resolve such problems inexpensively. Based upon its criticism of the inadequate expertise brought to bear to control exposure levels and of the poor quality of design of engineering controls recently installed in foundries, AFS might well agree with this point (Ex. 689-3, p. 1; see also Kenneth E. Robinson, "Eight Fallacies in Plant Air Handling, Exs. 689-7 and 689-13C, p. 56). Foundries appear recently to have spent considerable sums of money for engineering controls that they could have known were unsuitable and inadequate.

To control cross contamination simple steps may be effective. For example, at Foundry F which is one of the more sophisticated foundries in the industry, the coremaking operation, which uses no lead or lead-contaminated materials, is cross contaminated. This is true despite the fact that the operation is separated from the furnace and pouring areas by some distance and by canvas curtains on three sides (Ex. 684F p. 11). OSHA believes there are four likely factors contributing to this cross contamination. First, the operation is not enclosed on all sides. Second, the enclosure does not extend to the ceiling. Third, forklift trucks travel by the open side entraining and spreading lead dust from other operations. Fourth, a man-cooling fan, located at the edge of the open side and facing in, directs presumably contaminated air into the operation. OSHA believes that controlling these sources of cross contamination probably would require little more than completing the enclosure and providing some source of uncontaminated air.

Several other operations are much closer to these sources and therefore, everything else being equal, are likely to suffer higher levels of cross contamination.

Erecting cross draft barriers at proper locations and assuring that windows and doors operate in a way to minimize airflow, as Foundry F has done (Ex. 684f), not only will decrease cross contamination, but also will increase the efficiency of exhaust hoods. High exposure levels in a particular work area also may be effectively contained within that area by maintaining the area under slightly higher negative pressure than surrounding areas. Once contained, emissions then must be captured. These measures will result in an appreciable reduction in air lead levels in all areas, as sources of lead extraneous to an operation are eliminated and control of sources of lead intrinsic to an operation is enhanced.

If preventing cross contamination is one of the most important steps that can be taken to reduce exposure levels generally throughout the non-ferrous foundry industry, other conventional controls that are applicable to many operations also should be implemented to broadly reduce exposure levels. Implementation of effective conventional controls already has dramatically reduced exposure levels in various operations throughout the industry (Exs. 582-11, 586-18, 583-13, 689-13 A and C, 689-3, and 689-4). These conventional controls include better ventilation, enclosure, isolation, housekeeping, and maintenance.

Ventilation. The presence of excessive lead in the work environments of non-ferrous foundries is proof that existing engineering controls like local exhaust ventilation (LEV) and general ventilation are not doing the job. Although much more quantitative and other information than industry has provided would be needed to state with any precision how great a reduction of any particular exposure level could be achieved by enhancing specific ventilation systems, OSHA has no doubt that in many operations improved or additional ventilation can achieve major reductions in worker exposure.

Such controls have been developed, tested, and where found effective, manufactured and applied widely for many years throughout industry to control specific contaminants. Conventional controls for nearly every operation in foundries have been described in detail and often depicted in photographs or diagrams by industrial hygienists and engineers from the American Conference of Governmental Industrial Hygienists (Ex. 583-13, pp. 5-4 to 5-20, 5-41, 5-48 to 5-60), AFS (Exs. 689-3; 689-4), NIOSH (Ex. 645), American National Standards Institute (Exs. 689-13A, 13B, 13C), and many consultants that have worked for OSHA or industry (Exs. 689-6; 689-7· 689-8; 689-9; 689-10; 689-11; 689-12).

Improved or additional ventilation can achieve major reductions in air lead levels at Ford Meter Box, for example, where in the furnace operation the capacity of the ventilation system fails to meet the AFS criteria for effective exhaust (Exs. 689-3, p. 26 and 689-4D, fig. 19). Specifically, at Ford Meter Box's melting rate of 1.5 tons per hour, a technical committee of AFS has recommended that ventilation at furnace openings be at least 12,500 CFM at all times. This is 25% above the 10,000 CFM currently used for charging, and dramatically above the 2,500 CFM used during melting at Foundry E (Ex. 582-81, p. 5). Based upon AFS' analysis, OSHA anticipates that increasing ventilation capacity to satisfy AFS criteria should result in nearly total capture of emissions by any appropriate hood.

At Foundry F the ventilation system in general may be adequately designed, but it is not balanced properly. Foundry F appears to have an insufficient supply of makeup air, which means there is not enough makeup air to compensate for exhausted air. This is effectively conceded by the foundry's owner (Ex. 694-25, p. 4) and was manifest on OSHA's site visit in the fact that excessive negative pressure created by the imbalance kept doors from operating normally.

As the *Foundry Ventilation Manual*, written by a technical committee of the AFS, makes clear, this condition is prevalent throughout the industry (Ex. 689-3, pp. 67-68). From this manual it appears that ventilation systems often have been installed in foundries with little or no attention to the requirement of replenishing the exhausted air. As a result, capture velocities are likely to have been decreased and the removal of contaminants probably has been substantially reduced or even eliminated under extreme conditions of air starvation. AFS recommends that increasing the volume of makeup air to the appropriate level should improve the efficiency of exhaust ventilation by at least 5-10% (Ex. 689-3, p. 68, fig. 7-2).

Thus, it is imperative that improvements to existing ventilation and newly-installed ventilation be properly designed and installed. Many previously-installed ventilation systems, according to AFS' manual, appear to have been ineffective:

> Recognizing that the expertise required to properly design a ventilation system was not present on their staffs, foundry owners have increasingly utilized the services of engineering firms to accomplish this task. Many times such firms are not familiar with foundry processes, resulting in many ventilation systems being designed and installed which cannot provide proper control. Many designers follow commercial specifications which have no application in the industry.
>
> Without proper knowledge of specifications or data, engineering firms or equipment suppliers are seriously handicapped in providing good industrial equipment. The result is that the equipment and systems fail to provide the desired control and may not meet local, state and/or Federal codes.

(Ex. 689-3, p.1).

Improvements to ventilation systems can substantially reduce exposure levels. At Hill Air Force Base foundry, for example, a properly selected, designed, and installed control system has resulted in a decrease in air lead levels of 86% (from 50 $\mu g/m^3$ to 7 $\mu g/m^3$· Ex. 582-94). This system consists of up-draft ventilation primarily aimed at controlling fumes, the base of which is a ventilated grate and the top of which is a swiveling hood and telescopic ducts, which can accommodate various ladle sizes (Ex. 649). This system also can be operated in a down-draft mode to capture heavy lead particles, for example, in the shakeout operation.

Enclosure and Isolation. Enclosure and isolation are two alternative methods of separating workers from air contaminants. In the case of isolation, the employee is physically separated from contaminants in the air; e.g., by working in a filtered, ventilated control booth (Ex. 689-4D, fig. 32). With enclosure, the source of the contaminant is physically contained and separated from the rest of the work environment to prevent contamination of the air.

Docket entries describe standard enclosure techniques that are in use in the industry or can be readily implemented (e.g., enclosing casting operations; Ex. 590, p. 22). Simple isolation techniques that have been successfully used in certain plants in this and other lead industries are applicable throughout this industry (e.g., providing employees with filtered-air, ventilated cabs for mobile equipment, fresh air islands, isolation booths and control rooms; Ex. 689-4D, p. 7-14, figs. 31, 32).

Isolating workers even for a portion of their shift can significantly reduce exposure levels. For example, a Radian study of a secondary lead smelter demonstrates that employee exposures can be reduced by 23-77% even when employees spend only a portion of the workday in an isolation booth (Ex. 583-16, p. 30. Another study, by the National Institute for Occupational Safety and

Health (NIOSH), investigating the effectiveness of various control technologies in secondary lead smelters, reports that workers spending even one-quarter of their time in a supplied air island would experience a 20% reduction in their 8-hour TWA exposure levels (Ex. 590, p. 40). Consequently, fresh air islands could be installed for operators near the furnace (e.g., charging) to reduce remaining excess exposures after other controls are implemented.

Housekeeping, Work Practices, and Preventive Maintenance. Housekeeping, work practices, and preventive maintenance are critically important controls whose importance frequently is not adequately recognized by employers. Failure to develop and use rigorous housekeeping, good work practices, and preventive maintenance can destroy the effectiveness of otherwise adequate engineering controls.

The importance of housekeeping measures in general was stressed in a report prepared by the Cadre Corporation for a secondary copper smelter (Ex. 475–32D, p. 58). The Cadre report states,

> [Housekeeping] is definitely the most underrated aspect of any fume abatement program. In any industrial facility there will be some amount of particulate in the air. Sooner or later this particulate is going to settle out on the plant floor, equipment and materials. If this dust is not collected and disposed of then it will become airborne again due to building drafts, mobile machinery traffic and numerous other disturbances. The housekeeping component of the abatement plan is a vital link in the success of the project. By neglecting to properly control settled particulate any gains made by capturing fugitive emissions will be minimal.

(Ex. 475–32D, H–004E, p. 58).

OSHA agrees. It is impossible to overemphasize the importance of good housekeeping and work practices. It only takes a small amount of lead dispersed throughout a building's air space to raise the airborne level over the PEL. Housekeeping in non-ferrous foundries needs to be improved.

For example, at Foundry F which is offered by industry representatives as an exemplary operation, the last wall-to-wall cleaning was conducted more than 18 months prior to OSHA's site visit in February of 1988 (Ex. 684f. p. 12). Each non-ferrous foundry should thoroughly clean its entire facility, including rafters, at least annually (Ex. 609, pp. 15–16). At Foundry F the site visit team also observed considerable dust buildup on stairs, railings, floors and at workstations (e.g., grinding and cutoff). Moreover, Foundry F continues to rely on dry sweeping in some operations (Ex. 684f, p. 12), which is prohibited under the lead standard except where vacuuming and other equally effective methods have been tried and found ineffective (29 CFR 1910.1025 (h)(2)(ii)). This prompted Meridian to recommend prohibition of dry sweeping and increased frequency of vacuuming and plant-wide cleaning. Meridian estimated that such straight-forward improvements in housekeeping as these could be expected to reduce worker exposures in general by 10–25% (Ex. 686a, p. 22).

Detailed housekeeping instructions should be prepared, in accordance with the requirements of paragraph (e)(3)(ii)(F) of the lead standard (29 CFR 1910.1025), and adherence to them enforced by employers, with scheduling and checkoff of regular cleaning of all areas of the plant where dust can collect. If necessary, housekeeping instructions should list individual sites, pieces of equipment, parts of equipment, and obscure corners (e.g., under conveyors) to assure that they are cleaned regularly.

Implementing appropriate work practice controls is also vital to achieving exposure levels at or below 50 $\mu g/m^3$ Engineering controls often can only be as effective as the associated work practices that determine how they are used and where the employee locates himself relative to the controls. For example, if the enclosed and ventilated crucible is moved too quickly to the molding area, fumes are removed from the capture range of the hood (Ex. 684e, p. 2). OSHA finds this work practice unacceptable. Employers should ensure that the crucible is moved in a manner that does not defeat the ventilation system (Ex. 686a, p. 20).

Work practices also should be written to prescribe correct procedures for all tasks that might result in increased employee exposure. Such procedures should dictate, for example, that an employee remove himself from proximity to a source of exposure whenever possible and, to the extent possible, isolate himself from contaminants in a fresh-air island or the like. Similarly, the dumping of dross in open bins should be prohibited. Care also should be taken to assure, whenever possible, that covers or exhaust hoods are kept on ladles and other lead-emitting vessels filled with molten metal (Ex. 586–18).

OSHA also notes the importance of maintenance programs to assure that all systems function as cleanly and as efficiently as practicable. For example, as stated in AFS' publications, (Ex. 689–3, p. 74, Table 8–1; and see *Safety in Metal Casting,* Des Plaines, IL, Vol. 6, 1970, p. 172), the needed control capacity for ventilation systems to protect air quality depends not only on proper design and installation, but also on proper maintenance and availability of sufficient makeup air. Exhaust systems lose their capacity because belts and pulleys slip, duct branches become clogged, duct couplings become loose and develop holes that leak air, filters become occluded, and fan blades become corroded or unbalanced. Thus, the effectiveness of engineering controls can be severely limited by poor maintenance.

Before discussing in detail OSHA's recommended additional controls operation by operation, a simple exercise suggests that implementing additional controls in a non-ferrous foundry to control exposure levels to or below 50 $\mu g/m^3$ is straightforward. Looking at the unadjusted data from foundries E and F it is apparent that one or the other of the foundries already controls exposure levels to or below 50 $\mu g/m^3$ in all operations but two (pourer and cutoff/gate saw operator; see Table B, above). As a result, if Foundry E were to adopt the controls of Foundry F for operations in which Foundry F has achieved levels below 50 $\mu g/m^3$ and Foundry F were to do the same for operations in which Foundry E has achieved levels below 50 $\mu g/m^3$ geometric mean exposure levels would be below 50 $\mu g/m^3$ in all operations except pouring and cutoff.

For example, at Foundry E personal sampling results in shakeout and sand treatment are 61.7 $\mu g/m^3$ and 77 6 $\mu g/m^3$ respectively. By contrast, at Foundry F both of those operations have been enclosed and fully automated, with the result that no employee is exposed to lead in either operation (Ex. 684f, pp. 3–4).

On the other hand, for grinders at Foundry F geometric mean exposure levels are 57 $\mu g/m^3$ (see Table C), while at Foundry E they are 21.7 $\mu g/m^3$ (see Table B). In 1980, Foundry E had an arithmetic mean exposure level of approximately 90 $\mu g/m^3$ in grinding, because local exhaust ventilation was inadequate (citation omitted to protect confidentiality). Since that time, Foundry E has redesigned the dust hoods over grinders and increased capture velocity, thereby reducing exposure levels to well below 50 $\mu g/m^3$ Currently, exhaust ventilation in grinding at Foundry F appears to be inadequate. Members of the site visit team at Foundry F observed dust escaping the capture system. In addition, the site visit team observed considerable dust buildup on stairs, railings and floors in this work area, which confirms that current ventilation is not capturing all emissions (Ex. 684f, p. 12). Using the sorts of controls Foundry E has instituted, Foundry F should have no problem achieving similar results.

Thus, a simple exchange of appropriate technology between the two foundries is likely to reduce exposure levels to or below 50 μg/m³ in nearly all operations at both foundries. These results could be achieved even before cross contamination is effectively controlled and before any other additional controls are implemented in specific operations. In addition to the above controls, OSHA specifically recommends additional controls operation by operation.

Cutoff Saw. The cutoff saw operation is the source of some of the highest exposure levels in non-ferrous foundries and is probably the most difficult area to control to 50 μg/m³ Indeed, although OSHA believes that significant reductions in exposure levels can be achieved, the Agency recognizes that in some plants in this single operation 50 μg/m³ may not be consistently achievable.

Exposure levels exceed 50 μg/m³ in the cutoff saw operation primarily because leaded dust is ejected from the saw at a high velocity. To capture this dust requires that dust hoods or enclosures be well-designed to handle various kinds of castings and local ventilation systems have adequate exhaust volume (cfm) (Exs. 583–13, pp. 5–41; 689–3, p. 62, figs. 6–7). OSHA believes that if the additional controls recommended below by the Agency and by the expert panel of certified industrial hygienists brought together by Meridian are implemented, exposure levels in the cutoff saw operation will approach 50 μg/m³

The cutoff saw operation, which is one of the two major sources of cross contamination in the industry, contributes substantially to total cross contamination. However, this exposure is experienced by the cutoff saw operator as direct exposure from his own operation, not as cross contamination. As a result, simply controlling cross contamination will not reduce these exposures for the operator. Controlling cross contamination will reduce the operators' exposures from the second substantial source of cross contamination, pouring, as well as from other operations. For purposes of analysis, OSHA assumes that one half of all cross contamination originates in the pouring operation. Consequently, the level of cross contamination included in the cutoff saw operators' exposure levels should be at least one-half of the total increment attributed to cross contamination.

For the cutoff saw operation at Foundry F the expert panel recommends installing additional slots to improve down-draft ventilation and additional hoods over the blade (Ex. 686A, p. 21). The panel also recommends that both Foundries E and F use wet suppression. These controls, the panel estimates, will reduce worker exposure levels at Foundry F by 75–95% and at Foundry E by 25% (Ex. 686A, pp. 20–21). When these reductions are applied (OSHA conservatively estimates a 75% reduction at Foundry F) and after adjusting for cross contamination, OSHA anticipates that geometric mean exposure levels will be 49 μg/m³ at Foundry E and 28 μg/m³ at Foundry F (see Tables B and C, below).

In addition, in accordance with the manual prepared by a technical committee of AFS, OSHA also recommends installing a booth-type enclosure for the abrasive cutoff operation with a minimum of open area at the face of the enclosure where cutting should be performed (Ex. 689–3, pp. 51–52, 62). This should certainly further reduce exposure levels to the cutoff saw operator and the potential for cross contamination from this operation as well.

Pouring. Pouring is an operation in which exposure levels can be reduced below 50 μg/m³ Before considering the installation of new controls in pouring, it is imperative that foundries perform industrial hygiene surveys to systematically assess the sources of their exposure problems and the effectiveness of current controls. OSHA believes that such surveys will confirm that there are two major problems with existing controls. The first is that in pouring and other operations the capacities of the ventilation systems in place are inadequate. Second, controls that have been installed not infrequently have proven to be inadequate because of a lack of industrial hygiene analysis prior to installation and/or failure to assess the effectiveness of such controls after installation.

For example, at Ford Meter Box's modern foundry, where the unadjusted geometric mean exposure level in pouring already is quite low (69.6 μg/m³), the increase in production in recent years appears to have seriously taxed the capacity of the foundry's ventilation system (Ex. 582–81). Existing ventilation, including a Hawley close-capture system over the crucible and some side-draft ventilation at the pouring station, obviously is no longer adequate.

Data and comments from Ford Meter Box suggest that production has outrun ventilation capacity. These documents indicate, for example, that when the foundry first installed side-draft ventilation at pouring operations in 1980, exposure levels were reduced by at least 24%–40%. However, thereafter, as production rose by two-thirds between 1980 to 1987 exposure levels rose to above the levels that preexisted installation of these controls. This strongly suggests that production has exceeded the capacity of the system. Indeed Ford Meter Box itself admits it has exceeded the capacity of the system (Ex. 582–81, pp. 22–26, 29). Data from the first quarter of 1988 indicate that this situation has worsened (Ex. 698, p. 1).

Thus, there is obvious room for improvement in the ventilation system even before considering the installation of other controls. OSHA has no doubt that by increasing the capacity of the ventilation system, Ford Meter Box can reduce exposure levels to or below 50 μg/m³ in pouring.

Like Ford Meter Box, Foundry F where the geometric mean exposure level in pouring is 86.9 μg/m³ also needs to increase the capture velocity of its local exhaust and to increase the number of ventilation slots. With this modification alone, the expert panel estimates that unadjusted exposure levels can be reduced by about 25% (Ex. 686A, p. 21).

The primary obstacle in effectively controlling exposure levels in pouring through local exhaust ventilation is that, while the molten metal is being poured, it emits fume that rises vertically into or near the breathing zone of the operator. However, exhaust ventilation cannot easily be placed directly over the mold, where it would be most effective, because that would interfere with pouring itself (but see, Ex. 649). Nevertheless, OSHA believes that substantial reduction in exposure levels can be achieved, for example, by installing the kinds of side or compensating hoods depicted in the AFS's manual, *Foundry Environmental Control* (Ex. 689–4–D, figs. 1, 13, 29). This side-draft ventilation is not positioned perpendicular to the floor beside the mold, as is conventional, but is angled so that it does reach out over the mold without interfering with pouring. Such a configuration, according to the caption beneath figure 13 in the AFS manual, would remove all fume and smoke emitted during pouring.

Foundry F is typical of the industry in its failure to take advantage of industrial hygiene expertise in assessing exposure problems, designing solutions, and monitoring the effectiveness of newly-installed controls. For example, the foundry installed fresh air stations in the pouring operation (Ex. 684f, p. 10), without knowing in advance what all the sources of exposure were and without knowing afterwards how effective the new controls were (e.g., Ex. 689-7 p. 2).

Implementing other controls will further reduce exposure levels. For example, Foundry F should institute an annual wall-to-wall cleaning of the facility, the last one having been conducted in the summer of 1986 (Ex. 684f, p. 12). In addition, routine housekeeping also should be improved, to remove the dust observed by the OSHA site visit team in various operations throughout the plant and to maintain all surfaces as clean as practicable, as required by the lead standard (29 CFR 1910.1025(h)(1)). Controlling cross contamination will also reduce air lead levels in pouring.

The pouring operation, which is one of the two major sources of cross contamination in the industry, contributes substantially to total cross contamination. However, this exposure is experienced by the pourer as direct exposure from his own operation, not as cross contamination. As a result, simply controlling cross contamination will not reduce these exposures for the pourer. Controlling cross contamination will reduce the pourers' exposures from the second substantial source of cross contamination, the cutoff saw, as well as from other operations. For purposes of analysis, OSHA assumes that one-half of all cross contamination originates outside of pouring operation. Consequently, the level of cross contamination included in the pourers' exposure levels should be approximately one-half of the total increment attributed to cross contamination.

When the expert panel's recommended controls are implemented, the panel estimates worker exposure levels in pouring will be reduced by 32% at Foundry F (Ex. 686A, p. 21) and by 27–37% at Foundry E (Ex. 686A, p. 20). When these reductions are applied and after adjusting for cross contamination, OSHA anticipates that the range of geometric mean exposure levels will be 35–41 $\mu g/m^3$ at Foundry E and 53.5 $\mu g/m^3$ at Foundry F (see Tables B and C, below). Moreover, these estimated resulting exposure levels do not reflect all anticipated reductions (e.g., reductions anticipated from improved housekeeping, which the expert panel estimated could reduce overall exposure by 10–25% at Foundry F).

Charging. The only other operation that may require substantial controls to reach 50 $\mu g/m^3$ is furnace charger. The exposure data for workers performing this operation are quite limited and somewhat confusing. Neither Foundry E nor Foundry F have a separate job category called charger. OSHA therefore assumes charging is one of the tasks performed by employees classified in other job categories that already are or can be controlled to or below 50 $\mu g/m^3$ In foundries where charging constitutes a separate job classification, exposure levels in charging, like pouring, appear to vary directly with production levels.

There are two aspects to controlling exposure levels in charging. The first entails controlling the source of fume and dust released from the furnace during charging. Uncaptured emissions constitute a source of exposure to the charger and, via cross contamination, to workers in other operations. The second entails isolating the charger and modifying the charger's work practices to minimize resulting exposures.

With regard to the first aspect, the ventilation system must be well designed and its capacity must be adequate to capture emissions at prevailing and anticipated production levels (Ex. 689-3, p. 26). When the demands of higher production exceed the capacity of the ventilation system, large amounts of fume and dust will escape and employee exposure levels will rise.

For example, in 1980 at Ford Meter Box, when ventilation capacity was not obviously exceeded by the demands of production, exposure levels for charging ranged between 84.8 $\mu g/m^3$ and 95.8 $\mu g/m^3$ However, in 1987 with increased production, the average exposure level was 164 $\mu g/m^3$ These recent exposure levels are evidence that, with increased levels of production, the furnace operation is not adequately controlled and the charger, who works in close proximity to fume and dust, is not adequately protected.

According to Ford Meter Box, the only controls relevant to this operation are general plant ventilation, roof fans and a close capture ventilation system on the furnace. There appears to be no specific control directed at charging itself. OSHA believes that, aside from the obvious need to increase the capacity of the ventilation system at Ford Meter Box, a number of other readily available controls can be implemented to reduce exposure levels to or below 50 $\mu g/m^3$ in charging. These controls, which must be predicated upon an industrial hygiene survey to assess the foundry's particular conditions and be designed with health considerations in mind, should include enclosure of the charging port (Exs. 649; 689-3, p. 29, Fig. 3-4, p. 31, Fig. 3-6; 689-4D, Figs. 8, 10), isolation of workers on the charging deck in a fresh air pulpit (Ex. 689-4D, Fig. 32), and use of remote controls for delivering the charge to the furnace (Ex. 689-4D, Fig. 32).

OSHA believes that operations other than cutoff saw, pouring and charging either already are controlled to or below 50 $\mu g/m^3$ or are so close to that level that only the following, relatively modest improvments and/or additional controls may be needed.

Moldmaking. In moldmaking at foundries E and F geometric mean exposure levels, unadjusted for cross contamination, already are below 50 $\mu g/m^3$ Once cross contamination is controlled, exposure levels for this operation in both foundries should be below 25 $\mu g/m^3$ (see Table B, below). The sole remaining source of lead in this operation is lead-contaminated, recycled sand. OSHA believes that more effective removal of lead from the recycled sand will further reduce exposure levels.

In addition, Meridian recommends reducing the fall distance for molding sand (e.g., flexible fall chutes), reducing drop distance for spillage, enclosing the sand dispensing operation, and providing three-sided slot ventilated enclosures to control dust from excess spillage. These combined controls recommended by Meridian are estimated by Meridian to reduce exposure levels by between 75–95%, which would maintain exposure levels well below 50 $\mu g/m^3$ in moldmaking (Ex. 686A, p. 19).

Furnaces. In addition to the controls recommended above (e.g., increase in ventilation capacity where it is too low for current levels of production), which should reduce exposure levels to or below 50 $\mu g/m^3$ in the furnace area in general and in charging specifically, limited additional controls should reduce exposure levels consistently to or below 50 $\mu g/m^3$ for employees engaged in other furnace tasks: melting, tapping, drossing, and transferring molten metal (see Tables B and C, below).

For example, by providing an exhaust hood equipped with a swiveling telescopic duct and employing push-pull ventilation (Ex. 649), Hill Air Force Base reduced exposure levels by as much as 86%, to well below 50 µg/m³ (Ex. 582-94). The controls were successful in that small foundry in accommodating different-sized ladles as well as in controlling emissions during charging, tapping and drossing. The up-draft ventilated grates were successful in confining fumes generated from spills of molten metal or dross. At Hill, roof fans were completely eliminated and replaced with mechanical ventilation for providing sufficient make-up air. The location of the furnace was selected in a fashion that wind drafts from the access doors would not interfere with the function of the mechanical ventilation (Exs. 582-94; 649).

Alternatively to implementing controls appropriate to mobile operations, foundries can perform these operations at fixed stations with improved local exhaust (Exs. 689-4D, Fig. 24; 686A, pp. 19-22). For example, installing side-draft slot ventilation at the slag bucket is expected to reduce exposure levels to the worker performing drossing by 20-30% at Foundry E (Ex. 686A, p. 20). In addition, placing a lid on the slag bucket while tramp elements and compounds cool will further reduce exposure levels. Such control of emissions at their source will reduce exposure levels at other work stations caused by cross contamination from the furnace, as well.

Shakeout Operations. At Foundry F the shakeout operation is automated, fully enclosed and exhausted. This has eliminated workers' exposures to lead in shakeout. OSHA supports this approach to controls as the most effective in the industry. Even at Foundry E, where partially enclosed shakeout equipment is employed, the unadjusted geometric mean exposure level already is 61.7 µg/m³ (see Table B, below). OSHA recommends that Foundry E install a push-pull exhaust system, combining an adjustable hood mounted over an air supply (e.g., from a grate), which should reduce prevailing exposure levels by 5-25% (Ex. 686A, p. 20; and see Ex. 649)). In combination with controlling for cross contamination, these controls are anticipated to reduce exposure levels to well below 50 µg/m³

Finishing. Finishing consists primarily of cutting and grinding. OSHA has discussed the cutoff saw operation above. In grinding, unadjusted geometric mean exposure levels already are at 21.7 µg/m³ at Foundry E and 57 µg/m³ in Foundry F OSHA has determined that increasing the capacity of exhaust systems for grinders, particularly by supplying fresh makeup air to the work stations, is the most effective way to reduce exposure levels to consistently below 50 µg/m³ (Ex. 684e, p. 7).

Sandhandling. OSHA has determined that controlling exposure levels to or below 50 µg/m³ in sandhandling is not a problem. At Foundry F where sandhandling is basically automated, enclosed and locally exhausted, sandhandling is effectively controlled. At Foundry E, exposure data covering the last half of 1986 and the first quarter of 1987 indicate that controlling exposures to or below 50 µg/m³ also should be relatively easy. The four sampling results are 37 µg/m³ 51 µg/m³ 59 µg/m³ and 327 µg/m³ (citation omitted to protect confidentiality). OSHA believes the final data point represents an aberration due either to upset conditions or sampling error (e.g., "a piece of particulate getting into the sample. Ex. 684e, p. 7). OSHA therefore concludes that exposure levels in sandhandling already are at or near 50 µg/m³ Moreover, OSHA believes that current exposure levels in sandhandling at Foundry E are likely to be lower than 1986 monitoring results suggest, because a new baghouse was added in 1987 (Ex. 684e, p. 6).

TABLE B.—COMPANY E

Job classification	Unadjusted geometric mean	Geometric mean after recommended adjustment for cross contamination	Geometric mean after recommended additional controls are applied and after adjustment for cross contamination
Muller	35.6	8.6	8.6
Coremaker	27	—	—
Moldmaker	45.7	18.7	1.0-4.6
Melter	47.6	20.6	17.1-19.1
Pourer	69.6	[2] 56.1	35.3-41.0
Shakeout	61.7	34.7	26.0-33.0
Cutoff	78.6	[2] 65.1	48.8
Grinder	21.7	([4])	([4])
Sorter	65.3	38.3	1.9-9.6
Sand treatment	77.6	50.6	50.6
Cleaner	47.0	47	47

No additional controls were recommended for this job classification by the expert panel of certified industrial hygienists.

[2] Because this operation is itself one of the sources of cross contamination, OSHA has only reduced exposure levels in this operation by one-half of OSHA's estimate of the increment due to cross contamination.

Operation located in separate building and it is extremely unlikely this operation is affected by cross contamination from other operations. Therefore, OSHA has not reduced exposure levels in this operation by the estimate of the increment due to cross contamination.

Negligible.

TABLE C.—COMPANY F

Job classification	Unadjusted geometric mean	Geometric mean after adjustment for cross contamination	Geometric mean after recommended additional controls are applied and after adjustment for cross contamination
Coremaker	16.5	—	—
Moldmaker	39.9	23.4	23.4
Furnace tender	50.9	34.4	34.4
Hot metal dispatcher	33.9	17.4	17.4
Pourer	86.9	[2] 78.7	53.5
Cutoff	121.6	30.4	22.2
Grinder	57	42.8	26.3
Pangborn	46.2	39.3	22.8
Sorter	38.5	22	22
Inspector	20.6	4.1	4.1
Electrician	44.9	28.4	28.4
Millwright	33	16.5	16.5
Forklift driver	32.3	15.8	15.8
Laborer	26	9.5	9.5
Supervisor	23.2	6.7	6.7

No additional controls were recommended for this job classification by the expert panel of certified industrial hygienists.

Because this operation is itself one of the sources of cross contamination, OSHA has only reduced exposure levels in this operation by one-half of OSHA's estimate of the increment due to cross contamination.

[3] OSHA has estimated this conservatively.

Technological Feasibility Conclusions. Based on the above analysis of the evidence in the record and OSHA's experience and expertise, the Agency determines that achieving a PEL of 50 µg/m³ by implementing readily available engineering and work practice controls is technologically feasible in the non-ferrous foundry industry as a whole.

Nevertheless, the Agency recognizes that in some plants in the cutoff saw and pouring operations it may not be possible to consistently achieve the 50 µg/m³ PEL by these controls. Since OSHA has found the 50 µg/m³ PEL feasible for the industry, employers will be required in the cutoff saw and pouring operations, as well, to implement engineering and work practice controls to control exposure levels to the PEL or the lowest feasible level. Where all feasible engineering and work practice controls have been implemented and employees operating the cut off saw or performing pouring are still exposed above the 50 µg/m³ PEL as an 8-hour TWA, employers will be required to provide these workers with respirators for supplemental protection while they are operating the cutoff saw and performing pouring.

To summarize, OSHA has shown the following. In the non-ferrous foundry industry the majority of useable sampling results already are at or below 50 µg/m³ and in nearly all operations geometric mean exposure levels at

Foundry E or F (or both) already are at or below 50 μg/m³ At foundries E and F a mere exchange of appropriate technology between the two foundries may be all that is necessary to bring nearly every operation at these foundries to or below 50 μg/m³ (Exs. 684e; 684f; see Tables B and C, above). These results can be achieved even before other additional controls are implemented and before cross contamination is controlled. After additional controls recommended by OSHA are implemented and cross contamination is effectively controlled, OSHA anticipates that geometric mean exposure levels in both foundries E and F will be at or below 50 μg/m³ in nearly all operations. Indeed, in 19 of 26 job categories in these two foundries, exposure levels are anticipated to be below 30 μg/m³ In addition, in two other foundries, one studied by NIOSH (Ex. 582-11, Att.), upon which OSHA does not rely, and the other reported in a peer-reviewed article in the *American Industrial Hygiene Journal* (Ex. 586-18), exposure levels also appear to have been controlled to or below 50 μg/m³

OSHA also wishes to point out that all of its recommendations for achieving 50 μg/m³ rely exclusively upon conventional and readily available controls. OSHA has not needed to exercise its statutory authority to force the development of new technology in this industry to justify its finding of feasibility.

Based on the foregoing OSHA believes that 50 μg/m³ is achieveable most of the time in most of the operations in non-ferrous foundries. In reaching this conclusion, OSHA does not purport to have recommended an exhaustive list of additional controls. The Agency is certain that industry will be capable of devising and fine-tuning various controls to further reduce exposure levels. Consequently, OSHA anticipates that industry will be able to consistently achieve exposure levels at or below 50 μg/m³ in nearly every phase of production.

OSHA acknowledges that the lead standard is strict and believes that to achieve the PEL requires implementing an integrated system of controls. The basic element in that system is an industrial hygiene study. Each foundry should have an experienced industrial hygienist perform an in-depth job/task analysis and a plant-wide survey. This survey and analysis should identify sources of emission in each task, sources of cross drafts or cross contamination, and appropriate sites for erecting cross contamination barriers. Such an analysis should also recommend appropriate engineering and work practice controls to reduce emissions and minimize employee exposures. If, after implementing these recommendations, reductions in air lead levels deviate substantially from what was anticipated, a follow-up industrial hygiene survey should be conducted and necessary corrections made.

The second element in that system is the development of good, written housekeeping and work practice programs that are systematically implemented so that proper procedures are routinely and meticulously followed. For example, wall-to-wall cleanups should be conducted at least annually.

The final element of an integrated system of controls is a preventive maintenance program to assure that all systems are maintained in clean and efficient condition.

The non-ferrous foundry industry does not agree that a PEL of 50 μg/m³ is achieveable. Industry's disagreement is based on four main, and other secondary arguments. The four main arguments are:

Foundries E and F which embody state-of-the-art technology, have not been able to consistently achieve 50 μg/m³ (Exs. 582-81, letter from G. Mosher to R. Walther, p. 4, and Jacko report; 684f, pp. 12-13; 694-28, pp. 9-10); Foundries E and F upon which OSHA has relied heavily in making this feasibility determination, are not representative of the non-ferrous foundry industry (*CITE*); OSHA's reliance on geometric means in assessing technological feasibility is inappropriate (Ex. 694-28, pp. 1-8); and the efforts of Meridian and its expert panel of certified industrial hygienists are biased, incompetent, and unsupportable (Exs. 694-26, pp. 2-8; 694-28, pp. 6-9).

First, industry argues that several foundries with state of the art technology, including Foundries E and F have been unable to consistently achieve 50 μg/m³ While OSHA concedes that these foundries have extensive controls and are not consistently achieving 50 μg/m³ in all operations, the Agency does not agree that they have not been, or are unable to achieve 50 μg/m³ OSHA also maintains that, despite the characterization of these foundries as "state-of-the-art, there are further controls and improvements that can be implemented there. For example, both foundries E and F need to improve the effectiveness of their current ventilation systems.

Nonetheless, OSHA has shown that at Foundry F geometric mean exposure levels and 50% or more of the sampling results already are at or below 50 μg/m³ in 11 of 15 operations. At Foundry E, geometric mean exposure levels already are below 50 μg/m³ in 6 of 11 operations. OSHA also has shown that by effectively controlling cross contamination and implementing the sorts of additional controls OSHA recommends, geometric mean exposure levels are anticipated to be reduced to or below 50 μg/m³ in all operations at Foundry E and in all but one operation at Foundry F In addition, in over 73% of the combined operations at these two foundries exposure levels are anticipated to be below the action level of the lead standard (30 μg/m³).

The reason that foundries E and F are not achieving 50 μg/m³ nearly all the time is not because they have reached the limits of technological feasibility. Rather, it is because after these foundries implemented what at the time may well have been state-of-the-art technology, they did not take steps necessary to maintain their foundries at that level.

For example, while Foundry E in 1980 may have had effective controls at then prevailing production levels, it has not since then made adequate modifications and improvements to those controls, especially including increasing its ventilation capacity to keep pace with increases in production. In addition, there is no indication in Foundry E's recent comments that it has effectively resolved certain other problems pointed out as long ago as 1980 by Mr. Mosher (citation omitted to protect confidentiality). Thus, Foundry E has not taken effective action to control cross contamination, and there is no indication in the record that it has dealt with the potentially serious problem of lead-contaminated exhaust air being recycled by external wind currents through open doors and windows back into the foundry.

Furthermore, within at least the last 8 years apparently neither Foundry E nor F has conducted the kind of industrial hygiene survey of plant conditions that OSHA considers to be the foundation of an integrated, state-of-the-art control program capable of consistently achieving the strict PEL of the lead standard. At Foundry F for example, within 18 months of opening its new state-of-the-art plant, it decided that further controls were needed in the pouring area. Without consulting an industrial hygienist, Foundry F installed several fresh air showers to deal with the problem. Monitoring results before and after installing these showers do not indicate any noticeable reduction in air lead levels, which remain excessive (Ex. 613B-6). Nonetheless, Foundry F still has not employed an industrial hygienist to assess these results.

Consequently, OSHA is unpersuaded by industry's argument that Foundries E and F with their "state-of-the-art" technology, have been unable to achieve 50 $\mu g/m^3$ and that therefore the PEL is unachieveable by engineering and work practice controls.

Second, industry argues that Foundries E and F are not representative of the industry, which is comprised of unique plants, many of which are small, and most of which are less well controlled than these two foundries. In response, OSHA wishes to emphasize that the fact that foundries E and F may have more controls than most other foundries does not preclude OSHA from relying upon them for purposes of making its determination about technological feasibility. On the contrary, the fact that these foundries have been able to achieve 50 $\mu g/m^3$ in so many operations through conventional methods is the best evidence of technological feasibility. So, the fact that the level of controls at Foundries E and F may be higher than elsewhere in the industry does not in itself make them unrepresentative on the issue of technological feasibility.

The ultimate determination of technological feasibility depends not upon the level of control that may be currently typical in an industry, but rather upon the level of control of which the industry is capable. Indeed, the court has stated that to prove technological feasibility OSHA need not prove that the controls needed to achieve a PEL have already been successfully implemented in any plant in the industry. OSHA need only prove a reasonable possibility that a typical firm will be able to develop and install engineering and work practice controls that can meet the PEL. *USWA* v. *Marshall*, 647 F 2d at 1272.

Consequently, the relevant issue in this regard is only whether the diversity within the non-ferrous foundry industry somehow technologically precludes the controls implemented at Foundries E and F from being adopted and adapted by other typical plants, which may be smaller or have other distinguishing characteristics. While recognizing this diversity, OSHA believes the controls at Foundries E and F can be implemented, with appropriate adaptation, by typical foundries in the industry.

The controls used in both Foundries E and F are conventional, and as indicated above, OSHA's recommendations to further reduce exposure levels also rely exclusively upon conventional controls. These readily available controls are predicated upon widely accepted general principles of industrial hygiene. Of course, as in most industries, controls that have been implemented in one plant may have to be somewhat modified to adapt them to particular conditions in other plants. However, OSHA does not accept the proposition that there is anything so unique about the non-ferrous foundry industry or anything inherent in the relevant controls that would impede or preclude such adaptation by typical plants. Foundry E, for example, is a captive foundry that produces a wide range of castings, some in low volume. In this respect, most small foundries, which run special jobs in low volume, are similar to Foundry E.

Third, industry argues that OSHA's reliance in its technological feasibility assessment on the concept of the geometric mean is inappropriate. OSHA disagrees primarily for the reasons previously set out. Industry's main criticism of the use of the geometric mean is that showing that an industry can achieve geometric means below 50 $\mu g/m^3$ is insufficient to prove technological feasibility, unless OSHA can prove industry is capable of achieving geometric means far below 50 $\mu g/m^3$ so that industry is guaranteed that it can achieve 50 $\mu g/m^3$ all or nearly all the time.

OSHA agrees in part with this point but believes that industry has misunderstood how geometric means are being used in the Agency's feasibility determination. However, Meridian may have used the geometric mean, OSHA wishes to emphasize that, while the Agency certainly has relied upon the geometric mean to assess feasibility in non-ferrous foundries, it has not treated the fact that the industry may already be achieving a geometric mean of 50 $\mu g/m^3$ as tantamount to a proof of technological feasibility. Rather, the Agency's position is that a geometric mean of 50 $\mu g/m^3$ indicates that some controls are in place to limit excessive worker exposures or that exposure levels are low to begin with and that only relatively modest further additions and improvements to controls are necessary to consistently reduce exposure levels to or below 50 $\mu g/m^3$

Industry further argues that if the Agency uses a geometric mean it should recalculate the geometric mean to three standard deviations from the mean to provide "a reasonable level of assurance" of compliance (Ex. 694–28, pp. 1–8). By reasonable assurance, industry means that statistically more than 998 out of every 1,000 samples would be at or below 50 $\mu g/m^3$

However, as the courts have said, to prove the technological feasibility of a PEL, OSHA is not required to prove that an industry can achieve the PEL in all of the operations all of the time. *USWA* v. *Marshall*, 647 F 2d at 1270. Indeed, if a PEL is generally feasible across an industry, there may still be operations in which the PEL can never be achieved and in which industry's obligation is to engineer down to the lowest feasible level. In that case, fulfilling this obligation constitutes compliance with paragraph (e)(1) of the lead standard (29 CFR 1910.1025).

For example, suppose hypothetically that exposure levels for employees in 9 of 10 operations in a particular industry can always be controlled below 50 $\mu g/m^3$ Suppose further that exposure levels for employees in the single remaining operation can never be controlled to 50 $\mu g/m^3$ Despite the fact that 50 $\mu g/m^3$ is clearly feasible in 9 of 10 operations, if all employees are sampled at the same frequency and if the same number of employees work in each operation, 10% of the sampling results will always exceed 50 $\mu g/m^3$ OSHA, nonetheless, would conclude that 50 $\mu g/m^3$ is technologically feasible for that industry, even though it is infeasible in that operation. The Agency believes that the fact that exposure levels for a minority of workers cannot be controlled as effectively as exposure levels for the majority is no reason to forego protection to the extent feasible for the majority.

Even if, for purposes of argument only, OSHA were to accept the notion that feasibility entails some statistically anticipated level of minimum assured compliance and assuming the exposure data were good enough to support such analysis, the Agency, as a matter of policy, would set that minimum considerably lower than industry suggests. OSHA believes that industry's minimum of 998 out of 1,000 samples, which is virtually all the time in all operations, is in conflict with the court's opinion that to prove technological feasibility OSHA does not have to prove the PEL can be achieved in all operations all of the time. OSHA further believes that if industry's interpretation were to prevail it would effectively subvert OSHA's statutory mission to protect workers to the extent feasible.

Moreover, again for purposes of argument only, if OSHA accepted industry's suggestion that for a PEL to be technologically feasible a geometric mean well below 50 would be required to provide the necessary assurance of compliance, the Agency would still conclude that a PEL of 50 $\mu g/m^3$ is technologically feasible in the non-ferrous foundry industry. As indicated at the beginning of this section, OSHA anticipates that after its recommended controls are implemented at foundries E and F geometric mean exposure levels in over 95% of the combined job categories are anticipated to be well below 50 $\mu g/m^3$ In fact, over 73% are anticipated to be below 30 $\mu g/m^3$ (see Tables B and C, above).

Finally in this regard, industry argues that, instead of relying on geometric means, OSHA should eliminate what the Agency considers to be outlying data points and use arithmetic means (Ex. 694-28, p. 1). Industry seems to favor this substitution because it believes geometric means are lower than arithmetic means. OSHA cannot accept this suggestion in this rulemaking. OSHA believes industry's alternative would require OSHA to make highly subjective judgments concerning what constitutes an outlier. By contrast, the geometric mean is a statistic derived from an objective mathematical formula that results in appropriately de-emphasizing outliers and reflects typical exposure levels. The way OSHA uses geometric means in this rulemaking is widely accepted in the scientific community. Industry itself often uses geometric means in comparable ways.

Fourth, industry has devoted considerable effort in written comments and in cross examination at the hearing to impugning the competence and integrity of OSHA's contractor, Meridian, and the expert panel of certified industrial hygienists established by Meridian (e.g., Ex. 694-26, pp. 5-6, 9, 12). On the whole, OSHA rejects these criticisms and believes that Meridian did a creditable job given time and resource constraints.

Meridian has had extensive experience and possesses very broad competence in the area of industrial hygiene, the principles of which are universally applicable to all industries. It also has expertise and has broad experience in assessing factors relevant to technological feasibility. Physically, there is nothing unique about lead dust and lead fume or about non-ferrous foundries that would make Meridian's extensive expertise and competence in evaluating engineering and work practice controls across many industries irrelevant to this industry. The control technologies recommended are conventional and transferrable from similar industries, and the anticipated effectiveness of these controls in reducing air lead levels also is the same across industries.

Meridian's final report (Ex. 686A) and its conclusions are based on numerous sources in the record. These include data, other evidence, and comments submitted by foundries, unions, trade associations and other interested parties; site visits to three foundries, participated in by two experienced certified industrial hygienists; and recommendations by an expert panel of three experienced certified industrial hygienists, two of whom had been on all the site visits. The industrial hygienist on the panel who did not go on site visits had previously had extensive experience in non-ferrous foundries (Ex. 609, pp. 1-2).

Of course, notwithstanding their experience and expertise, Meridian and the expert panel may have drawn some incorrect conclusions and made certain mistakes of fact. This is almost inevitable when a contractor can devote only limited time and resources to examining a complex industry and a voluminous record. Such mistakes are more likely to occur where, as in the case of the non-ferrous foundry industry in this rulemaking, an industry declines to testify and to subject itself to any questioning at the public hearing.

Thus, OSHA concludes that Meridian's revisions and its conclusions generally are firmly grounded in the record. In any event, OSHA has independently assessed the record, reviewed Meridian's final report for accuracy, taken account of industry's comments on that report, and relied only in part upon the Meridian report for the Agency's feasibility determination.

In addition to its main criticisms, industry makes a number of other arguments, all of which the Agency has carefully considered and four of which are important enough to deal with individually. Industry argues that day-to-day variability of exposure levels within a foundry makes it impossible to achieve 50 $\mu g/m^3$ on a regular basis; that 50 cannot be achieved in foundries E and F or in other foundries without rebuilding (Exs. 582-81, p. 33; 694-25, p. 6); that recycled lead-bearing sand, which contaminates several operations, is so abrasive that equipment to permanently enclose or automatically convey it will have a short life expectancy, and that task analysis cannot be usefully performed because of low exposure levels and short exposure times.

With regard to the variability argument, OSHA recognizes that some variability in exposure levels above or below an average level does occur over time. However, much of this variability is due to factors that are identifiable and frequently within the control of the employer, such as poor work practices, inadequate housekeeping and upset conditions (Exs. 686A, p. 40; 694-42, p. 8). In addition, at least one foundry has conceded for example, that a certain percentage of sampling results that seem to suggest variability is instead the product of contamination of the sampling device by large stray lead particles (Ex. 684e, p. 7).

OSHA strongly believes that if production and engineering and work practice controls are properly and consistently carried out, the factors causing variability will be largely controlled and the range of variability will be very narrow. OSHA therefore considers evidence of repeated, wide-ranging variability in exposure levels as evidence of the inadequacy of controls. That inadequacy, of course, hardly constitutes evidence of infeasibility.

Once the range of variability has been narrowed by effective controls, the degree of latitude for variability that is built into OSHA's determination that the PEL is feasible should prove sufficient. This latitude is implicit in OSHA's conclusion that in most operations foundries will be able to reduce exposures to levels that are reasonably below 50 $\mu g/m^3$

However, OSHA understands that from time to time peak exposures due to unforeseeable upsets or other aberrational events will exceed the latitude for variability. The Agency takes account of that possibility in its enforcement policy (FOM). As a result, OSHA does not believe that such excursions are relevant to its feasibility determination.

Second, industry argues that 50 $\mu g/m^3$ cannot be achieved in Foundries E and F or in other foundries without rebuilding (Exs. 582-81, p. 33; 694-25, p. 6). OSHA has already shown that the PEL can be achieved most of the time in most of the operations at Foundries E and F through the mere exchange of technology currently employed and without rebuilding. As to the other plants that are said to require rebuilding, industry has not presented any evidence to support that assertion. The main argument of industry in this regard seems to be that Foundries E and F have effectively implemented all the controls that can be implemented in their existing plants. OSHA has already shown this assertion to be incorrect as well. The analogous argument that most other foundries cannot do more within their existing plants is not only unsupported by documentation, but also inherently suspect given the apparently low level or poor quality of engineering controls in most small foundries (Ex. 689-3, p. 1). On the other hand, OSHA does recognize that some foundries may require extensive capital improvements if they are to achieve the PEL

Third, industry argues that recycled lead-bearing sand, which contaminates several operations, is so abrasive that equipment to permanently enclose or automatically convey it will have a short life expectancy. Although the record is devoid of evidence concerning the life expectancy of such equipment. OSHA doubts industry's position. Covered screw conveyors are typical material handling methods for sand. Specifically, it is perfectly apparent that sand handling can be permanently enclosed and automatically conveyed since Foundry F has already done so (Ex. 684f, App. A). Foundry F says nothing regarding equipment problems arising from the abrasiveness of sand.

Consequently, OSHA is unpersuaded by industry arguments. Based upon its own expertise, experience and the record evidence. OSHA concludes that a PEL of 50 $\mu g/m^3$ is technologically feasible by means of engineering and work practice controls in the non-ferrous foundry industry.

Uses. The non-ferrous foundry industry produces a wide range of cast products for various uses, Castings may be quite small (electrical connectors weighing less than an ounce) or very large (such as an 80,000 pound ship's propeller) [Ex. 582-84, p. 1]. Other types of castings include bushings, bearings, valves, and fittings [Ex. 571, p. 8]. Castings are used extensively as components in equipment such as military hardware, electric power generation and distribution systems, mining machinery, and plumbing ware [Ex. 475-3A, p. 1] as well as in applications such as bathroom fixtures, furniture, and decorative items [Ex. 571, p. 8].

Industry Profile. Non-ferrous foundries are establishments that melt and cast non-ferrous metals. Of interest in this rulemaking are those foundries casting metal alloys which contain lead, namely copper and copper-based brass and bronze castings. (Lead is added at concentrations that range from 0.02 to 42.5 percent in 130 commercially available alloys, primarily to increase the properties of tightness, lubricity, and machinability [Ex. 475-3, p. 2; Ex. 582-84, p. 2].)

In written testimony submitted by James L. Mallory, the Executive Director of the Nonferrous Founders' Society, at the Informal Public Hearing held November 3-6, 1987 in Washington, DC [Ex. 581-2, p. 2], reference was made to the 1986 Foundry Industry Census [Ex. 658]. This census indicates that 1,291 foundries are involved in the production of brass and bronze alloys. This figure includes all foundries for which brass and bronze alloy castings are a primary activity (over 50% of production) as well as those for which such castings are a secondary or tertiary activity (less than 50% and less than 10% of production, respectively). Also included are a substantial number of "captive" foundries (those establishments where castings are produced and incorporated into another manufactured product or process at the same establishment) that may be found in SIC classifications other than 3362, such as 3432 (Plumbing Fixtures and Brass Goods), 3494 (Valve and Pipe Fittings), and 3561 (Pump and Pumping Equipment Manufacturers).

For the purposes of this rulemaking. OSHA estimates the number of foundries affected by the standard to be 1,291 based on the latest estimates submitted by the ACMA and AFS. Of these 1,291 foundries, approximately one-half, or about 616 foundries, primarily produce brass, bronze, and copper alloy castings [Ex. 581-2, testimony of J. Mallory, p. 2]. The remaining 675 foundries produce some brass, bronze, and copper castings, although their primary work is with other metals and alloys [Ex. 677]. Also, information in the 1986 foundry census indicates that about 20 percent of all foundries are exclusively captive or primarily captive [Ex. 658, p. 2]. Thus, OSHA estimates that about 258 captive operations are part of this industry sector. OSHA also estimated establishment count by size category. Three size categories were used: small plants employing 9 or fewer workers, small plants employing 10 to 19 workers, and large plants employing 20 or more workers. The number of establishments in each of these size categories is provided with respect to primary function in Table H.

Based on the latest information, there are approximately 18,585 lead-exposed workers in this sector. Total employment has been estimated to be about 23,000 [Ex. 686a, p. 2].

Non-ferrous foundries are predominantly small establishments, with the great majority of firms operating only one foundry. In 1982, the Census Bureau reported 484 firms owning 500 foundries in SIC 3362 [Ex. 571, p. 11]. Recent information indicates that 57 percent of all foundries involved in the production of brass and bronze castings employ fewer than 20 workers [Ex. 582-84, p. 1].

Value of Shipments data was compiled by Meridian in current dollars and in constant 1982 dollars for primary brass and bronze foundries (SIC 3362) [Ex. 571, p. 9]. As would be expected due to the recession of the early 1980s, both indicators showed a sharp drop of 15 to 20 percent between 1981 and 1982. Bet7een 1982 and 1985, value of shipments in current dollars increased from $702 million to $797 million while the value of shipments in constant 1982 dollars was unchanged. Weight of metal content decreased from 564 thousand short tons to 444 thousand between '81 and '82. Increases were realized in each of the next two years but a decrease from 504 thousand short tons to 470 thousand occurred between '84 and '85 [Ex. 571, p. 9]. More recently, shipments of copper castings were estimated to have increased by about 11 percent between 1986 and 1987 and by about 10 percent between 1987 and 1988 [U.S Industrial Outlook, 1989, Department of Commerce].

With regard to import competition, Meridian reported that

> imports can compete with domestically produced castings in a variety of ways. Castings may be imported directly by firms using castings. Products incorporating castings, such as valves, fittings, and decorative items, may also be imported. In addition, increased imports of machinery reduce the domestic market for castings [Ex. 571, p. 10].

No data were available which would allow OSHA to develop a quantitative estimate of the degree of import penetration.

Dun & Bradstreet financial information for 1986 and 1988 provided estimates of average sales and allowed OSHA to compute rates of return on sales (ROS) for Primary Brass, Bronze, and Copper Foundries (SIC 3362) by asset size class. For those firms with less than $100,000 in total assets, the 1988 median ROS was 2.4 percent; for firms having total assets of between $100,000 and $1,000,000, the 1988 median ROS was 5.7 percent; and for firms in the over $1,000,000 asset class, the 1988 median ROS was 6.2 percent. (ROS rates for 1986 reported by Meridian research (Ex. 571, p. 14) were used to disaggregate and apportion the total ROS for the industry sector which was available for 1986.) This information suggests that most primary brass, bronze, and copper foundries were operating profitably in 1988. These data were used in conjunction with 1988 data from Dun's Market Identifiers, which provided sales by employment size class, to compute economic impacts.

Rates of return on sales for manufacturers in SIC codes other than 3362 were examined for the year 1985 and were not found to differ significantly from SIC 3362 [Ex. 686a, p. 7]. These facilities were in SICs where captive foundries most likely would be found.

Information submitted into the record provided another source of financial data. Meloon Foundries, a small facility, claimed sales of $3,000,000 and 4 percent net profit on sales, though only 20 percent of their business is lead related [Ex. 582-2]. Another small foundry, Kloppenborg Foundry and Fan Company, claimed $330,000 in total sales, a return on assets (ROA) of 5.74 percent, and a return on net worth of 6.05 percent [Ex. 582-29]. Over the last 5 years, Kloppenborg's percentage of brass-related sales has ranged from 19 percent to 24 percent. Montclair Bronze, a foundry employing 25 workers, reported lead-related sales of $490,000 and a net worth of $800,000 for 1986. Lead-related returns make up 20 percent of Montclair's total returns [Ex. 582-37]. A large operation, Ford Meter Box Company, reported a dollar value of castings for 1986 of approximately $9 million [Ex. 582-81]. All returns for this company are lead related. Foundry "D" [Ex. 667], also a large foundry with essentially all of its returns being lead related, has sales which range between $8 and $15 million annually.

Costs of Compliance. This section presents OSHA's estimate of the compliance costs that would be incurred by employers in the nonferrous foundry industry sector in order for them to achieve the permissible exposure limit of 50 micrograms of lead per cubic meter of air by engineering and work practice controls. Only those costs associated with engineering and work practice controls were considered, and no savings due to reductions in costs for respirator usage were estimated. In developing its estimate, OSHA relied on the study performed by its contractor, Meridian Research, comments submitted in response to OSHA's August 3, 1987 request for information, comments and testimony received prior to, during, and after the informal public hearing held November 3–6, 1987 and information obtained from three site visits to nonferrous foundries.

Compliance costs expected to be incurred by foundries were estimated by Meridian Research in their August, 1987 report and were dependent upon the number of sources of lead dust and fume in the facility as well as the extent of ventilation controls, if any, already in place. The incremental annualized costs were estimated separately for small and large facilities.

Prior to and during the informal public hearing, a number of comments were received from the public regarding the Meridian cost estimates. Joint comments submitted by the American Cast Metals Association (ACMA) and the Nonferrous Founders' Society (NFFS) expressed the view that Meridian understated the magnitude of the compliance costs [Ex. 582-86, p. 15]. One cause of this, they argued, was Meridian's apparent failure to include the substantial expense of a traveling vent in their $15 per cfm (cubic feet per minute) ventilation expense. The commenters also cite a submittal by Philip S. Zettler, President of Vulcan Engineering Co., a manufacturer of ventilation equipment and traveling vents, in which Mr. Zettler stated that "the cost to control lead to [the] proposed standard in small foundries would be on the magnitude of $500,000 to $700,000" [Ex. 582-34]. (The estimate made by Mr. Zettler included no baseline information, that is, the level of control that was assumed to be in place in a small foundry to begin with, though it is generally agreed that this level is quite low. Also, no information was given as to the assumed lead content of the alloys).

The ACMA-NFFS comments were also critical of Meridian's modelling of foundries. The commenters pointed out that the number of grinding and finishing stations modelled did not reasonably represent such facilities [Ex. 582-86, p. 16]. These commenters also objected to the baseline level of control used by Meridian, claiming it was too high [Ex. 582-86, pp. 16–17]. Unfortunately, no specific correction was suggested.

Chicago Faucet noted that the costs developed in the Meridian report were understated, asserting that "Meridian has totally ignored the cost or installation of make-up air" [Ex. 582-13, p. 4]. At the industry-wide level, a submission by Mr. James Mallory argued that Meridian's count of the number of foundries affected by the standard was underestimated [Ex. 581-2, p. 2].

Other evidence in the record suggests that the Meridian cost estimates may have been overstated. Dr. Franklin Mirer, a toxicologist and Certified Industrial Hygienist and director of the Health and Safety Department of the UAW stated that the $15 per cfm estimate was unrealistic for smaller plants, and cited instead figures of $4 to $7 per cfm [Ex. 643; Tr., 829–830]. During questioning at the hearing, Dr. Mirer explained that for certain smaller facilities it might be possible to achieve the standard using only general ventilation techniques [Tr., p. 839], and that in such a case the ventilation cost would only be about $4 per cfm. Even if a small facility does need a "conventional" ventilation system, the costs are likely to be less than for a large facility due to the fact that less ductwork is required. [Ex. 643, p. 8; Tr., 839–840].

Meridian's Addendum [Ex. 686a] to their August, 1987 report reflects these commenters' concerns with regard to costs. The model foundries were adjusted to more accurately represent existing conditions in foundries. Specifically, the number of grinding and finishing stations, as well as travelling vents for ladles, were increased [Ex. 686a, p. 43]. Also, a cut-off saw was added as an emission source and ventilation requirements for furnace operations and shakeout areas were increased. With regard to the number of affected foundries industrywide, the total was increased to 1,291 to include all captive and non-captive foundries.

Also, Meridian's original estimate of the baseline level of control for small foundries was increased to reflect information which indicated that they have, on average, implemented about 30% of the controls necessary, as opposed to the 10% figure used previously [Ex. 686a, p. 44].

Meridian responded to questions concerning the types of costs included in their $15 per cfm estimate during the informal public hearing. They indicated that "[t]his was an estimate designed to cover all of the aspects of the ventilation cost, the direct ventilation, the baghouse, any things needed for makeup" [Tr., p. 442]. Existing evidence in the public record appears to support this value as a reasonable estimate for average costs per cfm for large foundries. Foundry "B" [Exhibit 667] describes a 175,000 cfm system which cost $988,755. This equates to only $5.65 per cfm (but does not include costs incurred by foundry personnel). In a submittal made by the Ford Meter Box Company [Ex. 582-81], costs of $8.67 per cfm were reported in 1981 for a mold ventilation system (about $9 in 1985). Costs higher than $15 per cfm were reported by Wisconsin Centrifugal. Average costs for systems A "C" "E" and "F" were about $17 per cfm in 1980, and did not include makeup air [Ex. 582-59].

Small foundries apparently have an advantage in that they require shorter runs of ductwork, as noted above. To reflect this advantage, Meridian revised their unit cost for ventilation to $7 per cfm for small foundries. Using this value produced an average incremental capital cost of compliance of $245,700 per small foundry [Ex. 686a, p. 44]. Total annual costs, including annualized capital (annualized at a 10 percent cost of capital and useful life of 12 years) and operation and maintenance expenses estimated at 10 percent of capital costs each year, would be $60,640. These costs are summarized in Table D. (Small foundries as defined by Meridian for the purposes of their analysis were those plants employing 20 or fewer workers). These are the average costs required per foundry to move from the baseline to compliance with the 50 microgram PEL. Evidence submitted into the docket indicates that this is a reasonable estimate for many small foundries, particularly those for which lead-containing castings are a secondary or minor product. For example, Meloon Foundries, Inc., a small foundry which submitted cost data, estimated that an investment of $250,000 would be required to implement fume control for existing facilities. AACCO Foundry, Inc. also submitted cost estimates [Ex. 582-58]. They quoted $2,600 as the engineering design fee for a ventilation system and $80,000 as the cost of the system itself. The size of this foundry was not discernable from the letter submitted, but it was assumed that it was a small foundry.

As noted above, the estimate for small foundries developed by Meridian applied to all foundries with fewer than 20 employees. However, information obtained from Duns Market Identifiers, which allowed OSHA to better utilize financial statistics contained in the public record, as described below, indicated that approximately 67 percent of this group actually employ fewer than 10 workers. Since information in the record indicates that exhaust air requirements could be less for very small foundries, OSHA believes that the Meridian estimate overstates compliance costs for these firms [Exs. 689-4D; 571, p. 14]; thus, OSHA has estimated costs for very small operations separately. It is estimated that very small foundries pouring primarily leaded alloys will require ventilation for three pit-type furnaces and two finishing stations while foundries of this size pouring primarily non-leaded alloys will require ventilation for one such furnace and one finishing station. Ventilation requirements would be 3,000 cfm per furnace [Ex. 689-4D, p. 7-3] and 2,000 cfm per finishing station [Ex. 686a, p. 45]. Each very small foundry is also estimated to require ventilation for one hand-pouring station, at 2,000 cfm, and one shakeout station at 6,000 cfm [Ex. 686a, p. 45]. Unit costs were estimated to be $4 per cfm. Total annual costs for ventilation, including annualized capital and O&M expense, and assuming baseline compliance to be 30%, would be $14,512 for primary brass and bronze foundries and $8,984 for foundries pouring primarily non-leaded alloys.

Costs for additional housekeeping for primary brass and bronze foundries employing 9 or fewer workers were estimated to be 50 percent of the Meridian estimate for small plants, or $829, while costs for additional housekeeping for foundries pouring primarily non-leaded alloys and employing 9 or fewer workers were estimated to be 25 percent of the Meridian estimate, or $415.

Total annual costs for these foundries would be $15,341 (foundries primarily pouring leaded alloys) and $9,399 (foundries primarily pouring non-leaded alloys).

Meridian's revised capital cost estimate for large foundries was $376,500 [Ex. 686a, p. 46]. Total annual costs would be $92,920, including annualized capital costs and operation and maintenance expenses. These costs are summarized in Table E.

For those foundries in all size categories for which leaded alloys constitute less than 10 percent of all production, lead fume and dust may be generated only occasionally. OSHA estimates that little or no cost will be incurred by such firms, since their workers should come under the 30-day exclusion rule, with 8-hour TWA exposures not exceeding the 50 $\mu g/m^3$ PEL for 30 days or more per year. (Under paragraph (e)(1) of the lead standard, any employer who can demonstrate that workers are exposed to lead in excess of 50 $\mu g/m^3$ for 30 or fewer days per year is permitted to use any combination of controls to achieve the PEL.) Second, information in the record indicates that small foundries typically have some controls in place [Ex. 686a, p. 44], and these may be all that are required to limit exposure below the PEL [Tr., p. 839]. Lastly, many of these firms may be able to phase out most or all of the lead-related portion of their business.

Comments received regarding Meridian's revised figures suggest, however, that for some foundries, potential cost impacts could be greater; variations in production processes, production levels, and lead content of castings may cause certain facilities to incur additional costs. OSHA, therefore, adjusted the final Meridian estimates to develop high end cost estimates. These high end estimates assume that all foundries employing 10 or more workers and primarily producing high lead alloy castings would need to implement each control method specified below to achieve the PEL of 50 $\mu g/m^3$

For such foundries, OSHA doubled the number of travelling vents for ladles and increased furnace ventilation to 30,000 cfm (to allow for the provision of a roof-mounted, slotted, canopy-type hood). For large foundries (20 or more employees), OSHA increased the number of pouring lines from 2 to 3 [Ex. 694-27 p. 6] as well as doubled the pouring line ventilation. Air volume requirements for shakeout for larger foundries were adjusted from 6,000 cfm to 20,000 cfm [Ex. 689-4B] and the number of cut-off saws was increased from 1 to 2. Costs were added to the estimate for large foundries for the ventilation of two blasting machines [Ex. 694-27 p. 6]. Also, since foundries located in areas where winters are particularly harsh could incur higher annual operating costs due to the heating of make-up air, the typical O&M expense of 10 percent of capital costs was increased to 12.5 percent. The annual costs associated with these adjustments were $36,150 for smaller foundries (10-19 employees) and $91,949 for large foundries. Fresh air pulpits may be implemented in some foundries as needed to isolate employees working on the charging deck. Capital costs are estimated to be $15,000 with annual costs being $3,952, based on a useful life of 12 years and HEPA filter replacements [Ex. 686c, p. 31]. It is anticipated that smaller foundries will acquire one pulpit and large foundries will acquire two. Costs for the enclosure of cabs of mobile equipment could also be required. Costs for these enclosures were estimated to be $5,000 per unit [Ex. 686c, pp. 32-33]. Annualized capital costs would be $734 per unit, and annual O&M expenses would be $3,600, including HEPA filter replacement. Small foundries were estimated to require 2 cabs and large foundries were estimated to require 4.

OSHA estimated costs for isolation and barrier construction to prevent cross contamination. Costs for partitioning in small and large foundries are estimated to be $25,000 and $50,000, respectively. Annualized capital costs (based on a twenty year useful life) will be $2,938 for small foundries and $5,875 for large.

Labor costs incurred due to the need for additional housekeeping were added as well. This cost is expected to be $3,357 for the smaller foundries and $6,713 for large foundries. Costs for annual cleaning were estimated to be $50,000 for large foundries and $25,000 for small [Ex. 694-9].

Costs for the industrial hygiene survey are estimated to be about $500 per day. The survey would require two days, one for planning and one for actual exposure monitoring and evaluation of mechanical systems. Thus, an initial cost of $1,000 would be incurred. (Larger foundries may require additional time, and thus, additional initial costs). Though reevaluation may be necessary, no recurring costs are anticipated.

OSHA's high end cost estimates are summarized in Tables F and G, and also assume a baseline level of control for most equipment of approximately 30 percent for small foundries and approximately 80 percent for large foundries [Exs. 571; 686a]. (This is the percentage of controls prescribed which are already estimated to be in place for these two types of foundries.) The baseline level for annual cleaning was estimated to be 25 percent [Exs. 684e; 684f; 684g]. No comment was received into the public record which suggested that these levels misrepresent current industry practice.

Adding the adjustments developed above to the previous estimates of $60,640 for small foundries and $92,920 for large foundries yields upper bound estimates of annual costs of $129,258 for small facilities and $238,008 for large.

Thus, costs for small foundries employing 10 or more employees and primarily producing non-leaded alloys were estimated to be $60,640 and costs for small foundries primarily producing leaded alloys were estimated to be $129,258. Costs for large foundries primarily producing non-leaded alloys were estimated to be $92,920 and costs for large foundries primarily producing leaded alloys were estimated to be $238,008.

To estimate total industry costs, it is assumed that 57 percent of the 1,291 affected foundries are small, employing fewer than 20 workers [Ex. 582–84]. Therefore, 736 foundries are small and 555 are large. Further, it is estimated that about 60 percent of all primary brass and bronze foundries are small [Exs. 658, p. 7· 571, p. 11]. Since 616 foundries are primary brass and bronze foundries, 370 would be small and 246 would be large. Thus, there are 370 small foundries (67 percent, or 248, of which employ fewer than 10 workers) whose primary product is brass and bronze, and 366 small foundries (245 of which employ fewer than 10 workers) producing lead containing alloys as a secondary or tertiary activity (736–370). Also, there are 246 large foundries whose primary product is brass and bronze and 309 large foundries producing lead containing alloys as a secondary or tertiary activity (555–246). Using the cost figures shown in Table H, total annual costs for small foundries were estimated to range from approximately $11.2 million to $29.2 million and total annual costs for large foundries were estimated to range from approximately $22.9 million to $87.3 million. Industrywide, total annual costs will range from $34.1 million to $116.5 million.

TABLE D.—ESTIMATED COSTS OF COMPLIANCE FOR SMALL FOUNDRIES PRODUCING CASTINGS PRIMARILY FROM NON-LEADED ALLOYS

[19 or Fewer Employees]

Emissions source or control	Annualized capital	Annual O&M	Total annual
(0–9 employees)			
Furnace	$1,233	$840	$2,073
Pouring	822	560	1,382
Shakeout	2,466	1,680	4,146
Finishing	822	560	1,382
Housekeeping		415	415
Total	5,344	4,055	9,399
(10–19 employees)			
Furnace	$16,442	$11,200	$27,642
Trav. vent	1,439	980	2,419
Pour. line	7,193	4,900	12,093
Shakeout	4,316	2,940	7,256
C-O saw	1,439	980	2,419
Grinding/finishing	4,316	2,940	7,256
Wet suppression	206	140	346
Wet sweeping	719	490	1,209
Total	36,069	24,570	60,639

Source: Occupational Safety and Health Administration, Office of Regulatory Analysis.

TABLE E.—ESTIMATED COSTS OF COMPLIANCE FOR LARGE FOUNDRIES PRODUCING CASTINGS PRIMARLY FROM NON-LEADED ALLOYS

Emissions source or control	Annualized capital	Annual O&M	Total annual
Furnace	$35,232	$24,000	$59,232
Trav. vent	1,762	1,200	2,962
Pour. line	8,808	6,000	14,808
Shakeout	2,642	1,800	4,442
C-O saw	881	600	1,481
G/F	5,285	3,600	8,885
Wet suppression	147	100	247
Wet sweeping	514	350	864
Total	55,270	37,650	92,920

Source: Occupational Safety and Health Administration, Office of Regulatory Analysis

TABLE F.—ESTIMATED COSTS OF COMPLIANCE FOR SMALL FOUNDRIES PRODUCING CASTINGS PRIMARILY FROM LEADED ALLOYS

Emissions source or control	Annualized capital	Annual O&M	Total annual
(0–9 employees)			
Furnace	$3,699	$2,520	$6,219
Pouring	822	560	1,382
Shakeout	2,466	1,680	4,146
Finishing	1,644	1,120	2,764
Housekeeping		829	829
Total	8,632	6,709	15,341
(10–19 employees)			
Furnace	$16,442	$14,000	$30,442
Trav. vent	2,877	2,450	5,327
Pour. line	7,193	6,125	13,318
Shakeout	4,316	3,675	7,991
C-O saw	1,439	1,225	2,664
Grinding/finishing	4,316	3,675	7,991
Canopy	14,386	12,250	26,636
Wet suppression	206	140	346
Wet sweeping	719	490	1,209
Labor-housekeeping	0	3,357	3,357
Cabs	1,028	5,040	6,068
Pulpits	1,541	1,563	3,104
Isolation	2,1056	0	2,056
Annual cleaning	0	18,750	18,750
Total	56,519	72,739	129,258

Source: Occupational Safety and Health Administration, Office of Regulatory Analysis.

TABLE G.—ESTIMATED COSTS OF COMPLIANCE FOR LARGE FOUNDRIES PRODUCING CASTINGS PRIMARILY FROM LEADED ALLOYS

Emissions source or control	Annualized capital	Annual O&M	Total annual
Furnace	$35,232	$30,000	$65,232
Trav. vent	3,523	3,000	6,523
Pour. line	26,424	22,500	48,924
Shakeout	8,808	7,500	16,308
C-O saw	1,762	1,500	3,262
G/F	7,046	6,000	13,046
Canopy	17,616	15,000	32,616
Wet suppression	147	100	247

TABLE G.—ESTIMATED COSTS OF COMPLIANCE FOR LARGE FOUNDRIES PRODUCING CASTINGS PRIMARILY FROM LEADED ALLOYS—Continued

Emissions source or control	Annualized capital	Annual O&M	Total annual
Wet sweeping	514	350	864
Labor-housekeeping	0	6,713	6,713
Cabs	587	2,880	3,467
Pulpits	881	1,250	2,131
Isolation	1,175	0	1,175
Annual cleaning	0	37,500	37,500
Total	103,715	134,293	238,008

Source: Occupational Safety and Health Administration, Office of Regulatory Analysis.

Economic Feasibility. Economic impacts for small and large nonferrous foundries were determined with regard to the ranges of costs presented in the previous section. Financial information was provided by Meridian Research and by commenters to the public record. In addition, OSHA relied upon publicly accessible data (Duns Market Identifiers).

Table H summarizes the economic impacts for the nonferrous foundry industry.

The first two columns of the table provide a summary of the number of establishments and exposed workers in each of the three size categories. The 18,585 exposed workers were apportioned using data on employment found in the public record [Ex. 686a, p. 6].

Column three provides estimates of lead related sales based on information available from Dun and Bradstreet's Duns Market Identifiers (1988). These publicly accessible data allowed the Agency to estimate average sales by employment size class. (No comparable data were provided by industry sources in response to OSHA's request.) The data relate to SIC 3362, Primary Brass, Bronze, and Copper Foundries, and appear in Table H for foundries primarily involved in the production of leaded alloys. Sales for foundries primarily producing non-leaded alloys were assumed to average 25 percent of primary producers' sales.

TABLE H.—Summary of Economic Impacts for the Non-Ferrous Foundry Industry

Size of plant (employment)	No.	Exposed workers	Sales/plant ($thous.)	Lead related profits/plant ($thous.)	Total profits/[a] ($thous.)	Costs/plant ($thous.)		Ratio: costs/sales		Ratio: Costs/lead rel. profits		Ratio: Costs/total profits [b]	
						low	high	low	high	low	high	low	high
Small (0–9)													
Primarily lead	248	1240	248	5.95	7.94		15.34		0.06186		2.19084		1.64313
Primarily non-lead	245	557	62	1.49	7.94	0.00	9.40	0.00000	0.15160	0.00000	5.36905	0.00000	1.00670
Small (10–19)													
Primarily lead	122	1830	785	44.75	59.66	60.64	129.26	0.07725	0.16466	1.15195	2.45546	0.86396	1.84159
Primarily non-lead	121	726	196	11.19	59.66	0.00	60.64	0.00000	0.30899	0.00000	4.60780	0.00000	0.8396
Large (20 or more)													
Primarily lead	246	9107	7100	440.20	586.93	92.92	238.01	0.01309	0.03352	0.13932	0.35885	0.10449	0.26764
Primarily non-lead	309	5130	1775	110.05	586.93	0.00	92.92	0.00000	0.05235	0.00000	0.55727	0.00000	0.10449

[a] Total profits after taxes were derived from sales using the following schedule of return on sales (ROS) rates: small (0–9), 2.4%; small (10–19), 5.7%, large (20 or more), 6.2%.

[b] See text for derivation. Profit impacts assume full cost absorption and were computed using the following federal income tax schedule: small (0–9), 0.15; small (10–19), 0.15; large (20 or more), 0.34.

Source: Occupational Safety and Health Administration, Office of Regulatory Analysis.

Column 4 provides lead-related profits. These figures were derived by applying the 1988 Dun and Bradstreet rate of return on sales (ROS) for SIC 3362 to the sales figures in column 3 [Ex. 571, p. 14] (see footnote "a, Table H). The 1988 industry median ROS for SIC 3362 was disaggregated and apportioned based on 1986 establishment size ROS levels (see Ex. 571, p. 14). This assumes that the relative profitability of the three size classes of foundries has remained constant from 1986 to 1988.

Column 5 provides estimates of total profits. Since leaded alloys comprise only a portion of the foundry product for a large number of facilities, another factor to be considered in assessing the ability of the firms in this industry to absorb the costs of compliance was the extent to which they pour non-leaded alloys. Producers for whom the sale of leaded castings represents a small fraction of total sales could avoid compliance costs altogether by shifting away from the production of leaded castings. If this is not an option, compliance costs could be financed by a combination of pass-through and absorption from total profits. Additionally, at least 20 percent of all affected foundries are part of larger corporations, which more easily could be able to absorb compliance costs.

In column 6, cost ranges as developed for six different size and lead production combinations are provided.

Column 7 contains estimated price increases, computed as the ratio of costs to lead related sales. Price impacts were computed assuming full cost pass-through. If total cost pass-through were possible for foundries in the smallest size category, price increases will range from 0 to 15 percent; for foundries with 10 to 19 workers, increases of 0 to 31 percent are indicated; and for large foundries, price increases of 0 to 5 percent would be required. However, due to foreign competition, full pass-through of costs is not an option for this industry, but with the falling exchange rate of the dollar, OSHA believes some pass through should be possible without losing market share. In addition, since industry reported that "[a]pproximately 10 percent of annual foundry industry output is used for national defense purposes *" [Ex. 582-86], OSHA believes some cost pass-through to defense contractors could also be possible.

Columns 8 and 9 provide profit impacts, computed as the ratio of annual costs to either lead-related or total profits. It should be noted that the tax deductibility of compliance costs was taken into account in computing profit impacts. That is, care was taken to compute before-tax profit before subtracting annual costs. After subtracting annual costs, the appropriate average tax rate (either 15 or 34 percent) was then reapplied to determine after-tax profit net of costs. (See footnote "b, Table H.)

The profit impacts in Table H were computed assuming compliance costs would be fully absorbed by each foundry. Profit impacts for large firms primarily producing leaded alloys will range from 10 and one-half to 35 and one-half percent while impacts on large foundries primarily producing non-leaded alloys will range from 0 to 56 percent. Impacts on total profits for small foundries will range from 0 to over 180 percent, and could exceed lead related profits by over 5 times for some small firms. This is an extreme or "worst case" estimate, since it assumes no cost pass-through possibility. Also, the example captures the effect on the average plant; plants with above average profits should remain viable. Nevertheless, the effect of the rule on small business in this industry sector is substantial.

The annual costs of compliance for the primary brass and bronze foundry industry (SIC 3362), which are estimated to be about $40-$50 million at the time the standard goes into effect, are about two times annual new capital expenditures as reported in the docket for the years 1981 to 1985 [Ex. 571, p. 34]. Existing capitalization spending, however, is concentrated among the larger more technologically advanced firms in the industry. Literally hundreds of small plants have failed to reinvest in capital improvements and as a result, continue to work obsolete machinery and processes. The reinvestment and capitalization record of such foundries has not been adequate to maintain a competitive technology base. In sum, capitalization, at least for small firms, has been chronically underfunded.

OSHA also examined economic trends in the foundry industry. It is expected that the foundry industry will continue to contract and evidence in the public record strongly suggests that this contraction is likely to occur primarily among captive operations, most of which are assumed to be small, and to a lesser extent, within the smallest size class of foundries [Exs. 658, p. 3].

Casting users have turned increasingly to purchasing castings instead of pouring their own at captive operations:

> Captive casting production will continue, but clearly at a reduced rate. Estimated at 45% of total casting production in 1984, it now probably is in the 35 to 40% range and seems likely to decline further. [Ex. 658, p. 3].

Thus, a substantial portion of the decline in establishment count will occur as a result of the continuing shift away from captive production. This shift does not necessarily reflect or presage a decline in U.S. casting production activity:

> The U.S. market for castings still is there, and in recent years casting users have turned increasingly to purchasing castings, instead of making their own. Strengthened by their successful survival tactics in recent years, domestic suppliers can take advantage of that changing situation [Ex. 658, p. 3].

This notion is supported by data reported by the Department of Commerce in its 1989 Industry Outlook. Production of copper castings, after dropping off about 20 percent between 1979 and 1981, gradually recovered during the 1980's and by 1988 was estimated to have reached the pre-recession levels of 1979 [U.S. Industrial Outlook, Department of Commerce, p. 18-13].

In addition, recent technological advances in production for foundries have increased the minimum size of a facility that can realize full economies of scale. Older technology is more labor intensive with significantly higher unit labor costs. The newer technology provides better quality castings and lower unit costs, but requires more capital investment. (OSHA believes that the new technology will also be more protective of workers' health.) In order to achieve the lower unit costs, production must occur on a larger scale. The globalization of markets in the 1980s has reinforced and accelerated this trend. The general shift to more capital intensive production inevitably results in the existence of larger and fewer foundries.

As a result of the technological change, small operations have found themselves at a competitive disadvantage. Larger foundries have been able to reduce production costs through automation and modernization. For small operations, such automation may not be practical, and further contraction in this segment of the industry is expected to occur. Thus, it is apparent that small firms will not be able to compete effectively with larger firms in the foundry industry and the costs of complying with this remand would hasten their exit.

This contraction will be accelerated if the decline in the value of the dollar is reversed and imports of castings and finished goods incorporating castings rise. (For the three month period ending June, 1989, OSHA notes that the dollar has strengthened against foreign currencies.) Additionally, the substitution of other materials for brass, bronze, and copper castings, such as aluminum or plastics, has contributed to industry contraction in general, though brass, bronze, and copper castings will continue to find a variety of uses [Ex. 571, p. 10].

The long-term decline in the nonferrous foundry industry is dramatically reflected in the establishment count. Over the last twenty-three years, the number of brass and bronze foundries in the U.S. and Canada has declined from 2,281 to 1,392 [Ex. 658, p. 3]. Historically, brass and bronze foundries have exited the market at an average rate of between 2 and 2 and one-half percent annually [Ex. 658, p. 3]; during the decline the average number of plants lost has been about 35 per year. When the period of economic adjustment and capitalization runs its course, firms remaining in this industry will be larger and more productive than their forebears, and will utilize more modern, capital intensive equipment with lower emissions of hazardous materials, including lead.

Against this background, economic feasibility was assessed as follows. Approximately 43 percent of the foundries affected by the standard are large, employing 20 or more workers. These foundries employ 77% of the exposed workforce and account for approximately 80 percent of industry shipments. Of the 555 large foundries, 309 pour primarily non-leaded alloys. Many of these plants, particularly those for which leaded alloys constitute 10 percent or less of total production volume, could simply choose to focus production on non-leaded alloys and thereby avoid the costs of compliance altogether. Many others qualify under the 30 day exclusion in paragraph (e)(1) of the lead standard and, therefore, bear no obligation to achieve the PEL by engineering and work practice controls, with the result that no costs would be incurred. As noted above, some firms pouring only limited amounts of leaded castings may already be in compliance and will also incur no cost. Those firms choosing to continue to produce leaded alloys will benefit from increased market share and many should be able to finance annual costs from overall profits, since the cost to total profit ratio for such firms, as shown in Table H, indicated an impact of about 10 and one-half percent. Impacts on lead related profits could be as high as 56 percent for some plants in this category, though, as noted above, this estimate assumes no pass-through and no increase in market share. Post-compliance ROS on the lead-related portion of their business was calculated for these plants and found to range between about 3 and 6.3 percent, after adjusting for an increase in market share.[5] Thus, OSHA concludes that large foundries pouring primarily non-leaded castings should be able to absorb the costs of the rulemaking without experiencing undue burden.

Two hundred and forty six large foundries primarily pour leaded alloys. Based on the figures shown in Table H, effects on total profits for this segment of the industry should be no more than 27 percent and impacts on lead-related profits should be no more than 36 percent. For these plants, post-compliance ROS rates on the lead-related portion of their business were computed and found to range between 4.1 and 5.5 percent. Given the profitability of these foundries, they should be able to finance the costs of the rulemaking without undue burden.

There are estimated to be 736 small foundries (foundries employing 0–19 workers), constituting 57 percent of the establishments affected by this rulemaking. These plants employ about 23 percent of the exposed workforce and account for about 20 percent of industry shipments.

An estimated 366 of these small foundries pour primarily non-leaded alloys (i.e., secondary and tertiary foundries). Given the continuation of existing market forces, many of these secondary and tertiary operations will cease operations in coming years. In particular, OSHA expects many captive operations to cease production.

Many of the 366 plants could shift away from the production of leaded alloys or limit production in order to come under the 30-day exclusion rule. Since the capital resources used in the production of copper-based castings may also be used in the production of other nonferrous alloys, and since the foundries in this category are already involved in the production of non-leaded castings, this shift away from leaded alloys would not necessarily be accompanied by a decline in industry employment and would not necessarily lead to establishment closures. In addition, many foundries already come under the 30-day exclusion rule (those foundries for which leaded alloys constitute less than 10 percent of total sales). Other foundries which remain in operation will benefit from increased market share. After adjusting for increased sales volume, post-compliance ROS for the lead-related portion of their business was found to vary widely for these firms, from −19.6 percent to 6.7 percent. Clearly, if forced to face the costs of complying with this remand, some of these firms could choose to cease or limit production of leaded castings; others, however, should be able to finance the costs of the regulation and at the same time remain moderately profitable. OSHA estimates that a number of additional secondary and tertiary foundries will be able to finance the costs of the rule from overall profits. For those foundries which are captive operations, compliance costs could be more easily absorbed by the parent organization. Also, some foundries could provide castings critical to the national defense, and could either pass costs forward or apply for a variance. Overall, OSHA estimates that under optimistic assumptions, one-half to two-thirds of the small secondary and tertiary foundries will be able to avoid, absorb, or pass through compliance costs.

Finally, there are 370 small plants primarily producing leaded alloys. OSHA estimates that as many as one-half to two-thirds of these operations could cease production. Post-compliance ROS calculations based on lead-related profits and adjusted for market redistribution indicate rates which range between −7.3 and 0.1 percent, though these rates do not take into account cost pass-through. Some firms, however, could shift production toward non-leaded castings and thus avoid a portion of the costs of compliance. The owners of captive operations could choose to absorb costs from overall profits. In addition, some might be able to secure local support in the form of financial incentives to relocate [Ex. 684f, p. 12] and, as noted above, some could provide castings critical to the national defense.

OSHA concludes that approximately 310 to 430 of the 736 small plants currently producing leaded alloys as either a primary, secondary, or tertiary function will continue production; thus, it is estimated that 42 to 57 percent of all small foundries will cease operations.

To sum up, two-thirds to three-quarters of all firms currently involved in the production of brass, bronze, and copper castings will be able to fully comply with this regulation without experiencing undue financial harm. Moreover, 80–83 percent of the currently exposed workforce will remain employed and benefit from the increased protection afforded under the rule.

However, OSHA recognizes that many small foundries (foundries employing 19 or fewer workers) will not be able to afford all necessary controls. The cost of automation has ensured that many small firms will not be able to compete with large firms and that profit levels for many small firms will not be sufficient to bear the costs of this rule. OSHA has noted that some of these

[5] OSHA's post-regulation ROS is an approximation of the short-run production increases of foundries responding to excess demand for brass, bronze, and copper castings. The excess demand is generated by an estimate that small foundries accounting for approximately 10 percent of total industry output will cease production if the 50 $\mu g/m^3$ PEL goes into effect. (Due to the interchangeability of capital resources, it is possible that these firms will shift to the production of other types of nonferrous alloys (zinc, aluminum, etc.).) OSHA assumes that of the total number of small foundries estimated to cease production, the majority (80 percent) are foundries pouring primarily leaded castings. Using *Census of Manufactures* data, OSHA calculated that small firms with 0–9 employees account for 7 percent of production, small firms with 10–19 employees account for 13 percent of production, and large firms account for 80 percent of production. *U.S. Industrial Outlook* reports that 290,000 short tons of copper-based castings were estimated to have been produced in 1988. OSHA distributed 10 percent of 290,000 short tons across all firms expected to be in business at the time full compliance with the OSHA lead rule becomes effective. Establishment size was used as a proxy for productive capacity and it was assumed that the average firm earns a 10¢ post-tax profit per each pound of copper-based casting sold. The redistribution of excess demand is a result of the regional nature of U.S. markets for foundry products and the ability of the larger foundries in each market area to be price leaders (locally), due to their technological advantages. (See Ex. 658 for a delineation of the 96 market areas). As small firms exit the market, large firms will tend to capitalize to meet excess demand, thereby improving profitability by realizing greater economies of scale. Since larger firms are generally able to operate profitably, OSHA assumes that the necessary capital will be available. OSHA notes, however, that the effect of this capitalization on short-run post-regulatory profitabilty is not reflected in the post-regulatory rate of ROS computed in this analysis; due to data limitations, this effect has not been quantified. Clearly, the decision to expand production would only be made on the expectation of profitable return on the investment.

small firms will exit the industry without regard to this rulemaking. However, the exit of a substantial number of these foundries could be hastened by the OSHA rule. Therefore, based on the legal criteria on economic feasibility established by the court in the lead decision, *USWA* v. *Marshall*, 647 F.2d at 1265, it is OSHA's judgment that if the rule significantly contributes to the withdrawal of over one-half of small foundries, which constitute about 60 percent of the nonferrous foundries, the Agency concludes for the nonferrous foundry industry that achieving 50 $\mu g/m^3$ by means of engineering and work practice controls is economically infeasible. OSHA has not, however, examined the economic feasibility of achieving a PEL between 50–200 $\mu g/m^3$ by means of engineering and work practice controls.

7 Secondary Copper Smelting

Process Description. Secondary copper smelting is the recovery of copper from scrap copper by scrap metal preparation, smelting, refining, and casting. The process fundamentally involves increasing refinement of the copper product by eliminating lead and other impurities. The exclusive source of lead in the industry is the scrap, which can contain up to 10% lead (Ex. 686C, p. 11). The blast furnace operation where the scrap is initially melted, is the major contributor of lead to the air.

Smelting and refining are carried out in various types of furnaces such as blast furnaces, holding furnaces, converters, Maerz (reverberatory) furnaces, and shaft furnaces, depending upon the purity of the scrap metal. The final step is casting of the refined copper metal, which contains only .08–.2% lead (Ex. 684d, p. 3), into a desired form.

Scrap Metal Preparation. Secondary copper smelters use any metallic scrap that contains useful amounts of copper, including punchings, turnings, defective or surplus goods, metallurgical residues, and worn-out or damaged articles (e.g., automobile radiators, pipe, or wire). The scrap is first cleaned and concentrated to prepare it for smelting. Feed scrap is concentrated by manual and mechanical methods such as sorting, stripping, shredding, and magnetic separation of ferrous metals. Scrap is sometimes briquetted in a hydraulic press or given pyrometallurgical pretreatment (e.g., sweating, burning off insulation, and drying in rotary kilns). The concentrated scrap is then transferred to the blast furnace by a front-end skip loader (Ex. 573, pp. 2–3).

Blast Furnace Operation. Smelting involves one or more processes, depending on the quality of the feed material. Low-grade scrap must be charged into a coke-fired blast furnace to be melted along with fluxes and coke. Impurities in the scrap are removed by the coke fuel and the gases formed during combustion. The blast furnace operates on a 24-hour-per-day basis and is shut down only for maintenance or plant-wide scheduled downtime (Ex. 475–32D, H–004E, pp. 8–10).

The charge is delivered by a front-end skip loader, which carries the charge between the scrapyard and the charge door. The guillotine-type charging door, operated by an overhead hoist, is approximately 9 by 9 feet and is located about 6 feet above the furnace's tapping hole. The driver loads the bucket with low-grade scrap and positions the vehicle in front of the charge door. A control box for the charge door is within reach. After opening the charge door, the operator moves the vehicle forward, inserting the front-end loader's bucket into the furnace shaft and unloading the concentrated scrap. After unloading, the operator backs out and closes the door. During charging, the door of the blast furnace remains open for one to five minutes (Ex. 475–32D, H–004E, pp. 8–10).

The product of the blast furnace, called black copper, contains 2–10% lead by weight and still includes slag (Ex. 684d, p. 2). The black copper is tapped on a continuous basis from the bottom of the furnace shaft through an open launder to the holding furnace, into which it is fed. From time to time, the tapping process is halted to allow maintenance of the launder tap hole (Ex. 475–32D, H–004E, pp. 8–10).

Holding Furnace. The main function of the cylindrical holding furnace is to remove impurities from the black copper. The holding furnace acts both as a storage reservoir and a vessel to separate the slag generated in the blast furnace. While no smelting occurs in this operation, enough heat is added to this oil-fired furnace to keep the contents molten (Ex. 475–32D, H–004E, p. 10).

Since copper is heavier than slag, copper occupies the bottom of the vessel and slag floats on top. The furnace can be rotated along its centerline in both clockwise and counter-clockwise directions. By rotating the furnace the slag is poured off into an open launder, where it is granulated by a water jet. This is done on a nearly continuous basis. The granulated slag is removed by front-end loader to storage areas until shipment to customers (Ex. 475–32D, H–004E, p. 10).

When enough black copper has been captured in the holding furnace, the furnace is tapped. A ladle is moved into position by an overhead, remote-controlled crane. The holding furnace is then rotated clockwise and the black copper is poured into the ladle. An operator's station is located so the employee can visually check the level of copper in the ladle and halt the tapping operation when the ladle is full. The molten black copper in the ladle is usually charged into a converter. At times when the converter is not in operation due to maintenance, the black copper can be charged in varying quantities to a Maerz (reverberatory) furnace (Ex. 475–32D, H–004E, pp. 10–11).

Converter. The function of the converter is to further refine the copper from the holding furnace. Molten black copper is charged into the converter, and silica fluxes are added to aid in the formation of slag. The process involves blowing air through the converter to drive off impurities either in the form of slag or fume. Most of the reactions involved with converter operations are exothermic. Therefore, little heat needs to be added to the vessel during the refining process (Ex. 475–32D, H–004E, p. 11).

The slag material is drawn off by rotating the cylindrical converter about its axis. Most of the slag is in the form of silicates and oxides. The slag contains about 17% copper by weight. The slag is later reused as a component in the blast furnace charge (Ex. 475–32D, H–004E, p. 11).

The product of the converter, called blister copper, is tapped and charged to either a Maerz or shaft furnace. Blister copper contains only approximately 1% lead (Ex. 684d, p. 3).

Maerz (Reverberatory) Furnace. The Maerz (reverberatory) furnace is a further stage in the refining process that produces anode-grade copper of over 99% purity. The Maerz furnace is charged with blister copper and clean, high-grade copper scrap. Dual fuel (oil and natural gas) burners supply the necessary heat to melt the charge and maintain the required temperature. Oxidation and reduction reactions occur during the approximately 24-hour cycle (Ex. 475–32D, H–004E, p. 12).

Three 5-by-5-foot charging doors are used for charging the furnace. Electrically-powered vehicles and fork-lift trucks transport the ladle for charging into the furnace. The furnace tilts along its central axis for slagging and pouring operations (Ex. 475–32D, H–004E, pp. 12–13).

During this refining process, cycle times and control procedures are based on sampling and operator experience. The slag that forms rises to the surface of the melt and is poured off into pots which are handled by fork-lift trucks.

This slag is allowed to cool and then is reused as part of the blast furnace charge material. When refining is complete, the furnace is tilted to pour the nearly pure copper into a launder system which leads to the casting wheel (Ex. 475-32D, H-004E, p. 13).

Shaft Furnace. The shaft furnace is used to melt copper that can be directly cast into anodes without further refining. Thus, it is charged only with high quality copper scrap and returned anodes (Ex. 475-32D, H-004E, p. 14).

Charging is accomplished by a conveyor/elevator that places materials into the top of the shaft furnace. When the furnace is tapped, the copper is fed into a launder system which leads to the casting wheel (Ex. 475-32D, H-004E, pp. 14-15).

Casting Wheel. A launder delivers the molten copper, which contains only .08-.2% lead (Ex. 684d, p. 3), from the Maerz and shaft furnaces to the ladle spoon at the casting wheel. There the final metal product is cast into anodes for electrolytic refining (Ex. 475-32D, H-004E, pp. 14-15).

The typical casting wheel is quite large (e.g., 43 feet in diameter), and turns and casts continuously. The castings enter a quench booth where a water spray cools and solidifies the copper. When the molds exit the quench booth, an ejection pin in the bottom of the mold forces the solidified casting to rise slightly out of the mold. A pick-up conveyor lifts the anode casting from the mold and carries it to a bosh tank, where the anode is further cooled. When five or six anodes accumulate in the tank they are removed by fork-lift truck and weighed. Then they are stacked outside the building until they are taken to the electrolytic refining building (tankhouse) (Ex. 475-32D, H-004E, p. 14).

Existing Exposure Levels. There are five air lead monitoring data sets in the record. The best by far is the data set from Company D (Ex. 684d), which is a conventional secondary copper smelter with different kinds of furnaces that use copper scrap of various grades. The data from Company D are recent, quite complete and contain some marginal notations which explain prevailing conditions at certain times when samples were obtained. Moreover, because OSHA recently made a site visit to Company D, the Agency has concrete information on production processes, work practices and engineering controls that allows it to better understand and interpret the data provided.

The other four data sets are from Smelter A (Ex. 668B), a company which OSHA will refer to as Company X (Ex. 613b-2), OSHA inspection data (Ex. 583-3), and a 1982 JACA report (Ex. 553-5). All have serious flaws that make them considerably less reliable and useful than Company D data.

The data from Smelter A were submitted by the Institute of Scrap Recycling Industries at the close of the post-comment briefing period and cover the years 1984-87 OSHA found Smelter A's data basically unuseable for the following reasons. First, the data apparently cover less than ¼th of the company's lead-exposed workforce. Second, there are large gaps in the data. For example, most of 1984 and part of 1985 are missing.

Third, no information was provided on associated work practices and engineering controls. Fourth, in a cursory manner Smelter A indicated that it had installed additional engineering controls during the period of time covered by the data, but it does not indicate specifically during what years and in which operations the engineering controls were implemented. In fact, Smelter A simply states that it added "additional capacity for baghouses, exhaust fan motors and hooding. Therefore, despite Smelter A's assertion that it spent more than $2 million between 1980-87 for these unspecified improvements in engineering controls, it is impossible for the Agency to use the exposure data to assess feasibility. Moreover, Smelter A's exposure levels inexplicably appear to have increased rather than decreased over the years. This raises questions concerning the effectiveness and extent of the engineering controls installed during this period. Finally, at least some of the data provided appear to suggest that certain operations are effectively uncontrolled, making that data useless in a feasibility assessment. For example, according to Smelter A's own table summarizing its most recent air monitoring sampling results, the average air lead levels between January-September 1987 at the reverberatory furnace, which processes copper with no more than 1% lead content, are nearly twice as high as the average exposure levels in the blast furnace area, where lead-contaminated scrap is processed (Ex. 668B).

Similarly, the data from Company X (Ex. 613b-2) are not useable for the following reasons. First, although the data were provided in response to a request for monitoring results from 1984-87 the company supplied data for only one year. Second, not only did the company fail to describe the engineering and work practice controls associated with particular operations and exposure levels, it also failed to adequately identify various employees. For example, in its monitoring data the company refers to the job category of "furnace operator" but provides no indication at which furnaces those operators work. Thus, OSHA is unable to ascertain which specific exposures are associated with the blast, holding, converter, Maerz or shaft furnaces, which is a critical distinction given the extreme variation in the lead content of the metal in the different furnaces.

The third data set, composed of 29 samples from OSHA inspections of three secondary copper smelters from 1984-87 (Ex. 583-3), is limited and fragmentary. Moreover, the kind of contextual information so useful for understanding and interpreting the data is largely lacking. For example, these data do not provide sufficient detail about job titles to allow operation-by-operation analysis of exposures and do not contain information about associated engineering and work practice controls. These data are therefore best utilized to confirm or deny analyses drawn from other data sets.

The final data set is the report prepared in 1982 by JACA (Ex. 553-5). This report deals almost exclusively with the issue of economic feasibility and devotes only two pages to an analysis of technological feasibility. In its report JACA provides no more than a paragraph or two describing existing controls. Moreover, few or no raw exposure data are provided, and the few summary numbers that are provided are gathered from 1979-81. Since both Company D and Smelter A, for example, claim to have spent large sums of money to control air lead levels in the years since JACA collected its data, more recent data are needed to reliably assess current technological feasibility.

Consequently, the Agency relies primarily on data from Company D to characterize baseline lead exposures in this industry. OSHA feels that this is a reasonable and even conservative basis for making feasibility determinations for three reasons.

First, the monitoring data from Company D indicate that operations with higher exposure levels have been monitored more frequently than those with lower levels (Ex. 684d). Although this monitoring schedule is in accordance with the requirements of the lead standard and good industrial hygiene practice, it inevitably skews reported average plant-wide exposure levels and frequency distributions toward the high side (Ex. 686C, p. 7). For example, as Meridian has pointed out, in the blast furnace area, where exposures are highest, 150 samples were taken for 14 job categories. In the casting area, where exposures are much lower, only 69 samples were taken for nearly the same number (13) of job categories (Ex. 686C, p. 7).

In addition, based upon its site visit to Company D and Company D's own data concerning exposure levels in casting and the shaft and Maerz furnace areas, OSHA believes that cross contamination has substantially contributed to raising employee exposure levels in these operations. In the clearest example, the proportion of lead in the product in the casting operation is probably less than one-quarter of 1% (Ex. 684d, p. 3). Yet, even there, where exposures attributable to the operation itself should be low [6] fully 38% of the samples were above 50 μg/m³ 6% were over 200 μg/m³ and the average was approximately 63 μg/m³

The Cadre Corporation, an industrial engineering consultant firm, seems to agree with OSHA's position. When Cadre evaluated exposures at a secondary copper facility in 1981, it also noted that cross contamination was chiefly responsible for the lead exposures of employees working in the casting area (Ex. 475–32D, H–004E, p. 22).

Similarly, in the Maerz and shaft furnace operations, where the charge of blister copper contains only 1% lead (Ex. 684d, p. 3) and where air lead levels therefore should be controllable to or below 50 μg/m³ exposure levels at Company D are above 50 μg/m³ in 82% and 78% of the samples, respectively, and the averages are 97 μg/m³ and 148.2 μg/m³ respectively.

Because of the low lead content of the materials being processed at these stages, OSHA does not believe that the air lead levels associated with these operations should be high. Nevertheless, at Company D the percentage of sampling results below 50 μg/m³ in the shaft and Maerz furnaces is not statistically distinguishable from the percentage of samples below 50 μg/m³ in the blast furnace area, where the lead content of the materials is much higher. OSHA believes that these results can be explained only by cross contamination throughout the plant.

OSHA also notes that the exposure levels reflected in the OSHA inspection data for secondary copper smelters (Ex. 583–3) are considerably lower than those in the data from Company D, especially in the furnace area. This suggests that in relying upon the Company D data to characterize industry exposure levels, OSHA is being conservative.

Notwithstanding the upward bias of the data from Company D, monitoring results from this facility are at or below 50 μg/m³ most of the time in the casting area (62%) and in the "miscellaneous" category (80%). Moreover, 84% of the samples in the casting operation and 93% of the samples in the miscellaneous classifications are below 100 μg/m³ (Ex. 684d, Table 5; see Table 1 below).

Miscellaneous operations include laboratory technicians, the laundry, and the scrapyard. The scrapyard, which has the highest exposures of these three operations, incorporates the receiving area, the brick plant and forklift operators. In the scrapyard employee exposure levels already are quite low. The overall average for scrapyard employees is approximately 35 μg/m³ Average exposure levels in 2 of the 3 scrapyard operations are below 27 μg/m³ and the third is below 53 μg/m³ In addition, 77% of the sampling results of scrapyard employees are below 50 μg/m³ and the remainder are below 100 μg/m³ (Ex. 684d, Table 5).

Again, even with considerable cross contamination in the plant, 59% of the sampling results of employees associated with the Maerz furnace and 56% of the sampling results of those working near the shaft furnace already are below 100 μg/m³ (Ex. 684d, Table 5).

TABLE 1.—FREQUENCY DISTRIBUTION OF COMPANY D EXPOSURE DATA, 1984–1987 [1]

Area	Number of samples	Distribution of samples at various concentrations (μg/m³) (percent)			
		<50	<100	<200	>200
Blast furnace	150	32(21)	61(40)	103(68)	47(31)
Casting area	69	43(62)	58(84)	65(94)	4(6)
Shaft furnace	9	2(22)	5(56)	7(78)	2(22)
Maerz furnace	27	5(18)	16(59)	25(93)	2(7)
Miscellaneous	30	24(80)	28(93)	30(100)	0
Total	285	106(37)	168(59)	230(81)	55(19)

Source: Ex. 684d, Table 5.

In the three operations in which average exposure levels are above 50 μg/m³ the blast, Maerz and shaft furnaces, an additional factor upwardly biases the data. That factor is the existence of a limited number of extremely high data points that are not representative of routine exposure levels. For example, employee exposure levels in the dirtiest operation in the plant, the copper hole at the blast furnace, range from 100 μg/m³ to 2,400 μg/m³ (Ex. 684d, Table 5). Of the 18 sampling results for that operation, fully two-thirds are below 337.1 μg/m³ Only 2 samples are over 1,850 and 3 others range from 635–817 μg/m³ Nonetheless, the arithmetic average is approximately 500 μg/m³ OSHA believes that this average figure distorts the actual array of sampling results by effectively giving too much weight to aberrantly high sampling results. It further believes that the geometric mean more accurately portrays the array. In this case, the geometric mean is 312.1 μg/m³ approximately two-thirds of the arithmetic mean (citations omitted to protect confidentiality).

OSHA recognizes that there is no single number or even range of numbers that can perfectly characterize a data set. A mere range of exposure levels (e.g., 100–2,400 μg/m³ for the copper hole operator) provides very little useful information about typical exposure levels. Similarly, the arithmetic mean, which is equivalent to the commonly used "average. provides little insight into the distribution of exposures and is subject to gross distortion by extreme high or low numbers.

OSHA believes that where a data set is lognormally distributed, as in the case

On this point, OSHA disagrees with Meridian, which did not take account of the effects of cross contamination and therefore attributed the exposure levels in casting to emission sources within that operation (Ex. 686C, p. 15).

of Company D (Ex 686C, p 2), the geometric mean is the best single statistic to characterize the data set. (See the NIOSH publication, Leidel *et al*, *Occupational Exposure Sampling Strategy Manual* (1977).) OSHA is further assured of the reasonableness of relying upon the geometric mean by the fact that it appears to fit well with the court's definition of feasibility. The court does not require that all operations be able to achieve a particular PEL all of the time for the PEL to be feasible. Consequently, the mere existence of aberrant exposure levels does not constitute proof of infeasibility. In using the geometric mean to characterize exposure data, the extreme outliers that are discounted are especially likely to be very high, rather than low sampling results. Thus, because the geometric mean better characterizes actual exposures, OSHA relies primarily upon the geometric mean in its feasibility analysis. This issue is discussed more fully in the introductory section on technological feasibility.

Utilizing this approach, it becomes clear that, even based on existing monitoring results, only the blast furnace operation presents serious problems for controlling employee air lead levels to 50 μg/m³ The geometric means in all other operations are below 90 μg/m³ (Ex. 686C, Ex. 2). In the casting and miscellaneous categories, for example, the geometric means are below 50 μg/m³ at 41.2 μg/m³ and 27.9 μg/m³ respectively. In the Maerz furnace, the geometric mean is only somewhat above 50 μg/m³ at 78 μg/m³ In the shaft furnace, the geometric mean is below 100 μg/m³ at 88.6 μg/m³ (Ex. 686C, Ex. 2).

In the blast furnace, where exposures are most difficult to control, the geometric mean is only somewhat above 100 μg/m³ at 114.2 μg/m³ In addition, of the 14 job categories included in the blast furnace classification (which includes exposure data from the holding and converter furnace areas), no less than eight have geometric means below 100 μg/m³ and three of these are below 50 μg/m³ Of the remaining 6, only one is above 200 μg/m³ while three are below 120 μg/m³ Moreover, according to Company D's own submission, one of the operations with the highest exposure levels, slag operator, is virtually uncontrolled (Exs. 684d, p. 2; 686C, Ex. 2).

Current Control Technologies. As OSHA has shown in the previous section, even the upwardly biased sampling results from Company D indicate that in at least 80% of the operations either a majority of sampling results are below 50 μg/m³ or the geometric means are below or not far above 50 μg/m³ In the blast furnace area, more than 20% of the operations already have geometric means below 50 μg/m³ and more than 57% have geometric means below 100 μg/m³ (Ex. 684d, Table 5).

To characterize existing controls in the industry, OSHA continues to rely upon information from Company D (Exs. 684d; 686C; 688a). Although industry claims that the controls in Company D are state-of-the-art and hardly typical of the rest of the industry, OSHA's site visit to Company D confirms that its controls are fundamentally conventional and readily available. Moreover, although on several occasions OSHA requested industry to provide information concerning associated engineering and work practice controls throughout the industry, industry generally failed to provide such information (Tr. 725–26). Consequently, since industry's claim that Company D has implemented more controls than the rest of the industry is essentially unsubstantiated, OSHA finds it reasonable to use Company D for these purposes.

The existing level of control at Company D has been achieved primarily through general and local exhaust ventilation and despite serious cross contamination of certain operations by the blast furnace. Existing engineering controls and work practices at Company D have not been established on the basis of industrial hygiene source identification and task analysis; that is, the company has focused on obvious emission sources rather than employee exposures (Ex. 684d, p. 17). As a consequence, management at Company D does not appear to have a firm grasp on what factors are contributing to employee exposures in each operation and which work practices and engineering controls would be appropriate to control these factors. In addition, Company D does not perform periodic (e.g., annual) wall-to-wall housecleanings (Ex. 684d, p. 17).

Current exposure levels at Company D have been achieved by means of the following controls.

General Building. Company D plant is a large open building with natural ventilation. Some ceiling fans also have been installed. Although natural ventilation and ceiling fans provide for a certain amount of dilution and air circulation, the cross drafts created by the fans and the large openings in the building can cause cross contamination (Ex. 684d, p. 15).

Scrap and Charge Preparation. The scrapyard is paved. It is washed down and cleaned by street sweepers. Scrap is also wetted to reduce the amount of lead dust emitted from handling. The briquetting plant is a shed housing the baling and briquetting machines, which compress fine materials into bricks that can be used for charging the furnaces. While the briquetting plant itself is locally exhausted, the cabs on the forklift trucks and front-end loaders operating in this area are not enclosed (Ex. 684d, pp 1, 2, 15, 17).

Blast furnace. The blast furnace is equipped with enclosures and exhaust ventilation at the charging point and the tap point of the furnace. Both the charging and tap hoods are ventilated to baghouses before being exhausted to the outside air (Ex. 684d, pp. 15, 16).

The exhaust ventilation hood, positioned directly over and around the charging point of the blast furnace, is activated when the furnace door opens. It has a design face velocity of 1,700 feet per minute. However, the effectiveness of this control is limited by "upsets," which occur when scrap is loaded improperly or an improperly selected load is charged. These upsets, which overwhelm or take place beyond the effective range of existing exhaust ventilation, can occur as often as twice a week, company personnel report (Ex. 684d, pp. 15, 16, 17).

Holding furnace. The holding furnace is equipped with exhaust ducting at the point of discharge of the molten copper. There is no ventilation at the slag hole. In addition, the launder carrying the slag discharged from the furnace is not enclosed and the slag granulating and sampling processes are not controlled (Ex. 684d, p. 16).

Converter. The charging and discharging points of the converter are equipped with exhaust hoods. The hoods are only turned on when the furnace is being charged with the ladle and when metal and slag are being discharged. These hoods are exhausted to baghouses (Ex. 684d, p. 16).

Maerz and shaft furnaces. Both the Maerz (reverberatory) and shaft furnaces are equipped with hooding and exhaust ventilation at the charging point. The hooding is exhausted to baghouses before emissions are released into the outside air (Ex. 684d, p. 16).

Casting operation. The molten copper is transferred to the casting operation via a launder that is semi-enclosed to retain heat. The steam generated during the quench is exhausted to a point outside the building (Ex. 475–32D, H-004E, p. 14).

Control rooms. There are several enclosed control rooms that are air conditioned. The blast furnace control room is a positive pressure environment using outside air. These control rooms are accessible to employees (Ex. 684d, p. 15).

Work practices. Company D reports that the scrapyard is wetted for dust control purposes, the scrap is heated before charging to drive off any moisture, and the facility is regularly vacuumed. Company D further states that it provides training, which includes instruction to employees not to stand in the area near furnace doors unless necessary (Ex. 684d, p. 17).

Additional Controls and Expected Reduction of Exposure Levels. As discussed in the section above concerning existing exposure levels, most of the sampling results for employees working in the casting and miscellaneous operations already are below 50 μg/m³ (Ex. 686C, p. 4). In addition, most employees in the shaft and Maerz furnace areas have geometric mean exposure levels below 90 μg/m³

OSHA believes that for operations where most sampling results or geometric means already are below 50 μg/m³ relatively modest improvements in work practices or engineering controls, such as improved housekeeping, will be sufficient to reduce employee air lead levels consistently below 50 μg/m³ For operations where most of the sampling results or geometric means are below 100 μg/m³ OSHA believes that a combination of limited additional and improved existing controls (e.g., enclosing a launder) will be sufficient to control exposure levels to 50 μg/m³ Specifically, OSHA believes, for example, that controlling employee exposure levels to 50 μg/m³ in the shaft and Maerz furnace areas should be quite manageable, since a primary source of exposure is extraneous to these operations (i.e., cross contamination from the blast furnace and, perhaps, other areas of the building) (Ex. 475-32D, H-004E, p. 42).

The blast furnace area is the only one in secondary copper smelting where controlling exposure levels to 50 μg/m³ is likely to pose a serious problem. At Company D, it is clear that existing engineering and work practice controls do not effectively control exposure levels in this area (Ex. 686C, Ex. 2). Exposure data indicate that in some blast furnace operations current engineering and work practice controls are inadequate, while in others such controls appear to be nonexistent. OSHA believes that employee air lead levels can be reduced to below 50 μg/m³ in many operations in the blast furnace, as well as in any other operations requiring additional controls, by implementing conventional and readily available industrial hygiene control techniques.

The Agency's discussion of reductions of air lead levels expected to be achieved by implementing recommended controls relies in part on assessments made by a panel of three certified industrial hygienists for OSHA's contractor, Meridian. These assessments are based upon data in the record, a site visit to Company D, and the extensive experience and expertise of the panel. Although quantification of the estimated reductions involves a substantial amount of expert judgment, OSHA believes that the panel's assessment is the best available evidence in the record on the reduction in exposure levels that can be reasonably expected from implementing recommended additional and improved controls.

OSHA, based on its own experience and expertise, therefore believes that reliance upon Meridian is entirely reasonable. OSHA in its own analysis places much greater emphasis than did Meridian on the central problems of controlling the blast furnace, cross drafts, and cross contamination to reduce air lead levels in secondary copper smelting to 50 μg/m³ From its analysis OSHA concludes that employee exposure levels in the blast furnace can be reasonably managed and that cross contamination from the blast furnace can be virtually eliminated.

Prevention of Cross Contamination and Cross Drafts. As indicated above, the blast furnace at Company D is not being effectively controlled. Evidence in the record suggests that cross contamination from the blast furnace, and perhaps to a lesser extent from the scrapyard, currently is creating excess exposure levels in the Maerz and shaft furnace areas, among others. OSHA does not believe that the copper used in these two furnace operations, which contains no more than 1% lead (Ex. 684d, p. 3), can by itself produce such high exposure levels. OSHA believes that eliminating cross contamination is technologically feasible.

As Company D itself recognizes (site omitted to protect confidentiality), cross contamination is the source of higher air lead levels in the casting operation, as well. In casting, where the lead content of the highly refined copper is between .08-.2% (Ex. 684d, p. 3), air lead levels should be low (Ex. 475-32D, pp. 22-23). In fact, the geometric mean exposure level in casting is 41.2 μg/m³ and 38% of the samples in casting are above 50 μg/m³ (Ex. 686C, Ex. 2). OSHA considers exposure levels in casting to be approximately equal to the increment in exposure levels broadly caused by cross contamination. Thus, by controlling cross contamination, exposure levels in various operations and areas generally would be reduced to the extent of the geometric mean exposure level in the casting area.

OSHA conservatively determines that the appropriate increment derived from the casting area as attributable to cross contamination is approximately 37 μg/m³ OSHA believes this is conservative because it excludes from the computation higher exposure levels relating to certain maintenance work and to the transfer and holding of the molten metal in the casting area.

After adjusting monitoring results from the shaft and Maerz furnace areas, for example, to factor out cross contamination OSHA finds geometric means of approximately 52 μg/m³ and 41 μg/m³ respectively, before additional controls are implemented (see Table 2 below).

TABLE 2.—1984-1987 WORKERS' EXPOSURE DATA OF COMPANY D—ADJUSTED VALUES BY USING CASTING AREA AS BACKGROUND [1]

Area	Geometric Mean w/cross contamination	Geometric Mean w/o cross contamination
Shaft Furnace	88.6	51.6
Maerz Furnace	78.0	41.0

Source: Ex. 686C, Ex. 2.

There are at least two reasons for this cross contamination. First, Company D has failed to adequately control lead exposures at their primary source, the blast furnace area. Second, cross drafts exist, which drive the lead fume and dust escaping from the blast furnace throughout the plant (Ex. 475-32, pp. 19, 22-23). These cross drafts occur because Company D, which has a large open building with a very hot smelting process, relies too heavily upon natural ventilation and some ceiling fans to control exposure levels. Not only do these cross drafts spread contamination from one operation to another, but they also disrupt local exhaust ventilation, thereby preventing exhaust hoods from operating at maximum capacity. OSHA's evaluation of the complex, plant-wide problems that cross drafts create is substantiated by the American Conference of Governmental Industrial Hygienists' book, *Industrial Ventilation*, which states that "[c]ross drafts not only interfere with the proper operation of exhaust hoods, but may also disperse contaminated air from one section of the building into another and can interfere with the proper operation of process equipment * * *" (Ex. 583-13, p. 7-2).

To remedy this problem, as well as others, OSHA believes that the first thing that Company D and the industry must do is to conduct a plant-wide industrial hygiene study which focuses in part on analyzing cross drafts and cross contamination as a basis for designing cross-draft barriers and other measures to eliminate them. Erecting cross-draft barriers at proper locations not only will control cross contamination, but also will increase the efficiency of exhaust hoods. This will result in an appreciable reduction of air lead levels in all areas, as sources of lead extraneous to an operation are eliminated and as control of sources of lead intrinsic to the operation is enhanced.

OSHA is confident that such a study is essential to systematically controlling air lead levels in the industry. OSHA's determination is further supported by Dr. Knowlton Caplan, a well-known engineering consultant to the lead industry, who has said that engineering controls should be designed with industrial hygiene problems in mind (Ex. 582-89, Appendix). However, there appear to have been few or no industrial hygiene studies in this industry to help employers control the exposures of their employees.

At Company D, for example, no such study has ever been made. No industrial hygienist is employed in its abatement program. After certain controls were identified and installed in the early 1980s to abate air lead levels to 200 $\mu g/m^3$ no industrial hygiene study was carried out to analyze their effectiveness. No study was conducted concerning the problems of cross drafts and cross contamination. OSHA believes consultation with an experienced industrial hygienist could help to resolve such problems inexpensively.

Preventing cross contamination is the single most important step that can be taken to reduce exposure levels generally throughout the plant. An engineering report based on conditions in a secondary copper smelter confirms OSHA's view that the blast furnace is the major source of lead emissions. This report states that the charging door and tapping point on the blast furnace are responsible for most of the lead emissions in the facility (Ex. 475-32D, H-004E, p. 42). In addition to preventing cross contamination, other conventional controls that are applicable to many operations also should be implemented to broadly reduce exposure levels in secondary copper smelters. These include better ventilation, enclosure, isolation, housekeeping, and maintenance.

Ventilation. The presence of excessive lead in the work environments of secondary copper smelters indicates that engineering controls like total enclosure, local exhaust ventilation (LEV), and general ventilation are not doing the job. As previously stated, where ventilation is inadequate, cross contamination can become a serious problem. Although much more quantitative and other information than industry has provided would be needed to state with any precision how much reduction of particular exposure levels should be achieved by enhancing specific ventilation systems, OSHA has no doubt that in some operations improved or additional ventilation can achieve major reductions in worker exposure. For example, reductions in exposure levels can be achieved in the blast furnace area by increasing the capture efficiency of the hood over the blast furnace so that it will prevent the escape of large quantities of fume into the facility during the upsets that are reported to occur as often as twice a week (Ex. 684d, p. 16) and by providing exhaust ventilation for the launder or for ladle transfer and ladle preheating (Ex. 568, p. 12).

Enclosure and Isolation. Enclosure and isolation are two alternative methods of separating workers from air contaminants. In the case of isolation, the employee is physically separated from contaminants in the air (e.g., by working in a filtered, ventilated control booth). With enclosure, the source of the contaminant is physically contained and separated from the rest of the work environment to prevent contamination of the air (e.g., placing equipment or dirty processes within an enclosure) (Ex. 568, p. 13).

Company D reports that it has "positive-pressure control rooms [that] are available to some employees" (Ex. 684d, p. 15). However, as demonstrated by employee exposures in Company D's blast furnace area, these control rooms in practice have not been adequate to control the exposure levels of most employees (Ex. 684d, Ex. 2).

Docket entries describe standard enclosure techniques that are in use in the industry or can be readily implemented (e.g., enclosing launders to stop fumes from escaping) (Exs. 475-32D, H-004E, p. 19; 686C, p. 13). Simple isolation techniques that have been successfully used in certain plants in this industry and in plants in other lead industries also are applicable throughout this industry (e.g., providing employees with filtered, ventilated cabs for mobile equipment and fresh air islands, isolation booths and control rooms) (Ex. 686C, pp. 11-14). Isolating workers, even for a portion of their shift, can significantly reduce exposure levels (Ex. 686C, p. 14; see also Ex. 568, p. 11).

For example, a Radian study of a secondary lead smelter demonstrates that employee exposures can be reduced by 23-77% even when employees spend only a portion of the workday in an isolation booth (Ex. 583-16, Vol. 1, p. 30). Another study, by the National Institute for Occupational Safety and Health (NIOSH), investigating the effectiveness of various control technologies in secondary lead smelters, reports that workers spending even one-quarter of their time in a supplied air island would experience a 20% reduction in overall 8-hour TWA exposure (Ex. 590, p. 40). Consequently, for example, a fresh air station could be installed in various operations where needed to reduce remaining excess exposures after other controls were implemented (e.g., Ex. 686C, p. 15).

Housekeeping, Work Practices, and Preventive Maintenance. Housekeeping, work practices, and preventive maintenance are essential controls whose importance frequently is not adequately recognized by employers. Failure to develop and use rigorous housekeeping, good work practices, and preventive maintenance can destroy the effectiveness of otherwise adequate engineering controls

The importance of housekeeping was stressed in a report prepared by the Cadre Corporation for the Southwire Copper Company, a secondary copper smelter (Ex. 475-32D, H-004E, p. 58). The Cadre report states,

> [Housekeeping] is definitely the most underrated aspect of any fume abatement program. In any industrial facility there will be some amount of particulate in the air. Sooner or later this particulate is going to settle out on the plant floor, equipment and materials. If this dust is not collected and disposed of then it will become airborne again due to building drafts, mobile machinery traffic and numerous other disturbances. The housekeeping component of the abatement plan is a vital link in the success of the project. By neglecting to properly control settled particulate any gains made by capturing fugitive emissions will be minimal.
>
> (Ex. 475-32D, H-004E, p. 58)

OSHA agrees. It is impossible to overemphasize the importance of good housekeeping and work practices.

Nevertheless, housekeeping at the Company D plant was so inadequate that Meridian, based on its site visit, substantially downgraded its assessment of the current level of housekeeping in secondary copper smelters (Ex. 686C, p. 13). Prior to that site visit, Meridian had assumed that secondary copper smelters utilized good housekeeping practices (Ex. 573, p. 28). After the visit, Meridian concluded that housekeeping needs to be substantially improved for the industry to meet 50 $\mu g/m^3$ (Ex. 686C, p. 16)

To improve housekeeping, OSHA specifically recommends the following. A vacuum system should be installed in copper smelters that do not have adequate vacuuming facilities so that spillage and settled dust can be vacuumed daily from surfaces. Such a system was recommended by Dr. Caplan for Amax's secondary copper smelter at Carteret, New Jersey (Ex. 668E, p. 11). Dry sweeping, particularly in the scrapyard, should be prohibited. HEPA-filtered vacuum floor sweepers and central HEPA-filtered vacuums should be used daily to control workstation dust.

In addition, at least annually each secondary copper smelter should thoroughly clean its entire facility, including rafters. The expert panel estimates that such a cleaning would reduce exposure levels of workers throughout the facility by 10–25% (Ex. 686C, p. 19). At Company D, management stated that such a cleaning has never been undertaken (Ex. 684d, p. 17).

Detailed housekeeping instructions should be prepared and adherence to them enforced by employers, with scheduling and checkoff of regular cleaning of all areas of the plant where dust can collect. If necessary, the housekeeping instructions should list hundreds of sites, pieces of equipment, parts of equipment, obscure corners, etc., to assure that they are cleaned regularly.

In addition to implementing good work practices for housekeeping and cleanup of fines and slag, work practices should be written to prescribe correct procedures for all tasks that might result in increased employee exposure. At Company D, for example, a worker was seen standing next to the slag hole of the holding furnace, one of the highest emission sources at this smelter, when the employee's work did not require his presence there. Improved work practices would dictate that the employee remove himself from proximity to the source of exposure whenever possible and, to the extent possible, isolate himself from contaminants in a fresh-air island or the like. Company D states that it trains its employees not to stand near furnace doors, etc., when employees are not required to be there (Ex. 684d, p. 17). However, based on the site visit to Company D, it appears that management does not enforce the workpractices taught to workers during training. Better work practices that reduce the frequency of upsets during blast furnace charging could also substantially decrease exposure levels in the blast furnace and resulting cross contamination.

Mr. Melvin Cassady, OSHA's expert on smelting, has stressed the importance of maintenance programs to assure that all systems function as cleanly and as efficiently as practicable. In addition to the actions recommended above, Mr. Cassady specifically suggested the following:

1. Preventive maintenance for belt conveying systems;
2. Maintenance of clean air stations to retain their effectiveness;
3. Regular cleaning and maintenance of positive-pressure; filtered-air systems in cabs of mobile equipment;
4. Periodic checks for, and prompt repair of leaks in baghouses; and
5. Daily checks on the pressure of baghouses and prompt replacement of ruptured bags (Ex. 604, pp. 2, 4, 7 14).

In addition to the above controls, OSHA specifically recommends additional controls operation by operation.

Blast Furnace. The blast furnace is the source of the highest lead exposure levels in secondary copper smelting and is the most difficult area to control to 50 $\mu g/m^3$

Exposure levels within the blast furnace area exceed 50 $\mu g/m^3$ for a variety of reasons, including lack of exhaust ventilation (e.g., on the launder and during ladle transfer), inadequate ventilation (e.g., inadequate capture efficiency on the blast furnace hood), lack of isolation or enclosure (e.g., absence of fresh air islands), "upsets" that frequently occur during the charging process, and, to a lesser degree, some cross contamination from the scrapyard and reentrainment of dust from the blast furnace area itself (Ex. 686C, pp. 9, 10, 13–15).

OSHA believes that if the additional controls recommended by the expert panel of certified industrial hygienists (Ex. 686C, pp. 9–10, 13–15) and by OSHA are implemented, exposure levels within the blast furnace will be controlled to or below 50 $\mu g/m^3$ in at least 50% of the operations most of the time. These controls include installation of local exhaust ventilation at all furnace openings, improving the capture efficiency of the hood over the charging door to capture fumes generated during upsets, installation of enclosed filtered-air booths or supplied-air islands for operators having permanent stations near furnaces, use of controls to reduce emissions during the transfer of molten material (e.g., traveling hoods for ladles and hoods or enclosures for launders), and improved work practices (e.g., to reduce or eliminate exposures caused when workers unnecessarily remain near the furnace openings).

When upsets occur at the blast furnace, as occurred during OSHA's site visit to Company D, clouds of smoke and fumes may fill the entire smelter area, notwithstanding the enclosure and canopy at the charging point (Ex. 684d, p. 15). These upsets, typically occurring as often as twice a week, undoubtedly are an important cause of the high exposure levels in the blast furnace and other areas throughout the facility. Standard work procedures should be implemented to minimize or prevent upsets during charging, such as adjusting the volume and rate of feeding of the charge and better quality control over the materials included in the charge. In addition, as discussed above, the capture efficiency of the hood over the charging door must be enlarged to accommodate the few upsets that remain. During upsets, OSHA recognizes that it generally will be necessary for affected employees to wear respirators.

The cabs on mobile equipment in the blast furnace area also should be enclosed and equipped with HEPA filters. Employees in the blast furnace area should be encouraged to use the existing ventilated control room whenever possible and additionally a supplied air island should be provided for the blast furnace operator. The expert panel expects that greater use of the control room by blast furnace operators, combined with the shift to filtered makeup air, should reduce exposure levels by 5–25% (Ex. 686C, pp. 9–10).

Several other controls can reduce lead exposure levels for employees in the blast furnace area. Providing exhaust ventilation for ladle transfer, ladle preheating, and cast pot staging is expected to reduce employee exposures by an additional 9–15% (Ex. 686C, p. 20). In conjunction with expected reductions from better dust control in the scrapyard, which is expected to reduce employee exposure levels in this area by 10%, employee exposures in the blast furnace area are expected to be reduced by a total of 34–50%, according to the expert panel (Ex. 686C, p. 20).

If the panel's recommendations for the blast furnace area are implemented, 4 operations in this area, in addition to the

3 operations with geometric means already below 50 μg/m³ will have midpoint geometric means below 50 μg/m³ for a total of 7 of 14 operations within the blast furnace area that are below 50 μg/m³ Two more operations also will have midpoint geometric means below 53 μg/m³ (Ex. 686C, p. 18), for a total of 9 operations below 53 μg/m³ An additional 3 operations will have midpoint geometric means below 70 μg/m³ Thus, 12 of 14 operations within the blast furnace area are expected to be below 70 μg/m³ and the other 2 operations are expected to have midpoint geometric means below 93 μg/m³ (Ex. 686C, p. 21). Where all feasible engineering and work practice controls have been implemented and employees performing tasks in the blast furnace area like maintaining the tap hole and sample preparation are still exposed above the 50 μg/m³ PEL as an 8-hour TWA, employers will be required to provide these workers with respirators for supplemental protection while they are performing such tasks.

OSHA recognizes that these are estimates, not precise calculations of reductions in exposure levels that can be expected with additional controls. Nonetheless, OSHA believes these estimates are important since they indicate that, even in many of the dirtiest operations, control of employee exposure levels to 50 μg/m³ can be reasonably anticipated without major overhaul or restructuring of facilities. OSHA further believes these estimates are conservative since they are based upon a limited, rather than an exhaustive list of recommended additional controls.

When the molten metal leaves the blast furnace area it undergoes the first of several transfers between furnaces. The transfer of molten metal can be an important source of lead emissions in the blast and other furnace areas. Consequently, control of the transfer is vital, as industry engineering consultants Dr. Caplan and Cadre Corporation have recognized (Exs. 475-32D, H-004E, p. 50; 668E, p. 12). Effective control of such transfers is not routinely implemented in secondary copper smelters, as Meridian points out (Ex. 686C, p. 14). The preferred method for accomplishing such transfers is by a transfer chute called a launder, because from an industrial hygiene point of view a launder can be fully and easily enclosed, thus completely containing the lead fumes. Company D uses an uncovered launder to transfer molten metal from the blast furnace to the holding furnace. The launder has a hood only at the end transfer point into the holding furnace. Company D also relies upon ladles with no observable controls for metal transfers from the holding furnace to the converter furnace and from the converter to the shaft and Maerz furnaces. The expert panel estimates that emissions from these transfers can be reduced by 75-95% by implementing well-designed local exhaust ventilation (Ex. 686C, p. 15).

Holding Furnace. At Company D only some sources of emission in the holding furnace area are effectively controlled. Additional ventilation and enclosures are needed. For example, the slag hole is not currently equipped with an exhaust hood. The company says it did not ventilate the slag hole because of the absence of visible emissions. However, because lead fume is not always visible, and because of very high employee exposure levels at the slag hole, the company should install local exhaust ventilation at this furnace opening.

Additional controls that should be implemented to control emissions in the holding furnace area include enclosure and ventilation of the ladle or launder, which is used to transfer molten metal to the converter; local exhaust ventilation for the slag testing area; and regular clean up of lead-bearing slag from the work area. These controls are expected to reduce the exposure of the copper/slag hole operator by 40-65%, according to the expert panel (Ex. 686C, p. 14).

By more effectively controlling exposure levels in the scrapyard and eliminating cross contamination from the yard, workers' exposure levels in the holding furnace area will be further reduced by 5-10%, according to the expert panel (Ex. 686C, p. 13).

Converter. Converting is carried out at the high temperature of 2,000°F Cracks and leaks in the furnace commonly occur due to high temperatures. Converters should be relined with firebrick regularly to keep them tight and leakproof. In Japan, for example, they are relined every 100 days (Ex. 689-1, p. 68).

Leaks of off-gases during air blowing are the principal source of emissions during converter operations. Such leaks can occur despite the fact that primary hoods collect the bulk of emissions. Secondary hoods are needed, therefore, to capture the off-gases. Secondary hooding can be accomplished either by totally enclosing the converter or installing a push/pull ventiliation system, as the secondary lead smelting industry has already done successfully (Exs. 604, p. 12; 689-1, p. 155).

In addition, where feasible, the ladles used in converter aisles should be exhausted by employing the Hawley Trav-L-Vent device, which has proven effective in controlling exposure levels in primary copper smelters and many other lead industries in the United States (Ex. 604).

Better dust control in the scrapyard will further reduce workers' exposure levels in this area by 5-10%, according to the expert panel (Ex. 686C, p. 13).

Maerz (Reverberatory) and Shaft Furnaces. As indicated above, solely with the elimination of cross contamination from the blast furnace area, the geometric mean employee exposure levels at the Maerz and shaft furnaces will be reduced to 41 μg/m³ and 51.6 μg/m³ respectively. These exposure levels should be achieved even before any additional controls are implemented to control sources of emission at those furnaces.

Additional controls such as covering or locally exhausting ladles or launders would further reduce workers' exposure levels by 3-5%, according to the expert panel (Ex. 686C, p. 15). Further, better dust controls in the scrapyard would reduce workers' exposures in the furnace areas by an additional 5% (Ex. 686C, p. 13). Better housekeeping would reduce exposures by another 15-25% (Ex. 686C, p 20). Thus, the total reduction anticipated by the expert panel from implementing these additional controls is 23-35%.

Cumulating the anticipated reductions from controlling cross contamination from the blast furnace and the scrapyard with the anticipated reductions from implementing additional controls in the furnacs areas, OSHA finds that of the 8 job categories listed for these furnaces, 7 will have geometric means below 49 μg/m³ Moreover, it appears that the eighth category, shaft furnace operator, no longer exists (Ex. 686C, pp. 5, 25). In other words, average geometric mean exmployee exposure levels would range from negligible to 48.8 μg/m³ in the Maerz furnace area and from 10.4-37.2 μg/m³ in the shaft furnace area.

OSHA believes that increased preventive maintenance is the key to still further reducing air lead levels at the Maerz furnace, specifically by making the furnace roof tighter and more leakproof. In Japan, for example, very few cracks occur because the insides of Maerz furnace roofs are coated frequently to make them essentially leakproof (Ex. 689-1, p. 112). Appropriate silica refractory sealants are commercially available in the United States, which have been applied successfully to seal top leaks of Maerz furnaces in secondary lead smelters in this country (Ex. 604, p. 11).

As a result of implementing all the above controls, OSHA has no doubt that employee exposure levels can be consistently controlled to or below 50 μg/m³ in the Maerz and shaft furnaces.

TABLE 3.— PRESENT EXPOSURE LEVELS AND ANTICIPATED EXPOSURE LEVELS IN THE MAERZ AND SHAFT FURNACES AT COMPANY D

Job category	Geometric mean exposure (μg/m³)	Geometric mean exposure adjusted for cross contamination	Ranges of geometric mean after additional controls applied and adjustment for cross contamination
Shaft Furnace:			
General	85.3	48.3	31.4–37.2
Operator	(¹) 318.2	(¹)	(¹)
Supervisor	53	16	10.4–12.3
Maerz Furnace:			
Operator	100.4	63.4	41.2–48.8
Assistant	88.4	51.4	33.4–39.6
Loader	21	(²)	(²)
Barco Operator	65.7	28.7	18.7–22.1
Supervisor	41.2	4.2	2.7–3.2

Shaft furnace operator job category no longer exists (Ex. 686C, pp. 5, 25).
Extremely low exposure levels, approximately equivalent to background levels or 0 μg/m³

Casting Area. As previously shown, in the casting operation the molten copper is more than 99% pure. Whatever significant exposure levels have been found in this operation, therefore, generally must be due to cross contamination from the blast furnace and scrapyard (Ex. 475–32D, H–004E, pp. 19, 22–23, 42). With the elimination of cross contamination, air lead levels in the casting operation should be negligible.

Scrap and Charge Preparation. In the scrapyard and briquetting plant, the vast majority of sampling results already are below 50 μg/m³ Modest improvements in controls would further control exposure levels.

Strict control of sources of lead emission in the scrapyard is important not only to protect scrapyard employees but also to eliminate one source of cross contamination in the plant. To stop cross contamination from the scrapyard, the expert panel recommends that Company D install baffles, screens or walls to prevent dispersion of lead-bearing dust from scrap (Ex. 686C, p. 13).

To further reduce exposure levels for scrapyard employees, OSHA has determined that wet sweeping should be used instead of street sweepers. This would reduce worker exposure in this area by up to 5%, according to the expert panel (Ex. 686C, p. 9). In addition, cabs of forklift trucks and front-end loaders should be enclosed and equipped with a filtered and tempered air supply, as is common practice in secondary lead smelters (Ex. 604, pp. 2, 4). This would reduce operators' exposure levels well below 50 μg/m³ Operators should be provided with audio communication systems if their tasks require communication with other personnel.

Baghouse and Control of Cross Contamination. Baghouses can be a significant source of dust if they are not operated and maintained properly. Industry consultants, Dr. Caplan (Ex. 668E, p. 12 of enclosure) and Cadre Corporation (Ex. 475–32D, H–004E, pp. 53–54), have recognized this in recommending to secondary copper smelters that they improve dust suppression at their baghouses.

During OSHA s site visit to Company D, management representatives conceded that 3 of the 4 baghouses in the plant were not in good condition and that replacing them, along with modifying the roof, would contribute more than any other single control measure to reducing air lead levels of employees in the plant (Ex. 684d, p. 18). OSHA agrees that replacing these baghouses would significantly contribute to reducing air lead levels in the facility. Running efficient baghouses is essential not only to reducing exposures to baghouse workers, but also to maintaining an effective ventilation system and to preventing cross contamination from baghouses to the entire facility (Ex. 686C, p. 29).

To keep baghouses clean and operating efficiently the following engineering controls and work practices should be strictly implemented:

1. Baghouses should be repaired and maintained to eliminate leaks and assure proper functioning of cleaning mechanisms;

2. Baghouses should be shielded from wind by erecting barriers; and

3. Dust-packaging operations should be ventilated (Ex. 573, p. 27).

OSHA also recommends that automatic dust-packaging systems that use mechanized material handling equipment, such as screw conveyors, should be installed when plants are being modernized.

Repair and maintenance of the baghouse is an intermittent maintenance activity. In certain repair and maintenance tasks it may not be feasible to control air lead levels to 50 μg/m³ by engineering and work practice controls. Under such circumstances, OSHA recognizes that it may be necessary for workers to wear respirators for supplemental protection while performing these tasks.

Technological Feasibility. Based on the above analysis of the evidence in the record and OSHA's experience and expertise, the Agency determines that achieving a PEL of 50 μg/m³ by means of engineering and work practice controls is technologically feasible in the secondary copper smelting industry as a whole.

Nevertheless, the Agency recognizes that it may not be possible to consistently achieve the 50 μg/m³ PEL by these controls for certain employees in the blast furnace area, like those who maintain the tap hole and carry out sample preparation. Since OSHA has found the 50 μg/m³ PEL feasible for the industry, employers will be required in these tasks, as well, to implement engineering and work practice controls to control exposure levels to the PEL or the lowest feasible level. Where all feasible engineering and work practice controls have been implemented and employees performing these tasks are still exposed above the 50 μg/m³ PEL as an 8-hour TWA, employers will be required to provide these workers with respirators for supplemental protection while they perform such tasks.

To sum up, OSHA has shown the following. In 2 of 5 operations at Company D, casting and miscellaneous, both the geometric means and more than 60% of all sampling results already are at or below 50 μg/m³ In 2 more operations, the shaft and Maerz furnaces, geometric means also will be below 52 μg/m³ once cross contamination has been eliminated. These levels can be achieved even before recommended additional controls are implemented to control sources of continuing lead emission within these furnace areas. After implementation of additional controls in both furnaces, geometric mean exposure levels in all job categories but one will be reduced below 40 μg/m³. In that one job category the geometric mean will be below 49 μg/m³

In the other operation, the blast furnace, after recommended controls are implemented, exposure levels in 9 of the 14 associated job categories will be below or just slightly above 50 μg/m³ and in 3 others levels will be below 70 μg/m³ Thus, in only 2 of 14 blast furnance categories are exposure levels expected to remain above 70 μg/m³. In operations where it is infeasible to reduce exposure levels to or below 50 μg/m³ by means of engineering and work practice controls and under many "upset" conditions, OSHA recognizes that it may be necessary for workers to wear respirators for supplementary protection.

OSHA also wishes to point out that all of its recommendations for achieving 50 μg/m³ rely exclusively upon conventional and readily available controls. OSHA has not needed to exercise its statutory authority to force the development of new technology in this industry to justify its finding of feasibility.

Based on the foregoing, OSHA believes that 50 μg/m³ is achievable most of the time in most of the operations in secondary copper smelting. In reaching this conclusion, OSHA does not purport to have recommended an exhaustive list of additional controls. The Agency is certain that industry will be capable of devising and finetuning various controls to further reduce exposure levels. Consequently, OSHA anticipates that industry will be able to consistently achieve exposure levels at or below 50 μg/m³ in nearly every phase of production.

OSHA believes that these levels will be attainable by implementing an integrated system of controls. The basic element in that system is an industrial hygiene study. Each smelter is required by paragraph (e)(3) of the lead standard (29 CFR 1910.1025) to establish and implement a written compliance plan for achieving the 50 μg/m³ PEL, which includes an in-depth job/task analysis and a plant wide survey. This survey and analysis should be performed by an experienced industrial hygienist who shall identify sources of emission in each task, sources of cross drafts and sources of cross contamination, and appropriate sites for erecting barriers to prevent cross contamination. Such an analyses should also recommend appropriate engineering and work practice controls to reduce emissions and minimize employee exposures. If, after implementing these recommendations, reductions in air lead levels deviate substantially from what was anticipated, a followup industrial hygiene evaluation should be conducted and necessary corrections made.

The second element in that system is the development of good written housekeeping and work practice programs, as required by paragraph (e)(3)(ii)(F) of the lead standard (29 CFR 1910.1025), which shall be systematically implemented so that proper procedures are routinely and meticulously followed. For example, wall-to-wall cleanings should be conducted at least annually.

The final element of an integrated system of controls is a preventive maintenance program to assure that all systems are maintained in clean and efficient condition.

The secondary copper smelting industry does not agree that a PEL of 50 μg/m³ is technologically feasible. Industry's disagreement is based on 6 main points.

First, and most generally, industry maintains there is insufficient evidence in the record to support a determination of technological feasibility. Second, industry portrays Meridian and its reports as incompetent and biased. Third, industry claims that Company D is not representative of the rest of the industry and that even the more modernized Company D has been unable, after the expenditure of millions of dollars, to consistently achieve 200 μg/m³ let alone 50 μg/m³. Fourth, industry alleges that the lead smelting industry has proven incapable of achieving 50 μg/m³ that OSHA has acknowledged that fact, and that it is more difficult to control exposure levels in copper smelting than in lead smelting. Fifth, industry states that several consultants, like JACA (Ex. 553-5) and Dr. Caplan (Ex. 668E, p. 2), as well as OSHA in a 1983 draft, previously concluded that a PEL of 50 μg/m³ is technologically infeasible in secondary copper smelting. Sixth, industry claims that NIOSH and others have recognized that an integrated system of controls, including some reliance upon respirators, is needed to achieve the PEL throughout secondary copper smelting. This, industry asserts, amounts to an acknowledgement that achieving the PEL by engineering and work practice controls alone is infeasible (Exhibits 582-89, 680, 694-39). OSHA has considered these arguments but finds them unpersuasive.

First, OSHA's statutory obligation is to make its determination on the best available evidence in the record. OSHA has actively sought to collect and develop a full and accurate record. OSHA is persuaded that it has more than enough current information and data upon which to base its feasibility determination. OSHA believes that there would be still more usable information and data in the record had industry not declined to testify at the public hearing and to subject itself to cross examination by OSHA and others. In pursuit of fully developing the record, OSHA took the unusual step of making a site visit to a secondary copper smelter after the public hearing.

Second, industry criticizes Meridian's efforts as perfunctory, preconceived, unsupportable and generally incompetent. Industry claims the site visit to Company D was "window dressing" and criticizes OSHA and Meridian for not performing air monitoring during the site visit. OSHA rejects these criticisms and believes that Meridian did a creditable job given time and resource constraints. Meridian has had extensive experience conducting industrial hygiene analyses and assessing factors relevant to feasibility. If its experience in secondary copper smelting in particular is limited, the industrial hygiene and engineering principles utilized by Meridian are applicable to all industries, and the technology referred to is both used in copper smelting and transferrable from analogous industries.

Meridian's final report (Ex. 686C) and its conclusions are based on data in the record submitted by Company D, a site visit to Company D in which two experienced and certified industrial hygienists participated, and recommendations by a panel of three experienced and certified industrial hygienists, including two who had been on the site visit.

The fact that, after analyzing additional data and participating in the site visit, Meridian confirmed its earlier conclusions does not indicate preconception or bias. Indeed, based upon evidence developed after the hearing, Meridian changed its mind about several points and revised its methodology Meridian found, for example, that housekeeping was much worse than it had anticipated. Similarly, after analyzing the array of exposure data, Meridian utilized geometric means because this is the most accurate way to portray that data (Ex. 686C, pp. 2, 6). None of this suggests that Meridian was operating in a perfunctory or biased manner. On the contrary, Meridian invested considerable effort in assembling its expert panel of certified industrial hygienists and assuring that the expert panel would make specific recommendations for additional controls and assessments of reductions in air lead levels to be expected from implementing such controls.

Meridian's revisions and conclusions are firmly grounded in the record. In any event, OSHA has independently assessed the record, reviewed Meridian's final report for accuracy and relied only in part upon that report for its feasibility determination.

With regard to the site visit to Company D, air monitoring was not conducted during the site visit for two reasons. First, four years of exposure data current to September, 1987 had already been submitted to the record by Company D. Second, in response to industry's demand. OSHA had previously agreed in writing as a precondition for the visit not to conduct air monitoring. Consequently, conducting air sampling during the site visit was neither necessary nor permitted. OSHA also notes that OSHA and Meridian, in the company of two independent, certified industrial hygienists, toured Company D and investigated conditions there. In addition, staff at OSHA and Meridian spent numerous hours preparing for the site visit by reading an engineering report on the plant and analyzing Company D's exposure data.

Third, industry says Company D uses state-of-the-art technology that is not representative of the rest of the industry and that even after spending millions of dollars Company D cannot consistently achieve 200 $\mu g/m^3$ let alone 50 $\mu g/m^3$ Industry further alleges that some of the additional controls Meridian recommends for Company D are already in place.

In response, OSHA first notes that the controls at Company D can hardly be said to be state of the art, since so many emissions sources (launder, ladles, tapping holes, slag sampling stations, etc.) are without controls at that facility. OSHA further wishes to emphasize that the fact that Company D may have more controls in place than other smelters does not make it an inappropriate choice for determining technological feasibility in this industry. As counsel for the Institute for Scrap Recycling Industries, which represents secondary copper smelters, among others, himself has pointed out, to prove feasibility OSHA need only prove a *reasonable possibility* that a typical firm *will be able to develop and install* engineering and work practice controls that can meet the PEL in most of its operations (Ex. 680, p. 12). In this case, OSHA has gone much further than that by showing that Company D, relying entirely on currently existing conventional controls, can consistently achieve air lead levels of 50 $\mu g/m^3$

Indeed, OSHA has shown that merely by controlling cross contamination Company D can reduce employee air lead levels to approximately 50 $\mu g/m^3$ in all areas but the blast furnace. No evidence in the record, other than unsupported industry statements, provides any basis for believing that the additional controls recommended by OSHA could not be implemented across the industry. Industry had every opportunity to submit such technological evidence to show that Company D is not typical in this sense, but has not done so.

With regard to the allegation that Company D and the industry, even after spending large amounts of money, are incapable of consistently achieving levels below 200 $\mu g/m^3$ OSHA notes that more than 80% of all samples at Company D already are under 200 $\mu g/m^3$ and 94% of all samples outside the blast furnace area are below 200 $\mu g/m^3$ OSHA recognizes that Company D has spent a considerable amount of money to modernize its plant. However, the Agency believes that in spending this money Company D neglected to base its design of additional controls on an industrial hygiene survey and neglected to engage an industrial hygienist to analyze resulting monitoring data (Ex. 684d, p. 17). Consequently, OSHA is not surprised that Company D has not achieved the anticipated reductions in employee air lead levels by implementing certain controls (Ex. 684d, pp. 17–18).

Although Company D suggests that it has relied on an engineer "with certain qualifications" to conduct and review its air monitoring (Ex. 684d, p. 3), Company D has failed to take the most basic, necessary steps to understand and correct its own problems. Company D does not know the sources and extent of exposure in each task, has done little to eliminate cross contamination, and has sought to control only those sources of lead where emissions are high enough to be visible. Only with a better understanding of its exposure problems from an industrial hygiene perspective can Company D be in a position to implement the kind of integrated system of controls that is needed to comply with the lead standard.

If it is true, as industry asserts, that a few of the many additional controls recommended by Meridian already exist in some parts of the Company D facility, those controls appear to have been largely ineffective. OSHA believes they have been ineffective because the company has failed to design or implement such controls from an industrial hygiene perspective. Without that understanding, no amount of money spent on exposure problems will adequately control employee exposure levels. Developing a compliance plan for achieving the 50 $\mu g/m^3$ PEL in accordance with the requirements of paragraph (e)(3) of the lead standard should rectify this situation.

Fourth, industry's claim that primary and secondary lead smelters have been unable to achieve 50 $\mu g/m^3$ through engineering and work practice controls, that OSHA has acknowledged this infeasibility and that secondary copper is even more difficult to control, is wrong in every respect. First, as indicated at the hearing, some secondary smelters have achieved 50 $\mu g/m^3$ (Tr, pp. 156–58). Second, primary lead smelters are under no obligation to achieve 50 $\mu g/m^3$ by engineering and work practice controls until 1991. The fact, therefore, that these smelters to date may not have done so is not evidence of their inability to do so.

Next, OSHA has never acknowledged that 50 $\mu g/m^3$ is infeasible in lead smelting. The court has held that 50 $\mu g/m^3$ is feasible in lead smelting and industry is obligated to comply with the PEL by means of engineering and work practice controls. It is incorrect to treat OSHA's Cooperative Assessment Plans (CAP) and Tripartite Agreements as tantamount to recognition by OSHA of infeasibility in lead smelters (and lead battery manufacturers). On the contrary, these agreements presume that 50 $\mu g/m^3$ is generally feasible and that industry's obligation is to use engineering and work practice controls to reduce air lead levels in all operations down to 50 $\mu g/m^3$ or, in those few operations where it is demonstrated that 50 $\mu g/m^3$ cannot be achieved, to reduce air lead levels to the lowest feasible level. In essence, the CAP and Tripartite agreements are mutually agreed-upon compliance plans for implementing engineering and work practice controls to achieve these levels.

Industry is also incorrect when it asserts that OSHA in any way recognized the infeasibility of achieving 50 $\mu g/m^3$ by engineering and work practice controls through Agency action modifying the lead standard to authorize supplemental use of respirators where it is infeasible to achieve 50 $\mu g/m^3$ through engineering and work practice controls. OSHA's standard operating procedure has been to allow the use of respirators where it is infeasible for the employer to achieve the PEL by engineering and work practice controls. Thus, OSHA has not expanded the authorized use of respirators since the lead standard was promulgated.

Finally, OSHA believes it is more difficult to control air lead levels to 50 $\mu g/m^3$ by means of engineering and work practice controls in primary and secondary lead smelters than in secondary copper smelters. Although it is true that temperatures are higher in copper than lead smelters, nevertheless, for several reasons, problems are much greater in lead smelters. In secondary copper smelters there is only one source of lead, copper scrap. The portion of lead in the copper scrap generally is below 10% and often is much lower. The purpose of copper smelting is to remove the limited number of impurities in the copper scrap to produce a nearly pure copper product. By the time that product arrives at the shaft and Maerz furnaces, the remaining lead is no more than 1% of the copper.

By contrast, the purpose of lead smelting is to produce lead. The main raw material is lead ore in primary smelters and lead scrap in secondary lead smelters. As the product is refined, it becomes purer and purer lead. Thus, in lead smelters the sources of lead are ubiquitous, and the lead content rises throughout the process. In secondary copper smelters, however, the source of lead is very limited to start with and the lead content decreases throughout the production process.

Fifth, OSHA disagrees that JACA or the Agency previously found a PEL of 50 $\mu g/m^3$ technologically infeasible in the secondary copper smelting industry. JACA's analysis focused almost exclusively upon economic, not technological feasibility (Ex. 553-5). JACA appears to have found a PEL of 50 $\mu g/m^3$ economically infeasible. On the other hand, the working draft written by OSHA staff in 1983 and based upon the JACA report and other evidence and analysis, concluded that a PEL of 50 $\mu g/m^3$ is feasible, but that for economic reasons a 5-year compliance time would have to be provided (Ex. 570). However, that draft was never published and never became Agency policy, because, as OSHA has maintained since 1981, the Agency has had insufficient information upon which to base a feasibility determination regarding secondary copper smelting. To correct that deficiency, OSHA in 1987-88 reopened the record and again initiated a full public rulemaking to collect additional current data.

OSHA's present feasibility determination is based largely upon data and information provided to the record in the 1987-88 phase of this rulemaking. OSHA has concluded that data and analysis prior to 1984 do not provide a reliable source for a current determination concerning feasibility.

Sixth, industry misconstrues both the concept of technological feasibility and the concept of an integrated system of controls. Industry incorrectly asserts that NIOSH's (and others') statement that such a system of controls, including some reliance upon respirators, is necessary to achieve air lead levels of 50 $\mu g/m^3$ throughout this industry constitutes a recognition that it is infeasible to achieve the PEL by engineering and work practice controls alone. In fact, OSHA strongly supports the need for implementing a system of integrated controls to achieve the strict PEL of the lead standard and recognizes, with NIOSH, that at times employees may have to wear respirators to control their air lead levels to 50 $\mu g/m^3$ (e.g., in certain maintenance operations).

The court has never said that for a PEL to be found feasible it must be capable of being achieved by engineering and work practice controls all of the time in all operations. Indeed the court has recognized that in the limited number of operations where it is not feasible to achieve 50 $\mu g/m^3$ exclusively by implementing work practice and engineering controls, respirators may have to be worn to provide supplemental protection to workers.

Thus, OSHA is unpersuaded by industry arguments. Based upon its own expertise, experience and the record evidence, the Agency concludes that a PEL of 50 $\mu g/m^3$ is achievable by means of engineering and work practice controls in the secondary copper smelting industry.

Uses. The largest use for copper in the United States is for wire and cable. Applications include construction, telecommunications, transportation equipment, and electrical equipment. These products accounted for 82 percent of all copper consumed in the U.S. in 1986. Copper is also fabricated into tubing used in refrigeration systems and automobile radiators. Copper alloys are widely used in the fabrication of plumbing fixtures and decorative items [Ex. 573, p. 6].

Industry Profile. Secondary copper smelters are classified under SIC code 3341. They differ from primary smelters in that secondary smelters use copper-bearing scrap exclusively as their primary raw material.

There are currently five secondary copper smelting facilities in operation in the U.S., though Cerro Copper Products Company reportedly uses high-grade scrap and generates much less lead fume than the other four producers [Ex. 686c, pp. 1-2]. The workforce exposed to lead is estimated to be 1150 workers, with 10% involved in scrap handling and sampling, 55% involved in smelting, 30% involved in anode production, and 5% involved in baghouse work and dust handling [Exs. 573, p 4; 686c, p. 1].

With regard to production data,

> [i]t is not possible to provide data on the total amount of copper produced by secondary smelters. U.S. government data on the use of scrap copper combine use data for secondary smelters with those for either brass and bronze ingot makers or primary producers. The picture is further complicated by the fact that many secondary smelters smelt or refine imported black or blister copper as well as scrap copper. In some years, the use of imported black or blister copper may be high enough at some facilities for them to be reclassified as primary refiners. As a result, separate total production data are not available for the secondary smelter industry [Ex. 573, pp. 12-15].

The Institute of Scrap Recycling Industries (ISRI), which represented four secondary copper smelters in the remand proceeding, did not submit production data for the public record.

Since 1980, total domestic consumption of copper has varied between 3.1 and 3.8 million short tons while consumption of refined copper has fluctuated between 2.1 and 3.0 million short tons [Ex. 573, p. 7].

Imports of refined copper were presented by Meridian [Ex. 573, p. 8]. Between 1980 and 1985, net imports as a percentage of U.S. refined copper consumption exceeded 14 percent in each year except 1982 (when the percentage fell to 9.7 percent). By 1986 it was estimated to be over 22 percent [Ex. 573, p. 8] but declined to about 18 percent in 1988 [U.S. Industrial Outlook, 1989, Department of Commerce].

An important aspect of the secondary copper smelting industry is its dependence on copper-based scrap as a raw material. Since 1980, the percentage of total U.S. consumption of copper derived from scrap has varied between 35.5 percent and 43.2 percent [Ex. 573, p.

10]. Competition for scrap from brass and bronze ingot makers and brass mills is limited because secondary smelters can smelt and refine lower grades of scrap [Ex. 573, p. 12]. It should be noted that the U.S is a net exporter of copper scrap and foreign competitors successfully bid for domestic scrap [Ex. 573, p. 12].

Currently, the price of copper has risen to over $1.00 per pound. Historical data in current dollars show that the price of refined copper declined steadily between 1980 and 1985 from $1.02 per pound to $.69 per pound [Ex. 573, p. 16]. At the same time, the price of No. 1 scrap also declined, from $.65 to $.40 per pound. The difference between these two prices has remained relatively stable, however, fluctuating between about $.26 and $.29. These trends are much the same when examined from the standpoint of constant (1982) dollars [Ex. 573, p. 18].

While OSHA would prefer sector or plant specific financial data, such data were not made available to the Agency by the secondary copper smelters during the informal public hearing. Public information was available, however, from Dialog Information Services (Duns Financial Records Plus) and from the Securities and Exchange Commission.

Sales data from Dialog for Chemetco and Franklin Smelting and Refining indicated annual sales of about $25 million for each plant in 1988. Sales for a third producer, Southwire, an integrated wire and cable operation, were about $550 million in 1986, according to SEC filings. No data were available for the largest plant, Nassau Recycling.

Data on profitability were also available from Dialog. Average ROS for 60 firms with primary activities classified under SIC 3341 was 1.7 percent in 1988. Of the three firms for which sales data were quoted above, only the primary activities of Franklin Smelting fall under SIC 3341. Chemetco is classified as a primary copper smelter (SIC 3331). Southwire is also a primary metals operation. According to Southwire's SEC filing, net income in 1986 was approximately 1.1 percent of sales. Dun and Bradstreet data for 1986 were available for primary metals (SIC 33). The ROS for SIC 33 was 4.6 percent in 1986 [Dun and Bradstreet Industry Norms and Key Business Ratios, 1987].

Costs of Compliance. Compliance costs will be incurred primarily for additional exhaust ventilation, isolation and enclosure, and for improved housekeeping. Costs as developed in this section, are incremental; the estimates presented were based on the costs necessary to bring a secondary smelter (Company "D") into compliance from the existing level of control.

Costs for additional exhaust ventilation equipment were estimated by Meridian and included costs for transfer operations (ventilated ladles), ventilation at slag holes, the slag testing area, the ladle preheating area, and the cast pot staging area [Ex. 686c, pp. 35–36]. Incremental capital costs for this equipment were estimated to be $525,000 for company "D" and $1,275,000 for a larger plant. OSHA assumes the cost of secondary hooding for the converter will be $75,000 (5,000 cfm at a unit cost of $15) for company "D" and $225,000 for a larger facility, which is assumed to have three convertors. Although industry commented (but did not supply data to support its contention) that the 10 percent factor used to estimate operation and maintenance (O&M) expenses underestimated such expenses [Ex. 582-89, p. 26]. OSHA believes that a factor of 10 percent accurately reflects annual O&M costs, and has used this figure in many regulatory impact assessments. Total incremental ventilation costs for company "D" and the larger plant would be $600,000 and $1,500,000, respectively. Total annual costs would be the sum of annualized capital costs and operation and maintenance (O&M) expenses. Annualized capital costs for the two plants would be $88,080 and $220,200, respectively, based on a twelve year useful life and a 10 percent cost of capital. O&M expenses for each plant would be 10 percent of capital costs. Total annual costs for ventilation for company "D" and the larger plant are thus estimated to be $148,080 and $370,200, respectively.

Costs for cab enclosures, fresh air stations, enclosed booths, and housekeeping, including annual cleaning, were also estimated. Costs for cab enclosures were estimated to be $5,000 per unit [Ex. 686c, pp. 32–33]. Annualized capital costs would be $734 per unit, and annual O&M expenses would be $3,600, including HEPA filter replacement. Total annual costs for this equipment are estimated to be $21,670 for company "D" and $65,010 for the larger plant. Costs for filtered air booths and fresh air islands were estimated to be $15,000 per unit [Ex. 686c, pp. 32–33]. Annualized capital costs would be $2,202 per unit, and O&M expenses would be $1,500 annually for fresh air islands and $1,750 annually for filtered air booths. (HEPA filter replacement is estimated to cost $250 annually for filtered air booths). Company "D" was estimated to require one filtered air booth and one fresh air island. Larger smelters are estimated to require three of each item. Total annual costs for this equipment are estimated to be $7,654 for company "D" and $22,962 for larger plants.

OSHA also estimated the cost of a vacuum system. This cost was estimated to be $16,667 for company "D" and $50,000 for larger plants [Ex. 668E]. Annual costs, including annualized capital and O&M expenses, would be $6,937 and $20,810, respectively. An increase in costs due to additional housekeeping is expected. Costs for equipment for outdoor wet sweeping were estimated to be $35,000 (1 sweeper truck) for company "D" and $105,000 (3 trucks) for a larger facility [Ex. 686c, p. 32]. Costs for indoor wet sweeping equipment were estimated to be $14,000 (2 floor-scrubber vacuums) for company "D" and $42,000 for a larger facility (6 vacuums) [Ex. 686c, p. 32]. Annual costs for sweeping equipment, including annualized capital and O&M expenses, would be $12,093 for company "D" and $36,280 for a larger facility. Costs were also estimated for additional labor for housekeeping. It was estimated that $8,470 would be incurred by company "D" and $25,410 would be incurred by a larger facility. (The estimates for additional housekeeping were based on assuming an increase of two person-hours per day for company "D" and an increase of six person-hours per day in larger facilities, at an average wage of $12.10 per hour for 7 days per week over 50 weeks). Costs for the annual cleaning were estimated by Meridian to be $65,400 for company "D" and $196,200 for a larger facility [Ex. 686c, p. 32].

Costs for the regular relining of convertors were assumed to be $1,000 annually per convertor, including labor and materials. Costs for company "D" were thus estimated to be $1,000 and costs for larger smelters were estimated to be $3,000. Costs for relining the roofs of Maerz furnaces were assumed to be $1,000 annually for company "D" and $3,000 annually for a larger plant.

OSHA also estimated costs which will be incurred for dust packaging. Evidence in the public record indicated that costs to ventilate a dust packaging system in a larger smelter would be $75,000 [Ex. 668E]. Based on this figure, capital costs for company "D" were estimated to be $25,000. Total annual costs for dust packaging for a larger plant and company "D" would be $18,510 and $6,170, respectively.

Finally, OSHA estimated the costs of isolation and barriers (which may include structural or flexible materials). Company "D" was assumed to require at least $25,000 in capital while a larger facility was assumed to require $75,000.

Annualized capital costs, computed at a 10 percent financing rate and using a twenty year useful life, will be $2,938 for company "D" and $8,813 for larger plants. (Since it was anticipated that the majority of these costs would be for structural materials as opposed to flexible, a 20 year useful life was used to compute annualized capital costs. Using this methodology, costs for barriers will be understated somewhat.) O&M costs for these barriers were assumed to be negligible.

The cost of the industrial hygiene survey was estimated to be $1,000, based on one hygienist working for two days at $500 per day. The first day would be required for a survey of the site and the second day would be required for actual monitoring and for the evaluation of mechanical equipment. (The larger facility may require additional time, and thus, additional initial costs). Recurring costs were not estimated to be required; thus, no annual costs were estimated.

Costs of improved work practices to limit upsets during furnace charging are assumed to be insignificant, as it is likely that any costs associated with this recommendation would be offset by savings realized in that blockages of the furnace would no longer need to be cleared.

Total annual incremental costs for company "D" were thus estimated to be $278,588. Total annual costs for the larger facility are expected to be $759,724. The total annual industry cost is estimated to be $1.9 million, based on the existence of 5 smelters, four of which are approximately the size of company "D" and one of which is larger.

A comment was received regarding costs of compliance for a larger smelter [Ex. 582-89, pp. 27-28]. It was asserted that this facility has implemented 80,000 cfm in exhaust ventilation at one of its furnaces though, apparently, none at any of the other three. No justification was given as to why this air volume was chosen, nor was any description offered of any other control measures currently being practiced. While this submission indicated that a large smelter may be larger than reflected in the methodology used to complete this analysis, the submission also indicated a higher level of baseline control currently in place than OSHA's methodology assumed. (Only controls for agglomerators, blast furnaces, and one travelling hood were required in the industry submission).

As noted above, the incremental cost estimates were developed based largely upon information obtained pertaining to company "D. Reliable, detailed information for other plants was not made available to the Agency.

Economic Feasibility. No sales or value of shipments data were supplied by the industry during.public comment periods or during the public hearing; sales for the secondary copper smelting industry were estimated using two approaches. Meridian estimated sales based on average revenue product per production worker for SIC 3341 [Exs. 573, 686c]. Total industry sales were estimated to be $390,590,550.

In a second approach, the refined copper product of the industry was estimated to be 295,650,000 pounds [Ex. 573, p. 13; Ex. 574, p. 6]. This volume of product, at $1.00 per pound, represents $295,650,000 in shipments for the secondary copper smelters.

Price increases required to pass forward the costs of compliance can be estimated by comparing total annual costs to total sales. With total annual costs of $1.9 million and total copper sales of $295,650,000, a price increase of about 0.6 percent is indicated. The average price of refined copper increased by over 30 percent between 1987 and 1988, and demand for refined copper is near historical highs [Department of Commerce, U.S. Industrial Outlook, 1989]. Over the same period, scrap prices have also risen sharply (over 30 percent). Although the required price increase represents a small portion of the recent variability in the price of copper, price increases are not likely for this sector, since the price of copper is a world price.

OSHA calculated profitability impacts based on Dun and Bradstreet statistics. Using the sales and ROS figures presented above, OSHA developed estimates of profits derived solely from the secondary smelting of copper. To estimate profit impact, the tax-deductibility of compliance costs was taken into account. That is, care was taken to compute before-tax profit before subtracting annual costs. After subtracting annual costs, the appropriate average tax rate was then reapplied to determine after-tax profit net of costs. For this sector, an average tax rate of 0.34 was used. Using the total industry sales estimate of $295,650,000 and the ROS rate of 1.7 percent for SIC 3341 yields a total profit estimate of about $5 million. Since total annual incremental costs for the sector were estimated to be $1.9 million, the cost to profit ratio would be 0.25. The associated post-compliance ROS was estimated to be 1.3 percent.

Since plant specific sales data were available from the Dialog database and SEC filings, impacts on total profits were also calculated for three firms. Total sales for Franklin Smelting were reported to be $25 million in 1988. Applying the ROS factor for SIC 3341 of 1.7 percent, total profits for this firm were calculated to be $425,000. Total profits for Southwire were $6.1 million in 1986 with an associated ROS rate of 1.1 percent, according to the company's SEC filings. Assuming that Chemetco's activities are 50 percent primary smelting and 50 percent secondary smelting, ROS was estimated to be 3.2 percent (the average of the 1.7 percent rate for SIC 3341 and the 4.6 percent rate for SIC 33). Applied against the sales figure of $25 million for this firm yields a profit estimate of $800,000.

Cost to profit ratios were then computed for these three smelters. The cost to profit ratio for Franklin Smelting was calculated to be 0.43 (with an associated post-compliance ROS of 1.0 percent), while the ratios for Southwire and Chemetco were calculated to be 0.030 (with an associated post-compliance ROS of 1.1 percent) and 0.23 (with an associated post-compliance ROS of 2.5 percent), respectively. According to its SEC filings, Southwire is a major producer of wire and cable for construction and utilities and the company believss it is in a strong competitive position with regard to both markets. The corporation has also entered into a joint venture with the Furukawa Electric Company Ltd., of Japan and the partnership is the exclusive licensee in the U.S. of a high value-added, water impervious underground cable. Evidence suggests that impacts for Cerro Copper will be minor, as they reportedly generate less lead fume than the other plants. No information was available which would permit OSHA to compute profit impacts for Nassau Recycling.

OSHA recognizes that rates of return are modest for this sector Also, while the industry is currently enjoying strong demand, this sector has been contracting for some time; there were twenty secondary smelters operating in 1965 but only five remain in operation today. Factors contributing to this decline are expanding world copper refining capacity and government subsidization of copper production among foreign competitors [*Copper*, Mineral Facts and Problems, Bureau of Mines, U.S. Department of Interior, 1985]. (Private U.S. refiners bear the brunt of cutbacks during cyclic downturns in copper demand while foreign nationalized smelters benefit from government subsidies.) Additionally, some primary smelters are currently refining copper by the electrowinning process, a process for which capital costs are roughly one-half those of conventional smelting. This technology is expected to represent about 18 percent of domestic copper refining in 5 years, and less efficient secondary smelters may be put at a competitive disadvantage.

Nevertheless, the profit impact ratios computed above indicate that, with additional compliance time, the costs of compliance can be absorbed. Additional time is granted because of the inability of firms in this sector to raise prices and because rates of return are low. The extended schedule will provide opportunities to increase production efficiency, thereby cutting costs and improving profitability, and to phase in engineering controls.

Thus, OSHA concludes that the 50 $\mu g/m^3$ PEL is economically feasible with an extended compliance period of five years. The impact of this regulation will not threaten industry existence or structure.

8. Shipbuilding and Ship Repair

Process Description and Sources of Exposure—Overview. For purposes of this rulemaking, the shipbuilding and repair industry can be divided into two segments: (1) nuclear shipbuilding and repair, and (2) non-nuclear shipbuilding and repair. Nuclear yards, in addition to sharing the very limited exposure problems of non-nuclear yards, have other lead exposure problems that are peculiarly related to work on nuclear ships. Consequently, these segments have fundamentally different problems with regard to lead exposure.

For non-nuclear yards, employees can be exposed to lead primarily in painting and paint removal operations. As lead-free paint is being increasingly substituted for leaded paint, lead exposure in paint application is diminishing, and exposure problems are basically limited to operations involving removal of old leaded paint. This means that for 398 non-nuclear yards of the approximately 400 total shipyards (nuclear and non-nuclear combined), employing more than 60% of the total industry workers, increasingly the only employees exposed to lead are in the paint removal operation. Even for that small number of employees, lead exposure is being further reduced as the use of lead-free paint becomes more widespread and the subsequent removal of paint and repainting involves only lead-free paint. Thus, the single operation in non-nuclear yards in which lead exposures may continue for some time is becoming an operation that does not use lead. When full substitution of lead-free paint takes place, employees in these non-nuclear yards as well as those in nuclear yards performing painting and paint removal will no longer be subjected to lead exposure (Ex. 610, p. 19).

At the two nuclear yards in the industry, Newport News Shipbuilding (NNS) and General Dynamics Electric Boat Division (GD), lead-free paint is now generally or exclusively used (Ex. 582–66, p. 6). Consequently, the sources of lead exposure are essentially limited to the removal of old leaded paint and to certain operations peculiar to the construction and repair of nuclear ships. These operations relate to installing or removing lead ballast and to building and installing lead shielding panels for nuclear reactors.

In both nuclear and non-nuclear yards, shipbuilding and ship repair work is labor intensive. Many operations are performed manually to meet customer specifications (Ex. 582–66, pp. 1, 5). As ship construction proceeds and more structures are erected and joined, the work environment changes and can become more confined. Where there are lead exposures in enclosed, narrow spaces, engineering control equipment can be difficult to apply (Ex. 582–66, p. 1). Consequently, employees working in such spaces may be potentially exposed to high lead exposures.

General Ship Construction. Many of the main production processes in ship building are common to both nuclear and non nuclear yards. In both types of yards, to form the ship's hull, steel plates are first treated by automatic shotblasting machines. The steel plates are then coated by automatic spraying in booths or by airless spray guns with a primer paint to reduce corrosion. Then smaller plates are cut by an oxy-fuel torch or guillotine; larger or duplicate pieces are cut on automatic machines. The steel pieces are shaped by bending, rolling, or pressing; welded into subassemblies; and fitted together. Once the hull has been assembled, the ship is launched. Its interior (pipes, wiring, controls, equipment, rigging, etc.) are then installed at a fitting-out berth. Finally the ship is ready to undergo sea trials to determine whether mechanical or physical defects exist. Adjustments may involve the removal of components, stripping of insulation, welding, repainting, and cleaning of oil tanks and lines prior to repair (Ex. 572).

General Ship Repair. Many shipyards of both sorts combine repair, overhaul, and conversion with shipbuilding capabilities. Unscheduled or emergency repair and casualty work are relatively rare. Scheduled repairs often are in the nature of maintenance and involve cleaning and repainting the ship's hull at the time the ship is inspected. Major overhauls and conversions include changing the ship's capacity and size (e.g., placing a new and larger midships section between the bow and stern) and changing the ship's cargo-carrying characteristics or its propulsion system. Ship repair yards also engage in non-ship industrial work (e.g., repairs on oil platforms, foundry operations, carpentry work) (Ex. 572, p. 3).

Paint removal is often necessary in many types of repair work. It also can be an important step in cleaning the ship's surface prior to other operations such as welding. Traditionally, abrasive blasting has been used to remove old, deteriorating paint and to create small indentations or etchings on the ship's surface to facilitate the bonding of new paint. Other methods of paint removal are available, such as grinding, sanding, needle gunning, and chemical cleaning (Ex. 582–66, p. 10). In some repair operations, welding, cutting, and burning is done directly through the existing layer of paint. If that paint contains lead, these operations result in lead emissions (Ex. 572, p. 3). As indicated above, substitutes for leaded paints are available and widely used. Thus, exposures to lead in paint removal operations have already been or, in time, will be eliminated in ship yards as lead-free paint is substituted for the leaded paint on old ships (Exs. 582–66, p. 6; 610, pp. 19, 20).

Nuclear Ship Construction and Repair. Nuclear ship construction and repair involve special activities related to installing and removing lead ballast in nuclear submarines and other ships and to constructing and installing lead shielding for nuclear reactors (Ex. 582–66, p. 12).

Exposures to lead primarily are limited to these operations which include casting lead panels; tinning, bonding or burning on leaded structures; caulking with leaded wool; sawing, passing, and packing lead ballast; welding on or near leaded surfaces; and carbon arc gouging of canning plates during overhaul (Ex. 582–66, pp. 12–23). These processes are described in detail below.

In fitting vessels with nuclear reactors, the entire interior of the reactor compartment, as well as the interior of the hull, must be lined with lead to effectively shield personnel from radiation (Ex. 610, p. 24). Elemental lead slabs are cast and built into the primary shield tank enclosing the nuclear reactor, and secondary lead shielding is built into the bulkheads surrounding the reactor compartment. Operations involving casting of primary and secondary lead shielding are performed in fixed facilities off ship, but the reactor shield subassemblies are assembled in final form in the vessel itself (Ex. 610, p. 25).

Casting. Lead is melted, poured and cast to form reactor shielding panels. (A description of foundry operations and their controls is discussed at length in the section of this preamble devoted to nonferrous foundries.) NNS, the largest nuclear shipyard in the United States, pours and casts lead shielding panels in a semi-automated process in a newly constructed lead shielding panel shop. In this process, elemental lead is melted and pumped into an open trough that delivers the molten lead to the casting machine to cast into shapes. After casting, the lead shielding panels are sized to exact dimensions on a computer-controlled milling machine in the panel shop (Ex. 582–66, pp. 12–13).

Burning. Tinning and bonding are collectively referred to as lead burning. Exposure to lead occurs when the heat of the burning torch causes the lead, lead dust or tinning paste (a lead-tin alloy) to fume off and become airborne (Exs. 572, p 2; 688B, pp. 1–9).

a. Tinning: Shielding panels are sized by a process of milling, chipping, grinding, and planing. Then, they are mounted onto steel frames onboard ship by tinning and bonding. Tinning is the application of a thin coat of lead-tin alloy paste to the cleaned and heated surface of the steel plate. The surface is then conditioned by heating with an oxygen-hydrogen torch to provide a thin lead film on the steel to which the lead panel is bonded. Not only does the thin lead film facilitate the bonding of the lead shield panels to steel, it also ensures the structural integrity of the bond under shock testing (Exs. 572, p. 2; 610, p. 25; 688B, pp. 1–4).

b. Bonding: The actual bonding is accomplished by depositing lead in the joint or seam between the tinned steel plates and lead panels. The bonding process is essential in that the effected adhesion of lead to steel must be able to prevent leakage of radiation and also withstand the shock that the shield may be exposed to during the operational lifetime of the vessel (Exs. 610, p. 25; 688B, p. 5).

There are two methods of bonding. In manual ladle bonding, as the name implies, molten lead (at 700 to 850 °F) is ladled by hand from a lead pot into the joint (Exs. 572, p. 2; 688B, p. 5). This process requires a specially trained team with one or two operators using oxygen-hydrogen torches in the joint and another operator ladling lead into the joint (Exs. 572, p. 2; 688B, p 5). By contrast, manual torch bonding involves manually melting lead bars with an oxy-propane torch onto lead panels to "build up" or increase the thickness of the panels to specifications (Exs. 582–66, pp. 13–14; 688B, pp. 5–6). Manual torch bonding is used in lieu of manual ladling where limited accessibility to the joints precludes the use of a lead pot and ladle. This is most often the case onboard ship (Exs. 582–66, p. 16; 688B, pp. 5–6).

Caulking. Caulking may be used in some cases instead of burning. It substitutes for tinning and bonding and involves manually forcing lead wool, lead rope, or lead strips into the joint around the shielding panel, using a pneumatic blunt-ended chisel. Caulking, because it is "cold" lead work, produces much lower levels of exposures to lead than lead burning. According to James Thorton, manager of Industrial Hygiene at NNS, either caulking or burning can be used to fill the lead joints around shielding panels. On submarines, however, because of Navy specifications, very little caulking is allowed and joints generally are burned in (Ex. 582–66, pp. 18, 19).

Lead Ballast Work—Sawing, Passing, and Packing. Navy specifications require that lead ballast be installed in the hulls of submarines (Exs. 582–66, p. 22; 688B, p. 10). The ballast is used to trim the submarine so that it floats in a level manner and to add weight to the submarine for more stability in rough weather. Because of the density of lead, lead bricks are used as permanent ballast on submarines.

The submarine hull frame is divided into compartments and bins. Lead blocks are cut offship with a bandsaw to form bricks and shims of various sizes and shapes for ballast. Then passers move the bricks and shims from the saw shop to the vessel, where they are tightly packed into the ballast bins. Lead ballast packers are responsible for installing lead in the ballast bins. The process involves hammering, fitting, and shimming the lead as required to fill the voids between the lead ballast and the hull.

All ballast operations are performed cold; no melting of lead is required. Exposure to airborne lead occurs from dispersion of surface lead oxide during handling and from lead dust during sawing (Exs. 572, p. 3; 582–66, pp. 20–23; 610, pp. 21–24). Sawing lead ballast may result in high exposures if the saws are not enclosed and ventilated.

Canninq and Welding. After installation of lead ballast, steel canning plates are fitted and welded over the lead in the bins to secure the ballast in place. As in lead ballast work, when all shielding panels have been installed over the frame, steel canning plates and retainer bars also are welded over the lead panels to protect the shielding and maintain it in place. Welding of these structures may result in lead emissions, because the heat generated may be sufficient to volatilize the lead from tinned surfaces or the lead ballast or caulking adhering to the canning plates and nearby frames (Exs. 582–66, pp. 21–23; 610, pp. 21–24; 688B, pp. 11–16).

Overhaul and Carbon Arc Gouging. During overhaul, the lead in the ballast bins must be removed. The canning plate is removed by carbon-arc gouging to allow for inspection, and the ballast bricks are removed from the bins to a storage area in the drydock. For reinstallation, the lead bricks are transported to and packed into the bins, and the canning plate is replaced (Ex. 582–66, p. 21).

The removal of canning plates by carbon arc gouging may provide a significant source of lead exposure. This process involves passing a high electrical current through a copper-coated carbon rod and striking an arc on the steel surface. If the arc breaks through the canning plate to the lead below, the intense heat needed to melt the weld joint causes the lead to volatilize and fume. When the metal weld surface becomes molten steel, it is removed from the gouge path by controlled release of compressed air. This high pressure air stream also increases the dispersion of lead as well as scatters other molten metals (Exs. 610, pp. 23, 24; 688B, pp. 11–16).

A few other miscellaneous operations produce insignificant airborne levels of lead, such as the use of lead blankets as temporary shielding, the use of coated lead bricks, the sorting of scrap lead and quality control inspection of lead structures (Ex. 582–66, p. 23). In summary, across the shipbuilding industry exposures to lead occur to a limited and decreasing degree in the application and removal of leaded paint. In addition, in the nuclear segment of the industry exposures also occur in operations relating to fitting the vessel with lead shielding for the nuclear reactor and to fabricating, installing and removing lead ballast.

Existing Exposure Levels and Current Controls—Overview. Workers exposed to lead in shipbuilding can be divided into two general categories: (1) non-nuclear construction and repair, and (2) nuclear construction and repair.

In *non-nuclear construction*, exposure data in the record indicate that average lead exposures generally have been reduced to or below 50 $\mu g/m^3$ or exposure to lead has been entirely eliminated. In *non-nuclear repair*, only a small percentage of employees, primarily in the paint removal operation, are exposed above 50 $\mu g/m^3$

The *nuclear construction and repair* segment of the industry is limited to two yards. At the larger of the two, NNS, either the majority of air lead monitoring results or average exposure levels are at or below 50 $\mu g/m^3$ in 16 of 26 (62%) lead operations, according to the most recent exposure data in the record (Ex. 582-66, Table II). These 16 operations employed over 85% of NNS' lead-exposed workers, according to the most recent employment data in the record (Ex. 582-66, Table I). GD, by indicating that serious lead exposure problems are limited to three general problem areas (Ex. 688B, p. 1), confirms OSHA's understanding that most operations and the vast majority of employees in nuclear yards have average exposures at or below 50 $\mu g/m^3$

In nuclear and non-nuclear shipbuilding and repair, the primary engineering control used to reduce worker exposure levels is local exhaust ventilation. Operations that generally are exhausted include welding, casting, burning, caulking, carbon arc gouging, and sawing. Substitution of lead-free paints for leaded paints is another control measure that has eliminated lead exposures during painting and significantly contributed to reduction in exposure in paint removal. In nuclear shipbuilding, moving preassembly to fixed locations offship is a process modification which has reduced the problem of high exposures caused by assembling on board ship (Ex. 582-66, p. 13).

Non-nuclear construction and repair. Non-nuclear construction and repair yards employ 66,750 (63.7%) of the estimated 104,750 shipbuilding industry employees (Ex. 686B, pp. 2-3). In 1982, JACA reported that in non-nuclear construction and repair, average exposures above 50 $\mu g/m^3$ were limited to three operations: painting (100 $\mu g/m^3$), paint removal (280 $\mu g/m^3$), and welding/burning (110 $\mu g/m^3$) (Ex. 553-8, pp. 1-2 to 1-5). OSHA believes that since then, the increasingly widespread use of lead-free paints (Ex. 610, pp. 19 and 20) and the implementation of airless paint guns have greatly reduced or virtually eliminated lead exposure in painting in the non-nuclear sector.

Consequently, OSHA finds that in non-nuclear shipyards lead exposure above 50 $\mu g/m^3$ is primarily limited to paint removal operations. Nonetheless, even where removal of paint is by means of blasting, more than 70% of monitoring results in 1984 and subsequent years are below 50 $\mu g/m^3$ according to OSHA inspection data (Ex. 572, p. 15). As lead-free paints completely replace leaded paints, OSHA expects exposures above 50 $\mu g/m^3$ to be virtually eliminated in non-nuclear paint removal.

OSHA notes that today the number of employees doing paint removal in the non-nuclear sector is a small part of the 66,750 employees working in that sector. Although industry has not provided OSHA with current employment data for the non-nuclear ship sector, if the 3.6% figure for the percent of employees at NNS who were doing paint removal in 1981 (Ex. 553-8, pp. 1-2 to 1-5) is typical of current employment in non-nuclear shipyards, then approximately 2,400 employees presently remove paint in this sector.

Nuclear construction and repair. Nuclear ship construction and repair is carried out in two yards employing an estimated 38,000 workers, which is 36.3% of total industry employment (Ex. 686B, pp. 2, 3). NNS employs 27,000 workers and GD approximately 11,000 (Exs. 582-66, p. 2; 686B, pp. 2, 3).

GD currently has an estimated 650 workers designated as lead workers, less than 6% of its workforce. NNS, in 1981 when its employment was higher, had 1,357 workers designated as lead workers, which would be approximately 5% of its current workforce (Ex. 582-66, Table I). Thus, GD and NNS combined appear to have approximately 2,000 lead workers, which is less than 2% of total industry employment (Ex. 686B, pp. 2-3).

Since raw data were not provided by the nuclear segment of this industry, OSHA relied on the average values and the distribution of samples below and above 50 stated in submissions by NNS and GD (Exs. 582-66; 688B). The data show that reduction in employee exposure levels has resulted from the implementation of improved engineering and work practice controls.

For most lead operations and most employees exposed to lead, exposure levels reflected in the most recent exposure data (1985-86) are close to or below 50 $\mu g/m^3$ most of the time at NNS (Ex. 582-66, Table II). With regard to operations, in 16 of 26 operations at NNS, a majority of exposure readings or average exposure levels are below 50 $\mu g/m^3$ In seven of these, NNS recently engineered out lead exposure by substituting lead-free paints, painting ballast bricks, using prefabricated lead wool blankets for temporary reactor shielding, or eliminating the operation. In another of these 16 operations, referred to as "miscellaneous" operations, exposure levels were below 50 $\mu g/m^3$ even in 1981, and employees continue to be exposed below 50 $\mu g/m^3$ according to NNS's prehearing comment (Ex. 582-66, p. 24). In addition to these 16 operations, in three other operations, 42-49% of the samples also are below 50 $\mu g/m^3$ (Ex. 582-66, Table II).

Thus, utilizing NNS' 1981 employment data, the only employment data provided by NNS, the number of employees in the operations where monitoring results are at or below 50 $\mu g/m^3$ for most, or close to most of the time represents over 90% of all lead-exposed workers at NNS' (Ex. 582-66, Tables I and II). Conversely, less than 10% of NNS lead exposed workers are likely to have lead exposures consistently above 50. Furthermore, some of the workers who constitute this 10% work in an operation where average exposure levels are only 66 $\mu g/m^3$ (Ex. 582-66, Table 11).

This degree of control reflects a significant reduction in lead use and exposure and a substantial improvement in engineering and work practice controls achieved since the lead standard went into effect in 1979. For example, between 1981 and 1985 NNS achieved a 28% reduction in the number of operations using lead and achieved a significant reduction in exposure levels in every operation but one. Assuming that the number of employees working in each operation at NNS was the same in 1985 as in 1981, there was during that period a 27% reduction in the number of employees exposed above 50 $\mu g/m^3$ (Ex. 582-66, Tables I and II).

Major reductions in employee air lead levels also have been achieved in that same period by GD through improved engineering and work practice controls (Ex. 688B). For example, in one operation identified by GD as having high employee exposure, lead boot, a tripling of the exhausted air volume, in conjunction with improvements in dust collectors and hooding, resulted in the 1979-87 period in a radical reduction of employee exposure levels from an average of 3,180 $\mu g/m^3$ to 72 $\mu g/m^3$ (Ex. 688B, p. 8).

In lead bonding-tinning, the installation of slotted hoods, combined with improved work practices, reduced exposure levels so that 50% of monitoring results are now below 50 $\mu g/m^3$ Similarly, the installation of the so-called TB-8F-SH modern exhaust system, combined with improved work practices, reduced exposure levels in another bonding-tinning operation so that 42% of monitoring results are now below 50 $\mu g/m^3$ (Ex 688B, p. 3).

GD has identified only three general areas of high lead exposure. These include construction and installation of the reactor shield, ballast installation and removal, and abrasive blasting (Ex. 688B, p. 1). Based upon NNS' data, these also appear to be among the main problem areas there as well.

Nevertheless, even in operations that are characterized by relatively high average lead exposures, like lead bonding, lead shielding, ballast work, carbon arc gouging, and blasting, exposure levels at NNS are less than 100 $\mu g/m^3$ more than 70% of the time. For example, in welding and burning of leaded surfaces, which includes carbon arc gouging, an operation that NNS has asserted it cannot control to 50 $\mu g/m^3$ 33% of exposure samples are below 50 $\mu g/m^3$ and 66% are less than 100 $\mu g/m^3$. In lead bonding done aboard ship, 75% of exposures are less than 100 $\mu g/m^3$. In casting of shielding panels, 72% of exposures are less than 100 $\mu g/m^3$. In the several operations involving installing and removing lead ballast, 72–100% of exposures are less than 100 $\mu g/m^3$ Finally, in blasting and in painting/rust grinding, exposure levels are less than 100 $\mu g/m^3$ 62 and 68% of the time, respectively (Ex. 582–66, Table II). (Unfortunately, because GD did not provide OSHA with raw data or with data indicating the number or percentage of exposure monitoring results below 100 $\mu g/m^3$, the Agency cannot provide a similar analysis of GD's data.)

The primary engineering control used in shipbuilding to reduce worker exposure levels is local exhaust ventilation (Ex. 582–66, p. 4). Welding, burning, and caulking operations are reported to be locally exhausted whenever possible, coupled with the use of respirators. Substitution of non-leaded paints has eliminated lead exposures during the process of paint application and has contributed to reductions in exposure levels in some paint removal operations. Controls for abrasive blasting include type CE respirators in exterior areas, and type CE respirators in conjunction with exhaust ventilation in enclosed and confined areas. Lead work controls for mechanical cleaning of lead coated surfaces (grinding rust) include respirators outdoors and respirators with exhaust ventilation in enclosed areas (Ex. 582–66, pp. 6–20).

Additional Controls—Overview. OSHA's analysis of the record in the previous section indicates that for most operations in both nuclear and non-nuclear shipyards exposure levels already are at or below 50 $\mu g/m^3$ OSHA has reached this conclusion because for most of the operations a majority of sampling results are at or below 50 $\mu g/m^3$ Based upon that record and OSHA's own experience and expertise, the Agency has concluded that for such operations exposure levels can be controlled consistently to or below 50 $\mu g/m^3$ with a modest modification or addition of controls, such as improving work practices, housekeeping and maintenance. The operations already at or below 50 $\mu g/m^3$ most of the time include painting, chipping and grinding, casting, ship fitting, caulking, milling reactor shielding panels, passing ballast, and welding. Exposure to lead in paint removal in nuclear and non-nuclear shipyards is also expected to be eliminated with the full substitution of lead-free paints on new and old ships (Exs. 582–66; 688B).

Controlling exposures to or below 50 $\mu g/m^3$ in problem operations will require implementation of an integrated system of controls. The basic element of that system is an industrial hygiene study, which is required by the lead standard to be carried out as part of the development and implementation of a written compliance program (29 CFR 1910.1025(e)(3)). The system also should include training in appropriate work practices, maximizing onshore operations (e.g., prefabrication and subassembly), better housekeeping and preventive maintenance, improved ventilation, and, under limited circumstances, the use of respirators.

Industry has emphasized the importance of work practices in controlling lead exposures, as evidenced, for example, by the special training given to "lead workers" (Exs. 688B; 582–66). Improved work practices can be readily implemented at low cost and are effective in reducing employees' exposures. For example, employees need to be trained in proper placement of portable local exhaust to maximize its efficiency. Good housekeeping and preventive maintenance measures are crucial to maintaining ventilation systems in proper working order.

An effective way to control lead exposures is to minimize the number of operations that are carried out onboard vessels. Generally speaking, operations performed onboard often are performed in confined spaces and are therefore more difficult to control. Where operations are performed in fixed locations on shore, these facilities can be more effectively equipped with ventilation systems. For those major shipyards that have not yet done so, sawing, grinding, chipping, machining, and hot work can be moved to onshore assembly shops, which can be equipped with large, effective ventilation systems.

Paint Removal. Paint removal can be accomplished by several methods: grinding, sanding, needle gunning, chemical cleaning and abrasive blasting. The kind of paint removal that causes the highest lead exposures is abrasive blasting. Technologies are available to control lead exposures in paint removal to or below 50 $\mu g/m^3$ Local exhaust systems are available to exhaust grinding and sanding operations. Needle gunning, which involves use of water under high pressure, produces larger particles of lead and therefore poses less of an airborne problem (Ex. 582–66, pp. 10–11).

In abrasive blasting, two technologies are available to effectively control exposure levels. One is a portable vacuum system known as "Blast 'n' Vac. With Blast 'n' Vac, the vacuum system surrounds the blasting nozzle and exhausts the grit and paint as they are deflected from the painted surface. Grit and paint are deposited in a material recovery container; and dust is removed in a water bath dust filter. According to the manufacturer, Blast 'n' Vac has been used successfully in work on submarines. This system has the capability of bringing abrasive blasting workers' 8-hour TWA lead exposures to levels below 50 $\mu g/m^3$ (Exs. 610, pp. 20–21; 572, p. 62).

The other technology is hydroblast, which involves a water spray curtain that surrounds the blast nozzle. The spray wets the grit and paint as they rebound from the surface and turns them into a slurry. Flash rust of the surface may be prevented by the addition of a water soluble antioxidant to the water or by quick drying by hot air blast. If the surface has been oxidized by the use of water, quick abrasive blasting may be performed after the lead has been removed to take off the oxidation (Ex. 572, p. 62; 610, pp. 20–21).

Another method to remove paint is by means of chemicals, which effectively eliminate lead exposures. If a blast pattern is necessary, the paint may still be removed with a chemical stripper, and after the removal, the surface then can be blasted to apply the etched pattern. As indicated, the use of these techniques, either singly or in combination, will bring exposure levels under 50 $\mu g/m^3$ and still leave the surface properly conditioned for painting (Exs. 582–66, pp. 11–12; 610, p. 19).

Lead Ballast. In lead ballast work, exposures to lead occur from two sources: the release of surface lead oxide, which causes exposures during the passing and packing/unpacking of lead ballast; and the release of metallic lead particles during sawing of the ballast bricks and shims to fit into the bins. Exposures due to surface lead oxidation can be reduced to or below 50 μg/m³ by epoxy coating or painting the pigs (Ex. 610, p. 22). Exposures due to sawing the ballast can be reduced to or below 50 μg/m³ by completely enclosing the bandsaw in a booth (Ex. 610, p. 22). (NNS currently has an average exposure of 66 μg/m³ in this operation without enclosures) (Tr. 428). Alternatively, exposures can be eliminated by purchasing prefabricated ballast shims of various sizes and shapes (Ex. 610, p. 22).

In addition, a HEPA vacuum can be used to maintain all surfaces as clean as practicable in the work area, especially after sawing, which would further reduce exposure levels and help to minimize the potential for dispersion of lead dust (Ex. 610, p. 23).

These control technologies are readily available and are already applied in other industries as well as in some shipyards.

Casting. NNS reports an average exposure level of 80 μg/m³ for casting even with the construction of a new lead shielding shop equipped with new ventilation systems (Ex. 582–66, Table II). Casting at NNS is performed automatically in the shop (Ex. 582–16, p. 13). OSHA has determined that exposures in casting can be reduced to below 50 μg/m³ with minor modifications to existing equipment and practices. For example, reduction in exposure levels can be achieved by eliminating the open trough or chute that delivers the molten lead to the casting machine and replacing it with direct connection to the lead pump placed in the melting pot. This modification, coupled with better housekeeping and proper maintenance and improved work practices, should be able to control exposures to or below 50 μg/m³

Tinning and Bonding (Burning). NNS states that some tinning and bonding (average exposure result of 312 μg/m³) is routinely performed in the submarine shop. Under such circumstances, this operation can and should be effectively controlled with appropriate exhaust ventilation. Another effective way to sharply reduce exposure levels would be to replace the hot processes of tinning and bonding with caulking, which is a cold operation performed at room temperature (Ex. 582–66, pp 18–19). Either caulking or tinning and bonding can be used to fill the lead joints around shielding panels (Ex. 582–66, p. 18). Where caulking has been used, NNS reports that average employee exposure levels are 36 μg/m³ (Ex. 582–6, p 18).

Although the Navy apparently allows caulking to be used for most of its nuclear fleet, OSHA recognizes that the United States Navy in its contracts currently may allow very little caulking on submarines (Ex. 582–66, p. 19). If, with the implementation of the 50 μg/m³ PEL, the Navy becomes willing to allow greater use of caulking in submarines, then, wherever possible, caulking should be substituted for burning. In any event, where tinning and bonding remain necessary, GD has emphasized the importance of proper work practices, which can minimize excessive exposures in the application of tinning paste and in subsequent work on tinned surfaces (e.g. welding) (Ex. 688b, p. 2).

Carbon Arc Gouging. OSHA recognizes that carbon arc gouging is an operation in which it is difficult to consistently control exposures to or below 50 μg/m³ GD has acknowledged that, in conjunction with the use of local exhaust ventilation, the key to controlling exposures in this operation is through consistently good work practices (Ex. 688B, p. 13). This operation can be controlled if the worker can maintain a precise adjustment of the arc height so as not to penetrate the steel and volatilize the lead below. Then, the final cut of the weld can be performed with a grinding wheel and local exhaust ventilation (Ex. 688B, p. 13). This work practice is vital because, on occasions when breakthrough of the arc to the lead occurs, local exhaust ventilation is unlikely to be adequate to achieve the 50 μg/m³ due to the high velocity ejection of the molten metal. Because of the complexities of carbon arc gouging and the uncertainty of alternatives, OSHA believes it may be necessary for workers doing carbon arc gouging to wear respirators for supplementary protection.

If carbon arc gouging is performed only intermittently during overhaul and if the employee who performs gouging is not exposed to lead in excess of 50 μg/m³ for more than 30 days a year, then the employer would not be required under the lead standard to implement engineering and work practice controls in preference to respirators to achieve 50 μg/m³ In cases where exposures are above 50 μg/m³ for more than 30 days a year, OSHA suggests that, to the extent practicable, bolting and rivetting be used as an alternative to welding the canning plates (Ex. 610, p. 24). This would eliminate the need for future removal of plates by gouging.

Technological Feasibility Conclusion. Based upon the above analysis of the evidence in the record and OSHA's experience and expertise, the Agency determines that achieving a PEL of 50 μg/m³ by implementing readily available engineering and work practice controls is technologically feasible for the shipbuilding and repair industry as a whole.

Nevertheless, the Agency recognizes that it may not be possible to consistently achieve the PEL by these controls in certain confined spaces when tasks like carbon arc gouging and tinning and bonding are being performed. Since OSHA has found the 50 μg/m³ PEL feasible for the industry, employers will be required in such circumstances, as well, to implement engineering and work practice controls to control exposure levels to the PEL or the lowest feasible level. Where all feasible engineering and work practice controls have been implemented and employees are still exposed above the PEL as an 8-hour TWA, employers will be allowed to provide these workers with respirators for supplemental protection while they are performing such tasks.

Through its previous analysis of the record, OSHA has demonstrated that in both nuclear and non-nuclear shipyards, lead exposure levels for most operations already are at or below 50 μg/m³ In many of the operations where exposure levels exceed 50 μg/m³ improved, modified or additional engineering and work practice controls can reduce exposures to or below 50 μg/m³ As indicated, this conclusion is based in part upon the fact that for nearly all of the operations in non-nuclear shipbuilding and repair, available exposure data indicate that average exposure levels are at or below 50 μg/m³ It is based as well in part upon the fact that for most of the operations in nuclear shipbuilding and repair either average exposures levels are at or below 50 μg/m³ or a majority of sampling results are at or below 50 μg/m³ OSHA's conclusion is further predicated upon its determination that for such operations in both segments of the industry exposure levels can be controlled consistently to or below 50 μg/m³ by maintaining existing controls or by means of modest additions or improvements to controls.

For the few problem operations, OSHA has determined that implementation of an integrated system of controls can substantially reduce exposure levels. These isolated problem operations are confined exclusively to the nuclear segment of the industry. (OSHA does not consider painting or paint removal in either the non-nuclear or nuclear segments of the industry to be a problem operation because of the availability and increasing use of lead-free paints and the availability of controls for, and alternatives to abrasive blasting during the period that leaded paint still needs to be removed.) As indicated by the discussion in the exposure levels section, exposure levels in most of the problem operations are already less than 100 $\mu g/m^3$ more than 65% of the time. OSHA therefore concludes that, although these are the most difficult operations to control to or below 50 $\mu g/m^3$ control of these operations should not constitute an insurmountable obstacle.

OSHA wishes to emphasize that, in the nuclear segment of the industry, the very substantial reductions in exposure levels accomplished by existing controls have been achieved without any legal obligation on the part of employers to comply with 50 $\mu g/m^3$ by means of engineering and work practice controls. OSHA believes that, once the legal obligation to comply with 50 $\mu g/m^3$ comes into effect, further reductions will take place. OSHA also wishes to point out that the current level of control has been achieved by technology that is readily available and by conventional work practices. The further reductions that OSHA foresees also can be achieved by such controls. As GD has noted, the key to controlling excessive exposure levels often is likely to be appropriate work practices rather than the addition of complex and costly engineering controls (Ex. 688B, p. 4). This is especially true of operations conducted in confined spaces, where the use of engineering controls may sometimes be difficult.

In at least two cases of which OSHA is aware in the nuclear segment of the industry, control of excessive exposures in one company can be achieved by merely adopting simple techniques or practices used by the other company, like coating lead ballast materials to prevent oxidation or implementing the better work practices of the other company. In the first case, in lead ballast operations NNS has begun to paint lead ingots with an epoxy coat that prevents oxidation and therefore eliminates resulting exposures (Ex. 582-66, p. 22). OSHA is not clear whether NNS's coating of lead is limited to lead ingots or whether all lead bricks and shims also are coated. OSHA sees no reason why all ballast materials cannot be coated, including those that have recently been sawed and have newly-exposed lead surfaces. GD, at one time, did coat at least some of its lead ballast; but GD now states that it has eliminated that practice because the slippery coating created difficulty in handling the ballast. As a direct result of eliminating the practice of coating, lead exposures in ballast operations at GD have significantly increased (Ex. 688B, p. 11). Since NNS seems to have been able to cope with that problem and since OSHA is assured that non-slippery coatings are available to make coated ballast easier to handle (Ex. 610, pp. 21-22), OSHA is not persuaded by GD's assertions.

The second case involves carbon arc gouging, where current exposure levels are sometimes very high. NNS has claimed that there is no known engineering technology that can control exposure levels to 50 $\mu g/m^3$. However, nothing in NNS's submission suggests that the company has explored controlling carbon arc gouging by alternative methods. GD, on the other hand, has acknowledged that, in conjunction with local exhaust, exposure levels in this operation frequently can be controlled to 50 $\mu g/m^3$ by implementing careful work practices involving the precise adjustment of the arc height so as to prevent penetration of the steel and volatilization of the lead below the gouge (Ex. 688B, p. 13). OSHA believes this work practice can be adopted by NNS. However, because of the complexities of carbon arc gouging and the uncertainty of alternatives, OSHA acknowledges that it may be necessary for workers performing this task to wear respirators for supplementary protection.

Industry has made a number of other major objections to the feasibility of achieving 50 $\mu g/m^3$ by means of engineering and work practice controls in shipbuilding that OSHA wishes to address. These objections involve control problems in confined spaces; high exposure levels in shops where allegedly state-of-the-art engineering controls have been installed; production problems associated with controls for abrasive blasting; and contractual problems associated with caulking as an alternative to tinning and bonding.

With regard to operations in confined spaces onboard ship, industry argues that it is generally impossible to utilize engineering controls and that where engineering controls have been used, exposure levels are significantly above 50 $\mu g/m^3$. Although OSHA recognizes that there can be problems in using engineering controls in confined spaces, OSHA believes that in many confined spaces portable local exhaust systems can be used (Ex. 610, p. 23). In addition, OSHA agrees with GD's statements that proper work practices are crucial for local exhaust to be effective, because the positioning of the local exhaust largely determines its collection efficiency (Ex. 688B, p. 2). Moreover, OSHA believes that some operations done in confined spaces can be moved to fixed facilities offship, which can be more effectively equipped with ventilation systems. Finally, when individual employees have high 8-hour, time-weighted averages due to working in confined spaces, employers are authorized by paragraph (e) of the lead standard to use administrative controls to rotate employees, thus lowering the individual employee's exposures to lead. Under some circumstances where all engineering and work practice controls have been implemented and 50 $\mu g/m^3$ still has not been achieved, OSHA recognizes that employers may have to rely on respirators as supplementary protection for employees performing operations in confined spaces.

Industry also argues that, where certain operations are performed offship even when allegedly state-of-the-art engineering controls are implemented, exposure levels still have not consistently achieved 50 $\mu g/m^3$. However, NNS, the company making the objection, has not shown by its submission that it has implemented all available engineering and work practice controls in such offship facilities as its lead shielding panel shop or panel cutting shop. OSHA does not regard failure to achieve 50 $\mu g/m^3$ as proof of the infeasibility of achieving 50 $\mu g/m^3$. For example, in NNS's panel cutting shop, NNS concedes that it has not locally exhausted or enclosed the circular sawing of lead panels (Ex. 582-66, p. 14).

With respect to abrasive blasting, one method of paint removal, industry argues that exposure levels are extremely high and that additional control measures are impractical. Specifically, industry argues that the Blast 'n' Vac system is too slow and can only be used for horizontal blasting and that in hydroblasting the water may cause flash rust, which, NNS contends, would require additional dry blasting to remove. As indicated above, OSHA believes that there are many methods, which can be used either singly or in combination, to remove lead paint while effectively controlling air lead levels. For example, in at least certain circumstances blasting can be avoided entirely by the use of chemical cleaning (Ex. 582-66, p. 11). OSHA also agrees with its expert witness, Mr. Michael Larsen, who stated that antioxidants could be added to the water used in hydroblasting to prevent oxidation altogether (Ex. 610, p. 20). Finally, the fact that it may require more time to conduct an operation in a manner that adequately protects employees does not, under the OSH Act, constitute proof of infeasibility. OSHA believes that, either alone or in combination with other methods, Blast 'n' Vac or hydroblast can be effectively used to remove leaded paint.

With regard to putative contractual problems associated with alternatives to tinning and bonding, industry agrees that caulking can be used to fill lead joints around shielding panels but argues that caulking as a substitute for burning is not always acceptable to clients like the Navy. This suggests that caulking is acceptable at times. Indeed, NNS acknowledges that caulking is acceptable to the Navy on aircraft carriers and presumably on other nuclear surface vessels and further implies that even on nuclear submarines caulking is allowed by the Navy to a limited extent as a substitute for burning (Ex. 582-66, pp. 18-19). Moreover, the record does not show any attempt by industry to secure the Navy's approval of caulking as a substitute for burning. The record does show, on the other hand, that industry was successful in securing approval from the Navy for the use of lead-free paint, which the Navy previously had prohibited (Ex. 582-66, p. 6). Consequently, OSHA believes contractual problems do not impose the degree of limitation on industry practice that NNS seems to suggest and that industry has at least some flexibility in this regard to select the method of production that causes the lowest airborne lead levels.

Finally, OSHA wishes to comment on the quality and method of presentation of the data supplied by this industry. First, despite the fact that OSHA requested raw air lead monitoring results, the two nuclear shipyards did not supply OSHA with individual air lead monitoring results by job category for a period of several years but, at best, submitted average air lead levels or frequency distributions.

Second, the averages appear to be arithmetic means. As a result, they have only limited reliability as indicators of air lead levels, since one or several very high monitoring results can upwardly skew the average. For example, at NNS one monitoring result for interior blaster during 1985-86 was 60,000 μg/m^3 (Ex. 582-66, Table II). This result dramatically skewed the arithmetic mean upward.

Third, this problem is further compounded by the additional fact that averages and frequency distributions submitted by NNS and GD incorporate exposure levels for several years. As a consequence, OSHA cannot easily ascertain whether recent exposure levels show any improvement. Consequently, OSHA has had to discount certain industry data or evaluate it in conjunction with whatever other supplemental data were in the record.

Last, NNS, the company that submitted the most extensive comment to the record, claims that a PEL of 50 μg/m^3 cannot be achieved exclusively by means of engineering and work practice controls. As indicated previously, NNS's contention contradicts its own submission to the record. That submission shows that in 16 of 26 lead operations at NNS, representing over 85% of all lead-exposed workers, most, or average air lead monitoring results already are at or below 50 μg/m^3 The submission further indicates that, in three other operations, close to a majority of monitoring results already are at or below 50 μg/m^3 (Ex. 582-66, Table II). This level of control has been achieved before taking into account OSHA's recommended additional controls, which, OSHA anticipates, will substantially reduce exposure levels in every operation where they are implemented.

Thus, for all the above reasons, OSHA is unpersuaded by industry's arguments that the PEL cannot be achieved by means of engineering and work practice controls. Based upon its own expertise, experience, and the record evidence, OSHA concludes that a PEL of 50 μg/m^3 is achievable in the shipbuilding and repair industry as a whole by means of engineering and work practice controls.

Industry Profile. Of interest in this rulemaking are those establishments engaged in any of the following activities: nuclear shipbuilding, other non-nuclear military and commercial shipbuilding, and ship repairing. Most of these establishments are classified under Standard Industrial Code 3731, though there may also be small, captive yards for which the primary activity of the owner is something other than shipbuilding and repairing and which may fall under some other SIC classification. The sizes of the shipyards and the types of vessels being built or repaired vary widely.

Census data revealed 689 shipyards in SIC 3731 as of 1982 [Ex. 572, p. 36]. Four hundred twenty of these shipyards were reported to employ fewer than 50 workers. In its Addendum to its Analysis of the Shipbuilding and Repair Industry [Ex. 686b], Meridian places the number of shipyards in business at 400 in 1986, with size distribution (by production employment) as follows: 1-20 production employees, 153 yards; 21-50, 82 yards; 51-100, 70 yards; 101-200, 41 yards; 201-1000, 43 yards; and over 1000, 11 yards [Ex. 686b, pp. 2-3].

Total shipyard employment was reported to be 139,900 in 1985 in SIC 3731 [Ex. 572, p. 4]. Total production employment (employees performing both construction and repair) as of October 1986 is estimated at 104,750 [Ex. 686b, pp 2-3], or about 75 percent of the total shipbuilding and repair employment.

OSHA estimates that approximately 24,000 workers in shipbuilding and repair are potentially exposed to airborne lead. The portion of the workforce which is potentially exposed to lead through welding, cutting, painting, and blasting activities in non-nuclear shipyards is estimated to be 22,550 [Exs. 686b, p. 2; 572, p. 70]. With regard to activities related solely to nuclear yards, another 1,529 workers are estimated to be exposed [Exs. 582-66, Table I; 688B].

On a world scale, the "commercial shipbuilding industry is in the longest and worst slump of the post-World War II period" [Ex. 572, p. 30], and competition is intense. Meridian reports that Japan's 37 percent of gross tonnage on order as of 1986 leads the world, with other major competitors being West Germany, the Netherlands, South Korea, Singapore, Hong Kong, and Taiwan [Ex. 572, p. 30]. The U.S. industry has advantages in its high quality and fast turn-around; it is not, however, competitive with regard to price [Ex. 572, p. 30]. Indeed, foreign yards may actually build a vessel at less than half the price charged by a U.S. yard [Ex. 572, p. 32].

In its report, Meridian Research noted that

> [t]he industry can be divided into "first-tier" and "second-tier" shipyards. First-tier shipyards build and repair large ocean-going vessels and naval vessels. Second-tier shipyards primarily build and repair barges, tugboats, and towboats used for inland and coastal water transportation; drill rigs, supply boats, and crewboats for the offshore service industry; and fishing vessels [Ex. 572, p. 1].

Distinctions are also made between shipbuilding and ship repair yards, major shipyards, and the Active Shipbuilding Base. In general,

> a shipbuilding yard must have at least one shipbuilding position an—inclined way, a side launching platform, or a building basin—while a repair yard does not have such a position [Ex. 572, p. 36].

Major Shipyards are the largest facilities and in 1986 there were 25 such yards employing just under 102,000 total workers [Ex. 572, pp. 38-41]. A Major Repair facility may construct ships smaller than 475 feet in length. In 1986 there were 30 major repair facilities employing about 8,400 workers [Ex. 572, pp. 38, 42-44]. Major Topside Repair facilities, of which there were 38 in 1986, may construct the same size vessels as the Major Repair yards, and may also have dry-docks. Approximately 6,900 workers are employed in these facilities [Ex. 572, pp. 38, 45–48].

The Maritime Administration defines the Active Shipbuilding Base as those shipyards that are open and currently engaged in or seeking contracts for the construction of ships of 1,000 gross tons or more. There were 22 such yards in 1986 compared with 24 in 1985 and 26 in 1980. Employment for this group of yards is estimated at 72% of the total workforce in SIC 3731 [Ex. 572, p. 45]. Of these 22 yards, 19 are Major Shipbuilding yards and 3 are Major Topside Repair yards. In 1986, 9 yards were engaged in construction and/or conversion of major combat ships for the Navy, 6 yards were engaged primarily in ship construction and conversion work for the Navy's T-ship program, 3 yards were engaged in the construction of 7 commercial vessels, and 4 yards were engaged in only repair and overhaul work and non-ship construction [Ex. 572, p. 45]. There are currently only two private shipyards in the United States which construct nuclear-powered vessels.

With regard to small yards,

[t]here are virtually no data on shipyards with fewer than 20 employees as a group. Shipyards of this size tend to be excluded from discussion—and seem almost to be excluded from verbal definitions—of the shipbuilding and repair industry [Ex. 572, p. 50].

These small yards make up about one-third of the total number of yards while accounting for about 2.2 percent of total employment [Ex. 686b, pp. 2–3].

Commercial production in first-tier yards (which includes all of the yards in the Active Shipbuilding Base) has been minimal since 1980, with no new merchant vessel contracts entered into in 1985 or in 1986 [Ex. 687–3]. First-tier yards are also engaged in Naval construction, however, and this has been their strength, as substantial orders for construction and repair work were contracted for in 1986 [Ex. 572, p. 18]. In second-tier yards, production of nearly all types of power-driven vessels and barges declined markedly between 1982 and 1984 [Ex. 572, p. 18]. Repair work in second-tier yards has also declined, but stability can be found in some areas [Ex. 572, p. 24].

Regarding commercial shipbuilding demand, Meridian pointed out that

[d]emand for commercial shipbuilding is a derived demand. It depends on several factors, which include demand for shipping services, size and capacity of available fleet, and extent of foreign competition None of these has favored U.S. commercial shipbuilding in recent years [Ex. 572, p. 24].

Worldwide overcapacity was specifically cited by Meridian as an important problem with respect to the demand for commercial shipbuilding [Ex. 572, pp. 24, 28].

Subsidies are available in the form of Construction Differential Subsidy (CDS) grants or financing guarantees (Title XI of the Merchant Marine Act of 1936 and amended in 1972). No CDS contracts were awarded in fiscal year 1985, while commitments approved in that year for financing guarantees totaled $20 million, with pending applications for $99 million more [Ex. 572, pp. 28–29].

With respect to repair work, the strongest element in the market is the Navy's ship repair and maintenance program, with commercial yards getting about one-third of this work [Ex. 572, p. 29]. The National Defense Reserve Fleet (NDRF) is also a source of repair work, with $45 to $60 million in annual work expected for the 86 ship Ready Reserve Force [Ex. 572, pp. 29–30]. Meridian points out that U.S. yards are more competitive in the world repair market than they are in construction (Ex. 572, p. 29].

Aggregated 1986 Dun & Bradstreet financial data (SIC 3731) for the industry as a whole indicate that the mean return on sales was about 1.8% [Ex. 572, p. 53]. Disaggregated data show a somewhat higher mean return on sales for small firms (under $1,000,000 in assets) and a negative mean rate of return on sales for some larger firms, though third quartile return on sales figures approached 3 percent for these firms [Ex. 572, pp. 53–54]. No establishment-specific financial data were provided during the public comment period or the public hearing for the non-nuclear shipyards. Company data on nuclear shipyards indicate average operating profits for 1986 of approximately $200,000,000 [Ex. 572, p. 56].

Costs of Compliance. The compliance costs for the Shipbuilding and Repair sector consist of costs for enclosed bandsaw booths (used during the sawing of lead pigs into ballast for nuclear submarines), HEPA vacuums, and for controlled blasting units. Required improvements for casting operations are minimal, and thus costs were assumed to be negligible. Ventilation for "hot work" (welding, burning, cutting, etc.) performed in the assembly shop or on board vessels is estimated to be currently in use, and thus no costs will be incurred for this equipment [Ex. 572, pp. 60, 64]. Additionally, no costs were assumed to be incurred in the substituting of caulking for burning, since both techniques require local ventilation. Also, no costs have been estimated for the coating of lead ballast to reduce exposures during ballast passing, as one of the two yards is currently working to develop a suitable coating [Ex. 688B] and the other is already coating a part of its lead ballast with epoxy paint [Ex. 582–66, p. 22]. Additional costs attributable to this rule are assumed to be negligible.

An enclosed bandsaw booth is estimated to cost $12,000. Annual costs include annualized capital charges of $1,762 plus operation and maintenance costs of $1,200 for a total of $2,962 [Ex. 572, pp 64–65].

The cost of a portable vacuum is estimated to be $3,900 [Ex. 579, p. 29]. Annualized capital costs would be $572, while operation and maintenance costs would be $2,390. (Annual operation and maintenance costs were estimated to be 10 percent of capital costs plus $2,000 per year for HEPA filter replacement). It is estimated that two sweepers will be required for each nuclear shipyard. Additional labor is estimated to be $4,060 annually, based on 1 person-hour per day, 7 days per week, and 50 weeks per year at an average wage of $11.60. Total annual costs for vacuum sweeping are thus estimated to be $8,840.

The cost of a vacuum-controlled blasting unit is estimated to be $5,060 per unit. Annual costs (computed using an expected useful life of five years) would amount to $1,335 in annualized capital charges only; operation and maintenance expenses are expected to be offset by the savings realized due to the environmental efficiency of the equipment. (That is, the recommended equipment eliminates considerable expense for clean-up) [Ex. 572, p. 66]. The cost of the wet blasting unit is estimated to be $360. Annual costs for this unit include $207 in annualized capital charges (using an expected useful life of two years) plus $36 in annual operation and maintenance costs for a total annual cost of $243 [Ex. 572, p. 65].

Total industry costs for controlled blasting are based on allocating the average number of controlled blasting units required per yard according to the number of potentially exposed workers per yard. Tables 1 and 2 provide a summary of the average number of blasting units required per yard, the number of yards, and the total annual costs for each of six shipyard size categories and for each of the three types of shipyards. Table 1 addresses the vacuum blast option and Table 2 addresses the wet blast option. Using this methodology, total annual costs of $11,026,110 are expected to be required for vacuum units and $8,469,738 for the wet blast units. While the wet blasting units appear less costly than the vacuum units, the wet blast units will produce a lead-contaminated solution which will need to be disposed of as a hazardous waste in accordance with EPA regulations, at additional cost to the shipyard. Also, this method of controlled blasting may oxidize the stripped surface and thus may necessitate a dry blast to remove the oxidation at additional cost [Ex. 582–66, p. 10].

In addition to the annualized capital costs of vacuum units, the annual cost amount presented in Table 1 includes costs for additional labor, as the vacuum blast system may require more time to use than conventional blasting equipment [Ex. 582–66, p. 9]. It is assumed that one additional worker will be hired for every 10 blasting units, wet or vacuum. Additional costs for these workers are based on an annual total compensation cost of $33,750. Since the environmental waste disposal problem exists for wet blast units, OSHA assumes in this analysis that industry will opt for the vacuum units. Cost estimates for these units as developed in this analysis overstate actual costs to the extent that leaded paints are being replaced with non-leaded coatings. That is, costs will decline over time as non-leaded coatings are substituted for coatings containing lead.

The total annual costs for nuclear shipyards include costs for bandsaw enclosures (six for each yard), HEPA vacuums, and 50 blasting units. Total annual costs for the bandsaw enclosures are estimated to be $17,772, total annual costs for vacuum sweeping were estimated at $8,840, and total annual costs for the blasting units would be $235,500. Total annual costs for each of the two nuclear yards would thus be $262,112. Total annual costs for non-nuclear yards are for vacuum blasting units only, and appear in Table 1. Cost per yard will vary, depending upon the number of blasting units that are required. Annual costs range from $4,710 for the smallest yards to $235,500 for the largest. As shown in Table 1, total annual costs for non-nuclear construction yards are estimated to be $5,284,620 and those for non-nuclear repair yards are estimated to be $5,270,490.

Total industry costs would be $11,079,334. This total includes $524,224 for the nuclear segment of the industry and $10,555,110 for non-nuclear yards.

TABLE 1.—COSTS OF VACUUM BLASTING UNITS

Shipyard size and related variables	Nuclear construction yards	Non-nuclear construction yards	Repair yards
1–20 Production workers			
Number of blasting units/yd		1	1
Total annual cost/yd		$4,710	$4,710
Number of yards		18	135
21–50 Production workers			
Number of blasting units/yd		2	2
Total annual cost/yd		$9,420	$9,420
Number of yards		33	49
51–100 Production workers			
Number of blasting units/yd		3	4
Total annual cost/yd		$14,130	$18,840
Number of yards		36	34
101–200 Production workers			
Number of blasting units/yd		5	8
Total annual cost/yd		$23,550	$37,680
Number of yards		21	20
200–1000 Production workers			
Number of blasting units/yd		17	30
Total annual cost/yd		$80,070	$141,300
Number of yards		25	18
>1000 Production workers			
Number of blasting units/yd	50	50	50
Total annual cost/yd	$235,500	$235,500	$235,500
Number of yards	2	8	1
Summed Annual Costs	$471,000	$5,284,620	$5,270,490
Total Annual Costs			$11,026,110

Source: Occupational Safety and Health Administration, Office of Regulatory Analysis. (Adapted from Ex. 686b, pp. 2–3).

TABLE 2.—COSTS OF WET BLASTING UNITS

Shipyard size and related variables	Nuclear construction yards	Non-nuclear construction yards	Repair yards
1–20 Production workers			
Number of blasting units/yd		1	1
Total annual cost/yd		$3,618	$3,618
Number of yards		18	135
21–50 Production workers			
Number of blasting units/yd		2	2
Total annual cost/yd		$7,236	$7,236
Number of yards		33	49
51–100 Production workers			
Number of blasting units/yd		3	4
Total annual cost/yd		$10,854	$14,472
Number of yards		36	34
101–200 Production workers			
Number of blasting units/yd		5	8
Total annual cost/yd		$18,090	$28,944
Number of yards		21	20

TABLE 2.—COSTS OF WET BLASTING UNITS—Continued

Shipyard size and related variables	Nuclear construction yards	Non-nuclear construction yards	Repair yards
200–1000 Production workers			
Number of blasting units/yd		17	30
Total annual cost/yd		$61,506	$108,540
Number of yards		25	18
>1000 Production workers			
Number of blasting units/yd	50	50	50
Total annual cost/yd	$180,900	$180,900	$180,900
Number of yards	2	8	1
Summed Annual Costs	$361,800	$4,059,396	$4,048,542
Total Annual Costs			$8,469,738

Source: Occupational Safety and Health Administration, Office of Regulatory Analysis. (Adapted from Ex. 686b, pp. 2-3).

Economic Feasibility. Nuclear construction yards will bear about 4 percent of the total annual costs of this regulation. These yards should be able to pass all costs through to the government. Though Mr. James R. Thornton of Newport News Shipbuilding, one of the two yards performing nuclear construction for the government, commented that its Navy contracts "are 'fixed price' and do not allow for recovery of costs in excess of the fixed or ceiling price" [Ex. 582-66, p. 1], alternatives for the Navy are limited. Even if contractural arrangements preclude the immediate pass-through of the $262,112 in annual costs borne by each yard, which would necessitate a price increase of about 0.02 percent based on sales of $1.65 billion [Ex. 572, p. 71], it does not appear that the nuclear shipyards would be adversely affected by these annual costs. Costs of this regulation would be expected to reduce the average operating profit of $200 million for these yards by about 0.13 percent.

There are 141 non-nuclear construction yards and 257 non-nuclear repair yards [Ex. 686b, p. 3]. 1986 Shipments data and profit information broken out by function and size pertaining to these yards appear in Table 3, along with costs incurred for vacuum blast units and impact ratios.

TABLE 3.—SUMMARY OF ECONOMIC IMPACTS FOR NON-NUCLEAR CONSTRUCTION AND REPAIR YARDS—VACUUM BLAST

Size class	Sales ($ thous.) [a]		Profits ($ thous.) [b]		Costs ($ thous.)		Ratio: costs/sales		Ratio: costs/profit [c]	
	C[d]	R[e]	C	R	C	R	C	R	C	R
1-20	1376	1330	71.55	69.16	4.71	4.71	0.00342	0.00354	0.05198	0.05415
21-50	3753	3538	−67.55	−63.68	9.42	9.42	0.00251	0.00266	−0.13944	−0.14792
51-100	7568	7285	−136.22	−131.13	14.13	18.84	0.00187	0.00259	−0.10373	−0.14367
101-200	14743	13932	−265.37	−250.78	23.55	37.68	0.00160	0.00270	−0.08874	−0.15025
201-1000	46564	36120	1350.36	1047 48	80.07	141.30	0.00172	0.00391	0.03914	0.08903
>1000	328176	136224	9517.10	3950.50	235.50	235.50	0.00072	0.00173	0.01633	0.03934

[a] Sales were obtained by subtracting sales of nuclear yards from total industry shipments and allocating the remaining shipments value among size classes by share of production employment. Total shipments for each size class were then divided by the total number of shipyards in each class (number of shipyards in each class appear in Tables 1 and 2).

[b] Profits for size class 1-20 were calculated using a Return on Sales (ROS) rate of .052.
Profits for classes 21-50, 51-100, and 101-200 were calculated using an ROS of −.018.
Profits for classes 201-1000 and >1000 were calculated using an ROS of .029.
Profits are after taxes. [Ex. 572, pp. 53-54].

[c] See text for derivation. Profit impacts were computed using the following federal income tax schedule: 1-20 workers: 0.21; 21-50, 51-100, and 101-200 workers: 0.0; 201-1000 and >1000 workers: 0.34.

[d] Construction yards.

[e] Repair yards.

Source: Occupational Safety and Health Administration, Office of Regulatory Analysis.

As can be seen in the table, no shipyard category has a ratio of costs to sales greater than 0.40 percent. The price increases required to pass the costs of compliance forward are small, ranging from a low of about 0.07 percent for the largest construction yards to a high of 0.40 percent for repair yards with between 201 and 1,000 production employees.

Cost pass-through, at least partially, should be possible for all yards, including those doing construction and repair work for the U.S. Navy and for those yards operating in protected or captive markets.

If the costs of compliance were to be absorbed by these firms, the impacts on profits can be estimated from the cost to profit ratio. Costs represent only about 1.6 percent of profits for construction yards with over 1,000 production employees but could increase losses over 15 percent for repair yards with between 101 and 200 production employees. It should be noted that the tax-deductibility of compliance costs was taken into account in computing profit impacts. That is, care was taken to compute before-tax profit before subtracting annual costs. After subtracting annual costs, the appropriate average tax rate (either 21 or 34 percent) was then reapplied to determine after-tax profit net of costs. Profits were calculated using an average financial statement [Ex. 572, pp. 53–54] and based on 1986 data provided by

Dun and Bradstreet. (See footnote "b, Table 3.)

More specifically, in three size categories, namely 21–50, 51–100, and 101–200 production employees, many construction and repair firms are not profitable. Should the demand for commercial shipbuilding not improve in the near future, many construction firms in these size categories may no longer be in operation at the time the standard takes effect. For those choosing to continue operations, full absorption of compliance costs could increase losses up to 14 percent. Full absorption of compliance costs could increase losses in some repair yards by as much as 15 percent.

While these profit impacts appear substantial, there are other points to consider in assessing the impacts of the rulemaking on these firms. One is that both repair yards and construction yards which perform repair in these size groups should benefit from the repair work required for the Ready Reserve Force of the U.S. Navy, as this work is required by law to be performed by U.S. shipyards [Ex. 572, pp. 29–30]. Also, a substantial amount of second-tier repair work is reported to be protected by legislation [Ex. 572, p. 77]. Second-tier repair of vessels traveling on U.S. waterways is also assured due to the fact that many of these vessels do not travel overseas [Ex. 572, p. 77]. A final consideration is that full cost absorption will reduce ROS for both categories of shipyard in these three size classes from −1.8 percent to about −2.1 percent, on average. These changes in ROS reflect the relatively low magnitude of the costs of compliance, as no yard in these three size categories is expected to incur more than $38,000 in total annual costs.

Absorbing the costs of compliance fully would impact profits for the remaining (profitable) shipyards by between 1.6 and 8.9 percent. The smallest yards would realize profit reductions of 5.2 to 5.4 percent, the largest yards could experience reductions of 1.6 to 3.9 percent, and the 201–1,000 employee category could see reductions of 3.9 to 8.9 percent. It should be noted that this latter category contains a number of major yards which are part of the Active Shipbuilding Base and demand for U.S. Navy ships will continue to provide construction work for these yards. Post-compliance ROS for the smallest yards was estimated to be 4.9 percent; for the 201–1,000 employee category, a range of 2.6 (for repair yards) to 2.9 percent (for construction yards) was estimated; and for the largest yards, a range of 2.8 (for repair yards) to 2.9 (for construction yards) was estimated.

OSHA recognizes that the shipbuilding and repair industry in this country is in a state of contraction. The number of shipyards in operation has fallen from 689 in 1982 to the current estimate of approximately 400, a decrease of 42 percent. These data, coupled with the reported worldwide shipping overcapacity, indicate that this contraction is likely to continue. The impact of the OSHA lead rulemaking should not be a significant factor in the restructuring of this industry which is occurring in response to the prevailing economic environment.

OSHA notes that the issue of availability with regard to the wet blast units was raised in the record [Ex. 686b, pp. 11–12]; though a compliance period extension might prove useful to the manufacturer(s) of the wet blast technology, OSHA does not believe that such an extension is necessary. The two and one-half year compliance schedule should allow sufficient time to expand production (as noted by one manufacturer [Ex. 686b, p. 11]).

OSHA concludes that the standard, as it applies to the Shipbuilding and Repair industry, is economically feasible in an extended compliance period of two and one-half years. Larger yards performing work for the U.S. Navy, both nuclear and non-nuclear, should have the ability to pass forward all compliance costs. Additionally, worldwide overcapacity suggests that many marginal yards employing 21–200 workers will no longer be in operation at the end of the two and one-half year compliance schedule. Many other shipyards should be able to pass forward most, if not all, of the cost increases identified in this analysis due to the existence of protected and captive markets. Combinations of cost pass-through and cost absorption will reduce the respective magnitudes of the impacts associated with each compliance scheme to levels that should not materially worsen the competitive or financial status for these yards. Finally, all yards will benefit from the two and one-half year compliance schedule, allowing additional time to raise capital and/or effect gradual price increases.

Stevedoring Process Description and Exposure Areas. Stevedoring involves loading and unloading ores to and from ships. A typical stevedoring operation takes several days or several shifts to complete. The ores are either loaded from dockside warehouses to ships or unloaded from ships directly to trucks or gondola railcars positioned along side the ship. The ores can also be stockpiled in dockside warehouses for later land transit or loading aboard ships (Exs. 475–17 H–004E, p. 1; Ex. 582–14, p. 1).

Initially lead ores are unloaded or loaded by gantry cranes or mobile cranes that use clamshell buckets to pick up the ore. During this phase of the operation, longshoremen are not present onboard the ship (Ex. 5B2–14, p. 1). As the pile is worked down, industrial front-end loaders are lowered into the hatch to pile the ore in the center of the ship to be picked up by cranes. Near the end of the job, sweepers/trimmers shovel and/or sweep the remaining ore from between the vessel ribs into the clamshell bucket to be lifted out of the hatch (Exs. 475–17 H–004E, p. 2; 577· 582–14, p. 1).

Workers are potentially exposed to lead whenever the ores being loaded or unloaded contain lead. Dockside workers (crane operators, foremen, gang workers) may be exposed to blowing dust from stockpiles, vessel operations, and spills. Employees working in the hatch (foremen, operators of cranes and front-end loaders, sweepers/trimmers) are generally subjected to higher levels of lead exposure than dockside workers because they are closer to the ore and may be working in limited spaces. (Ex. 686G, p. 3).

Exposure Levels and Controls Currently Used. In stevedoring, the most recent exposure data in the record indicate that in almost all operations exposure levels are at or below 50 $\mu g/m^3$ (Ex. 612, p. 5).

OSHA has relied primarily on current data gathered by OSHA expert witness Howard Spielman, president of Health Science Associates (HSA). These comprehensive data consist of 201 8-hour, time-weighted average (TWA) exposures determined from samples gathered in 1984–85 during five complete stevedoring lead ore transfers. The HSA data reveal that 85% of all samples are at or below 50 $\mu g/m^3$ and in 10 of 11 operations a majority of samples also are at or below 50 $\mu g/m^3$ (Exs. 612, p. 8; 686G, pp. 4, 5).

Exposures of almost all employees who worked on deck and dockside were below the action level. Specifically, 97% of those exposures were below 30 $\mu g/m^3$ while only 3 of 148 sample results exceeded 50 $\mu g/m^3$ (Ex. 612, pp. 5, 8).

For work inside the hatch where exposure levels generally are higher, in two of the three operations a majority of sample results are at or below the action level. In one of those operations, bulldozing, 68% of the sample results were at or below 50 $\mu g/m^3$ and 59% of the sample results were below the action level. These results were obtained even though none of the bulldozers had enclosed cabs (Ex. 612, pp. 3, 9).

In the HSA data, the only operation that has exposure levels consistently above 50 $\mu g/m^3$ is sweeping/trimming. Spielman reported that all sweeping/trimming to remove remaining ore was done manually with brooms, shovels and hoes (Ex. 612, p. 2). No HEPA vacuums or water spraying systems to suppress dust levels were in use; the operation was virtually uncontrolled. Exposure levels ranged from 17 to 1,348 $\mu g/m^3$ with an average of 292 $\mu g/m^3$ (Ex. 612, p. 9). OSHA notes, however, that excessively high exposures in one out of 34 work shifts upwardly skewed the overall average (Ex. 612, Att. 4, Table IX). The average for that one particular shift was 939 $\mu g/m^3$ while the average for the other shifts was only 113 $\mu g/m^3$ There was no explanation of whether any spills or any particular atmospheric condition affected the sample results of that shift.

As previously noted, engineering controls were not used during these transfers, but workers were trained in the hazards of lead exposure prior to each shift. Spielman also reported the ore was damp because it was exposed to "ocean atmospheric conditions" during transit. Those conditions, in effect, acted similarly to water spray systems used to suppress lead dust during loading and unloading. In any event, even without implementation of engineering controls, the HSA data indicate that almost all stevedoring operations are currently at or below 50 $\mu g/m^3$ (Ex. 612, pp. 8, 9).

OSHA data, collected from one site during a 1984 inspection, corroborate the HSA data. The OSHA data show that only one of seven workers (job titles not specified) was exposed over 50 $\mu g/m^3$ That employee was exposed to 67 $\mu g/m^3$ which indicates that, with just a slight improvement in controls, exposure levels for all employees should be controlled to or below 50 $\mu g/m^3$ (Ex. 577 p. 7).

The degree of control achieved recently by stevedoring companies through work practices reflects a significant reduction in lead exposures over a short period of time. For example, in 1982 ASARCO reported that exposures for all crews were uniformly above 50 $\mu g/m^3$ and often above 200 $\mu g/m^3$ even though the moisture content of the ore was 4.5% and a fogging nozzle was also used to wet down the ore before unloading and after every 6 to 8 railcars had been loaded. Average exposures were 180 $\mu g/m^3$ for foremen, 415 $\mu g/m^3$ for payloader operators and 211 $\mu g/m^3$ for sweepers/trimmers. The fact that the exposure range for sweepers/trimmers was 130 to 310 $\mu g/m^3$ significantly lower than the range reported in HSA's data during one particular shift, also supports OSHA's finding that the high levels in that shift were aberrant (Exs. 2-7 H-004S, p. 7· 577 p. 4).

OSHA notes that on the day the ASARCO data were collected holes were found in the rubber sock, a chute-like device used to reduce the amount of ore blown during discharge of ore from the clamshell bucket (Ex. 2-7 H-004S, p. 3). The empty clamshell returning to the hold also dropped ore which had adhered to the sides of the clamshell. In addition, gusty winds were present that day which, in combination with the spills from the clamshell bucket, are likely to have contributed to the high exposure levels of dockside workers, who normally would have low exposures (Ex. 2-7 H-004S, p. 3).

As stated above, very few control measures are currently employed by the stevedoring industry to reduce employee exposure to lead. Although the controls that are currently used (i.e., rubber sock and water spray) contribute to the reduction of employee exposures to lead, they are designed to reduce dust emissions in general and not specifically to reduce the lead exposures of employees handling the ore (Exs. 577 p. 24; 583-63, p. 1). Currently, work practice controls are the primary means used by stevedoring companies to reduce employee exposures to lead. Spielman reported that most shifts in the hatch are limited to less than 4 hours, employees are trained at the beginning of each shift in the hazards of lead exposure and foremen observing work in progress initiate corrective actions as appropriate (Ex. 612, pp. 3-4). Some stevedoring companies are starting to use cranes and front-end loaders with enclosed cabs to move the ore and suction trucks instead of using manual sweeping/trimming (Ex. 583-63, p. 1).

Additional Controls. OSHA's analysis of the record in the previous section indicates that in almost all operations exposure levels already are at or below 50 $\mu g/m^3$ most of the time (Exs. 577 pp. 4, 8; 612, pp. 8-9). Eighty-five percent of all sampling results are at or below 50 $\mu g/m^3$ and a majority of sampling results in 10 of 11 operations are at or below 50 $\mu g/m^3$ In addition, the vast majority of all sampling results are below the action level. Based upon that record and OSHA's own experience and expertise, the Agency has concluded that in nearly all operations exposure levels can be controlled consistently to or below 50 $\mu g/m^3$ with a modest modification or addition of controls, such as improving work practices, housekeeping, and maintenance or, in certain situations, enclosing cabs of mobile equipment. In sweeping/trimming, the only operation where exposure levels are not already at or below 50 $\mu g/m^3$ controlling exposures to or below 50 $\mu g/m^3$ will require implementation of some engineering controls (e.g., HEPA vacuums or slurry pumping systems) as well as additional work practice controls (Ex. 686G, pp. 6-7· Tr. 359, 368-69).

OSHA finds that in the stevedoring industry there are many available and simple engineering controls to further reduce employee exposure to lead, if necessary. For example, if exposures of mobile equipment operators are a problem, they can be reduced significantly by enclosing cabs and equipping them with tempered air and HEPA filters (Ex. 686G, p. 6). To ensure that operators keep the cab doors closed, a communication system, such as two-way radios, should also be provided. These control technologies have proven successful in other industries and OSHA determines that these controls can be applied to the stevedoring industry to consistently control exposure levels to or below 50 $\mu g/m^3$ (Ex. 604, p. 4).

There are other available engineering controls that can be implemented in this industry to reduce employee exposures. The exposures of employees can be reduced during loading and unloading by the use of the properly maintained rubber sock over the clamshell bucket to confine dust emissions as the ore is being discharged (Ex. 2-7 p. 5). The use of clamshell buckets to move the ore may even be replaced by automated, enclosed conveyor and chute systems which will eliminate employee exposures due to spillages from overloading the clamshell bucket (Ex. 577 p. 25). Finally, the use of two-ton superbags, otherwise known as Flexible Intermodal Bulk Containers (FIBCs), is another alternative to loading and unloading lead ore as a loose bulk cargo. FIBCs completely contain the ore, thus minimizing or eliminating the potential emission of dust. FIBCs have been used successfully in the stevedoring industry to handle other hazardous materials and have been tried with lead ore (Ex. 583-63, p. 1). OSHA determines that the use of FIBCs should largely eliminate the overexposure of workers in this industry.

In addition to engineering controls, good work practices are essential to achieve 50 $\mu g/m^3$ They also are effective and low-cost ways of reducing employee exposure to lead. For example, standing upwind of the discharge pile and away from the immediate vicinity of the emissions source will reduce the exposure levels of both dockside and hatch workers (Ex. 577 pp. 24–25). Frequent wetting of the ore with a fogging nozzle or other water sprayers to suppress blowing dust will further reduce employee exposures. HSA reported that the lead ore in the five transfers was damp due to ocean atmospheric conditions. The HSA data indicate that maintaining the dampness of the ore is a successful method to control employee exposures (Ex. 612, p. 1).

Exposures that result from spillages can also be reduced by appropriate work practices. By exercising greater care in crane operation so the clamshell bucket is not overloaded and by machining down the ridge of the bucket so lead ore does not adhere to the sides, spillages will be minimized, thus reducing exposure levels of employees. In the event of a spillage, immediate wetting down or vacuuming the spills will also control employee exposures (46 FR 6221, January 21, 1981; Ex. 620).

With regard to sweeping/trimming, the only operation in which exposures are generally above 50 $\mu g/m^3$ exposure levels can be reduced to or below 50 $\mu g/m^3$ through implementation of simple work practices and engineering controls which are readily available. The exposures of sweepers/trimmers can be reduced significantly by using a vacuum collection system rather than manually sweeping the remaining ore in the hatch. Instead of dry-sweeping, sweepers/trimmers can also wash down remaining material to create a slurry that can be pumped to dockside stockpiles or railroad cars (Ex. 686G, p. 7). Not only will this technique contribute to the reduction of exposure for sweepers/trimmers, but also it will reduce exposures of dockside workers by minimizing dust blowing from stockpiles (Tr. 359). In cases where manual sweeping/trimming continues to be used, providing portable ventilation systems should reduce exposure levels of these employees.

Implementation of administrative controls, which are part of work practice controls, will complement the effectiveness of engineering controls. For example, limiting the number of hours sweepers/trimmers spend in the hatch or making sure these employees stay out of the hatch until after the front-end loaders have finished their operation will greatly reduce their exposure levels (Ex. 612, pp. 2–4). According to Spielman, sweepers/trimmers worked less than 4 hours in the hatch during any one shift (Ex. 612, p. 3).

Technological Feasibility Conclusion. Based upon the above analysis of the evidence in the record and OSHA's experience and expertise, the Agency determines that achieving a PEL of 50 $\mu g/m^3$ by implementing readily available and work practice controls is technologically feasible for the stevedoring industry as a whole.

Through its analysis of the record, OSHA has demonstrated that in the stevedoring industry exposure levels for almost all operations already are at or below 50 $\mu g/m^3$ This conclusion is in part based upon the fact that for almost all operations almost all sampling results are at or below 50 $\mu g/m^3$ OSHA's conclusion is also predicated upon its determination that for those operations where exposure levels are above 50 $\mu g/m^3$ exposure levels can be controlled consistently to or below 50 $\mu g/m^3$ by modest improvements in engineering or work practice controls. These readily available controls include installing enclosed cabs on mobile equipment; supplying these cabs with filtered air, HEPA filters and communication systems; wetting down the ore and spillages; using automated conveyor and chute systems; and replacing bulk cargo handling with FIBCs (Exs. 577 pp. 24–26; 612, p. 6).

For sweeping/trimming, the only operation which is not currently at or below 50 $\mu g/m^3$ OSHA has determined that implementation of some engineering controls and improved work practices can reduce employee exposure levels consistently to or below 50 $\mu g/m^3$ For this operation, engineering controls, such as vacuum and slurry pumping systems, are readily available. Maintaining lead ores wet throughout unloading and loading and limiting the time workers are in the hatch will substantially reduce employee exposure to lead dust. When these engineering and work practice controls are properly implemented, OSHA concludes that exposure levels in all stevedoring operations should be at or below 50 $\mu g/m^3$

Industry has raised a number of objections that OSHA wishes to address. In most of these objections industry argues that it should be exempted from paragraph (e)(1) of the lead standard (Exs. 2–7 p. 6; 475–15, H–004E, p. 5; 582–1, p. 1).

First, industry commenters argue the stevedoring industry should be exempted from paragraph (e)(1) of the lead standard, because current employee exposure levels that exceed 50 $\mu g/m^3$ are intermittent and no employee is exposed above the PEL for more than 30 days per year (Ex. 582–1, p. 1). Although, it appears on the basis of the record evidence that no employee currently is exposed above the PEL for more than 30 days per year. The Agency nonetheless must reject the request for an industry-wide exemption.

Even if no employee is currently exposed above the PEL for more than 30 days per year, these conditions may change. Demand for lead ore may increase or certain employers may choose to handle more shipments. Where employees are or become exposed above the PEL for more than 30 days in a year, OSHA is obligated to enforce the requirement of paragraph (e)(1) that the employer implement work practice and engineering controls to comply with the PEL. For that reason, among others, it would be inappropriate to grant an exemption to the industry from paragraph (e)(1).

Individual employers, and indeed all employers, may currently be entitled to the 30-day exemption in paragraph (e)(1), but that is not within the province of this rulemaking, which is examining the feasibility for the entire stevedoring industry of achieving 50 $\mu g/m^3$ by means of engineering and work practice controls. In an enforcement proceeding on a citation for failure to implement paragraph (e)(1), an individual employer may show as a complete defense that he or she is exempt from the requirements of that paragraph. If the employer qualifies for the exemption, he or she still must comply with the PEL, but may do so using any combination of controls, including respirators. Employers who can demonstrate that none of their employees are exposed above the PEL for more than 30 days per year will not be impacted by paragraph (e)(1) of the lead standard.

Second, the stevedoring industry contends that the stevedoring industry should be exempted from paragraph (e)(1) of the lead standard because it lacks the legal capacity to control exposures because the mobile equipment are not owned by the stevedoring companies (Exs. 2–5, p. 2; 475–17 H–004E, p. 1). OSHA does not regard the lack of ownership of the equipment as proof of infeasibility, since individual stevedoring companies can make appropriate contractual agreements with the owners of the equipment.

Third, industry contends that the stevedoring industry should be exempted because if it has to comply with paragraph (e)(1) of the lead standard, insurance carriers will stop insuring lead ore operations due to anticipated worker compensation claims. OSHA rejects this contention.

since the record indicates that the reason some insurance companies have terminated coverage for stevedoring employees is due to the industry's lack of compliance with the lead standard. For example, one insurance company stated explicitly by letter to a stevedoring company that it was unwilling to insure the handling of lead ore unless the stevedore took measures to control employee exposures (Ex. 2-1, H-004S, pp. 3-4).

Fourth, industry contends the stevedoring industry should be exempted from paragraph (e)(1) of the lead standard because stevedoring companies are unwilling to invest in such controls and may refuse to handle lead ores as a result (Exs. 2-1, H-004S, pp. 3-4; 582-1, p. 2; 582-5, p. 3; 582-9, p. 1). OSHA believes this is very unlikely to happen. In order to protect workers, OSHA regulates many substances, and industry nonetheless continues to handle or produce those substances. In any event, OSHA has no control over any stevedoring company's decision on whether to handle lead ores. The Agency is mandated by the Occupational Safety and Health Act of 1970 to develop and implement safety and health regulations to protect workers to the extent feasible. OSHA is not authorized to grant exemptions that effectively deny workers protection from health and safety hazards simply because an industry does not wish to expend the necessary effort to comply with a standard.

Finally, OSHA also determines that two other issues raised by industry commenters concerning the solubility of lead sulfide ores and health effects are not within the scope of the present remand rulemaking (Exs. 2-1, H-004S, pp. 5-8; 2-5, H-004S, p. 2; 475-17 H-004E; 582-5).

In conclusion, based on its analysis of the record, OSHA has determined that in the stevedoring industry it is technologically feasible to achieve the PEL exclusively by means of engineering and work practice controls.

Industry Profile. Stevedoring companies are those companies which arrange for the manpower to load or unload cargo from seagoing vessels. They are classified under SIC 4463.

The estimated number of stevedoring firms is 640, though only a minority of these firms are located in ports that handle lead shipments. Although some stevedoring companies may specialize in handling lead ores, it appears that, in any major port, there are several firms, perhaps a half dozen or more, that handle such cargo [Ex. 577 p. 19].

Total employment is estimated at 59,456 employees. This workforce has a high turnover rate, with workers entering, leaving, and re-entering the industry with relatively high frequency. Very few of these employees are involved in handling lead ore [Ex. 577 p. 2]. Information indicates that about 7 shifts and a crew of 10 to 14 workers per shift are required to unload a shipment of ore [Exs. 582-5, p. 9; 612, pp. 2-4]. Assuming 25 to 30 shipments per year yields a total of 2,100 to 2,500 workers potentially exposed to lead. This total represents no more than 4.2 percent of the total workforce.

The demand for stevedoring services is dependent upon the volume of material being traded. Import/export data for the period 1976-1986 tabulated by U.S. customs districts and by weight of the lead content of ore show that imports have been transported largely by rail. Total tonnage of imports was quite variable throughout the period, with no clear trend evident. Data for more recent years (1985-1986) indicate that imports by vessel have increased. With regard to exports of lead ore, vessel share has been on a long term downward trend [Ex. 577 pp. 10-15].

An examination of geographical distribution shows that waterborne imports of lead ore have been concentrated in a limited number of customs districts, notably St. Louis, Missouri, Seattle, Washington, and Houston-Galveston, Texas. Waterborne imports through these districts, however, have been erratic [Ex. 577 pp. 10-15].

Waterborne exports have most recently been handled through Seattle, Washington, New Orleans, Louisiana, and Portland, Oregon [Ex. 577 p 12].

Over the last decade, only a few ports have handled more than one or two shipments of lead ore annually.

The inability to acquire insurance has been cited by some commenters as one reason for foregoing the handling of lead bearing ores [Ex. 577 p. 16].

Financial data for SIC 4463 (Marine Cargo Handling) were obtained from Robert Morris Associates and indicate an industrywide median profit before taxes to total assets ratio of 3.1% for the latest reporting period (5/30/85 to 3/31/86). Ratios for earlier reporting periods, '83-'84 and '84-'85, were 1.8% and 5.5%, respectively [Ex. 577 p. 21]. Both average net sales and average profit before taxes increased between '83-'84 and '84-'85 industrywide (by 10% and 800%) but decreased over the following period (by 12% and 50%).

Costs of Compliance. The equipment required for unloading operations involving leaded ores include a portable skid-mounted sweeper at a cost of $50,000 per unit [Ex. 577 p. 27]. One unit per stevedoring firm would be required. Annualized capital costs (with an assumed useful life of twelve years and cost of capital of 10 percent) are $7,340. Operation and maintenance (O&M) expenses, estimated at 10 percent of capital plus $1,500 for filter replacement, would be $6,500.

Payloader cab enclosures and filters, estimated to cost $5,000 per vehicle, would also be required [Ex. 686c, p. 33]. Two such vehicles would need to be equipped per firm [Ex. 577 p. 271. (This cost may be avoided by those firms that rent payloaders). Annualized capital costs are $734 each and O&M expenses would be $3,600 each. Total annual costs for these enclosures are thus $4,334 per enclosure.

The estimated cost of acquiring a retro-fit clamshell cover is $800 to $1,000. Lips for the clamshell can also be retro-fit at $2,500 to $3,000.

Slurrying and pumping the final amounts of ore from the hold are options that may be used in lieu of vacuum sweeping. Costs for this equipment are expected to be approximately $1,000,000. Annualized costs would be $146,800 and O&M costs will be $100,000 annually. Total annual costs for this equipment are thus $246,800.

Conveyors and chutes have been prescribed to reduce exposure during loading. Most stevedoring firms are believed to have conveyors, but not chutes. Capital costs for this item are assumed to be at most $1,000. Annual costs are expected to be negligible.

Total costs per firm were estimated based on the following expenditures: for unloading operations, the vacuum sweeping equipment would be $50,000, along with two payloader enclosures at $5,000 each, and clamshell attachments at $4,000. Total costs for this equipment would be $64,000. For loading operations, it is expected that $1,000 will be expended for the chute used in conjunction with a conveyor. Total capital costs per firm are thus $65,000.

Annual costs for the sweeper and payloader enclosures total $22,508, based on the calculations performed above. Annual costs for clamshell attachments and chutes are expected to be low, on the order of $600 (assuming a 20 year useful life). Total annual cost per firm was thus estimated to be $23,108.

Total annual industry costs are expected to be approximately $550,000 to $830,000. This figure is based on an estimate that 24 to 36 firms are unloading lead ores (6 to 9 firms at each of 4 ports [Ex. 577 p. 11] with all firms complying fully).

Should flexible intermodal bulk containers (FIBCs) be found feasible for lead ore transport, compliance costs would be virtually eliminated.

Economic Feasibility. Based on information in the public record OSHA believes that no costs will be incurred by the stevedoring industry in response to this rulemaking action. OSHA s reasoning is as follows:

Under paragraph (e)(1) of the lead standard, any employer who can demonstrate that workers are exposed to lead in excess of 50 $\mu g/m^3$ for 30 or fewer days per year is permitted to use any combination of controls to achieve the PEL. Available data indicate that about 3 days (7 shifts) are required to unload a shipment of ore [Ex. 612, p. 2]; thus, a stevedoring firm would need to unload 10 shipments per year for its employees to be exposed in excess of the 30 day limit. Import data indicate that it is highly unlikely that any one firm is handling such an abundance of ore, since only about 30 shipments are received annually by the U.S. overall, on average, and there are apparently a number of firms which handle ore in each port [Ex. 577 pp. 11, 19]. Further, in the event that any individual firm were to find itself in a position to handle such a large amount of the lead cargo, the lead standard allows administrative controls to ensure that no employee is exposed in excess of 30 days per year. Even this strategy may not be necessary, however, as many jobs involving lead exposure apparently do not last a full shift [Ex. 612, p. 3] and the turnover rate in this industry is reported to be quite high [Ex. 577 p. 2].

OSHA therefore concludes that the stevedoring industry will incur no costs, and hence, will experience no economic impact as a result of this action.

III. Regulatory Flexibility and Environmental Impact Determinations.

Regulatory Flexibility Determination

In accordance with the Regulatory Flexibility Act (Pub. L. 96–353, 94 Stat. 1664, 5 U.S.C. 601 *et seq.*), OSHA has made an assessment of the impact of this rulemaking action on small entities. As a result of this assessment, OSHA has determined that small entities in the nonferrous foundry industry could experience substantial impact as a result of this rulemaking action. However, since the Agency has determined that achieving the 50 $\mu g/m^3$ PEL by means of engineering and work practice controls is economically infeasible for the nonferrous foundry industry, small foundries will face no adverse impact as a result of this rule.

Environmental Impacts

This rulemaking action has been reviewed in accordance with the requirements of the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality NEPA regulations, and the Department of Labor's NEPA compliance procedures and is not anticipated to have a significant impact on the external environment.

For the nine industries in this remand proceeding, the recommended techniques for controlling employee exposure to airborne lead principally involve the capture and containment of lead fume and dust. To comply with EPA and OSHA regulations, lead fume and dust are captured by ventilation systems or suppressed by wet methods. The effect of the 50 $\mu g/m^3$ PEL will be to increase the amount of lead currently being contained, either in the form dust ventilated to baghouse collection systems or lead-contaminated solutions. This increase was judged by OSHA to represent a small portion of all lead contaminated wastes currently being collected by any means. Thus, OSHA finds that there will be no significant environmental impact associated with this rulemaking. To the extent that lead dust is being prevented from entering ambient air and to the extent that wastes are disposed of in an environmentally acceptable manner, this regulation should provide some improvement of environmental quality.

IV Authority

This document was prepared under the direction of Alan C. McMillan, Acting Assistant Secretary of Labor for the Occupational Safety and Health Administration, 200 Constitution Avenue NW Washington, DC 20210.

List of Subjects in 29 CFR Part 1910

Lead, Occupational safety and health.

It is issued pursuant to sections 6(b) and 8(c) of the Occupational Safety and Health Act of 1970 (84 Stat. 1593; 29 U.S.C. 655, 657), Secretary of Labor's Order No. 9–83 (48 FR 35736), 29 CFR Part 1911, and 33 U.S.C. 941. Part 1910 of Title 29, Code of Federal Regulations, is hereby amended, for the reasons set forth in the preamble, by revising Table I of paragraph (e)(1) of § 1910.1025 and paragraph (r)(7)(i)(B) of § 910.1025 and by adding paragraph (r)(7)(i)(E) of §1910.1025.

Signed at Washington, DC, this 28th day of June 1989.

Alan C. McMillan,

Acting Assistant Secretary of Labor.

V Amendments to Standard

PART 1910—OCCUPATIONAL SAFETY AND HEALTH STANDARDS

1. The authority citation for Subpart Z of Part 1910 continues to read as follows:

Authority: Secs. 6, 8 Occupational Safety and Health Act, 29 U.S.C. 655, 657· Secretary of Labor's Orders 12–71 (36 FR 8754), 8–76 (41 FR 25059), or 9–83 (48 FR 35736) as applicable; and 29 CFR Part 1911.

Section 1910.1000 Tables Z–1, Z–2, Z–3 also issued under 5 U.S.C. 553.

Section 1910.1000 not issued under 29 CFR Part 1911, except for "Arsenic" and "Cotton Dust" listings in Table Z–1.

Section 1910.1001 also issued under Sec. 107 of Contract Work Hours and Safety Standards Act, 40 U.S.C. 333.

Section 1910.1002 not issued under 29 U.S.C. 655 or 29 CFR Part 1911; also issued under 5 U.S.C. 553.

Sections 1910.1003 through 1910.1018 also issued under 29 U.S.C. 653.

Section 1910.1025 also issued under 29 U.S.C. 653 and 5 U.S.C. 553.

Section 1910.1028 also issued under 29 U.S.C. 653.

Section 1910.1043 also issued under 5 U.S.C. 551 *et seq.*

Sections 1910.1045 and 1910.1047 also issued under 29 U.S.C. 653.

Section 1910.1048 also issued under 29 U.S.C. 653.

Sections 1910.1200, 1910.1499 and 1910.1500 also issued under 5 U.S.C. 553.

2. Part 1910 of Title 29 of the Code of Federal Regulations is hereby amended in § 1910.1025 by revising Table I of paragraph (e)(1) and paragraph (r)(7)(i)(B) and by adding paragraph (r)(7)(i)(E) to read as follows:

§ 1910.1025 Lead.

(e) *Methods of compliance*—(1) *Engineering and work practice controls.*

TABLE I—IMPLEMENTATION SCHEDULE

Industry[1]	Compliance dates		
	200 $\mu g/m^3$	100 $\mu g/m^3$	50 $\mu g/m^3$
Primary lead production	(3)	June 29, 1984	June 29, 1991.
Secondary lead production	(3)	June 29, 1984	June 29, 1986.

TABLE I—IMPLEMENTATION SCHEDULE—Continued

Industry[1]	Compliance dates 200 µg/m³	100 µg/m³	50 µg/m³
Lead acid battery manufacture	(3)	June 29, √983	June 29, 1986.
Automobile manufacture/solder grinding	(3)	N/A	June 29, 1988.
Electronics, gray iron foundries, ink manufacture, paints and coatings manufacture, wall paper manufacture, can manufacture, and printing	(3)	N/A	June 29, 1982.
Brass and bronze ingot manufacture, lead chemical manufacture, and secondary copper smelting	(3)	N/A	[4]5 years.
Non-ferrous foundries	(3)	N/A	N/A.
All other industries	(3)	N/A	[4]2½ years.

Includes ancillary activities located on the same worksite.
[2] This date is calculated by counting, from June 29, 1981 (the date when the United States Supreme Court denied certiorari and lifted the stay on the implementation of paragraph (e)(1)), the number of years specified for the particular industry in the original lead standard for compliance with the given airborne exposure level. The denial of certiorari followed a decision of the United States Court of Appeals for the District of Columbia Circuit finding compliance with paragraph (e)(1) to be feasible for the relevant industries.
[3] On the effective date of this standard, March 1, 1979. This continues an obligation from Table Z-2 of 29 CFR 1910.1000, which had been in effect since 1971 but was deleted from the Code of Federal Regulations upon the effectiveness of this standard.
Expressed as the number of years from the date on which the court lifts the stay on the implementation of paragraph (e)(1) for the particular industry.

(r) *Startup dates.*

(7)(i)

(B) Employers in secondary lead smelting and refining and in lead storage battery manufacturing—1 year from the effective date.

(E) All other industries—1 year from the date on which the court lifts the stay on the implementation of paragraph (e)(1) for the particular industry.

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Part III

Department of Defense
General Services Administration
National Aeronautics and Space Administration

48 CFR Part 1 et al.

Federal Acquisition Regulation (FAR); Miscellaneous Amendments

DEPARTMENT OF DEFENSE

GENERAL SERVICES ADMINISTRATION

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

48 CFR Parts 1, 4, 7 8, 14, 15, 17 19, 22, 25, 36, 37, 38, 47, 51, 52, and 53

[Federal Acquisition Circular 84-49]

RIN: 9000-AC60; 9000-AC04; 9000-AC37; 9000-AC20; 9000-AC22; 9000-AC55; 9000-AA97

Federal Acquisition Regulation (FAR); Miscellaneous Amendments

AGENCIES: Department of Defense (DoD), General Services Administration (GSA), and National Aeronautics and Space Administration (NASA).

ACTION: Final rules.

SUMMARY: Federal Acquisition Circular (FAC) 84-49 amends the Federal Acquisition Regulation (FAR) with respect to the following: Contractor Establishment Codes; Revisions to Federal Supply Schedules; Master Solicitations; Revision of SF 1409, Abstract of Offers; OF 1419, Abstract of Offers—Construction; Extension after Performance (Options); Small Business Subcontracting Plans for Contracts with Options; English Translation of Contracts; Competition in Contracting Act—Protests; Protests to GAO; SF 1417 Pre-solicitation Notice (Construction Contract); Payment for Solicitation Documents (Construction); and Editorial Changes.

EFFECTIVE DATE: August 10, 1989.

FOR FURTHER INFORMATION CONTACT: Margaret A. Willis, FAR Secretariat, Room 4041, GS Building, Washington, DC 20405, (202) 523-4755. Please cite FAC 84-49.

SUPPLEMENTARY INFORMATION:

A. Background

FAC 84-49, Item VI. Award of contracts for recurring and continuing service requirements are often delayed due to circumstances beyond the control of contracting offices. Examples of circumstances causing such delays are bid protests and alleged mistakes in bid. Pending resolution of these circumstances, contracting officers are forced to negotiate short extensions to existing contracts. Changes are being made to FAR 17.208, 37.111, and 52.217-8 to permit contracting offices to include an option provision which will enable the Government to require continued performance of any services within the limits and at the rates specified in the contract. The option provision could be exercised more than once, but the total extension of performance thereunder could not exceed 6 months.

FAC 84-49, Items IX and X. The interim rule in FAC 84-6, Item III, implemented requirements of sections 2713 and 2741, Pub. L. 98-369, the Competition in Contracting Act (CICA) of 1984, regarding procedures for filing protests with the General Accounting Office and the General Services Board of Contract Appeals. The interim rule also implemented Justice Department advice that the GAO "stay" provisions in 31 U.S.C. 3553 (c) and (d) and the GAO "damages" provision in 31 U.S.C. 3554(c) regarding payment of costs of filing and pursuing a protest and preparing the bid and proposal, are unconstitutional.

The interim rule in FAC 84-9 revised FAC 84-6, Item III, coverage to implement revised Justice Department advice regarding the "stay" and "damages" provisions of CICA.

The final rule also revises the clause at 52.212-13, Stop-Work Order, the clause at 52.212-14, Stop Work Order—Facilities, and the clause at 52.233-3, Protest After Award. The clause revisions are based on a public comment received recommending that language concerning equitable adjustments be revised to allow contractors 30 days to assert a right to an adjustment after the end of a period of work stoppage. The revised clause language is consistent with revisions made in FAC 84-29, Item X, "FAR Changes Clauses" which was published as a final rule in the Federal Register on August 12, 1987 (52 FR 30074).

B. Regulatory Flexibility Act

FAC 84-49, Items I thru VII, XI and XII. DoD, GSA, and NASA certify that the Regulatory Flexibility Act (Pub. L. 96-354) does not apply to these final rules because each revision is not a "significant revision" as defined in FAR 1.501-1; i.e., it does not alter the substantive meaning of any coverage in the FAR having a significant cost or administrative impact on contractors or offerors, or a significant effect beyond the internal operating procedures of the issuing agencies.

FAC 84-49, Item VIII. DoD, GSA, and NASA certify that this final rule will not have a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act, 5 U.S.C. 601, et seq., because the translation inconsistency clause is routinely used in overseas contracts when prospective vendors require a translation into a local language.

FAC 84-49, Items IX and X. A Final Regulatory Flexibility Analysis pertaining to CICA protest coverage has been prepared in accordance with the Regulatory Flexibility Act of 1980, Pub. L. 96-354, is on file in the FAR Secretariat, and will be submitted to the Chief Counsel for Advocacy, Small Business Administration.

C. Paperwork Reduction Act

FAC 84-49, Items I thru X and XII. The Paperwork Reduction Act (Pub. L. 96-511) does not apply because these final rules do not impose any reporting or recordkeeping requirements or collection of information from offerors, contractors, or members of the public which require the approval of OMB under 44 U.S.C. 3501, et seq.

FAC 84-49, Item XI. The information collection requirements in this rule have been approved by the Office of Management and Budget (OMB) as required by 44 U.S.C. 3501, et seq., under OMB Control Number 9000-0037

D. Public Comments

FAC 84-49, Item III. On October 21, 1988, a proposed rule was published in the **Federal Register** (53 FR 41535). The comments that were received were considered by the Councils in the development of this final rule.

FAC 84-49, Item VI. On February 9, 1988, a proposed rule was published in the **Federal Register** (53 FR 3814). The comments that were received were considered by the Councils in the development of this final rule.

FAC 84-49, Item VII. On August 25, 1988, a proposed rule was published in the **Federal Register** (53 FR 32558). The comments that were received were considered by the Councils in the development of this final rule.

FAC 84-49, Item VIII. On February 26, 1988, a proposed rule was published in the **Federal Register** (53 FR 5928). The comments that were received were considered by the Councils in the development of this final rule.

FAC 84-49, Items IX and X. On January 15, 1985, Item III of Federal Acquisition Circular (FAC) 84-6 was published as an interim rule in the **Federal Register** (50 FR 2268). On June 28, 1985, FAC 84-9, which revised Item III of FAC 84-6, was published as an interim rule in the **Federal Register** (50 FR 27969). The comments that were received were considered by the Councils in the development of this final rule.

List of Subjects in 48 CFR Parts 1, 4, 7 8, 14, 15, 17 19, 22, 25, 36, 37 38, 47 51, 52, and 53

Government procurement.

Dated: July 3, 1987

Harry S. Rosinski,

Acting Director, Office of Federal Acquisition and Regulatory Policy.

Unless otherwise specified, all Federal Acquisition Regulation (FAR) and other directive material contained in FAC 84-49 is effective August 9, 1989.

Eleanor Spector,

Assistant Secretary of Defense for Procurement, DOD.

Richard H. Hopf, III,

Associate Administrator for Office of Acquisition Policy, GSA.

S. J. Evans,

Associate Administrator for Procurement, NASA.

Federal Acquisition Circular (FAC) 84-49 amends the Federal Acquisition Regulation (FAR) as specified below:

Item I—Contractor Establishment Codes

FAR 15.406-2 is revised and 4.602(d), 4.603, and a provision at 52.204-4 are added for use in all solicitations in excess of $25,000 requesting offerors to identify their Contractor Establishment Codes, if available. If the apparent awardee does not identify its code, the contracting office shall obtain one as specified in the EPDS Reporting Manual.

Item II—Revisions to Federal Supply Schedules

FAR 8.401, 8.404, 8.406, and 38.201(b) are revised for editorial and clarification purposes, and 38.202 is revised to update the criteria used in establishing a Federal Supply Schedule.

Item III—Master Solicitations

FAR 14.203-3 and 15.408(d) are added to provide coverage on the use of master solicitations.

Item IV—Revision of Standard Form (SF) 1409, Abstract of Offers

FAR 14.403(a) and 53.214(f), are revised to prescribe SF 1409 and SF 1410. FAR 53.301-1409 is revised to illustrate the latest edition of SF 1409, Abstract of Offers, and 53.301-1410 is added to illustrate SF 1410, Abstract of Offers-Continuation Sheet.

Item V—Optional Form (of) 1419, Abstract of Offers—Construction

FAR 14.403(a), Subpart 36.7 36.700, and 36.701(d) are revised, and 53.302-1419 and 53.302-1419A are added to prescribe OF 1419 and OF 1419A to make the forms more functional when recording offers from seven or more offerors and/or recording offers when the construction contract solicitation requires individual offers on 14 or more line items.

Item VI—Extension After Performance (Option)

FAR 17.208 and the clause at 52.217-8 are revised, and 37.111 is added, to permit contracting officers to include in service contracts an option provision which will enable the Government to extend performance for short periods of time.

Item VII—Small Business Subcontracting Plans for Contracts with Options

FAR 19.704(c) is amended to clarify and to specify that the subcontracting plans for contracts containing options that meet the required threshold for requiring such plans must separately address goals for both the basic contract term and each option. It also amends the clause at FAR 52.219-9, Small Business and Small Disadvantaged Business Subcontracting Plan, by inserting conforming language in the contract clause.

Item VIII—English Translation of Contracts

FAR Subpart 25.9 is revised to add language prescribing the use of the clause at FAR 52.225-14, Inconsistency Between English Version and Translation of Contract, whenever translation of a contract into a foreign language is anticipated.

Items IX and X—Competition in Contracting Act (CICA)—Protests and Protests to the General Accounting Office (GAO)

These items covert to final rule the following interim rules:

FAC 84-6, Item III, "Protests" which was published as an interim rule and request for comment in the **Federal Register** on January 15, 1985 (50 FR 2268).

FAC 84-9, which was published as an interim rule and request for comment in the **Federal Register** on June 20, 1985 (50 FR 25680) and July 9, 1985 (50 FR 27969).

In consideration of public and agency comments received in connection with the above referenced interim rules, these items revise the following contract clauses:

The clause at 52.212-13, Stop-Work Order.

The clause at 52.212-14, Stop Work Order-Facilities.

The clause at 52.233-3, Protest After Award. Item III of FAC 84-6 implemented—

Requirements of Sections 2713 and 2741, Pub. L. 98-369, the Competition in Contracting Act (CICA) of 1984, regarding procedures for filing protests with the General Accounting Office and the General Services Board of Contract Appeals, and

Justice Department advice that the GAO "stay" provisions in 31 U.S.C. 3553 (c) and (d) and the GAO "damages" provision in 31 U.S.C. 3554(c) regarding liability for the costs of filing and pursuing a protest and preparing the bid and proposal, are unconstitutional.

FAC 84-9 revised the above referenced FAC 84-6 coverage to implement revised Justice Department advice regarding the "stay" and "damages" provisions of CICA.

The clause revisions are based on a comment received recommending that language concerning equitable adjustments be revised to allow contractors 30 days to assert a right to an adjustment after the end of a period of work stoppage.

The revised clause language is consistent with revisions made in FAC 84-29, Item X, FAR Changes Clauses, which was published as a final rule in the **Federal Register** on August 12, 1987 (52 FR 30074).

Item XI—Standard Form (SF) 1417 Presolicitation Notice (Construction Contract)

FAR 53.236-1(a), 53.301-1417 and SF 1417 Pre-solicitation Notice (Construction Contact); are revised to require firms to include a telephone number in Block 17 when expressing interest in bidding on a construction project.

Item XII—Payment for Solicitation Documents (Construction)

FAR 53.236-1(a), 53.301-1417 and SF 1417 Pre-solicitation Notice (Construction Contract), are revised to substitute "check or money order" for "certified check, cashier's check or money order" in the instructions block of the form. Block 12 is revised to reflect the language used in the FAR by inserting the word "Plan" instead of "Program.

Item XIII-Editorial Changes

FAR 1.105 is revised to add an approved OMB Control Number 9000-0097 pertaining to Taxpayer Identification Number, published as an interim rule (Item I, FAC 84-40) in the **Federal Register** on October 26, 1988 (53 FR 43386).

FAR 1.201-19(b), 8.001(a)(1)(v); 19.1004; 25.406, 38.101(e), and 52.102(c)(3) are revised to reflect the agency name change from "The Veterans Administration" to "The Department of Veterans Affairs"

FAR 7.403(b)(2), 8.401(b), 8.404-3(a), 47.105(a)(1), 51.103, 51.103(a) (1) and (2), 51.103 (b) and (c), 51.104(b)(3), Subpart 51.2, 51.200, 51.201 (a) and (c), 51.202(a) (2) and (5), 51.202(d), 51.204, 51.205, and 52.251-2 are revised to reflect current General Services Administration organizational structure.

FAR 22.608-2(f)(2) and 22.608-3(b)(2) are revised to reflect a change in an SBA designated point of contact.

FAR 52.232-25 is corrected to add subdivision (a)(3)(iv) which was inadvertently omitted in the final rule pertaining to Prompt Payment (Item I, FAC 84-45) and published as a final rule in the **Federal Register** on March 31, 1989 (54 FR 13332).

Therefore, 48 CFR Parts 1, 4, 7 8, 14, 15, 17 19, 22, 25, 36, 37 38, 47 51, 52, and 53 are amended as set forth below:

1. The authority citation for 48 CFR Parts 1, 4, 7 8, 14, 15, 17 19, 22, 25, 36, 37 38, 47 51, 52, and 53 continues to read as follows:

Authority: 40 U.S.C. 486(c); 10 U.S.C. Chapter 137· and 42 U.S.C. 2473(c).

PART 1—FEDERAL ACQUISITION REGULATIONS SYSTEM

2. Section 1.105 is amended by adding in numerical order, two FAR segments and a corresponding OMB Control Number to read as follows:

1.105 OMB Approval under the Paperwork Reduction Act.

FAR segment	OMB control No.
4.9	9000-0097
52.204-3	9000-0097

1.201-1 [Amended]

3. Section 1.201-1 is amended by removing in paragraph (b)(2) the words "Veterans Administration" and inserting in their place "Department of Veterans Affairs"

PART 4—ADMINISTRATIVE MATTERS

4. Section 4.602 is amended by adding paragraph (d) to read as follows:

4.602 Federal Procurement Data System.

(d) The contracting officer shall obtain and report a Contractor Establishment Code for each awardee from information on file or available to the contracting office, or by using the procedures at 4.603. When appropriate, offerors shall be request to identify their Contractor Establishment Code, if available. If the apparent awardee does not identify its code, the contracting office or other designated agency office shall request a code using the procedures in the FPDS Reporting Manual or in accordance with agency procedures. Requests for codes shall be made by Government offices and only for the apparent awardees.

5. Section 4.603 is added to read as follows:

4.603 Solicitation provision.

The contracting officer shall insert the provision at 52.204-4, Contractor Establishment Code, in all solicitations exceeding the small purchase limitation in Part 13 when there is a reasonable expectation that an award may be made to an offeror whose Contractor Establishment Code is not available to the contracting office but will be available to the offeror(s).

PART 7—ACQUISITION PLANNING

7.403 [Amended]

6. Section 7.403 is amended in paragraph (b)(2) by removing the words "Office of Procurement" and inserting in their place "Office of Commodity Management"

PART 8—REQUIRED SOURCES OF SUPPLIES AND SERVICES

8.001 [Amended]

7 Section 8.001 is amended in paragraph (a)(1)(v) by removing the words "Veterans Administration" and inserting in their place "Department of Veterans Affairs"

8. Section 8.401 is amended by revising paragraph (b) to read as follows:

8.401 General.

(b) Ordering offices may request copies of schedules by completing GSA Form 457 FSS Publications Mailing List Application, and mailing it to the GSA Centralized Mailing Lists Services, 819 Taylor Street, P.O. Box 17077 Fort Worth, Texas 76102-0077 Copies of GSA Form 457 and the GSA publication titled "GSA Supply Catalog" (which includes a listing of schedules and information on the use of schedules) may also be obtained from the above address.

9. Section 8.404 is amended by redesignating existing paragraphs (a) and (b) as (b) and (c), and by adding a new paragraph (a) to read as follows:

8.404 Using schedules.

(a) The planning, solicitation, and award phases of Federal Supply Schedules comply with FAR requirements. Consequently, contracting officers need not seek further competition, synopsize the solicitation or award, determine fair and reasonable pricing, or consider small business-small purchase set-aside procedures when placing an order under a Federal Supply Schedule.

8.404-3 [Amended]

10. Section 8.404-3 is amended in paragraph (a) by removing in the first sentence the words Assistant Administrator, Office of Federal Supply and Services (F)" and inserting in their place "Commissioner, Federal Supply Service (F)"

11. Section 8.406 is amended by adding a fourth and fifth sentence to read as follows:

8.406 Blanket purchase agreements.

When establishing dollar limitations for BPA's established against Federal Supply Schedules pursuant to 13.204(b), the limitations apply to individual orders placed under the BPA and are those prescribed in the Maximum Order Limitation clause for the particular schedule contract. No limitation is imposed on the total BPA unless specified by agency procedures.

PART 14—SEALED BIDDING

12. Section 14.203-3 is added to read as follows:

14.203-3 Master solicitation.

(a) *Definition.* "Master solicitation, as used in this subsection, means a document containing special clauses and provisions that have been identified as essential for the acquisition of a specific type of supply or service that is acquired repetitvely.

(b) *Use.* The master solicitation is provided to potential sources who are requested to retain it for continued and repetitive use. Individual solicitations shall reference the date of the current master solicitation and any changes thereto. Copies of the master solicitation shall be made available on request. Cognizant contract administration activities shall be provided a current copy of the master solicitation.

13. Section 14.403 is amended by revising paragraph (a) to read as follows:

14.403 Recording of bids.

(a) Standard Form 1409, Abstract of Offers, or Optional Form 1419, Abstract of Offers—Construction (or automated equivalent), shall be completed and certified as to its accuracy by the bid opening officer as soon after bid opening as practicable. Where bid items are too numerous to warrant complete recording of all bids, abstract entries for individual bids may be limited to item numbers and bid prices. In preparing these forms, the extra columns and SF 1410, Abstract of Offers—Continuation, and OF 1419A, Abstract of Offers—Construction, Continuation Sheet, may be used to label and record such information as the contracting activity deems necessary.

PART 15—CONTRACTING BY NEGOTIATION

14. Section 15.406-2 is amended by revising paragraph (a)(3)(viii) to read as follows:

15.406-2 Part I—The Schedule.

(a)

(3)

(viii) Requirement for the offeror or quoter to provide its name and complete address, including street, city, county, State, and Zip Code.

15. Section 15.408 is amended by adding paragraph (d) to read as follows:

15.408 Issuing solicitations.

(d) A master solicitation may be used for negotiated acquisitions, subject to the criteria and procedures in 14.203-3.

PART 17—SPECIAL CONTRACTING METHODS

16. Section 17.208 is amended by revising paragraph (f) to read as follows:

17.208 Solicitation provision and contract clauses.

(f) The contracting officer shall insert a clause substantially the same as the clause at 52.217-8, Options to Extend Services, in solicitations and contracts for services when the inclusion of an option is appropriate. (See 17.200, 17.202, and 37.111.)

PART 19—SMALL BUSINESS AND SMALL DISADVANTAGED BUSINESS CONCERNS

17 Section 19.704 is amended by adding paragraph (c) to read as follows:

19.704 Subcontracting plan requirements.

(c) For contracts containing options, the cumulative value of the basic contract and all options is considered in determining whether a subcontracting plan is necessary (see 19.705-2(a)). If a plan is necessary and the offeror is submitting an individual contract plan, the plan shall contain all the elements required by 19.704(a) and shall contain separate parts, one for the basic contract and one for each option.

19.1004 [Amended]

18. Section 19.1004 is amended by removing the words "Veterans Administration" and inserting in their place "Department of Veterans Affairs"

PART 22—APPLICATION OF LABOR LAWS TO GOVERNMENT ACQUISITIONS

22.608-2 [Amended]

22.608-3 [Amended]

19. Section 22.608-2 is amended in paragraph (f)(2) and section 22.608-3 is amended in paragraph (b)(2) by removing in both places the words Administrator of the SBA and inserting in their place "SBA Regional Officer serving the geographical area in which the principal office of the small business concern is located"

PART 25—FOREIGN ACQUISITION

25.406 [Amended]

20. Section 25.406 is revised at the end of the agency listing by removing the words "Veterans Administration" and inserting in their place "Department of Veterans Affairs"

21. Subpart 25.9 is revised to read as follows:

Subpart 25.9—Additional Foreign Acquisition Clauses

Sec.
25.901 Omission of the examination of records clause.
25.902 Inconsistency between English version and translation of contract.

Subpart 25.9—Additional Foreign Acquisition Clauses

25.901 Omission of examination of records clause.

(a) *Definition.* "Foreign contractor, as used in this subpart, means a contractor or subcontractor organized or existing under the laws of a country other than the United States, its territories, or possessions.

(b) *Policy.* As required by 10 U.S.C. 2313, 41 U.S.C. 254, and 15.106-1(b)(3), the contracting officer shall consider for use in negotiated contracts with foreign contractors, whenever possible, the clause at 52.215-1, Examination of Records by Comptroller General. Omission of the clause should be approved only after the contracting agency, having considered such factors as alternate sources of supply, additional cost, and time of delivery, has made all reasonable efforts to include the clause.

(c) *Conditions for omission.* (1)(i) The contracting officer may omit the clause at 52.215-1, Examination of Records by Comptroller General, from contracts with foreign contractors—

(A) If the agency head determines, with the concurrence of the Comptroller General or a designee, the omission of the clause will serve the public interest; or

(B) If the contractor is a foreign government or agency thereof or is precluded by the laws of the country involved from making its books, documents, papers, or records available for examination, and the agency head determines, after taking into account the price and availability of the property or services from domestic sources, that omission of the clause best serves the public interest.

(ii) When a determination under subdivision (c)(1)(i)(B) of this section is the basis for omission of the clause at 52.215-1, Examination of Records by Comptroller General, the agency head shall forward a written report to the Congress explaining the reasons for the determination.

(d) *Determination and findings.* The determination and findings shall—

(1) Identify the contract and its purpose, and whether it is a contract with a foreign contractor or with a foreign government or agency thereof;

(2) Describe the efforts to include the clause;

(3) State the reasons for the contractor's refusal to include the clause;

(4) Describe the price and availability of the property or services from the United States and other sources; and

(5) Determine that it will serve the interest of the United States to omit the clause.

25.902 Inconsistency between English version and translation of contract.

The contracting officer shall insert the clause at 52.225-14, Inconsistency Between English Version and Translation of Contract, in solicitations and contracts whenever translation into another language is anticipated.

PART 36—CONSTRUCTION AND ARCHITECT-ENGINEER CONTRACTS

22. Subpart 36.7 is amended by revising the title to read as follows:

Subpart 36.7—Standard and Optional Forms for Contracting for Construction, Architect-Engineer Services, and Dismantling, Demolition, or Removal of Improvements

23. Section 36.700 is revised to read as follows:

36.700 Scope of subpart.

This subpart sets forth requirements for the use of standard and optional forms, prescribed in Part 53, for contracting for construction, architect-engineer services, or dismantling, demolition, or removal of improvements. These standard and optional forms are illustrated in Part 53.

24. Section 36.701 is amended by revising the section title and paragraph (d) to read as follows:

36.701 Standard and optional forms for use in contracting for construction or dismantling, demolition, or removal of improvements.

(d) Contracting officers may use Optional Form 1419, Abstract of Offers—Construction, and Optional Form 1419A, Abstract of Offers—Construction, Continuation Sheet, or the automated equivalents to record offers submitted in response to a sealed bid solicitation (see 14.403) and may also use them to record offers submitted in response to negotiated solicitations.

PART 37—SERVICE CONTRACTING

25. Section 37.111 is added to read as follows:

37.111 Extension of services.

Award of contracts for recurring and continuing service requirements are often delayed due to circumstances beyond the control of contracting offices. Examples of circumstances causing such delays are bid protests and alleged mistakes in bid. In order to avoid negotiation of short extensions to existing contracts, the contracting officer may include an option clause (see 17.208(f)) in solicitations and contracts which will enable the Government to require continued performance of any services within the limits and at the rates specified in the contract. However, these rates may be adjusted only as a result of revisions to prevailing labor rates provided by the Secretary of Labor. The option provision may be exercised more than once, but the total extension of performance thereunder shall not exceed 6 months.

PART 38—FEDERAL SUPPLY SCHEDULE CONTRACTING

38.101 [Amended]

26. Section 38.101 is amended in paragraph (e) by removing the words "Veterans Administration" and inserting in their place "Department of Veterans Affairs"

27 Section 38.201 is amended by revising in paragraph (b) the second sentence to read as follows:

38.201 Coordination requirements.

(b) This form shall be submitted to GSA, Federal Supply Service (FSS), FCO, Washington, DC 20406, in duplicate, well in advance of solicitation preparation.

28. Section 38.202 is amended by revising paragraph (a) and the introductory text of paragraph (c) and by removing in the first sentence of paragraph (c)(5) the words "per contract period" and inserting in their place "for a 1-year period" to read as follows:

38.202 Criteria.

(a) To justify establishing or continuing a Federal Supply Schedule, the annual business volume expected from a particular Federal Supply Schedule should be as follows: National scope multiple-award schedule—$1,000,000; national scope single-award schedule—$500,000; regional service schedules—$250,000.

(c) A special item number (SIN) should not be retained in a future multiple-award schedule when the anticipated purchases of the SIN will be less than $25,000 for a 1-year period. A new contract should not be awarded to a current supplier whose sales were less than $25,000 for the most recent 1-year period. An item (product or service) should not be retained in a future schedule when the anticipated purchases of the item will be less than $2,000 for a 1-year period. (For the purpose of these criteria, an item is defined as a product on a multiple-award schedule; or a National Stock Number (NSN) or SIN on a single-award schedule.) This policy does not apply to service contracts or to the following:

PART 47—TRANSPORTATION

47.105 [Amended]

29. Section 47.105 is amended in paragraph (a)(1) by removing the words "Office of Transportation" and inserting in their place "Federal Supply Service Bureau"

PART 51—USE OF GOVERNMENT SOURCES BY CONTRACTORS

51.102 [Amended]

30. Section 51.102 is amended in paragraph (c)(3) by removing in two places the words "Veterans Administration" and by inserting in both places the words "Department of Veterans Affairs"

51.103 [Amended]

31. Section 51.103 is amended in the introductory text of paragraph (a) and in paragraphs (a) (1) and (2), by removing the words "or Personal Property Rehabilitation Price Schedules", by removing in paragraph (b) the office symbol "FFN" and inserting in its place "FCO", and by removing in paragraph (c) the words "Office of Information Resources Management" and inserting in their place "Information Resources Management Service"

32. Section 51.104 is amended by revising paragraph (b)(3) to read as follows:

51.104 Furnishing assistance to contractors.

(b)

(3) A completed GSA Form 3525, Application for Customer Supply Center Services and (Address Change).

33. Subpart 51.2 is amended by revising the title and by removing all references to the "interagency motor pool" and inserting in each place "interagency fleet management system (IFMS)" in the sections listed below, to read as follows:

Subpart 51.2—Contractor Use of Interagency Fleet Management System (IFMS)

51.200
51.201(a)
51.201(c)
51.202(a)
51.202(a)(2)
51.202(a)(5)
51.202(d)
51.203(a)
51.204 section title and text
51.205 clause title and text

51.202 [Amended]

34. Section 51.202 is amended in paragraph (a)(4) by removing the citation "41 CFR 101-39.602" and inserting in its place "41 CFR 101-38.301-1" and in paragraph (d) by removing "41 CFR 101-39.8" and inserting "41 CFR 101-39.4"

35. Section 51.203 is amended in the introductory text of paragraph (a) to read as follows:

51.203 Means of obtaining service.

(a) Authorized contractors shall submit requests for interagency fleet management system (IFMS) vehicles and related services in writing to the appropriate GSA regional Federal Supply Service Bureau, Attention: Regional fleet manager, except that requests for more than five vehicles shall be submitted to General Services Administration, FBF Washington, DC 20406, and not to the regions. Each request shall include the following:

51.204 [Amended]

36. Section 51.204 is amended by removing the citation "41 CFR 1[illegible]-39" and inserting in its place "41 CFR 101-38"

PART 52—SOLICITATION PROVISIONS AND CONTRACT CLAUSES

37 Section 52.204-4 is added to read as follows:

52.204-4 Contractor Establishment Code.

As prescribed in 4.603, insert the following provision:

Contractor Establishment Code (AUG 1989)

In the block with its name and address, the offeror should supply the Contractor Establistment Code applicable to that name and address, if known to the offerer. The number should be preceded by "CEC. Offerors should take care to report the correct CEC and not a similar number assigned to the Offeror in a different system.

The CEC is a 9-digit code assigned to a contractor establishment that contracts with a Federal executive agency. The CEC system is a contractor identification coding system which is currently the Dun and Bradstreet Data Universal Numbering System (DUNS). The CEC system is distinct from the Federal Taxpayer Identification Number (TIN) system.

The Government will obtain a Contractor Establishment Code for any awardee that does not have or does not know its CEC.

(End of provision)

38. Section 52.212-13 is amended by removing in the title of the clause the date "(APR 1984)" and inserting in its place "(AUG 1989);" by revising paragraph (b)(2); and by removing the derivation line following "(End of clause)" to read as follows:

52.212-13 Stop-work order.

(b)

(2) The Contractor asserts its right to the adjustment within 30 days after the end of the period of work stoppage; *provided*, that, if the Contracting Officer decides the facts justify the action, the Contracting Officer may receive and act upon a proposal submitted at any time before final payment under this contract.

39. Section 52.212-14 is amended by revising the introductory text of the clause; by removing the date "(APR 1984)" and inserting in its place "(AUG 1989)"· by revising paragraph (b)(2); and by removing the derivative line following "(End of clause)" to read as follows:

52.212-14 Stop-work-order-facilities.

As prescribed in 12.505(c), insert the following clause. The "90-day" period stated in the clause may be reduced to less than 90 days.

(b)

(2) The Contractor asserts its right to the adjustment within 30 days after the end of the period of work stoppage; *provided*, that, if the Contracting Officer decides the facts justify the action, the Contracting Officer may receive and act upon a proposal submitted at any time before final payment under this contract.

40. Section 52.217-8 is revised to read as follows:

52.217-8 Option to extend services.

As prescribed in 17.208(f), insert a clause substantially the same as the following:

Option to Extent Services (AUG 1989)

The Government may require continued performance of any services within the limits and at the rates specified in the contract. These rates may be adjusted only as a result of revisions to prevailing labor rates provided by the Secretary of Labor. The option provision may be exercised more than once, but the total extention of performance hereunder shall not exceed 6 months. The Contracting Officer may exercise the option by written notice to the Contractor within the period specified in the Schedule.

(End of clause)

41. Section 52.219-9 is amended by revising the introductory text; by removing in the title of the clause and in the Alternate I the date "(APR 1984)" and inserting in each place the date "(AUG 1989)"· and by revising the first sentence in paragraph (c) of the clause, and the first sentence in paragraph (c) of the Alternate I; and by removing the derivation lines following "(End of clause)" and following paragraph (c) of Alternate I to read as follows:

52.219-9 Small Business and Small Disadvantaged Business Subcontracting Plan.

As prescribed in 19.708(b), insert the following clause:

(c) The offeror, upon request by the Contracting Officer, shall submit and negotiate a subcontracting plan, where applicable, which separately addresses subcontracting with small business concerns and with small disadvantaged business concerns. If the offeror is submitting an individual contract plan, the plan must separately address subcontracting with small business concerns and with small disadvantaged business concerns with a separate part for the basic contract and separate parts for each option (if any). The plan shall be included in and made a part of the resultant contract. The subcontracting plan shall be negotiated within the time specified by the Contracting Officer. Failure to submit and negotiate the subcontracting plan shall make the offeror ineligible for award of a contract.

Alternate I (AUG 1989). When contracting by sealed bidding rather than by negotiation, substitute the following paragraph (c) for paragraph (c) of the basic clause:

(c) The apparent low bidder, upon request by the Contracting Officer, shall submit a subcontracting plan, where applicable, which separately addresses subcontracting with small business concerns and with small disadvantaged business concerns. If the bidder is submitting an individual contract plan, the plan must separately address subcontracting with small business concerns and with small disadvantaged business concerns with a separate part for the basic contract and separate parts for each option (if any). The plan shall be included in and made a part of the resultant contract.

42. Section 52.225-14 is added to read as follows:

52.225-14 Inconsistency between English version and translation of contract.

As prescribed at 25.902, insert the following clause:

Inconsistency Between English Version and Translation of Contract (Aug 1989)

In the event of inconsistency between any terms of this contract and any translation thereof into another language, the English language meaning shall control.

(End of clause)

43. Section 52.232-25 is amended by adding paragraph (a)(3)(iv) to read as follows:

52.232-25 Prompt payment.

(a)

(3)

(iv) If the contract does not require submission of an invoice for payment (e.g., periodic lease payments), the due date will be as specified in the contract.

44. Section 52.233-3 is amended by removing in the title of the clause the date "(JUN 1985)" and inserting in its place "(AUG 1989)" and by revising paragraph (b)(2) to read as follows:

52.233-3 Protest after award.

*

(b)

(2) The Contractor asserts its right to an adjustment within 30 days after the end of the period of work stoppage; *provided,* that if the Contracting Officer decides the facts justify the action, the Contracting Officer may receive and act upon a proposal submitted at any time before final payment under this contract.

52.251-2 [Amended]

45. Section 52.251-2 is amended by removing the words "interagency motor pool" and inserting in their place "interagency fleet management system" in the section title, in the clause title, and in the first and second sentences of the clause; by inserting a colon following the word "clause" and removing the remainder of the sentence; by removing in the clause title the date "(APR 1984)" and inserting in its place "(AUG 1989)" and by removing the derivation line following "(End of clause)"

PART 53—FORMS

46. Section 53.214 is amended by revising the section title and paragraph (f) to read as follows:

53.214 Sealed bidding (SF's 26, 30, 33, 129, 1409, 1410, and OF's 17, and 336).

(f) *SF 1409 (REV. 9/88), Abstract of Offers, and SF 1410 (9/88), Abstract of Offers-Continuation. SF 1409 and SF 1410 are prescribed for use in recording bids, as specified in 14.403(a).*

47. Section 53.236-1 is amended by revising the section title and the introductory heading of paragraph (a); by removing "(1)" and "(2)" in the introductory text; by removing and reserving paragraph (c); and by adding paragraph (g) to read as follows:

53.236-1 Construction (SF's 1417, 1420, 1442, and OF's 347, 1419, and 1419A).

(a) *SF 1417 (REV 12/88), Pre-Solicitation Notice (Construction Contract).*

(g) *OF 1419 (11/88), Abstract of Offers-Construction, and OF 1419A (11/88), Abstract of Offers-Construction, Continuation Sheet.* OF's 1419 and 1419A are prescribed for use in recording bids (and may be used for recording proposal evaluation information), as specified in 36.701(d).

48. Section 53.301-1409 is revised to read as follows:

53.301-1409 Standard Form 1409, Abstract of Offers.

BILLING CODE 6820-JC-M

ABSTRACT OF OFFERS

SOLICITATION NO	OPENING DATE	PAGE OF PAGES
ISSUING OFFICE	SUPPLIES OR SERVICES (G I De cripti)	

NO	NAME OF OFFEROR	ACCEPTANCE TIME (days)	BUSINESS SIZE L	BUSINESS SIZE S	ITEM NO. ► / QUANTITY ► / UNIT ►				DELIVERY TIME *	F.O.B. POINT	REMARKS
						$	$	$			

I dicat by a X a 60-d y a c ;t e
I dic t by ı X if offer c ıforı s t
delive y tin spe ified i s li it ti

I CERTIFY THAT I HAVE OPENED READ AND RECORDED ON THIS ABSTRACT (AND CONTINUATION SHEETS, IF ANY) ALL OFFERS RECEIVED IN RESPONSE TO THE SOLICITATION

TYPED NAME AND TITLE

SIGNATURE

DATE

NSN 7540 01 142 9844

1409 102

STANDARD FORM 1409 (Rev 9 88)
P esc ibed by GSA FAR (48 CFR) 53 214(f)

BILLING CODE 6820-JC-C

49. Section 53.301-1410 is added to read as follows:

53.301-1410 Standard Form 1410, Abstract of Offers—Continuation.

BILLING CODE 6820-JC-M

ABSTRACT OF OFFERS—CONTINUATION

PAGE OF PAGES

NO									
	ITEM NO. ►								
	QUANTITY ►								
	UNIT ►								
		$	$	$	$	$	$	$	$

NSN 7540 01 280 5501 1410 101 STANDARD FORM 1410 (Re 9 88)
P esc ibed by GSA FAR (48 CFR) 53 214(l)

BILLING CODE 6820-JC-C

50. Section 53.301–1417 is revised to read as follows:

53.301–1417 Standard Form 1417, Presolicitation Notice (Construction Contract).

BILLING CODE 6820–JC–M

PRE-SOLICITATION NOTICE (Construction Contract)	1. PROJECT NO.	2. DATE OF NOTICE	3. DATE SOLICITATION DOCUMENTS AVAILABLE (Approx.)	FORM APPROVED OMB NO. 9000-0037

Public reporting burden for this collection of information is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the FAR Secretariat (VRS), Office of Federal Acquisition and Regulatory Policy, GSA, Washington, D.C. 20405; and to the Office of Management and Budget, Paperwork Reduction Project (9000-0037), Washington, D.C. 20503.

NOTE: The project number in Items 1 and 16 may be the same as the Invitation or Proposal Number.

4. OFFERS TO BE RECEIVED BY (at place specified for receipt of offers)	A. TIME A.M. P.M.	B. DATE (Month, day, year)	5. TIME FOR COMPLETION (Calendar days)

6A. ISSUING OFFICE (Name, address, and ZIP code)		7. PROJECT TITLE AND LOCATION
6B. ROOM NO.	6C. TELEPHONE NO. (Include area code)	

INSTRUCTIONS: a. Solicitation Documents will be issued upon receipt of your affirmative response to this Pre-Solicitation Notice by the DUE DATE set forth in Item 15. b. If a charge is required under Item 8A, your affirmative response must include a check or money order in the applicable amount, made payable to Agency (shown in Item 9). Refund (when specified in Item 8B) will be made upon your return of the bid documents in good condition, without marks, notes, or mutilations, within 20 calendar days after the final date for receipt of offers. c. The Issuing Office, at its discretion, may make bid documents available to plan rooms of the Associated General Contractors, Chambers of Commerce, Dodge Reports, and other similar contractors' commercial service facilities. d. Bid guarantee is required with any bid in excess of $25,000. Bid guarantee shall be in the amount of 20 percent of the amount of the bid, or $3,000,000, whichever is less. For bid guarantee purposes, the amount of the bid is the aggregate of the Lump Sum Base Bid, all Alternates (if any), and the product(s) of each unit price (if any) multiplied by the applicable number of units shown on the Bid Form. e. NOTICE TO SMALL BUSINESS FIRMS: A program for the purpose of assisting qualified small business concerns in obtaining certain bid, payment, or performance bonds that are otherwise not obtainable is available through the Small Business Administration (SBA). For information concerning SBA's surety bond guarantee assistance, contact your SBA District Office.

8A. CHARGE FOR SOLICITATION DOCUMENTS $	8B. IS THIS CHARGE REFUNDABLE? ☐ YES ☐ NO	9. MAKE CHECK PAYABLE TO:	
10. ESTIMATED COST RANGE OF PROJECT A. FROM $	B. TO $	11. OFFERS COVERING THE PROJECT RESTRICTED TO SMALL BUSINESS? ☐ YES ☐ NO	12. SUBCONTRACTING PLAN REQUIRED? ☐ YES ☐ NO

13. DESCRIPTION OF WORK (Physical characteristics)

(If additional space is needed use reverse)

IMPORTANT: FAILURE TO COMPLETE AND RETURN THIS PART OF THE NOTICE TO THE ISSUING OFFICE, ON OR BEFORE THE DUE DATE SHOWN IN ITEM 15, MAY RESULT IN YOUR NAME BEING REMOVED FROM OUR MAILING LIST.

14. ACTION REQUESTED (Check applicable box)		15. DUE DATE
A. AM INTERESTED IN BIDDING ON THIS PROJECT AS A: ☐ PRIME CONTRACTOR ☐ PRINCIPAL SUBCONTRACTOR	B. I AM NOT INTERESTED IN BIDDING ON THIS PROJECT. RETAIN MY NAME ON YOUR MAILING LIST.	
NO. OF SET(S) YOU REQUIRE OF SOLICITATION DOCUMENTS	C. REMOVE MY NAME FROM YOUR MAILING LIST.	16. PROJECT NO.

17. NAME, ADDRESS (City, State, ZIP Code), AND TELEPHONE NUMBER OF FIRM

18. NAME AND TITLE OF FIRM REPRESENTATIVE	19. SIGNATURE OF REPRESENTATIVE	20. DATE SIGNED

NSN 7540-01-148-3531 EXPIRATION DATE 1-31-90
Previous edition not usable.

1417-103

STANDARD FORM 1417 (REV. 12-88)
Prescribed by GSA - FAR (48 CFR) 53.236-1(a)

BILLING CODE 6820-JC-C

53.301-1419 [Reserved].

51. Section 53.301-1419 is removed and reserved.

52. Section 53.302-1419 is added to read as follows:

53.302-1419 Optional Form 1419, Abstract of Offers—Construction.

BILLING CODE 6820-JC-M

ABSTRACT OF OFFERS CONSTRUCTION

1 SOLICITATION NUMBER

2 DATE ISSUED

3 DATE OPENED

PAGE OF PAGES

4 ISSUING OFFICE

I CERTIFY that I have opened read and recorded on this abstract all offers received in response to this solicitation.

NAME AND TITLE OF CERTIFYING OFFICIAL (TYPE)

SIGNATURE

D TE SIGNED

5 PROJECT TITLE

8 GOVERNMENT ESTIMATE (Check A B or C and complete D E and F)

A HIRED LABOR

B REASONABLE CONTRACT (With t P fit)

C REASONABLE CONTRACT (I cludi g P ofit)

6 NUMBER OF AMENDMENTS ISSUED

9. OFFERS

NO. 1	NO. 2
A. OFFEROR	A OFFEROR
B BID SECURITY (Typ d m t)	B BID SECURITY (Typ d m t)
C AMENDMENTS ACKNOWLEDGED	C AMENDMENTS AC NOWLEDGED

7A. ITEM NO.	7B DESCRIPTION OF OFFERED ITEM	7C EST QUANTITY	D UNIT	E UNIT PRICE	F ESTIMATED AMOUNT	D UNIT PRICE	E ESTIMATED AMOUNT	D UNIT PRICE	E ESTIMATED AMOUNT

NSN 7540 01 150 0981 501 9 101

NOTE If mo e tha two offe s a e ecei ed co ti e on OF 1419A

OPTIONAL FORM 1419 (11 88)
P b d by GSA F R (8 CFR) 53 238 '

BILLING CODE 6820-JC-C

53. Section 53.302–1419A is added to read as follows:

53.302–1419A Optional Form 1419A, Abstract of Offers—Construction, Continuation Sheet.

BILLING CODE 6820–JC–M

ABSTRACT OF OFFERS CONSTRUCTION CONTINUATION SHEET

1 SOLICITATION NUMBER

P GE OF PAGES

INSTRUCTIONS Attach this form to OF 1419 Abstract of Offers Construction when more than 2 offers are received on a construction project Each Continuation Sheet will accomodate 14 contract items to conform to the number of items which can be entered on the OF 1419 Use additional OF 1419 s for contract items in excess of 14 and attach additional Continuation Sheets (OF 1419A) as needed

2 PROJECT TITLE

3. CONTRACT ITEMS			4. OFFERS (Continued)							
			NO.:____		NO.:____		NO.:____		NO.:____	
			A OFFEROR		OFFEROR		A OFFEROR		A OFFEROR	
			B B D SECURITY (T p d Am t)		B BID SECURITY (Typ d Am t)		B B D SECURIT (Typ d Am t)		B B D SECUR T (Typ d m t)	
			C MENDMENTS CKNOWLEDGED		C AMENDMENTS ACKNOWLEDGED		C AMENDMENTS ACKNOWLEDGED		C AME DMEI TS CKNOWLEDGED	
A ITEM NO	B ESTIMATED QUANTITY	C UNIT	D UNIT PR CE	E ESTIM TED AMOUNT	D UN T PR CE	E ESTIMATED AMOUNT	D UNIT PRICE	E EST M TED MOUNT	D UNIT PR CE	E EST M TED MOUNT

NSN 7540 01 280-5502 501419 201 OPTIONAL FORM 1419A (11 88) P s ibed by GSA FAR (48 CFR) 53 236 1

[FR Doc 89-16077 Filed 7-10-89; 8:45 am]

BILLING CODE 6820-IC-C

federal register

Tuesday
July 11, 1989

Part IV

Department of Defense

General Services Administration

National Aeronautics and Space Administration

48 CFR Parts 15, 43, and 52

Federal Acquisition Regulation (FAR); Equitable Adjustment Claims; Proposed Rule

DEPARTMENT OF DEFENSE

GENERAL SERVICES ADMINISTRATION

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

48 CFR Parts 15, 43, and 52

Federal Acquisition Regulation (FAR); Equitable Adjustment Claims

AGENCIES: Department of Defense (DoD), General Services Administration (GSA), and National Aeronautics and Space Administration (NASA).

ACTION: Proposed rule.

SUMMARY: The Civilian Agency Acquisition Council and the Defense Acquisition Regulatory Council are considering a change to the Federal Acquisition Regulation (FAR) 15.804-6, 15.805-5, and 43.204(b)(5) to permit contracting officers to include the clause at FAR 52.243-6, Change Order Accounting, in construction contracts.

DATE: Comments should be submitted to the FAR Secretariat at the address shown below on or before September 11, 1989 to be considered in the formulation of a final rule.

ADDRESS: Interested parties should submit written comments to: General Services Administration, FAR Secretariat (VRS), 18th & F Streets, NW., Room 4041, Washington, DC 20405.

Please cite FAR Case 89-54 in all correspondence related to this issue.

FOR FURTHER INFORMATION CONTACT: Margaret A. Willis, FAR Secretariat, Room 4041, GS Building, Washington, DC 20405, (202) 523-4755. Please cite FAR Case 89-54.

SUPPLEMENTARY INFORMATION:

A. Background

A review by the Office of the Inspector General, Department of Defense, of requests for equitable adjustment submitted against construction contracts found that contractors were submitting requests far in excess of actual incurred cost. Many of these requests for adjustment were made after contract performance was substantially completed and actual costs were known. Contractors' cost representations, however, were generally based on estimates because the costs related to the change were not segregated from the costs of the unchanged portions of the contracts. The proposed rule would permit contracting officers to include a clause in construction contracts requiring that contractors separately account for changed work if the estimated cost of the change, or a series of related changes exceeds $100,000. It would also reiterate the requirement for contractors to identify all incurred costs as a part of any cost proposal submitted on a SF 1411.

B. Regulatory Flexibility Act

This proposed change does not appear to have a significant economic impact on a substantial number of small entities within the meaning of the Regulatory Flexibility Act, 5 U.S.C. 601, et seq., because the clause will be included in construction contracts only when deemed appropriate by the contracting officer and becomes operative only when the estimated cost of a change or series of related changes exceeds $100,000. An Initial Regulatory Flexibility Analysis (IRFA) has therefore not been prepared. Comments from small entities concerning the affected FAR sections will also be considered in accordance with section 610 of the Act. Such comments must be submitted separately and cite section 89-610 (FAR Case 89-54) in correspondence.

C. Paperwork Reduction Act

The Paperwork Reduction Act (Pub. L. 96-511) does not require approval of the proposed revisions because there is no change in paperwork burden involved. The proposed revision to the Change Order Accounting clause policies adds nothing that is not already permitted by the FAR. Contracting officers have always been permitted to insert the Change Order Accounting Clause in construction contracts. The revision to the Table 15-2 at 15.804-6 likewise has not changed the long-standing requirement to provide cost or pricing data in order to comply with the Truth in Negotiations Act. Identification of actual costs incurred prior to submittal of a proposal as addressed by this proposed rule falls within the definition of cost or pricing data, and submittal of this information has always been required by the FAR.

List of Subjects in 48 CFR Parts 15, 43, and 52

Government procurement.

Dated: June 30, 1989.

Harry S. Rosinski,

Acting Director, Office of Federal Acquisition and Regulatory Policy.

Therefore, 48 CFR Parts 15, 43, and 52 are amended as set forth below:

1. The authority citation for 48 CFR Parts 15, 43, and 52 continues to read as follows:

Authority: 40 U.S.C. 486(c); 10 U.S.C. Chapter 137 and 42 U.S.C. 2473(c).

PART 15—CONTRACTING BY NEGOTIATION

2. Section 15.804-6 is amended in Table 15-2 of paragraph (b)(2) by redesignating existing paragraphs 3., 4., 5., 6., and 7 as 4., 5., 6., 7 and 8., and adding a new paragraph 3., and by revising in Table 15-2 the title of new paragraph 8.B. to read as follows:

15.804-6 Procedural requirements.

(b)

(2)

Table 15-2—Instructions for Submission of a Contract Pricing Proposal

3. Whenever the offeror has incurred costs for work performed before submission of proposal, those costs must be identified in the offeror's cost/price proposal.

8.

B. Change Orders, Modifications, and Claims.

3. Section 15.805-5 is amended by adding paragraph (c)(4) to read as follows:

15.805-5 Field pricing support.

(c)

(4) When the contracting officer requires a field pricing review of requests for equitable adjustments, the contracting officer should provide the information listed in 43.204(b)(5).

PART 43—CONTRACT MODIFICATIONS

4. Section 43.204 is amended by adding paragraph (b)(5) to read as follows:

43.204 Administration.

(b)

(5) When the contracting officer requires a field pricing review of requests for equitable adjustment, the contracting officer shall provide a list of any significant contract events which may aid in the analysis of the request. This list should include—

(i) Date and dollar amount of contract award and/or modification;

(ii) Date of submission of initial contract proposal and dollar amount;

(iii) Date of alleged delays or disruptions;

(iv) Performance dates as scheduled at date of award and/or modification;

(v) Actual performance dates;

(vi) Date entitlement to an equitable adjustment was determined or contracting officer decision was rendered, if applicable;

(vii) Date of certification of the request for adjustment, if certification is required; and

(viii) Dates of any pertinent Government actions or other key events during contract performance which may have an impact on the contractor's request for equitable adjustment.

5. Section 43.205 is amended by revising paragraph (f) to read as follows:

43.205 Contract clauses.

(f) The contracting officer may insert a clause, substantially the same as the clause at 52.243-6, Change Order Accounting, in solicitations and contracts (1) for construction, supply, and research and development; (2) of significant technical complexity, and (3) if numerous changes are anticipated.

PART 52—SOLICITATION PROVISIONS AND CONTRACT CLAUSES

52.243-6 [Amended]

6. Section 52.243-6 is amended in the introductory text by inserting a colon following the word "follows" and removing the remainder of the sentence.

[FR Doc. 89-16197 Filed 7-10-89; 8:45 am]

BILLING CODE 6820-JC-M

federal register

Tuesday
July 11, 1989

Part V

Department of Justice

Office of Justice Programs

Obstacles to Recovery and Return of Parentally Abducted Children; Program Announcement and Solicitation for Applications

DEPARTMENT OF JUSTICE

Office of Justice Programs

Obstacles to Recovery and Return of Parentally Abducted Children; Program Announcement and Solicitation for Application

ACTION: Program Announcement—A Study of Obstacles to Recovery and Return of Parentally Abducted Children, Notice of Issuance of a solicitation for applications.

SUMMARY: The Office of Juvenile Justice and Delinquency Prevention (OJJDP), pursuant to Title IV of the Juvenile Justice and Delinquency Prevention (JJDP) Act of 1974, as amended, announces a new research program to examine obstacles encountered by custodial parents attempting to regain custody of their children abducted by a noncustodial parent. This study is required by Section 408 of the 1988 Amendments to the JJDP Act.

The main purpose of this research program is to document significant obstacles—including legal, policy, procedural, and practical—to the recovery and return of parentally abducted children and develop recommendations for eliminating them. A major product is a description of the study and a summary of the results to be used by OJJDP in preparing a report to the U.S. Congress describing such obstacles and summarizing the results of the study. This summary must be completed and submitted to OJJDP not later than September 1991, in order for OJJDP to meet the mandated reporting requirement.

This is a research effort consisting of three stages.

Stage I—Research Design: Stage I involves: (1) Reviewing related studies and other relevant literature; and (2) developing a research design for Stage II of the study. The research design should clearly articulate the problem, objectives, methodology, sampling strategy and analysis plans for assessing obstacles to legal parents' recovery of parentally abducted children.

Stage II—Data Collection: This stage of the study involves the implementation of the design developed in Stage I. This will entail the systematic collection of data and other information on intrastate, interstate, and international obstacles (legal, policy, procedural and practical) to parental recovery of children abducted by a noncustodial parent.

Stage III—Data Analysis and Preparation of Report: One major report will be developed on obstacles to parental recovery and return of children abducted by a noncustodial parent. The report will include a description of such obstacles and recommendations for ameliorating them. An executive summary shall be included.

OJJDP invites public agencies and non-profit private agencies to submit competitive applications to conduct the research outlined in this Request for Proposals (RFP).

Up to $300,000 has been allocated for the initial award. One cooperative agreement will be awarded competitively, with an initial budget period of 12 months. The initial award will provide support to complete Stage I and the implementation of a portion of Stage II. Applicants must propose and justify the amount required to complete Stages II and III. One noncompeting continuation award will be considered to complete Stage II and to conduct Stage III of the study, provided that Stage I is satisfactorily completed, and Stage II is proceeding satisfactorily, during the remaining 9 month budget period.

EFFECTIVE DATE: The deadline for receipt of applications is August 22, 1989.

FOR FURTHER INFORMATION CONTACT: Catherine P Sanders, (202) 724-7560, OJJDP Room 784, 633 Indiana Ave, NW Washington, DC 20531.

SUPPLEMENTARY INFORMATION:

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II. Program Goals
III. Program Strategy
IV Dollar Amount and Duration
V Eligibility Requirements
VI. Application Requirements
VII. Procedures and Criteria for Selection
VIII. Submission Requirements
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I. Introduction and Background

This study addresses obstacles custodial parents encounter in attempting to recover their children abducted by a noncustodial parent. Such custodial parents need help in overcoming the obstacles they encounter in regaining rightful custody of their children. These obstacles include but are not limited to:

Locating the child;

State laws restricting police authority to take such a child into custody;

Conflicting state laws regarding establishment of legal custody;

Situations in which the other parent may have civil custody; and

Costs associated with returning the child.

This experience is devastating, especially for the child and the legal parent. Recovery and return of such children to their legal parent is one of the most complex legal problems in our society. The obstacles such parents face are often virtually insurmountable. In some instances, legal parents attempting to recover their child abducted by the noncustodial parent discover that the abducting parent has obtained custody in another state (that has custodial provisions in conflict with those of the original State from which the child was abducted). In other instances, legal parents who have regained custodial rights do not have the necessary financial resources to cover the costs of returning the child home.

Some technical assistance and guidance is provided for parents attempting to locate and recover their children. More help is needed. This study constitutes the next step: A detailed, rigorous examination and documentation of the obstacles, in order to target remedial measures.

The Congress has directed OJJDP to undertake such a study. Section 408 of the Juvenile Justice and Delinquency Prevention Act (JJDP Act), as amended in 1988, directs the OJJDP Administrator to begin (within one year after enactment of the Act: October 1, 1988) a study

> To determine the obstacles that prevent or impede individuals who have legal custody of children from recovering such children from parents who have removed such children from such individuals in violation of law.

A report on the results of this study is to be made by OJJDP to the Congress not later than November 18, 1991.

The legislative history of the JJDP Act provides guidance upon the "obstacles" to be addressed in the study. In its report on H.R. 1801, the *Juvenile Justice and Delinquency Prevention Amendments of 1988,* H. Report 100-605, 5 May, 1988, Committee on Education and Labor stated at p. 23 that the:

> Obstacles (preventing or impeding recovery) should include (but are not limited to) those that are financial and legal (e.g., intrastate, interstate, or international).

This study is expected to involve a review of the following types of information:

The legal requirements, policies, and procedures of public and private organizations that become involved in handling parental abduction cases;

Interstate Compacts that may eliminate interstate obstacles to the return of abducted children;

State, custody provisions;

The Parental Kidnapping Prevention Act (with a particular focus on the use of Unlawful Flight to Avoid Prosecution warrants);

The Hague Convention on the Civil Aspects of International Child Abduction (and its implementation in the U.S. through the International Child Abduction Remedies Act).

In addition, the study must include examination of actual parental abduction cases. Consideration should be given to comprehensive on-site studies of selected jurisdictions—representative of problems/solutions parents, encounter/employ in attempting to regain legal custody of their children. The study should include a detailed analysis of costs custodial parents experience in recovering their children, together with recommended alternative sources of financial assistance.

Efforts should be made to identify ameliorative measures that address the range of involved agencies, for example, schools, law enforcement, courts, and human services from the standpoint of their legal requirements, policies, procedures and practices.

Finally the project should address unique problems encountered by special populations where different systems of justice are involved in the recovery and return of such abducted children. These might include Indian parents and parents in military families. Applicants should indicate those special populations they propose to address and explain how they would do so.

Related Projects. OJJDP is currently supporting five projects that are related to this study:

1. *"Investigation and Prosecution of Parental Abduction Cases"* (Grant No. 88-MC-CX-0011, 9/30/88—9/30/89, $99,989). Conducted by the National District Attorneys Association (NDAA), the purpose of this project is to address the legal, jurisdictional and administrative issues faced by prosecutors in cases of parent/family abductions.

The project consists of four stages:

State I. This stage involves legal research, including: (1) A review of relevant case law and statutes, (2) the collection and review of existing information on prosecutorial handling of parent/family abductions and related issues; and (3) a survey of prosecutors to identify effective approaches to addressing issues in the area.

Stage II. During this stage NDAA will develop a trial manual and training curriculum for prosecutors responsible for handling parent/family abduction cases.

Stage III. NDAA will provide training and technical assistance to multi-disciplinary teams in four communities during this stage.

Stage IV NDAA will develop and disseminate materials to facilitate replication of effective approaches to investigating and prosecuting parental abduction cases.

2. *"National Study of Law Enforcement Policies and Practices Regarding Missing Children and Homeless Youth"* (Grant No. 86-MC-CX-K036, 9/9/86-9/30/89, $927,621.) Conducted by the Research Triangle Institute (RTI) and the URSA Institute, this study is designed to improve the law enforcement response to missing children and homeless youth cases. The project's activities include a determination of the extent of the missing child and homeless youth problem as reported to law enforcement, the scope and variety of law enforcement policies and procedures that relate to missing children, and the effects of current policies and procedures on recovery of missing children. In addition, model programs will be designed and disseminated to police and other juvenile justice agencies.

As part of this project, RTI/URSA surveyed 1,060 state and local law enforcement agencies in 1987 regarding the numbers and types of missing children cases during 1986 and departmental responses. During subsequent phases, the project also involved conducting interviews with law enforcement officials in selected sites and conducting case studies of law enforcement handling of missing and homeless children.

3. *"Reunification of Missing Children"* (Grant No. 88-MC-CX-K002, 10/1/88-9/30/91, $174,840.) OJJDP is also supporting a new effort to develop and test prototypical approaches to reunifying missing children, including parentally abducted children, with their legal parents, and developing solutions to problems parents and children encounter in this area. The University of California (UC) began this development program in October 1988. It is designed to assess existing information regarding the reunification of missing children; develop and test program models (based on research and assessment of selected programs); and develop a dissemination strategy.

4. *"National Center for Missing and Exploited Children* (Grant No. 86-MC-CX-K003, 11/14/85—3/31/89, $6,788,560.) During the past four years the National Center for Missing and Exploited Children (NCMEC) has been providing police, prosecutors, parents and legislators legal technical assistance with regard to parental abductions. NCMEC's products in this area include:

Comprehensive digests of state laws relevant to child custody orders, both civil and criminal;

A manual that is "user friendly" to parents, attorneys and police on the steps that must be taken to conform to the laws and practices associated with parental custody disputes;

A manual on "Selected State Legislation" that includes technically accurate and instructive directions and information to assist the user in reviewing state laws on custody and how to use various resources in searching for and locating a parentally kidnapped child;

A manual on "Parental Kidnapping" that contains a step-by-step instructional guide for parents who have experienced a family abduction, whether domestic or foreign; and

An instructive brochure—"Just in Case You Are Using the Federal Locator Service"—that assists a searching parent in using this resource to locate a parent who may be the subject of a family abduction dispute.

5. *"Missing and Exploited Children Comprehensive Action Program"* (Grant No. 88-MC-CX-K001, 9/30/88-9/30/91, $382,768.) The Public Administration Service is conducting this project for OJJDP The Missing and Exploited Children Comprehensive Action Program (M-CAP) is aimed at promoting the coordination, concentration and direction of community resources to addressing the problems of missing and exploited children. A strategic planning process will be demonstrated in selected sites.

The award recipient for the Study of Obstacles to the Recovery and Return of Parentally Abducted Children will be required to coordinate its work with these five OJJDP projects.

II. Program Goals

To identify and describe significant problems encountered by custodial parents attempting to recover their children abducted by a noncustodial parent;

To identify programs and strategies for eliminating such obstacles; and

To make recommendations for improving the handling of child abductions by non-custodial parents.

III. Program Strategy

A variety of agencies may be involved in the recovery and return process, including schools, police, prosecution, courts, child protection agencies and private organizations.

The role each plays in a particular parental abduction case is affected by legal requirements, agency policies, procedures, and practices. These points should be kept in mind in relation to development of the strategy of this study.

Section 408 of the JJDP Act, and the related legislative history suggest that this study should emphasize the role of law enforcement, schools, and other human service agencies in the recovery and return of abducted children; and the *civil* process of assisting the legal parent in the recovery of the child from the abducting parent and return to the home. Furthermore, the NDAA project: "Investigation and Prosecution of Parental Abduction Cases" addresses the governmental prosecution function.

This program will be conducted in three discrete, incremental stages: (I) The research design stage, which involves the development of a research methodology for the assessment of obstacles to recovery and return of parentally abducted children; (II) the data collection stage, in which data will be collected using the methodology developed in the previous stage; and (III) the data analysis and report preparation stage, which involves the analysis of the data and the preparation of reports that summarize the results of the study and provide recommendations for ameliorating obstacles encountered by parents attempting to regain custody of their children abducted by a noncustodial parent.

All technical and subject matter portions of the program will be guided by recommendations of a project advisory committee established specifically for the program. The project advisory committee will provide comments and recommendations regarding the strategies and activities for this program. It may be necessary to change or supplement project advisory committee members for different stages of the program. However, the objective will be to select technical and subject matter experts capable of addressing issues related to each of the program stages. Thus the project advisory committee must have combined expertise in legal research in the parental abduction area, experience in the recovery of parentally abducted children, and criminal/juvenile justice research and evaluation.

The applicant must specify the necessary qualifications of the advisory board members, roles and responsibilities, anticipated tasks and level of compensation. The composition of the board must reflect an appropriate balance of skills and expertise (both programmatic and technical) and have a sufficient level of independence (i.e., no conflict of interest) to effectively advise the project. It should consist of five members to ensure an appropriate range of expertise.

Stage I: Research Design

The main objective of this stage is to review existing information related to significant obstacles encountered by custodial parents in the recovery and return of their children, and to use this information in the development of a detailed research design for the data collection and analysis/reporting stages of the study. In developing the research design, applicants are strongly encouraged to build on the information produced by the OJJDP projects described in the Introduction and Background Section. Applicants should address how this will be accomplished.

Applicants must describe how the following activities will be performed.

Establish a project advisory committee;

Develop a plan for preparing the research design;

Review related literature, including materials developed by the OJJDP-supported projects identified in the Introduction and Background Section;

Develop a research design;

Obtain project advisory committee review of the research design; and

Develop a dissemination strategy to inform the field of the status of the project.

Stage I Products. These research activities will result in three products:

A plan for developing a research design that includes:

—Research objectives;
—A description of activities, including a literature review, the methodology and a time/task plan; and
—Staff assignments

A literature review that describes and assesses existing information on legal, policy, procedural and practical barriers for custodial parents.

A research design that specifies:

—Objectives;
—Definition of key concepts;
—A sampling strategy for examining parental abduction cases;
—A data collection plan;
—Data analysis plans;
—Anticipated reports; and
—A time/task plan for implementation.

Stage II Activities: Data Collection

The main objectives of Stage II are to: Collect information and data on the nature and extent of significant obstacles to parental recovery and return of their abducted children, and on effective programs and strategies (including laws, policies, procedures and practices) for eliminating such obstacles.

Major activities during this stage include the following:

Preparation of a data collection plan;

Project advisory committee review and appropriate adjustments to methodology and/or data collection plans;

Data collection;

Data processing; and

Preparation of data and analysis.

The major products to be completed during this stage are:

A data collection plan;

Data base prepared for analysis to include all necessary documentation; and

A dissemination strategy to inform the field of the status of the program.

Stage III Activities: Data Analysis and Preparation of Report

The main objectives of Stage III are to: analyze the data collected in the course of examining actual cases representative of the most significant obstacles encountered by legal parents in recovering their abducted children, and prepare a set of reports that will communicate the findings to a variety of audiences. A major product will be a description of the study and a summary of the results to be used by OJJDP in preparing a report for Congress.

Applicants must describe how the following activities will be undertaken:

Preparation of a plan for report development;

Analysis of data;

Preparation of draft reports on analyses related to the research objectives;

Project advisory committee review of analysis and draft reports; and

Preparation of the final reports.

The products to be completed under this stage are:

A plan for data analysis and preparation of reports that identifies the report to be prepared and the outline;

Draft reports;

The final reports; and

A dissemination strategy to inform the field of the results of the program.

IV Dollar Amount and Duration

Up to $300,000 has been allocated for the initial award. One grant will be awarded competitively, with an initial budget period of twelve (12) months. This research program will consist of three stages (Design; Data Collection; and Analysis and Report Writing). The initial award will provide support for Stage I and part of Stage II. One noncompeting continuation award will be considered to complete Stage II and conduct Stage III within a 21 month project period.

A noncompetitive continuation award for the additional budget period may be withheld for justifiables reasons. These include: (1) The results of Stage I and II do not justify further program activity; (2) the recipient is delinquent in submitting required reports; (3) adequate grantor agency funds are not available to support the project; (4) the recipient has failed to show satisfactory progress in achieving the objectives of the project or otherwise failed to meet the terms and conditions of the award; (5) a recipient's management practices have failed to provide adequate stewardship of grantor agency funds; (6) outstanding audit exceptions have not been cleared; and (7) any other reason that would indicate continued funding would not be in the best interest of the Government. Applicants should anticipate a September 15, 1989 start-up date.

V Eligibility Requirements

Applications are invited from public and private agencies and organizations. Applications will be accepted from for-profit agencies as long as they agree to waive their profit fee and accept only actual allowable costs.

Applicants must demonstrate that they have prior experience in the design and conduct of studies of a similar nature; demonstrated knowledge of issues associated with legal custody of children; and demonstrated legal research experience in the juvenile justice field.

Applicants must also demonstrate that they have the financial capability, fiscal integrity and financial responsibility, including, but not limited to, an acceptable accounting system and internal controls, and compliance with grant fiscal requirements. Applicants who fail to demonstrate that they have the capability to manage this program will be ineligible for funding consideration.

VI. Application Requirements

All applicants must submit a completed Application for Federal Assistance (Standard Form 424), including a program narrative, a detailed budget, and budget narrative. All applications must include the information outlined in this section of the solicitation (Section VI) in Part IV Program Narrative of the application (SF-424). The program narrative of the application should not exceed 35 double-spaced pages in length.

In accordance with Executive Order 12549, 28 CFR 67.510, applicants must also provide certification that they have not been debarred (voluntarily or involuntarily) from the receipt of Federal Funds. Form 4662/2, which will be supplied with the application package must be submitted with the application.

Applications that include non-competitive contracts for the provision of specific services must include a sole source justification for any procurement in excess of $25,000.

The following information must be included in the application (SF-424) Part IV Program Narrative:

A. Organizational Capability—Applicants must demonstrate that they are eligible to compete for this grant on the basis of the eligibility criteria established in Section V of this solicitation. Applicants must concisely describe their organizational experience with respect to the eligibility criteria specified in Section V above. Applicants must demonstrate how their organizational experience and capabilities will enable them to achieve the goals and objectives of this initiative. Applicants are invited to append one example of prior work products of a similar nature to their application.

Applicants must demonstrate that their organization has or can establish fiscal controls and accounting procedures that assure Federal funds available under this agreement are disbursed and accounted for properly. Applicants who have not previously received Federal funds will be asked to submit a copy of the Office of Justice Assistance, Research and Statistics (OJARS) Accounting System and Financial Capability Questionnaire (OJARS Form 7120/1). Copies of the form will be provided in the application kit and must be prepared and submitted along with the application. Other applicants may be requested to submit this form. All questions are to be answered regardless of instructions (Section C.I.B. note). The CPA certification is required only of those applicants who have not previously received Federal funding.

B. Program Goals and Objectives—A succinct statement of your understanding of the goals and objectives of the program should be included. The application should also include a problem statement and a discussion of the potential contribution of this program to the field.

C. Program Strategy—Applicants should describe the proposed approach for achieving the goals and objectives of the program. A detailed discussion of how the activities and products of each of three stages of the program would be accomplished should be included.

D. Program Implementation Plan—Applicants should prepare a plan that outlines the major activities involved in implementing the study, describe how they will allocate available resources to implement the project, how the program will be coordinated with those OJJDP programs described in the Introduction and Background Section, and how the study will be managed.

The plan must also include an organizational chart depicting the roles and describing the responsibilities of key organizational/functional components, and a list of key personnel responsible for managing and implementing the three major stages of the project. Applicants must present detailed position descriptions, qualifications, and selection criteria for each position. This documentation and individual resumes may be submitted as appendices to the application.

E. Time-Task Plan—Applicants must develop a time-task plan for the 24-month project period, clearly identifying major milestones and products. This must include designation of organizational responsibility and a schedule for the completion of the activities and products identified in Section III. Applicants should also indicate the anticipated cost schedule per month for the entire project period.

F Products—Applicants must concisely describe the interim and final products of each stage of the program, and must address the adequacy of the final product for meeting the statutory requirements.

G. Program Budget—Applicants shall provide two budgets: the first for a 12-month period (the period of this award); and the second for the subsequent Stages II and III of the study. Each budget must be accompanied by a detailed justification for all costs, including the basis for computation of these costs. Applications containing contract(s) must include detailed budgets for each organization's expenses. The budget should include funds for a five-person Program Advisory Committee to meet one time during the 12-month budget period, and as appropriate during the subsequent phase.

VII. Procedures and Criteria for Selection

All applications will be evaluated and rated based on the extent to which they meet the following weighted criteria. In general, all applications received will be reviewed in terms of their responsiveness to the minimum program application requirements set forth in Section VI. Applications will be evaluated by a peer review panel according to the OJJDP Competition and

Peer Review Policy, 28 CFR Part 34, Subpart B, published August 2, 1985, at 50 FR 31366–31367 The selection criteria and their point values (weights) are as follows:

1. The problem to be addressed by the project is clearly stated. This criterion includes a concise, well-justified statement of the problem. (5 points)

2. The goals and objectives of the proposed project are clearly defined. This criterion includes a succinct statement of the goals and objectives of the project as well as definitions of key terms. (10 points)

3. The project design is sound and contains program elements directly linked to the achievement of project objectives. This criterion includes appropriateness and technical adequacy of the approach to the activities and products of each stage of the program for meeting the goals and objectives. (30 points)

4. The project management structure is adequate to the successful conduct of the project. This criterion includes: (a) Adequacy and appropriateness of the project management structure and the feasibility of the time-task plan, (15 points); and (b) the qualifications of staff identified to manage and implement the program, including staff to be hired through contracts (if any). Also included is the clarity and appropriateness of position descriptions, required qualifications and selection criteria relative to the specfic functions set out in the Implementation Plan, (15 points). (Total 30 points)

5. Organizational capability is demonstrated at a level sufficient to successfully support the project. This criterion includes the extent and quality of organizational experience in the development, délivery and coordination of research programs of similar nature that have been national in scope. (15 points)

6. Budgeted costs are reasonable, allowable, and cost-effective for the activities to be undertaken. This criterion includes completeness and appropriateness of the proposed costs in relation to the proposed strategy and tasks to be accomplished. (10 points)

Applications will be evaluated by a peer review panel. The results of peer review will be relative aggregate ranking of applications in the form of "Summary of Ratings. These will ordinarily be based on numerical values assigned by individual peer reviewers. Peer review recommendations, in conjunction with the results of internal review and any necessary supplementary reviews, will assist the Administrator in considering competing applications and in selection of the application for funding. The final award decision will be made by the OJJDP Administrator.

VIII. Submission Requirements

All applicants responding to this solicitation are subject to the following requirements:

1. Organizations that plan to respond to this announcement are requested to submit a written notification of their intent to apply to OJJDP by July 20, 1989. Such notification should specify the name, address and telephone number of the organization; co-applicants, if any; and contact persons. It should be sent to: Catherine P Sanders, OJJDP Rm 784, 633 Indiana Ave., NW Washington, DC 20531. This notification submission is optional and will be used to estimate the application review workload.

2. Upon request to OJJDP the necessary forms for application will be provided, along with Department of Justice certification information.

3. Applicants must submit the original signed application (Standard Form 424) and three copies to OJJDP including the certification that the organization has not been disbarred (Form 4662/2). Additionally, applicants must also provide a *Certification Regarding Drug-Free Workplace Requirements* which meets the requirements of the Drug-Free Workplace Act of 1988 (Pub. L. 100–690, Title V Subtitle D). Form 4061/3, which will be supplied with the application information package, must be submitted with the application.

All applications must be received by mail or hand delivered to the OJJDP by 5:00 p.m. EST on August 22, 1989. Those applications sent by mail should be addressed to: Catherine Sanders, OJJDP U.S. Department of Justice, 633 Indiana Avenue, NW Washington, DC. 20531. Hand delivered applications must be taken to the OJJDP Room 784, 633 Indiana Avenue, NW Washington, DC between the hours of 8:00 a.m. and 5:00 p.m. except Saturdays, Sundays or Federal holidays.

The OJJDP will notify applicants in writing of the receipt of their application. Subsequently, applicants will be notified by letter as to the decision made regarding whether or not their submission will be recommended for funding.

IX. Civil Rights Compliance

A. All recipients of OJJDP assistance including any contractors, must comply with the non-discrimination requirements of the Juvenile Justice and Delinquency Prevention Act of 1974, as amended; Title VI of the Civil Rights Act of 1964; Section 504 of the Rehabilitation Act of 1973, as amended; Title IX of the Education Amendments of 1972; the Age Discrimination Act of 1975; and the Department of Justice Non-Discrimination Regulations (28 CFR Part 42, Subparts C, D, E, and G).

B. In the event a Federal or State court of Federal or State administrative agency makes a finding of discrimination after a due process hearing on the grounds of race, color, religion, national origin or sex against a recipient of funds, the recipient will forward a copy of the finding to the Office of Civil Rights (OCR) of the Office of Justice Programs.

Date: July 5, 1989.

Terrence Donahue,

Acting Administrator Office of Juvenile Justice and Delinquency Prevention.

[FR Doc. 89–16182 Filed 7–10–89; 8:45 am]

BILLING CODE 4410–18–M

federal register

Tuesday
July 11, 1989

Part VI

Environmental Protection Agency

40 CFR Part 302 and 355

Reporting and Liability Exemptions for Federally Permitted Releases of Hazardous Substances; Supplemental Notice to Proposed Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 302 and 355

[FRL-3613-8]

Reporting and Liability Exemptions for Federally Permitted Releases of Hazardous Substances

AGENCY: U.S. Environmental Protection Agency (EPA).

ACTION: Supplemental notice to proposed rule.

SUMMARY: On July 19, 1988, the U.S. Environmental Protection Agency (EPA) published a Notice of Proposed Rulemaking (NPRM) to define the scope of the exemption from reporting and liability for "federally permitted releases" under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended. This Notice clarifies certain aspects of the proposed scope of the CERCLA exemption for releases permitted under the Clean Air Act (CAA) and solicits comments on the clarification.

DATES: Comments must be submitted on or before August 10, 1989.

ADDRESSES: *Comments:* Comments should be submitted in triplicate to: Emergency Response Division, Superfund Docket Clerk, Attention: Docket Number 101(10) FPR, Room 2427M, (OS-240), U.S. Environmental Protection Agency, 401 M Street, SW Washington, DC 20460.

Docket: Copies of materials relevant to this rulemaking are kept in Room 2427M, at the above address. The docket is available for inspection between 9:00 a.m. and 4:00 p.m. Monday through Friday, excluding Federal holidays. Appointments to review the docket can be made by calling 202/382-3046. As provided in 40 CFR Part 2, a reasonable fee (the first 50 pages are free and each additional page costs $.20) may be charged for copying services.

FOR FURTHER INFORMATION CONTACT: Mr. Hubert Watters, Project Officer, Response Standards and Criteria Branch, Emergency Response Division (OS-210), U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460, (202) 382-2463; or the RCRA/Superfund Hotline at 1-800/424-9356; in Washington, DC, 1-202/382-3000. The toll-free telephone number of the National Response Center is 1-800/424-8802; in Washington, DC, 1-202/426-2675.

SUPPLEMENTARY INFORMATION: The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, establishes broad Federal authority to respond to releases or threats of releases of hazardous substances, pollutants, and contaminants. In order to alert Federal officials of potentially dangerous releases of hazardous substances, section 103 of CERCLA requires any person in charge of a vessel or facility to immediately notify the National Response Center when there has been a release of a hazardous substance from a vessel or facility in an amount equal to or greater than the "reportable quantity" (RQ) for that substance. RQs are established under CERCLA section 102 and are published in 40 CFR Part 302. Under section 107 of CERCLA, responsible parties are liable for the costs incurred in responding to releases of hazardous substances, regardless of whether the amount released equals or exceeds an RQ.

CERCLA section 103(a) exempts "federally permitted releases" from the reporting requirements for releases of hazardous substances. Similarly, section 107(j) exempts federally permitted releases from CERCLA liability. In addition, section 304(a)(2)(A) of the Emergency Planning and Community Right-to-Know Act of 1986 (also known as Title III of the Superfund Amendments and Reauthorization Act of 1986) exempts federally permitted releases from State and local emergency release notification requirements.

Section 101(10) of CERCLA defines the term "federally permitted release" by specifically enumerating certain releases subject to permits or authorizations under other Federal or State environmental laws. EPA discussed and solicited comments on possible interpretations of the CERCLA section 101(10) federally permitted release exemptions in the preamble to a proposed rule published on May 25, 1983 (48 FR 23552). On July 19, 1988 (53 FR 27268), EPA proposed a rule defining the scope of these exemptions. Today's Notice addresses the proposed exemption for one category of release: releases permitted under the Clean Air Act (CAA). Public comment is requested on this approach for determining which air releases should be reported under section 103 and for defining the scope of the exemption for federally permitted air releases under CERCLA and Title III.

CERCLA section 101(10)(H) defines "federally permitted release" to include:

> any emission into the air subject to a permit or control regulation under section 111, section 112, title I part C, title I part D, or State implementation plans submitted in accordance with section 110 of the Clean Air Act (and not disapproved by the Administrator of the Environmental Protection Agency), including any schedule or waiver granted, promulgated, or approved under these sections

In the July 19, 1988 proposal (53 FR 27273-27274), EPA discussed three options for defining the scope of this exemption. Under the first option, EPA would include under the exemption only those air releases for which the constituent hazardous substances have been expressly identified on the record, reviewed during the permit or rulemaking proceeding, and subject to a specific or categorical limitation in the permit or control regulation. Option two would include as federally permitted those releases of specifically named criteria pollutants as well as constituents of the pollutant, i.e., particulate matter (including its constituents) and four other CAA criteria pollutants in compliance with a permit or regulatory standards. Releases of constituents of particulate matter that are hazardous substances would be federally permitted whether or not the specific constituent hazard substances are identified on the record. Under Option two, releases of volatile organic compounds (VOCs) that are regulated under section 109 of the CAA would not be federally permitted because they are not criteria pollutants, but rather are precursors of ozone. The third option would add to releases defined as federally permitted under Option one any "routine" emission that the permit or control regulation is designed to address.[1]

EPA is today clarifying Option one as described above. Under Option one, EPA would exempt as federally permitted under CERCLA section 101(10)(H) only those air releases in compliance with a CAA permit or control regulation that specifically identifies the hazardous substance and is specifically designed to limit or eliminate the emission of that hazardous substance. Thus, a hazardous substance constituent of released particulate matter [2] or a hazardous substance

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[1] Releases of particulate matter generally would be considered federally permitted under Options two and three, as those options are described in the July 19, 1988 NPRM; releases of VOCs would generally be considered federally permitted only under Option three.

[2] Particulate matter is regulated under the National Ambient Air Quality Standards of the CAA if it has a diameter of 10 micrometers (known as "PM10") or less (40 CFR 50.6(c)). Fine particles of CERCLA hazardous substances, such as lead and other metals, may be among the constituents released in particulate matter.

constituent of VOCs would not be considered federally permitted unless it was specifically addressed and controlled under a CAA permit or regulation. Identification in the public record without specific control in a permit or regulation would be insufficient. Even if the limitation or control is designed to address particulates or VOCs as a class, these emissions would not be federally permitted.

Under Option one as clarified in today's Supplemental Notice, reporting would be required for releases of an RQ or more of a CERCLA hazardous substance, unless the direct health and environmental effects of that substance have been explicitly considered in developing the permit or control regulation for the release. Specific consideration of the health and environmental effects of the hazardous substance constituent of particulate matter or VOCs must be clearly manifested in the permit or control regulation, either through a specific limit on the hazardous substance constituent or a statement that the limitation on the criteria pollutant sufficiently controls the toxic effects of the hazardous substance constituent. Moreover, persons in charge of facilities or vessels with releases of particulate matter or VOCs that are not federally permitted would be subject to the liability provisions of CERCLA section 107

There are several reasons for today's Supplemental Notice. First, Option one, which would exclude releases identified, reviewed, and made part of the public record for the permit, was based in part on the statutory language concerning the exemption for releases permitted under the Clean Water Act. (See CERCLA section 101(10)(B).) As noted by several commenters, however, section 101(10)(B) does not relate to air releases and the language is difficult to apply outside the context of permits issued under the Clean Water Act. For instance, under the Clean Water Act, such "identified" discharges must be subject to on-site treatment in order to qualify for the federally permitted release exemption.

Second, the July 19, 1988 preamble discussion of Option one stated that a release would be federally permitted if it was identified in the permitting record; this position was inconsistent with the proposed regulatory language. The intent of the regulatory language in the July 19, 1988 proposed rule and today's clarification of Option one is to exempt only those emissions which the permit or control is specifically designed to limit or eliminate. Thus, Option one would not, contrary to the expectations of some commenters, include releases of constituent hazardous substances in particulate matter unless those constituents are in compliance with a specific emission limit.

Third, as discussed above, the exemption for federally permitted releases applies to liability under CERCLA section 107 as well as emergency release notification under section 103 of CERCLA and section 304 of Title III. Although the impact of the rule on liability was stated in the preamble and is a significant factor in the Agency's decision concerning the breadth of the exclusions, virtually all commenters on the July 19, 1988 NPRM addressed only the impact of the options on their reporting responsibilities. Commenters did not address the large potential impact of the options on liability of responsible parties for CERCLA cleanups. Therefore, this Supplemental Notice is intended to highlight the fact that the definition of "federally permitted release" affects both notification and liability under CERCLA, and specifically solicit comments on the impacts on both notification and liability under CERCLA of the scope of the federally permitted release exemptions and today's clarification of Option one.

As stated in the July 19, 1988 proposal, the Agency is considering Option one because VOCs are regulated based on their contribution to ozone, not on the direct health effects associated with ambient concentrations of total VOCs or VOC constituents. Option one would ensure that individual VOCs are not considered federally permitted unless the health effects of those VOCs were considered in the permit or regulation development process. Similarly, EPA is aware of certain particulate matter emissions that contain large amounts of hazardous substances (e.g., lead), but for which the particulate matter emission limit was established without regard to the amount or toxicity of the constituent hazardous substances. Some of these emissions can result, and have resulted, in widespread soil contamination in the area of the facility. EPA solicits comments on whether such contamination, even though it may have resulted from releases in compliance with applicable categorical controls for particulate matter under the CAA (which are not based on the toxicity of the constituent hazardous substances), should be exempt from CERCLA notification and liability provisions.

Date: June 28, 1989

Jonathan Z. Cannon,

Acting Assistant Administrator.

[FR Doc. 89-16211 Filed 7-10-89; 8:45 am]

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federal register

Tuesday
July 11, 1989

Part VII

Environmental Protection Agency

40 CFR Part 52

Approval and Promulgation of State Implementation Plans; Colorado

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[FRL-3613-6]

Approval and Promulgation of State Implementation Plans; Colorado

AGENCY: Environmental Protection Agency (EPA).

ACTION: Withdrawal of Final Rule.

SUMMARY: The EPA gives notice that the direct final rule approving a revision to the Colorado State Implementation Plan (SIP) submitted on November 17 1988, by the Governor of Colorado, amending Colorado Regulation No. 1 to exempt the destruction of missiles under the Intermediate-Range Nuclear Forces (INF) Treaty from meeting the opacity limits, has been withdrawn. The notice approving the SIP revision was published on May 11, 1989 (54 FR 20389). This approval is being withdrawn because notice was received by EPA that someone wished to submit adverse or critical comments. EPA will propose approval of the SIP revision in another Federal Register notice.

DATES: This action will be effective July 11, 1989.

FOR FURTHER INFORMATION CONTACT: Dale M. Wells, Air Programs Branch, Environmental Protection Agency, One Denver Place, Suite 500, 999 18th Street, Denver, Colorado 80202-2405, (303) 294-1773, (FTS) 564-1773.

List of Subjects in 40 CFR Part 52

Air pollution control, Particulate matter, Sulfur oxides.

Authority: 42 U.S.C. 7401-7642)

Date: June 30, 1989.

Kerrigan G. Clough,

Acting for Regional Administrator

PART 52—[AMENDED]

1. The authority citation for Part 52 continue to read:

Authority: 42 U.S.C. 7401-7642.

§ 52.320 [Amended]

2. Section 52.320 is amended by removing paragraph (c)(48).

[FR Doc. 89-16415 Filed 7-10-89; 9:46 am]

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federal register

Tuesday
July 11, 1989

Part VIII

The President

Proclamation 5998—National Day to Commemorate the Bicentennial of Bastille Day, the French Revolution, and the Declaration of the Rights of Man and the Citizen

Executive Order 12682—Commission on Alternative Utilization of Military Facilities

Federal Register
Vol. 54, No. 131
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Presidential Documents

Title 3—

The President

Proclamation 5998 of July 7 1989

National Day to Commemorate the Bicentennial of Bastille Day, the French Revolution, and the Declaration of the Rights of Man and the Citizen

By the President of the United States of America

A Proclamation

On July 14, Americans will join the people of France in celebrating the 200th anniversary of the taking of the Bastille. As we commemorate the bicentennial of the French Revolution and the Declaration of the Rights of Man and the Citizen, we celebrate the values that we share and our partnership in the quest for liberty and justice.

The United States achieved its Independence with considerable assistance from France and from individual French citizens like the Marquis de Lafayette. Lafayette and other French soldiers who came to this country to fight alongside Americans during our Revolution supported the cause of freedom and individual liberty Bidding farewell to the Continental Congress in 1783, Lafayette exclaimed: "May this great monument, raised to Liberty, serve as a lesson to the oppressor, and an example to the oppressed! " A few years later, the significance of his words would be fully revealed.

On July 14, 1789, the people of France stormed the despised Bastille prison in Paris, marking the beginning of their own struggle against tyranny Shortly thereafter, the National Assembly of France approved the Declaration of the Rights of Man and the Citizen. This historic document noted that "ignorance, neglect, or contempt of human rights, are the sole causes of public misfortunes" and affirmed the concept of individual liberty.

The Declaration of the Rights of Man and the Citizen was not only adopted within the same year as the Congress approved our Bill of Rights, but also contained some of the same themes, including freedom of religion, freedom of the press, security in one's property and person, and due process in courts of law. These documents proclaimed the inviolability of human rights on both sides of the Atlantic Ocean and guaranteed them for future generations.

As we celebrate the bicentennial of the French Revolution and the Declaration of the Rights of Man and the Citizen, we note with pride that our two countries remain committed to the principles of individual liberty, equality, and representative government. Two centuries ago, the great American patriot Thomas Paine observed: "The Revolutions of America and France have thrown a beam of light over the world, which reaches into man." Today we rejoice in the fact that the bright promise of freedom not only continues to shine on both sides of the Atlantic, but also continues to grow stronger around the world.

The Congress, by House Joint Resolution 298, has designated July 14, 1989, as "National Day to Commemorate the Bastille Day Bicentennial," and requested the President to issue a proclamation in observance of this event.

NOW THEREFORE, I, GEORGE BUSH, President of the United States of America, do hereby proclaim July 14, 1989, as a National Day to Commemorate the Bicentennial of Bastille Day, the French Revolution, and the Declaration of the Rights of Man and the Citizen. I call upon the people of the United States to observe this day with appropriate ceremonies and activities, and I urge them to renew their support for the just aspirations of all peoples who seek freedom and self-determination.

IN WITNESS WHEREOF I have hereunto set my hand this seventh day of July, in the year of our Lord nineteen hundred and eighty-nine, and of the Independence of the United States of America the two hundred and fourteenth.

[FR Doc. 89-16409
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Billing code 3195-01-M

Presidential Documents

Executive Order 12682 of July 7 1989

Commission on Alternative Utilization of Military Facilities

By the authority vested in me as President by the Constitution and laws of the United States of America, including section 2819 of the Military Construction Authorization Act, 1989 (Public Law 100-456), it is hereby ordered as follows:

Section 1. (a) I hereby establish the Commission on Alternative Utilization of Military Facilities ("Commission").

(b) The Commission shall consist of a representative of the Department of Defense designated by the Secretary of Defense, a representative of the Federal Bureau of Prisons designated by the Attorney General, a representative of the National Institute on Drug Abuse designated by the Secretary of Health and Human Services, a representative of the General Services Administration designated by the Administrator of General Services, a representative of the Department of Housing and Urban Development designated by the Secretary of Housing and Urban Development, and a representative of the Office of National Drug Control Policy designated by the Director of the Office of National Drug Control Policy. The representative of the Department of Defense shall chair the Commission.

(c) The Secretary of Defense shall provide such personnel and support to the Commission as the Secretary determines is necessary to accomplish its mission.

Sec. 2. (a) Subject to subsection (b), the Secretary of Defense shall prepare and submit to the Commission reports listing active and nonactive military facilities that are underutilized in whole or in part or otherwise excess to the needs of the Department of Defense.

(b) The first such report shall be prepared and submitted as soon as possible for inclusion in the first report of the Commission. The second report shall be prepared and submitted on January 30, 1990, and succeeding reports shall be prepared and submitted every other year commencing on January 30, 1992, and continuing until January 30, 1996.

Sec. 3. (a) Subject to subsection (b), the Commission shall submit a report to the President and then to the Congress that identifies those facilities, or parts of facilities, from the list submitted by the Secretary of Defense under Section 2 that could be effectively utilized or renovated to serve as:

(1) minimum security facilities for nonviolent prisoners,

(2) drug treatment facilities for nonviolent drug abusers, and

(3) facilities to assist the homeless.

(b) The first report of the Commission shall be submitted to the President and then to the Congress by September 1, 1989. The second, and succeeding reports of the Commission, shall be submitted to the President and then to the Congress no later than September 1, 1990, and every second year through September 1, 1996.

THE WHITE HOUSE,
July 7, 1989.

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H.R. 923/Pub. L. 101-51

To redesignate the Federal hydropower generating facilities located at Dam B on the Neches River at Town Bluff, Texas, as the "Robert Douglas Willis Hydropower Project. (July 6, 1989; 103 Stat. 141; 1 page) Price: $1.00

H.J. Res. 132/Pub. L. 101-52

To designate the second Sunday in October of 1989 as "National Children's Day. (July 6, 1989; 103 Stat. 142; 2 pages) Price: $1.00