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# federal register

Friday
June 22, 1984

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Federal Home Loan Bank Board

**Air Pollution Control**
Environmental Protection Agency

**Aviation Safety**
Federal Aviation Administration

**Bridges**
Coast Guard

**Ethylene Oxide**
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**Marine Safety**
Coast Guard

**Marketing Agreements**
Agricultural Marketing Service

**Quarantine**
Animal and Plant Health Inspection Service

**Railroad Safety**
Federal Railroad Administration

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# Presidential Documents

Title 3—

The President

## Proclamation 5213 of June 19, 1984

## Minority Enterprise Development Week, 1984

By the President of the United States of America

A Proclamation

America's growth and prosperity depend on the full participation of all its citizens. If we as a Nation are to remain the world's leader in innovation, technology and productivity, we must ensure that all Americans are involved in our economic progress.

The fulfillment of this challenge has become more realistic today, because of the significant contributions of minority American entrepreneurs to our economy. The Nation's 600,000 minority-owned businesses reveal the true meaning of entrepreneurship. They have emerged as a dynamic force in the marketplace, bringing innovative products and services to our economy, and constituting the principal source for jobs and training for thousands of American workers.

As we enter an era of greatly expanded opportunities in economic growth and development, it is appropriate that we encourage minority business owners by recognizing their tremendous contributions toward the continued economic development of our Nation.

NOW, THEREFORE, I, RONALD REAGAN, President of the United States of America, do hereby proclaim the week of October 7 through October 13, 1984, as Minority Enterprise Development Week, and I urge all Americans to join together with the minority business enterprises of our Nation in appropriate observances.

IN WITNESS WHEREOF, I have hereunto set my hand this nineteenth day of June, in the year of our Lord nineteen hundred and eighty-four, and of the Independence of the United States of America the two hundred and eighth.

Ronald Reagan

[FR Doc. 84-16794
Filed 6-20-84; 11:44 am]

# Presidential Documents

**Executive Order 12480 of June 20, 1984**

## Establishing an Emergency Board To Investigate a Dispute Between The Long Island Rail Road and the Brotherhood of Locomotive Engineers

A dispute exists between The Long Island Rail Road and the Brotherhood of Locomotive Engineers representing employees of The Long Island Rail Road.

The dispute has not heretofore been adjusted under the provisions of the Railway Labor Act, as amended ("the Act").

A party empowered by the Act has requested that the President establish an emergency board pursuant to Section 9A of the Act.

Section 9A(c) of the Act provides that the President, upon such a request, shall appoint an emergency board to investigate and report on the dispute.

NOW, THEREFORE, by the authority vested in me by Section 9A of the Act, as amended (45 U.S.C. 159a), it is hereby ordered as follows:

**Section 1.** *Establishment of Board.* There is established, effective June 20, 1984, a board of three members to be appointed by the President to investigate this dispute. No member shall be pecuniarily or otherwise interested in any organization of railroad employees or any carrier. The board shall perform its functions subject to the availability of funds.

**Sec. 2.** *Report.* The board shall report its findings to the President with respect to the dispute within 30 days after the date of its creation.

**Sec. 3.** *Maintaining Conditions.* As provided by Section 9A(c) of the Act, as amended, from the date of the creation of the board, and for 120 days thereafter, no change, except by agreement of the parties, shall be made by the carrier or the employees in the conditions out of which the dispute arose.

**Sec. 4.** *Expiration.* The board shall terminate upon the submission of the report provided for in Section 2 of this Order.

Ronald Reagan

THE WHITE HOUSE,
*June 20, 1984.*

[FR Doc. 84-16891
Filed 6-21-84; 10:46 am]
Billing code 3195-01-M

# Presidential Documents

**Executive Order 12481 of June 20, 1984**

## Establishing an Emergency Board To Investigate a Dispute Between The Long Island Rail Road and the Brotherhood of Railway, Airline and Steamship Clerks, Freight Handlers, Express and Station Employes

A dispute exists between The Long Island Rail Road and the Brotherhood of Railway, Airline and Steamship Clerks, Freight Handlers, Express and Station Employes, representing employees of The Long Island Rail Road.

The dispute has not heretofore been adjusted under the provisions of the Railway Labor Act, as amended ("the Act").

A party empowered by the Act has requested that the President establish an emergency board pursuant to Section 9A of the Act.

Section 9A(c) of the Act provides that the President, upon such a request, shall appoint an emergency board to investigate and report on the dispute.

NOW, THEREFORE, by the authority vested in me by Section 9A of the Act, as amended (45 U.S.C. 159a), it is hereby ordered as follows:

**Section 1.** *Establishment of Board.* There is established, effective June 20, 1984, a board of three members to be appointed by the President to investigate this dispute. No member shall be pecuniarily or otherwise interested in any organization of railroad employees or any carrier. The board shall perform its functions subject to the availability of funds.

**Sec. 2.** *Report.* The board shall report its findings to the President with respect to the dispute within 30 days after the date of its creation.

**Sec. 3.** *Maintaining Conditions.* As provided by Section 9A(c) of the Act, as amended, from the date of the creation of the board, and for 120 days thereafter, no change, except by agreement of the parties, shall be made by the carrier or the employees in the conditions out of which the dispute arose.

**Sec. 4.** *Expiration.* The board shall terminate upon the submission of the report provided for in Section 2 of this Order.

Ronald Reagan

THE WHITE HOUSE,
*June 20, 1984.*

[FR Doc. 84-16892
Filed 6-21-84; 10:47 am]
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# 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

### Food and Nutrition Service

### 7 CFR Part 250

### Donation of Food for Use in the United States, Its Trust Territories and Possessions and Areas Under Its Jurisdiction

**AGENCY:** Food and Nutrition Service, USDA.

**ACTION:** Final rule.

**SUMMARY:** This final rule amends the Food Distribution Program Regulations (7 CFR Part 250). This amendment extends the prohibition relating to charges imposed by distributing agencies for the storage and transportation of commodities through September 30, 1985, and makes technical changes to conform the statutory language cited in the regulation to changes in the Temporary Emergency Food Assistance Act of 1983.

**DATES:** This rule is effective June 22, 1984.

**FOR FURTHER INFORMATION CONTACT:** Gwena Kay Tibbits, Chief, Program Administration Branch, (703) 756–3660.

**SUPPLEMENTARY INFORMATION:**

### Classification

These regulations have been reviewed under Executive Order 12291 and have been classified as "non-major." This rule will not have an annual effect on the economy of $100 million or more nor will it cause a major increase in costs or price for consumers; individual industries; Federal, State or local government agencies; or geographic regions. This action will not have 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.

This rule has been reviewed with regard to the Regulatory Flexibility Act (Pub. L. 96–354). Robert E. Leard, Administrator of the Food and Nutrition Service, has certified that this action will not have a significant economic impact on a substantial number of small entities.

Public Law 98–92 amends Pub. L. 98–8, extending the Temporary Emergency Food Assistance Act of 1983 through September 30, 1985, including the prohibition of certain charges imposed by distributing agencies for the storage and transportation of commodities. The regulation, with minor changes, merely recites the prohibition against charges contained in section 208 of Pub. L. 98–8 and as such is a nondiscretionary provision. In addition to the update to § 250.6(j), § 250.1(b)(21) is being amended to reflect the changes in section 202 of Pub. L. 98–8 which were made by Pub. L. 98–92. Since § 250.1(b) merely quotes the language of various commodity statutes for the ease of reference of the user, these changes are also nondiscretionary. Accordingly, Robert E. Leard has determined that this is an interpretive rule and that pursuant to 5 U.S.C. 553 (b) and (d) this rule is issued without solicitation of comments and is made effective upon publication. It is the Department's position, however, that the statutory prohibition against charges continued to be in effect prior to the publication of this rule. Section 250.6(j) is being amended to avoid confusion regarding this matter. Section 250.6(j) of the current regulations prohibits States from charging recipient agencies any amount that is in excess of the State's direct costs of storing and transporting commodities, minus any amount the Department provides the State for paying such costs, when such commodities are made available without charge or credit under any nutrition program administered by the Department. However, this provision expired on September 30, 1983. Through an oversight, the Interim Rule extending the Temporary Emergency Food Assistance Program through Fiscal Years 1984 and 1985 which was published on December 16, 1983 (48 FR 55498), does not contain an extension of the prohibition against recipient agencies being assessed charges for the storage and transportation of commodities.

This regulation does not contain any new recordkeeping or information collection requirements which are subject to approval by the Office of Management and Budget under the Paperwork Reduction Act of 1980 (44 U.S.C. 3507).

### List of Subjects in 7 CFR Part 250

Aged, Disaster assistance, Food Assistance Program, Grant programs-Social programs, Infants and children, Reporting and recordkeeping requirements, Surplus, Agricultural commodities.

### PART 250—[AMENDED]

Accordingly, Part 250 is amended as follows:

1. In § 250.1, paragraph (b)(21) is revised to read as follows:

**§ 250.1 General purpose and scope.**

* * * * *

(b) *Legislation* * * *

(21) Section 202 of Pub. L. 98–8, as amended, reads as follows: (a) Notwithstanding any other provision of law, in order to complement the domestic nutrition programs, make maximum use of the Nation's agricultural abundance, and expand and improve the domestic distribution of price-supported commodities, commodities acquired by the Commodity Credit Corporation that the Secretary of Agriculture (hereinafter referred to as the "Secretary") determines, in his discretion, are in excess of quantities needed to—

(1) Carry out other domestic donation programs,

(2) Meet other domestic obligations (including quantities needed to carry out a payment-in-kind acreage diversion program),

(3) Meet international market development and food aid commitments, and

(4) Carry out the farm price and income stabilization purposes of the Agricultural Adjustment Act of 1938, the Agricultural Act of 1949, and the Commodity Credit Corporation Charter Act, shall be made available by the Secretary, without charge or credit for such commodities, for use by eligible recipient agencies for food assistance.

(b) Notwithstanding any other provision of law, if wheat stocks acquired by the Commodity Credit Corporation are not available for the purposes of this Act, up to 300,000 metric tons of wheat designated under section 302(b)(1) of the Food Security Wheat Reserve Act of 1980 may be used for the purposes of this Act. Any amount of wheat used from the Food Security Wheat

Reserve under this Act shall be replenished by an equivalent quantity of wheat under the provisions of section 302(b) of the Food Security Wheat Reserve Act of 1980 as soon as practicable, but before October 1, 1985.

* * * * *

2. In § 250.6, paragraph (j) is revised to read as follows:

**§ 250.6 Obligations of distributing agencies.**

* * * * *

(j) *Distribution charges.* (1) Except as provided in paragraph (j)(2) of this section, recipient agencies may be required to pay part or all of the intrastate costs of distribution through a system of charges assessed by distributing or subdistributing agencies. Any system of assessment operated by the distributing or subdistributing agency shall have the prior approval of and be subject to review by the FNSRO. The charges assessed shall be used solely in accordance with the provisions of paragraph (k) of this section.

(2) For the period September 30, 1983, through September 30, 1985, whenever a commodity is donated to a State without charge or credit against entitlement, recipient agencies may not be assessed for any part of the intrastate costs of storage and transportation of such commodity that is in excess of the distributing or subdistributing agency's direct costs for such storage and transportation minus any amount that the Department provides to the State to pay such costs under Part 251 of this chapter.

(3) Under no circumstance shall recipients be required to make any payments in money, materials, or services for or in connection with the receipt of donated foods, nor shall voluntary contributions be solicited in connection with the receipt of donated foods for any purpose.

* * * * *

(Catalog of Federal Domestic Assistance No. 10.550.)

(Sec. 208, Pub. L. 98–8, as amended)

Dated: June 14, 1984.

**Robert E. Leard,**

*Administrator.*

[FR Doc. 84–16687 Filed 6–21–84; 8:45 am]

BILLING CODE 3410–30–M

## Agricultural Marketing Service

### 7 CFR Part 910

**[Lemon Reg. 469]**

### Lemons Grown in California and Arizona; Limitation of Handling

**AGENCY:** Agricultural Marketing Service, USDA.

**ACTION:** Final rule.

**SUMMARY:** This regulation establishes the quantity of fresh California-Arizona lemons that may be shipped to market at 325,000 cartons during the period June 24–30, 1984. Such action is needed to provide for orderly marketing of fresh lemons for the period due to the marketing situation confronting the lemon industry.

**EFFECTIVE DATE:** June 24, 1984.

**FOR FURTHER INFORMATION CONTACT:** William J. Doyle, Chief, Fruit Branch, F&V, AMS, USDA, Washington, D.C. 20250, telephone 202–447–5975.

**SUPPLEMENTARY INFORMATION:** This final rule has been reviewed under Secretary's Memorandum 1512–1 and Executive Order 12291, and has been designated a "non-major" rule. William T. Manley, Deputy Administrator, Agricultural Marketing Service, has certified that this action will not have a significant economic impact on a substantial number of small entities.

This final rule is issued under Marketing Order No. 910, as amended (7 CFR Part 910) regulating the handling of lemons grown in California and Arizona. The order is effective under the Agricultural Marketing Agreement Act of 1937, as amended (7 U.S.C. 601–674). The action is based upon recommendations and information submitted by the Lemon Administrative Committee and upon other available information. It is found that this action will tend to effectuate the declared policy of the Act.

This action is consistent with the marketing policy currently in effect. The committee met publicly on June 19, 1984, at Los Angeles, California, to consider the current and prospective conditions of supply and demand and recommended a quantity of lemons deemed advisable to be handled during the specified week. The committee reports that lemon demand is improving.

It is further found that it is impracticable and contrary to the public interest to give preliminary notice, engage in public rulemaking, and postpone the effective date until 30 days after publication in the **Federal Register** (5 U.S.C. 553), because of insufficient time between the date when information became available upon which this regulation is based and the effective date necessary to effectuate the declared purposes of the Act. Interested persons were given an opportunity to submit information and views on the regulation at an open meeting. It is necessary to effectuate the declared purposes of the Act to make these regulatory provisions effective as specified, and handlers have been apprised of such provisions and the effective time.

**List of Subjects in 7 CFR Part 910**

Marketing agreements and orders, California, Arizona, Lemons.

**PART 910—[AMENDED]**

Section 910.769 is added as follows:

**§ 910.769 Lemon Regulation 469.**

The quantity of lemons grown in California and Arizona which may be handled during the period June 24, 1984, through June 30, 1984, is established at 325,000 cartons.

(Secs. 1–19, 48 Stat. 31, as amended; 7 U.S.C. 601–674)

Dated: June 20, 1984.

**Thomas R. Clark,**

*Deputy Director, Fruit and Vegetable Division, Agricultural Marketing Service.*

[FR Doc. 84–16836 Filed 6–21–84; 8:45 am]

BILLING CODE 3410–02–M

## Animal and Plant Health Inspection Service

### 9 CFR Part 78

**[Docket No. 84–049]**

### Brucellosis in Cattle; State and Area Classifications

**AGENCY:** Animal and Plant Health Inspection Service, USDA.

**ACTION:** Interim rule.

**SUMMARY:** This document amends the regulations governing the interstate movement of cattle because of brucellosis by changing the classification of the States of North Carolina and South Carolina from Class A to Class Free. This action is necessary because it has been determined that these States meet the standards for Class Free status. The effect of this action is to relieve certain restrictions on the interstate movement of cattle from the States of North Carolina and South Carolina.

**DATES:** Effective date of the interim rule is June 22, 1984. Written comments must be received on or before August 21, 1984.

**ADDRESSES:** Written comments should be submitted to Thomas O. Gessel, Director, Regulatory Coordination Staff, APHIS, USDA, Room 728, Federal Building, Hyattsville, MD 20782. Written comments received may be inspected at Room 728 of the Federal Building between 8 a.m. and 4:30 p.m., Monday through Friday, except holidays.

**FOR FURTHER INFORMATION CONTACT:**
Dr. Thomas J. Holt, Cattle Diseases Staff, VS, APHIS, USDA, Room 817, Federal Building, 6505 Belcrest Road, Hyattsville, MD 20782, 301–436–8711.

**SUPPLEMENTARY INFORMATION:**

**Background**

The brucellosis regulations (contained in 9 CFR Part 78 and referred to below as the regulations) provide a system for classifying States or portions of States according to the rate of brucella infection present and the general effectiveness of a brucellosis control and eradication program. The classifications are Class Free, Class A, Class B, and Class C. States or Areas which do not meet the minimum standards for Class C are required to be placed under Federal quarantine. This document changes the classification of the States of North Carolina and South Carolina from Class A to Class Free.

The brucellosis Class Free classification is based on a finding of no known brucellosis in cattle for the period of 12 months preceding classification as Class Free. The Class C classification is for States or Areas with the highest rate of brucellosis, with Classes A and B in between. Restrictions on the movement of cattle are more stringent for movements from Class A States or Areas compared to movements from Free States or Areas, and are more stringent for movements from Class B States or Areas compared to movements from Class A States or Areas, and so on. The restrictions include testing for movement of certain cattle from other than Class Free States or Areas.

The basic standards for the different classifications of States or Areas concern maintenance of: (1) A State or Area-wide accumulated 12 consecutive month herd infection rate not to exceed a stated level; (2) a Market Cattle Identification (MCI) program reactor rate not to exceed a stated rate (this concerns the testing of cattle at auction markets, stockyards, and slaughtering establishments); (3) a surveillance system which includes a testing program for dairy herds and slaughtering establishments, and provisions for identifying and monitoring herds at high risk of infection, including herds adjacent to infected herds and herds from which infected animals have been sold or received under approved action plans; and (4) minimum procedural standards for administering the program.

Prior to the effective date of this document, the entire States of North Carolina and South Carolina were classified as Class A States. It had been necessary to classify these States as Class A rather than Class Free because of the herd infection rate. A State or Area must remain free from brucellosis in cattle for the preceding 12 month period in order to meet the herd infection rate criteria for Class Free Status. A review of brucellosis program records establishes that the States of North Carolina and South Carolina should be changed to Class Free since these States now meet the criteria for classification as Class Free.

**Executive Order and Regulatory Flexibility Act**

This rule is issued in conformance with Executive Order 12291 and has been determined to be not a major rule. Based on information compiled by the Department, it has been determined that this rule will not have a significant effect on the economy; 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 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.

For this action, the Office of Management and Budget has waived its review process required by Executive Order 12291.

Changing the status of the States of North Carolina and South Carolina reduces testing requirements on the interstate movement of certain cattle. Cattle moved interstate are moved for slaughter, for use as breeding stock, or for feeding. Testing requirements for cattle moved interstate for immediate slaughter, or to quarantined feedlots are not affected by the changes in status. Also, cattle from Certified Brucellosis-Free Herds moving interstate are not affected by these changes in status. It has been determined that the changes in brucellosis status made by this document will not affect marketing patterns and will not have a significant economic impact on those persons affected by this document.

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

**Emergency Action**

Dr. John K. Atwell, Deputy Administrator of the Animal and Plant Health Inspection Service for the Veterinary Services, has determined that an emergency situation exists which warrants publication of this interim rule without prior opportunity for public comment. Immediate action is warranted in order to delete unnecessary restrictions on the interstate movement of certain cattle from the States of North Carolina and South Carolina.

Further, pursuant to the administrative procedure provisions in 5 U.S.C. 553, it is found upon good cause that prior notice and other public procedures with respect to this interim rule are impracticable and contrary to the public interest and good cause is found for making this interim rule effective less than 30 days after publication of this document in the **Federal Register.** Comments have been solicited for 60 days after publication of this document. A document discussing comments received and any amendments required will be published in the **Federal Register.**

**List of Subjects in 9 CFR Part 78**

Animal diseases, Brucellosis, Cattle, Hogs, Quarantine, Transportation.

## PART 78—BRUCELLOSIS

Accordingly, 9 CFR Part 78 is amended as follows:

**§ 78.20 [Amended]**

1. Section 78.20(a) is amended by adding "North Carolina," immediately before "North Dakota," and by adding "South Carolina," immediately before "Utah,".

2. In § 78.20(b), "North Carolina," and "South Carolina," are removed.

(Authority: Secs. 4, 5, and 6, 23 Stat. 32, as amended; secs. 1 and 2, 32 Stat. 791–792, as amended; sec. 3, 33 Stat. 1265, as amended; sec. 2, 65 Stat. 693; and secs. 3 and 11, 76 Stat. 130, 132; 21 U.S.C. 111–113, 114a–1, 115, 120, 121, 125, 134b, 134f; 7 CFR 2.17, 2.51, and 371.2(d).)

Done at Washington, D.C., this 19th day of June, 1984.

**K. R. Hook,**

*Acting Deputy Administrator, Veterinary Services.*

[FR Doc. 84–16760 Filed 6–21–84; 8:45 am]

BILLING CODE 3410–34–M

## FEDERAL HOME LOAN BANK BOARD

### 12 CFR Parts 507, 508, 509, 509a, 512 and 513

[No. 84-307]

### Practice Before the Board

Dated: June 14, 1984.

**AGENCY:** Federal Home Loan Bank Board.

**ACTION:** Final rule; request for comments.

**SUMMARY:** The Federal Home Loan Bank Board ("Board") has revised its rules of practice and procedure regarding persons, particularly professionals representing other persons, practicing before the Board. These regulations: (1) define what constitutes "practice" before the Board, (2) clarify those persons who may practice before the Board, (3) authorize the Board, without preliminary hearing, to exclude an attorney from an adjudicatory, investigatory, rulemaking or removal proceeding for dilatory, obstructionist, egregious, contemptuous or contumacious conduct, and (4) establish procedures for the temporary or permanent suspension or debarment of a person's privilege to practice before the Board.

**DATES:** Effective June 20, 1984. Comments must be received by August 17, 1984.

**ADDRESS:** Send comments to Director, Information Services Section, Office of the Secretariat, Federal Home Loan Bank Board, 1700 G Street, NW., Washington, D.C. 20552. Comments will be available for public inspection at that address.

**FOR FURTHER INFORMATION CONTACT:** Rosemary Stewart (202-377-6437), Director, Enforcement Division, Office of General Counsel, Federal Home Loan Bank Board, or Marianne E. Roche (202-377-7000), Attorney, Enforcement Division, Office of General Counsel, Federal Home Loan Bank Board, at the above address.

**SUPPLEMENTARY INFORMATION:** The Board is adopting regulations in connection with (1) practice before the Board generally and at specific administrative proceedings and (2) the debarment or suspension of persons from that practice. The purpose of these regulations is to enable the Board to preserve the integrity of its administrative processes by temporarily or permanently suspending from practice before it those persons who misuse those processes. Any person who intentionally files false information or otherwise engages in unethical, dishonest or unprofessional conduct before the Board, or who is found to have violated the laws or regulations administered by the Board or to be otherwise unfit to practice before the Board, will be subject to the suspension and debarment procedures.

The Board's present regulations describe various forms of proceedings before the Board: rulemaking proceedings for Federal Home Loan Bank Board regulations in 12 CFR Part 507, general rulemaking proceedings in 12 CFR Part 508, adjudicatory proceedings in 12 CFR Part 509, expedited removal hearings in 12 CFR Part 509a and investigatory proceedings in 12 CFR Part 512. In each of these proceedings, a party or interested person, as appropriate, may come before the Board in the proceedings directly or through counsel. It is only in Part 509 that any minimum level of competency has been required for such counsel or that the Board has given itself the opportunity to expel a person from a proceeding for egregious conduct.

Under § 509.3(b), the Board has the authority to summarily suspend any person, including an attorney, from a hearing for contemptuous conduct; however, such suspension pertains solely to the duration of that particular hearing. The Board believes it has the authority, generally, to suspend attorneys or other persons from appearing before the Board if they have a history of similar conduct at any type of hearing or proceeding, in investigations or in other dealings with the Board.

The number of professionals appearing before the Board and its staff has increased in recent years as the thrift industry has become more complex and, particularly, as a rising number of institutions have converted from mutual to stock form and have become subject to the federal securities laws. Unfortunately, filings in connection with these conversions, securities filings and audit reports filed pursuant to Board regulations have often evidenced a lack of proper care in their preparation and a failure on the part of the attorney, accountant or other expert preparing the document to comply with applicable statutory and regulatory requirements or accepted practices in their respective professions. Furthermore, professionals have utilized dilatory or obstructionist practices during formal investigations and adjudicatory hearings to the detriment of the Board's administrative processes, and, sometimes, to the institutions they represent. This unprofessional conduct degrades the Board's processes, consumes an inordinate amount of the Board's staff time, and hinders the Board's ability to adequately regulate institutions and protect the public.

The new Part 513 (to be codified at 12 CFR Part 513) being adopted today generally governs practice before the Board and specifies under what circumstances a person may be censured or temporarily or permanently suspended or debarred from such practice. Suspension under Part 513 generally precludes practice in any form of proceeding. These regulations also provide for expulsions, without a preliminary hearing, in connection with specific proceedings.

The Board emphasizes that these regulations are intended to cover only those activities involving some form of contact with the Board, its staff or its administrative processes. The Board does not intend that the suspension and debarment powers in §513.4 be used as a new enforcement tool in lieu of removal or prohibition orders, cease-and-desist orders, injunctions, criminal referrals, administrative hearings, or other enforcement proceedings in connection with violations of laws or regulations by a person who happens to be an attorney or other professional. Furthermore, it does not intend to establish special standards of conduct for attorneys or other professionals practicing before the Board. Rather, the Board believes it should suspend from practice before it those persons who either engage in unethical or dishonest behavior in connection with direct dealings with the Board or its staff, or who have been found to have engaged in improper or unprofessional conduct or violated a law or regulation administered by the Board.

The Board, in any determination to suspend an attorney, will weigh the right of persons to choose their counsel against the duty of the Board to protect its administrative processes and the risk to those processes if the attorney in question is permitted to continue appearing before the Board. Such consideration is of particular importance when a summary suspension is being considered in the context of an adjudicatory proceeding under § 509.3(b). These regulations are not intended to require attorneys to report to the Board violations of laws and regulations by their client or to infringe otherwise on the attorney-client privilege.

#### Persons Previously Debarred or Suspended Under New Part 513

Sections 507.11 and 508.13 are being amended to prohibit persons who have

been debarred or suspended from practice before the Board under Part 513 from participating in the rulemaking proceedings in Parts 507 and 508. Furthermore, §§ 509.3, 509a.3 and 512.5 are being amended to preclude an attorney who has been suspended or debarred under Part 513 from representing another person in the proceedings under Parts 509, 509a and 512.

**Exclusions From Specific Proceedings**

Currently, under § 509.3, the Board or a presiding officer may exclude any person from a specific adjudicatory hearing temporarily, or for the duration of the hearing, based on a finding that such person has engaged in contemptuous conduct. That provision is being amended to provide that such exclusions may be based on a finding that the person has engaged in dilatory, obstructionist, egregious or contumacious conduct as well. Sections 507.11, 509a.4 and 512.5 are being amended to establish similar grounds for expulsion from the proceedings under Parts 507, 509a and 512. Section 512.5 is also being amended to clarify that the only attorney entitled to be present during the testimony of any witness shall be the attorney personally representing that witness.

**Appearance and Practice in Adjudicatory Proceedings**

Section 509.3 is being amended further to clarify that a person need not be represented by an attorney at an adjudicatory proceeding. The amendment provides that in any adjudicatory proceeding, an individual may appear in his own behalf; a partner may represent the partnership; a bona fide officer of a corporation, trust or association may represent that corporation, trust or association; and an officer or employee of any government unit, agency or authority may represent that unit, agency or authority.

**Practice Before the Board**

Practice is defined in § 513.2(e) to cover any business transacted with the Board, including:

(i) The representation of any person at an adjudicatory, investigatory, removal or rulemaking proceeding;

(ii) The preparation of a statement, opinion, financial statement, appraisal report, audit report, or other document or report for filing or submission to the Board;

(iii) Appearance at a conference or meeting relating to an institution's or other person's rights, privileges or liabilities with the Board, its staff, or a presiding officer;

(iv) Any business correspondence or communication with the Board, its staff or a presiding officer;

(v) The transaction of any other formal business with the Board as an attorney, an accountant or other licensed expert representing another person.

The Board intends that the scope of Part 513, and, therefore, the meaning of "practice", be limited to direct dealings with the Board and its staff or direct involvement in its administrative processes. Any improper conduct or violation of law not directly involving such dealings or processes will not be redressed under Part 513, but rather will continue to be remedied with the various enforcement tools at the Board's disposal or by referral to the appropriate bar, licensing, certifying or law enforcement authorities.

**Who May Practice Before the Board**

Section 513.3 provides that any individual may appear before the Board in his own behalf and that the authorized representative of any business, government or other entity may appear on behalf of that business, government or other entity. In addition, it provides that any accountant or other licensed expert may practice before the Board. Furthermore, any person may be represented before the Board by any attorney who is a member in good standing of the highest court of any State, possession, territory, Commonwealth or the District of Columbia.

The Board retains the authority to require any professional who is representing another before the Board to produce evidence that he is authorized to act in such capacity. The Board does not intend to create any requirements or qualifications for practice before the Board other than that which is permissible under 5 U.S.C. 500 (the Administrative Practice Act).

**Suspension or Debarment**

Section 513.4 designates three suspension and/or debarment procedures. Under the first method, set forth at § 513.4(a), the Board, after notice and a hearing on the matter, may censure any person practicing before it or temporarily or permanently suspend or debar any person from practicing before the Board based on a finding that such person: (1) Does not have the required qualifications to represent others, (2) is lacking in professional character or professional integrity, (3) has engaged in dilatory, obstructionist, egregious, contemptuous, contumacious or other unethical conduct before the Board, or (4) has willfully violated any provision of the laws administered by the Board or the regulations promulgated thereunder. Such hearing will be conducted pursuant to Part 509.

The second form of suspension, set forth at § 513.4(b), is automatic upon the occurrence of the following events: (1) A licensed expert or professional is convicted of a felony or of a misdemeanor involving moral turpitude, personal dishonesty or breach of trust; (2) an accountant's, appraiser's, or other expert's license is revoked; or (3) an attorney is suspended or disbarred by any state or federal bar. These events are deemed to have occurred when the deciding court, agency or tribunal enters its judgment (even if on a plea of *nolo contendere* or when an appeal is pending or could be taken). Persons suspended under this method are automatically reinstated upon application to the Board if the conviction, revocation or disbarment has been reversed or terminated.

The third form of suspension, set forth at § 513.4(c), is a temporary suspension, initiated without a preliminary hearing, of any person who, after the effective date of this regulation, has been permanently enjoined by a court in an action brought by the Board for a violation of, or the aiding or abetting of a violation of, the laws administered by the Board or any regulations promulgated thereunder. In addition, any person may be temporarily suspended, without a preliminary hearing, if he has been convicted by a court for violating, or found by the Board in an administrative proceeding to which he is a party and the Board is the complainant to have violated, any law administered by the Board or any regulations promulgated thereunder. Such an order is effective upon delivery by registered or certified mail to the person suspended. This form of temporary suspension cannot be entered more than three months after the entering of the final judgment or order against the individual and the completion of all review and appeal procedures. A recipient of a temporary suspension order has 30 days to petition that the suspension be lifted. If a petition is not filed, the suspension automatically becomes permanent. If a petition is filed, the Board will expedite the hearing process to the extent practicable. At such hearing, the Board need only prove the conviction or the existence of the final order or other action. The petitioner then must show why he should not be censured, suspended or debarred. The merits of the prior action and order will not be reconsidered, and the petitioner will be

deemed to have engaged in whatever violations he has been convicted of, even if the conviction or order was issued with his consent. In all other respects, the hearing shall conform to the procedural requirements in Part 509. The temporary suspension shall remain in effect during the hearing, unless the Board reinstates the person for good cause shown.

Unless the conviction, revocation or disbarment is based on an action initiated by the Board, any person appearing or practicing before the Board is required by § 513.6 to file any order, judgment or decree entered, after a finding of the kind described in § 513.4 (b) or (c), together with the related opinion or statement of the court, agency or tribunal involved with the Secretary to the Board. Failure to so file within 30 days of the later of the effective date of these regulations, the entry of the order, judgment or decree, or the date the person initiates practice before the Board, is grounds for a temporary suspension until such filing is made.

**Reinstatement**

Any person debarred or suspended from practice before the Board may apply for reinstatement at any time. In addition, any person suspended under § 513.4(b) automatically is reinstated, upon appropriate application, if the grounds for such suspension have been removed, reversed or terminated. If the grounds for the suspension under § 513.4(b) remain in effect, the person subject to the suspension may request an informal hearing or submit written application with regard to removing that suspension or debarment.

**Regulatory Flexibility**

Although the regulations promulgated herein have not been proposed for public notice and comment, and, therefore, do not require a regulatory flexibility analysis, the Board had determined that the proposed rules will not have a significant economic impact on small entities, as they only apply to attorneys and other persons who engage in improper conduct before the Board or its staff. The rules therefore do not appear to be of a kind that raises regulatory flexibility considerations.

**List of Subjects in 12 CFR Parts 507, 509, 509a, 512 and 513**

Savings and loan associations, Administrative rule-making and adjudicatory proceedings, Formal examination proceedings.

The Board finds that the public notice and comment procedures of 5 U.S.C. 553(b) and 12 CFR 508.13 are unnecessary because these regulations relate only to practice and procedure before the Board, and, therefore, are excepted from those procedures by 5 U.S.C. 553(b) and 12 CFR 508.11. However, as these regulations establish a new procedure for suspending or debarring persons from practice before the Board, the Board is soliciting comments from the public for a period of 60 days regarding the suspension and debarment aspects of Part 513. Furthermore, the Board finds for good cause that delay of the effective date of the regulations pursuant to 5 U.S.C. 553(d) and 12 CFR 508.14 is unnecessary because it is in the public interest to act expeditiously to protect the Board's administrative processes.

Accordingly, the Board hereby amends Parts 507, 508, 509, 509a and 512 and adds a new Part 513 under Subchapter A, Chapter V of Title 12, *Code of Federal Regulations*, as set forth below.

**SUBCHAPTER A—GENERAL**

1. Ament § 507.11 by adding the following two sentences at the end thereof:

**PART 507—HEARINGS**

**§ 507.11 Recommendations and representations at hearings by persons other than those requesting hearing.**

* * * However, no person who has been suspended or debarred from practice before the Board in accordance with the provisions of Part 513 of this subchapter is entitled to appear or be heard at any such hearing. The Board may, for good cause, exclude any person from further participation in any rulemaking hearing in which the Board has found the person to have engaged in dilatory, obstructionist, egregious, contemptuous or contumacious conduct.

2. Amend § 508.13 by adding the following sentence at the end thereof:

**PART 508—PROMULGATION OF REGULATIONS AND AMENDMENTS**

**§ 508.13 Participation of interested persons in a proposed amendment or rule.**

* * * However, no person who has been suspended or debarred from practice before the Board in accordance with the provisions of Part 513 of this subchapter may submit, either directly or on behalf of an interested party, any written documents or petitions otherwise permitted by this section.

3. Revise the title of Part 509 and revise § 509.3 as follows:

**PART 509—RULES OF PRACTICE AND PROCEDURE IN ADJUDICATORY PROCEEDINGS**

**§ 509.3 Appearance and practice in an adjudicatory proceeding.**

(a) *Appearance before the Board or a presiding officer—*

(1) *By non-attorneys.* An individual may appear in his own behalf; a member of a partnership may represent the partnership; a bona fide and duly authorized officer of a corporation, trust or association may represent the corporation, trust or association; and an officer or employee of any government unit, agency or authority may represent that unit, agency or authority.

(2) *By attorneys.* Any person who is a member in good standing of the bar of the highest court of any State, possession, territory, Commonwealth or the District of Columbia, and who has not been suspended or debarred from practice before the Board in accordance with the provisions of Part 513 of this subchapter, may represent parties in adjudicatory proceedings before the Board or a presiding officer. An attorney representing a person before the Board or a presiding officer in a specific adjudicatory proceeding shall file a notice of appearance with the Secretary which shall contain a written declaration that he is currently qualified as provided by this paragraph (a)(2) and is authorized to represent the particular party on whose behalf he acts.

(b) *Summary suspension.* Dilatory, obstructionist, egregious, contemptuous or contumacious conduct at any hearing before the Board or a presiding officer shall be grounds for exclusion therefrom and suspension for the duration of the hearing.

4. Amend § 509a.6 by revising paragraph (c) as follows:

**PART 509a—REMOVALS, SUSPENSIONS, AND PROHIBITIONS WHERE A CRIME IS CHARGED OR PROVED**

**§ 509a.6 Initiation of hearing.**

* * * * *

(c) A party may appear personally or through an attorney to submit relevant written materials and oral argument thereon: *Provided*, however, that any attorney is subject to all the requirements and limitations imposed on attorneys in § 509.3 of this subchapter.

* * * * *

5. Amend § 512.5 by revising paragraph (b) as follows:

## PART 512—RULES FOR INVESTIGATIVE PROCEEDINGS AND FORMAL EXAMINATION PROCEEDINGS

### § 512.5 Rights of witnesses.

* * * * *

(b) Any witness at an investigative proceeding or formal examination proceeding may be accompanied and advised by an attorney personally representing that witness.

(1) Such attorney shall be a member in good standing of the bar of the highest court of any State, possession, territory, Commonwealth or the District of Columbia, who has not been suspended or debarred from practice before the Board in accordance with the provisions of Part 513 of this title and has not been excluded from the particular investigative proceeding in accordance with paragraph (b)(3) of this section.

(2) Such attorney may advise the witness before, during and after the taking of his testimony and may briefly question the witness, on the record, at the conclusion of his testimony, for the sole purpose of clarifying any of the answers the witness has given. During the taking of the testimony of a witness, such attorney may make summary notes solely for the use of his client. All witnesses shall be sequestered and, unless permitted in the discretion of the designated representative, no witness or accompanying attorney may be permitted to be present during the taking of the testimony of any other witness called in such proceeding. Attorney(s) for the institution(s) that are the subject of the formal examination proceeding shall have no right to be present during the testimony of any witness not personally being represented by such attorney.

(3) The Board, for good cause, may exclude a particular attorney from further participation in any investigation in which the Board has found the attorney to have engaged in dilatory, obstructionist, egregious, contemptuous or contumacious conduct. The person conducting an investigation may report to the Board instances of apparently dilatory, obstructionist, egregious, contemptuous or contumacious conduct on the part of an attorney. After due notice to the attorney, the Board may take such action as the circumstances warrant based upon a written record evidencing the conduct of the attorney in that investigation or such other or additional written or oral presentation as the Board may permit or direct.

* * * * *

6. Add a new Part 513 as follows:

## PART 513—PRACTICE BEFORE THE BOARD

Sec.

513.1 Scope of part.
513.2 Definition.
513.3 Who may practice.
513.4 Suspension and debarment.
513.5 Reinstatement.
513.6 Duty to file information concerning adverse judicial or administrative action.
513.7 Proceeding under this part.

**Authority:** Sec. 17, 47 Stat. 736, as amended, (12 U.S.C. 1437); Sec. 5, 43 Stat. 132, as amended, (12 U.S.C. 1464); Sec. 407, 48 Stat. 1260, as amended, (12 U.S.C. 1730); Sec. 12, 48 Stat. 892, as amended, (15 U.S.C. 781).

### § 513.1 Scope of part.

This part prescribes rules with regard to general practice before the Board on one's own behalf or in a representative capacity and prescribes rules describing the circumstances under which attorneys, accountants, appraisers, or other persons may be suspended or debarred, either temporarily or permanently, from practicing before the Board. In connection with any particular matter, reference also should be made to any special requirements of procedure and practice that may be contained in the particular statute involved or the rules and forms adopted by the Board thereunder, which special requirements are controlling. In addition to any suspension hereunder, a person may be excluded from further participation under this subchapter in a particular Federal Home Loan Bank rulemaking hearing in accordance with § 507.11, from a rulemaking hearing in accordance with § 508.13, from an adjudicatory proceeding in accordance with § 509.3(b), from a removal hearing in accordance with § 509a.3, or from an investigatory proceeding in accordance with § 512.5(b)(2).

### § 513.2 Definitions.

As used in this part:

(a) "Board" means the Federal Home Loan Bank Board or, where appropriate, the Federal Savings and Loan Insurance Corporation;

(b) The term "Secretary" means the Secretary and any Assistant or Acting Secretary to the Board;

(c) The term "presiding officer" includes the Board, one or more members thereof or an administrative law judge appointed under section 3105 or detailed pursuant to section 3344 of title 5 of the United States Code and, as used in this part, the term shall be construed to refer to whichever of the above-identified individuals presides at a hearing or other proceeding, except as otherwise specified in the text;

(d) The term "attorney" means any person who is a member in good standing of the bar of the highest court of any State, possession, territory, Commonwealth or the District of Columbia; and

(e) The term "practice" means transacting any business with the Board, including:

(1) The representation of another person at any adjudicatory, investigatory, removal or rulemaking proceeding conducted before the Board, a presiding officer or the Board's staff, including those proceedings covered in Parts 507, 508, 509, 509a and 512 of this subchapter;

(2) The preparation of any statement, opinion, financial statement, appraisal report, audit report, or other document or report by any attorney, accountant, appraiser or other licensed expert which is filed with or submitted to the Board, with such expert's consent or knowledge in connection with any application or other filing with the Board;

(3) A presentation to the Board, a presiding officer or the Board's staff at a conference or meeting relating to an institution's or other person's rights, privileges or liabilities under the laws administered by the Board and rules and regulations promulgated thereunder;

(4) Any business correspondence or communication with the Board, a presiding officer or the Board's staff; and

(5) The transaction of any other formal business with the Board on behalf of another, in the capacity of an attorney, accountant, appraiser or other licensed expert.

### § 513.3 Who may practice.

(a) *By non-attorneys*—

(1) An individual may appear on his own behalf (*pro se*); a member of a partnership may represent the partnership; a bona fide and duly authorized officer of a corporation, trust or association may represent the corporation, trust or association; and an officer or employee of a commission, department or political subdivision may represent that commission, department or political subdivision before the Board.

(2) Any accountant, appraiser or other licensed expert may practice before the Board in a professional capacity.

(b) *By attorneys*—Any institution or other person may be represented in any proceeding or other matter before the Board by an attorney.

(c) Any licensed expert or professional transacting business with the Board in a representative capacity may be required to show his authority to act in such capacity.

**§ 513.4 Suspension and debarment.**

(a) The Board may censure any person practicing before it or may deny, temporarily or permanently, the privilege of any person to practice before it if such person is found by the Board, after notice of and opportunity for hearing in the matter, (1) not to possess the requisite qualifications to represent others, (2) to be lacking in character or professional integrity, (3) to have engaged in any dilatory, obstructionist, egregious, contemptuous, contumacious or other unethical or improper professional conduct before the Board, or (4) to have willfully violated, or willfully aided and abetted the violation of, any provision of the laws administered by the Board or the rules and regulations promulgated thereunder.

(b) *Automatic suspension.* (1) Any person who, after being licensed as a professional or expert by any competent authority, has been convicted of a felony, or of a misdemeanor involving moral turpitude, personal dishonesty or breach of trust, shall be suspended forthwith from practicing before the Board.

(2) Any accountant, appraiser or other licensed expert whose license to practice has been revoked in any State, possession, territory, Commonwealth or the District of Columbia, shall be suspended forthwith from practice before the Board.

(3) Any attorney who has been suspended or disbarred by a court of the United States or in any State, possession, territory, Commonwealth or the District of Columbia, shall be suspended forthwith from practicing before the Board.

(4) A conviction (including a judgment or order on a plea of *nolo contendere*), revocation, suspension or disbarment under paragraphs (b) (1), (2) and (3) of this section shall be deemed to have occurred when the convicting, revoking, suspending or disbarring agency or tribunal enters its judgment or order, regardless of whether an appeal is pending or could be taken.

(5) For purposes of this section, it shall be irrelevant that any attorney, accountant, appraiser or other licensed expert who has been suspended, disbarred or otherwise disqualified from practice before a court or in a jurisdication continues in professsional good standing before other courts or in other jurisdictions.

(c) *Temporary suspension.* (1) The Board, with due regard to the public interest and without preliminary hearing, by order, may temporarily suspend any person from appearing or practicing before it who, on or after June 20, 1984, by name, has been:

(i) Permanently enjoined (whether by consent, default or summary judment or after trial) by any court of competent jurisdiction or by the Board itself in a final administrative order, by reason of his misconduct in any action brought by the Board based upon violations of, or aiding and abetting the violation of, any provision of the Federal Home Loan Bank Act, as amended, 12 U.S.C. 1421 *et seq.*, the Home Owners' Loan Act of 1933, as amended, 12 U.S.C. 1461 *et seq.*, and Title IV of the National Housing Act, as amended, 12 U.S.C. 1724 *et seq.*, or any provision of the Securities Exchange Act of 1934, as amended, 15 U.S.C. 78a, *et seq.*, which is administered by the Board, or of any rule or regulation promulgated thereunder; or

(ii) Found by any court of competent jurisdiction (whether by consent, default, or summary judgment, or after trial) in any action brought by the Board to which he is a party or found by the Board (whether by consent, default, upon summary judgment or after hearing) in any administrative proceeding in which the Board is a complainant and he is a party, to have willfully committed, caused or aided or abetted a violation of any provision of the Federal Home Loan Bank Act, as amended, 12 U.S.C. 1421 *et seq.*, the Home Owners' Loan Act of 1933, as amended, 12 U.S.C. 1461 *et seq.*, and Title IV of the National Housing Act, as amended, 12 U.S.C. 1724 et seq. or any provision of the Securities Exchange Act of 1934, as amended, 15 U.S.C. 78a, *et seq.*, which is administered by the Board, or of any rule of regulation promulgated thereunder.

(2) An order of temporary suspension shall become effective when served by certified or registered mail directed to the last known business or residential address of the person involved. No order of temporary suspension shall be entered by the Board pursuant to paragraph (c)(1) of this section more than three months after the final judgment or order entered in a judicial or administrative proceeding described in paragraphs (i) or (ii) of paragraph (c)(1) has become effective and all review or appeal procedures have been completed or are no longer available.

(3) Any person temporarily suspended from appearing and practicing before the Board in accordance with paragraph (c)(1) may, within 30 days after service upon him of the order of temporary suspension, petition the Board to lift such suspension. If no petition is received by the Board within those 30 days, the suspension shall become permanent.

(4) Within 30 days after the filing of a petition in accordance with paragraph (c)(3) of this section, the Board shall either lift the temporary suspension or set the matter down for hearing at a time and place to be designated by the Board, or both. After opportunity for hearing, the Board may censure the petitioner or may suspend the petitioner from appearing or practicing before the Board temporarily or permanently. In every case in which the temporary suspension has not been lifted, the hearing and any other action taken pursuant to this paragraph (4) shall be expedited by the Board in order to ensure the petitioner's right to address the allegations against him.

(5) In any hearing held on a petition filed in accordance with paragraph (c)(3) of this section, a showing that the petitioner has been enjoined or has been found to have committed, caused or aided or abetted violations as described in paragraph (c)(1) of this section, without more, may be a basis for suspension or debarment; that showing having been made, the burden shall then be on the petitioner to show why he should not be censured or be temporarily or permanently suspended or debarred. A petitioner will not be permitted to contest any findings against him or any admissions made by him in the judicial or administrative proceedings upon which the proposed censure, suspension or debarment is based. A petitioner who has consented to the entry of a permanent injunction or order as described in paragraph (c)(1)(i) of this section, without admitting the facts set forth in the complaint, shall nevertheless be presumed for all purposes under this section to have been enjoined or ordered by reason of the misconduct alleged in the complaint.

**§ 513.5 Reinstatement.**

(a) Any person who is suspended from practicing before the Board under paragraph (a) or (c) of § 513.4 of this part may file an application for reinstatement at any time. Denial of the privilege of practicing before the Board shall continue unless and until the applicant has been reinstated by order of the Board for good cause shown.

(b) Any person suspended under paragraph (b) of § 513.4 shall be reinstated by the Board, upon appropriate application, if all of the grounds for application of the provisions of that paragraph subsequently are removed by a reversal of the conviction or termination of the suspension, disbarment or revocation. An

application for reinstatement on any other grounds by any person suspended under paragraph (b) of § 513.4 may be filed at any time. Such application shall state with particularity the relief desired and the grounds therefor and shall include supporting evidence, when available. The applicant shall be accorded an opportunity for an informal hearing in the matter, unless the applicant has waived a hearing in the application and, instead, has elected to have the matter determined on the basis of written submissions. Such hearing shall utilize the procedures established in § 509a.3 and paragraph (a) of § 509a.7 of this subchapter. However, such suspension shall continue unless and until the applicant has been reinstated by order of the Board for good cause shown.

**§ 513.6 Duty to file information concerning adverse judicial or administrative action.**

Any person appearing or practicing before the Board who has been or is the subject of a conviction, suspension, debarment, license revocation, injunction or other finding of the kind described in § 513.4 (b) or (c) of this part in an action not instituted by the Board shall promptly file a copy of the relevant order, judgment or decree with the Secretary together with any related opinion or statement of the agency or tribunal involved. Any person who fails to so file a copy of the order, judgment or decree within 30 days after the later of June 15, 1984, the entry of the order, judgment or decree, or the date such person initiates practice before the Board, for that reason alone may be disqualified from practicing before the Board until such time as the appropriate filing shall be made, but neither the filing of these documents nor the failure of a person to file them shall in any way impair the operation of any other provision of this part.

**§ 513.7 Proceeding under this part.**

(a) All hearings required or permitted to be held under paragraphs (a) and (c) of § 513.4 of this part shall be held before a presiding officer utilizing the procedures established in the rules of practice and procedure in adjudicatory proceedings under Part 509 of this subchapter.

(b) All hearings held under this part shall be closed to the public unless the Board on its own motion or upon the request of a party otherwise directs.

(c) Any proceeding brought under any section of this part shall not preclude a proceeding under any other section of this part or any other part of the Board's regulations.

(Sec. 17, 47 Stat. 736, as amended, (12 U.S.C. 1437); sec. 5, 48 Stat. 132, as amended, (12 U.S.C. 1464); sec. 407, 48 Stat. 1260, as amended, (12 U.S.C. 1730); sec. 12, 48 Stat. 892, as amended, (15 U.S.C. 781))

By the Federal Home Loan Bank Board.

**John F. Ghizzoni,**

*Assistant Secretary.*

[FR Doc. 84-16404 Filed 6-21-84; 8:45 am]

BILLING CODE 6720-01-M

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

### 14 CFR Part 39

**[Docket No. 84-CE-14-AD; Amdt. 39-4883]**

## Mitsubishi Heavy Industries, Ltd. (MHI) Models MU-2B, -10, -15, -20, -25, -26, -30, -35, -36 Airplanes Mitsubishi Aircraft International, Inc. (MAI) Models MU-2B, -25, -26, -26A, -35, -36A, -40, -60 Airplanes

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** This amendment adopts a new Airworthiness Directive (AD) applicable to certain serial numbered Mitsubishi Models MU-2B, -10, -15, -20, -25, -26, -26A, -30, -35, -36, -36A, -40, and -60 airplanes manufactured by Mitsubishi Heavy Industries (MHI), Ltd., and Mitsubishi Aircraft International, Inc. (MAI). The AD requires the retorquing and lockwire safetying of coupling nuts on the bleed air tubing. A field report has been received indicating that the engine air inlet anti-ice system malfunctioned as a result of loss of bleed air at a loose tube coupling nut. The action required by this AD will eliminate the cause of this malfunction of the air inlet anti-ice system and the possible loss of engine power during in-flight icing conditions.

**DATE:** *Effective Date:* June 28, 1984.

*Compliance:* As prescribed in the body of the AD.

**ADDRESSES:** Mitsubishi Heavy Industries, Ltd., MU-2 Service Bulletin No. 196A, dated April 12, 1984, applicable to this AD, may be obtained from Mitsubishi Heavy Industries, Ltd., Nagoya Aircraft Works, 10, Oye-cho, Minato-ku, Nagoya, Japan, or Mitsubishi Aircraft International, Inc., P.O. Box 3848, San Angelo, Texas 76901.

Mitsubishi Aircraft International, Inc., MU-2 Service Bulletin No. 047/30-001, dated February 20, 1984, applicable to this AD, may be obtained from Mitsubishi Aircraft International, Inc., P.O. Box 3848, San Angelo, Texas 76901.

Copies of these service bulletins are also contained in the Rules Docket, Federal Aviation Administration, Office of the Regional Counsel, Room 1558, 601 East 12th Street, Kansas City, Missouri 64106.

**FOR FURTHER INFORMATION CONTACT:** For the MHI Series airplanes manufactured in Japan: John G. Sullivan, Aerospace Engineer, Western Aircraft Certification Office, ANM-172W, Federal Aviation Administration, P.O. Box 92007, Worldway Postal Center, Los Angeles, California 90009, Telephone: (213) 536-6166.

For the MAI Series airplanes manufactured in the U.S.: Billy R. Parker, Propulsion Engineer, Airplane Certification Branch, ASW-150, Federal Aviation Administration, P.O. Box 1689, Forth Worth, Texas 76101, Telephone: (817) 877-2449.

**SUPPLEMENTARY INFORMATION:** As a result of a field report of an engine air inlet anti-ice system malfunction caused by loss of bleed air at a loose tube coupling nut on a Mitsubishi MU-2B airplane, the Japan civil Aviation Bureau (JCAB) issued their Airworthiness Directive (AD) No. TCD-2342-84 dated January 28, 1984, applicable to certain serial Mitsubishi Model MU-2B airplanes manufactured by MHI of Japan. This AD required retorquing and lockwire safetying the bleed air tube couplings in accordance with MHI Service Bulletin No. 196A, dated April 12, 1984.

MAI has also issued a service bulletin, SB 047/30-001, dated February 22, 1984. recommending the same action on Mitsubishi Model MU-2B Series airplanes manufactured in San Angelo, Texas.

The FAA has examined the available information relating to the issuance of the aforementioned service bulletins and the JCAB AD. Based on the foregoing, the FAA has determined that the condition addressed by these service bulletins and the JCAB AD is an unsafe condition and may exist on all Mitsubishi Model MU-2B Series airplanes certificated for operation in the United States irrespective of the location of their manufacture. Therefore, and AD is being issued which requires the retorquing and lockwire safetying of bleed air tubing coupling nuts on both MHI- and MAI-manufactured Mitsubishi Model MU-2B, -10, -15, -20, -25, -26, -26A, -30, -35, -36, -36A, -40 and -60 (all serial numbers up to and including 1564SA) airplanes in accordance with instructions contained in either Mitsubishi Heavy Industries MU-2 Service Bulletin No. 196A dated April 12,

1984, for MHI-manufactured airplanes or Mitsubishi Aircraft International, Inc., MU-2 Service Bulletin No. 047/30-001 dated February 20, 1984, for MAI-manufactured airplanes.

Because an emergency condition exists that requres the immediate adoption of this regulation, it is found that notice and public procedure hereon are impractical and contrary to the public interest, and good cause exists for making this amendment effective in less than 30 days.

**List of Subjects in 14 CFR Part 39**

Aviation safety, Aircraft.

**Adoption of the Amendment**

Accordingly, pursuant to the authority delegated to me by the Administrator, § 39.13 of the Federal Aviation Regulations (14 CFR 39.13) is amended by adding the following new AD:

**Mitsubishi:** Applies to Models MU-2B, -10, -15, 20, 25, -26, -26A, -30, -35, 36, 36A, 40, and -60 Serial Numbers 1 up to and including 1564 with or without the SA suffix airplanes certificated in any catagory.

**Note:** The Serial numbers of airplanes manufactured in the United States by Mitsubishi Aircraft International, Inc. (MAI) are suffixed by "SA." The serial numbers of airplanes manufactured in Japan by Mitsubishi Heavy Industries, Ltd. (MHI) have no suffix.

*Compliance:* Required as indicated, unless already accomplished.

To prevent malfunction of the engine air inlet anti-ice system, accomplish the following:

(a) Within the next 25 hours time-in-service after the effective date of this AD, install on the main instrument panel, in full view of the pilot, a temporary placard, having letters at least 0.10 inch high, which reads as follows: "Flight Into Known Icing Is Prohibited."

(b) Within the next 100 hours time-in-service after the effective date of this AD, retorque and lockwire safety the bleed air tubing coupling nuts:

(1) On the MHI airplanes, in accordance with the instructions contained in Mitsubishi MU-2 Service Bulletin No. 196A, dated April 12, 1984, and

(2) On the MAI airplanes in accordance with the instructions contained in Mitsubishi Aircraft International, Inc., MU-2 Service Bulletin No. 047/30-001 dated February 20, 1984.

(c) When paragraph (b) of this AD has been accomplished, the placard specified in paragraph (a) is no longer required and shall be removed from the airplane.

(d) Airplanes may be flown in accordance with Federal Aviation Regulation 21.197 to a location where this AD can be accomplished.

(e) An equivalent method of compliance with this AD may be used on the MHI airplanes, if approved by the Manager, Western Aircraft Certification Office, ANM-170W, Federal Aviation Administration, P.O. Box 92007, Worldway Postal Center, Los Angeles, California 90009, and on the MAI airplanes, if approved by the Manager, Airplane Certification Branch, ASW-150, Federal Aviation Administration, Southwest Region, P.O. Box 1689, Fort Worth, Texas 76101.

This amendment becomes effective on June 28, 1984.

(Secs. 313(a), 601, and 603, Federal Aviation Act of 1958, as amended, (49 U.S.C. 1354(a), 1421, and 1423); 49 U.S.C. 106(g) (Revised Pub. L. 97-449, January 12, 1983); sec. 11.89 of the Federal Aviation Regulations (14 CFR 11.89))

**Note:** The FAA has determined that this regulation is an emergency regulation that is not major under Section 8 of Executive Order 12291. It is impracticable for the agency to follow the procedures of 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 document 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 regulation, a final regulatory evaluation or analysis, as appropriate, will be prepared and placed in the regulatory docket (otherwise, an evaluation is not required). A copy of it, when filed, may be obtained by contacting the Rules Docket under the caption **"ADDRESSES"** At the location identified.

Issued in Kansas City, Missouri, on June 12, 1984.

**John E. Shaw,**

*Acting Director, Central Region.*

[FR Doc. 84-16868 Filed 6-21-84; 8:45 am]

**BILLING CODE 4910-13-M**

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**14 CFR Part 71**

**[Airspace Docket No. 84-ASW-3]**

## Alteration of Transition Area; Warren, AR

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** This amendment will alter the transition area at Warren, AR. The intended effect of the amendment is to provide controlled airspace for aircraft executing a new standard instrument approach procedure (SIAP) to the Warren Municipal Airport. This amendment is necessary since the Airport Commission is proposing to install a nonfederal nondirectional radio beacon (NDB) on the Warren Municipal Airport.

**EFFECTIVE DATE:** August 30, 1984.

**FOR FURTHER INFORMATION CONTACT:** Kenneth L. Stephenson, Airspace and Procedures Branch (ASW-535), Air Traffic Division, Southwest Region, Federal Aviation Administration, P.O. Box 1689, Fort Worth, TX 76101, telephone (817) 877-2630.

**SUPPLEMENTARY INFORMATION:**

**History**

On January 27, 1984, a notice of proposed rulemaking was published in the **Federal Register** (49 FR 3488) stating that the Federal Aviation Administration proposed to alter the Warren, AR, transition area. Interested persons were invited to participate in this rulemaking proceeding by submitting written comments on the proposal to the Federal Aviation Administration. Comments were received without objections. Except for editorial changes, this amendent is that proposed in the notice.

**List of Subjects in 14 CFR Part 71**

Control zones, Transition areas, Aviation safety.

**Adoption of the Amendment**

Accordingly, pursuant to the authority delegated to me, by the Administrator, Subpart G of Part 71, § 71.181, of the Federal Aviation Regulations (14 CFR Part 71) as republished in FAA Order 7400.6, Compilation of Regulations, dated January 3, 1984, is amended, effective 0901 GMT, August 30, 1984, as follows:

**Warren, AR Revised**

That airspace extending upwards from 700 feet above the surface within a 6.5-mile radius of the Warren Municipal Airport (latitude 33°33'50" N., longitude 92°05'00" W.) and within 3 miles each side of a 214° bearing of the NDB (latitude 33°32'49" N., longitude 92° 05'45" W.) extending from the 6.5-mile radius area to 8.5 miles southwest of the NDB.

(Sec. 307(a), Federal Aviation Act of 1958, as amended (49 U.S.C. 1348(a)); sec. 6(c), 49 U.S.C. 106(g) (Revised, Pub. L. 97-449, January 12, 1983); and 14 CFR 11.61(c).)

**Note:** 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 economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

Issued in Fort Worth, TX, on June 12, 1984.

F. E. Whitfield,

*Acting Director, Southwest Region.*

[FR Doc. 84-16666 Filed 6-21-84; 8:45 am]

BILLING CODE 4910-13-M

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**14 CFR Part 71**

**[Airspace Docket No. 84-AWA-12]**

## Alteration of VOR Federal Airways, Ukiah, CA

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule; request for comments.

**SUMMARY:** This action changes the descriptions of one Additional Control Area and five VOR Federal Airways in the State of California as necessitated by the imminent name change of a navigation aid.

**DATES:** *Effective date*—July 5, 1984. Comments must be received on or before August 6, 1984.

**ADDRESSES:** Send comments on the rule in triplicate to: Director, FAA, Western-Pacific Region, Attention: Manager, Air Traffic Division, Docket No. 84-AWA-12, Federal Aviation Administration, P.O. Box 92007, Worldway Postal Center, Los Angeles, CA 90009.

The official docket may be examined in the Rules Docket, weekdays, except Federal holidays, between 8:30 a.m. and 5:00 p.m. The FAA Rules Docket is located in the Office of the Chief Counsel, Room 916, 800 independence Avenue, SW., Washington, D.C.

An informal docket may also be examined during normal business hours at the office of the Regional Air Traffic Division.

**FOR FURTHER INFORMATION CONTACT:** William C. Davis, Airspace and Air Traffic Rules Branch (AAT-230), Airspace-Rules and Aeronautical Information Division, Air Traffic Service, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, D.C. 20591; telephone: (202) 426-8783.

**SUPPLEMENTARY INFORMATION:**

### Request for Comments on the Rule

Although this action is in the form of a final rule that was not preceded by notice and public procedure, comments are invited on the rule. When the comment period ends, the FAA will use the comments submitted, together with other available information, to review the regulation. After the review, if the FAA finds that changes are appropriate, it will initiate rulemaking proceedings to amend the regulation. Comments that provide the factual basis supporting the views and suggestions presented are particularly helpful in evaluating the effects of the rule and determining whether additional rulemaking is needed. Comments are specifically invited on the overall regulatory, aeronautical, economic, environmental, and energy aspects of the rule that might suggest the need to modify the rule.

### The Rule

The purpose of these amendments to § 71.123 and § 71.163 of Part 71 of the Federal Aviation Regulations (14 CFR Part 71) is to change the descriptions of Control 1486, V-199, V-200, V-25, V-27 and V-494 to reflect the new name, Mendocino, CA, which heretofore, was referred to as Ukiah, CA. This action is part of a system-wide effort to rename each navigational aid that bears the same name as the airport which it serves, if the navigational aid is not located on the airport. Sections 71.123 and 71.163 of Part 71 of the Federal Aviation Regulations were republished in Handbook 7400.6 dated January 3, 1984.

Without these amendments, the descriptions of Control 1486, V-199, V-200, V-25, V-27 and V-494 will contain an erroneous reference to a navigational aid after July 5, 1984. The FAA, therefore, concludes that there is an immediate need for a regulation. Accordingly, I find that notice of public procedure under 5 U.S.C. 553(b) is contrary to the public interest and that good cause exists for making this amendment effective on July 5, 1984, which is coincident with the navigational aid name change.

### List of Subjects in 14 CFR Part 71

VOR Federal Airways, Aviation Safety.

### Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me, § 71.123 and § 71.163 of Part 71 of the Federal Aviation Regulations (14 CFR Part 71) are amended, effective 0901 GMT, July 5, 1984, as follows:

§ 71.123

*V-199 [Amended]*

By deleting the word "Ukiah" wherever it appears and substituting the word "Mendocino"

*V-200 [Amended]*

By deleting the word "Ukiah" and substituting the word "Mendocino"

*V-25 [Amended]*

By deleting the word "Ukiah" and substituting the word "Mendocino"

*V-27 [Amended]*

By deleting the word "Ukiah" wherever it appears and substituting the word "Mendocino"

*V-494 [Amended]*

By deleting the word "Ukiah" wherever it appears and substituting the word "Mendocino"

§ 71.163

Control 1486 [Amended]

By deleting the word "Ukiah" and substituting the word "Mendocino"

(Secs. 307(a) and 313(a), Federal Aviation Act of 1958 (49 U.S.C. 1348(a) and 1354(a)); (49 U.S.C. 106(g) (Revised, Pub. L. 97-449, January 12, 1983)); and 14 CFR 11.69)

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, will not have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

Issued in Washington, D.C., on June 14, 1984.

Harold W. Becker,

*Acting Manager, Airspace-Rules and Aeronautical Information Division.*

[FR Doc. 84-16667 Filed 6-21-84; 8:45 am]

BILLING CODE 4910-13-M

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**14 CFR Part 71**

**[Airspace Docket No. 84-ASW-17]**

## Revocation of Transition Area: Cleveland, OK

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** This amendment will revoke the transition area at Cleveland, OK. The intended effect of the amendment is to cancel controlled airspace for aircraft executing a standard instrument approach procedure (SIAP) to the Cleveland Municipal Airport. This amendment is necessary since the sponsor of a proposed nondirectional radio beacon (NDB) has advised the facility will not be installed as planned, thereby eliminating the need for a 700-foot transition area at the Cleveland Municipal Airport.

**EFFECTIVE DATE:** August 30, 1984.

**FOR FURTHER INFORMATION CONTACT:** Kenneth L. Stephenson, Airspace and Procedures Branch (ASW-535), Air Traffic Division, Southwest Region, Federal Aviation Administration, P.O. Box 1689, Fort Worth, TX 76101, telephone (817) 877-2630.

**SUPPLEMENTARY INFORMATION:**

### History

On April 16, 1984, a notice of proposed rulemaking was published in the **Federal Register** (49 FR 14973) stating that the Federal Aviation Administration proposed to revoke the Cleveland, OK, transition area. Interested persons were invited to participate in this rulemaking proceeding by submitting written comments on the proposal to the Federal Aviation Administration. Comments were received without objections. Except for editorial changes, this amendment is that proposed in the notice.

### List of Subjects in 14 CFR Part 71

Control zones, Transition areas, Aviation safety.

### Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me, by the Administrator, Subpart G of Part 71, § 71.181, of the Federal Aviation Regulations (14 CFR Part 71) as republished in FAA Order 7400.6, Compilation of Regulations, dated January 3, 1984, is amended, effective 0901 GMT, August 30, 1984, as follows:

**Cleveland, OK [Revoked]**

(Sec. 307(a), Federal Aviation Act of 1958, as amended (49 U.S.C. 1348(a)); Sec. 6(c), 49 U.S.C. 106(g) (Revised, Pub. L. 97-449, January 12, 1983); and 14 CFR 11.61(c))

**Note:** 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 economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

Issued in Fort Worth, TX, on June 12, 1984.

**F. E. Whitfield,**

*Acting Director, Southwest Region.*

[FR Doc. 84-16865 Filed 6-21-84; 8:45 am]

**BILLING CODE 4910-13-M**

## 14 CFR Part 71

**[Docket No. 24116; Amdt. No. 1271]**

## Standard Instrument Approach Procedures; Miscellaneous Amendments

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** This amendment establishes, amends, suspends, or revokes Standard Instrument Approach Procedures (SIAPs) for operations at certain airports. These regulatory actions are needed because of the adoption of new or revised criteria, or because of changes occurring in the National Airspace System, such as the commissioning of new navigational facilities, addition of new obstacles, or changes in air traffic requirements. These changes are designed to provide safe and efficient use of the navigable airspace and to promote safe flight operations under instrument flight rules at the affected airports.

**DATES:** An effective date for each SIAP is specified in the amendatory provisions.

**ADDRESSES:** Availability of matters incorporated by reference in the amendment is as follows:

*For Examination—*

1. FAA Rules Docket, FAA Headquarters Building, 800 Independence Avenue, SW., Washington, D.C. 20591;

2. The FAA Regional Office of the region in which the affected airport is located; or

3. The Flight Inspection Field Office which originated the SIAP.

*For Purchase—*

Individual SIAP copies may be obtained from:

1. FAA Public Inquiry Center (APA-430), FAA Headquarters Building, 800 Independence Avenue, SW., Washington, D.C. 20591; or

2. The FAA Regional Office of the region in which the affected airport is located.

*By Subscription—*

Copies of all SIAPs, mailed once every 2 weeks, are for sale by the Superintendant of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

**FOR FURTHER INFORMATION CONTACT:** Donald K. Funai, Flight Procedures Standards Branch (AFO-230), Air Transportation Division, Office of Flight Operations, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, D.C. 20591; telephone (202) 426-8277.

**SUPPLEMENTARY INFORMATION:** This amendment to Part 97 of the Federal Aviation Regulations (14 CFR Part 97) prescribes new, amended, suspended, or revoked Standard Instrument Approach Procedures (SIAPs). The complete regulatory description of each SIAP is contained in offical FAA form documents which are incorporated by reference in this amendment under 5 U.S.C. 552(a), 1 CFR Part 51, and § 97.20 of the Federal Aviation Regulations (FARs). The applicable FAA Forms are identified as FAA Forms 8260-3, 8260-4 and 8260-5. Materials incorporated by reference are available for examination or purchase as stated above.

The large number of SIAPs, their complex nature, and the need for a special format make their verbatim publication in the **Federal Register** expensive and impractical. Further, airmen do not use the regulatory text of the SIAPs, but refer to their graphic depiction on charts printed by publishers of aeronautical materials. Thus, the advantages of incorporation by reference are realized and publication of the complete description of each SIAP contained in FAA form document is unnecessary. The provisions of this amendment state the affected CFR (and FAR) sections, with the types and effective dates of the SIAPs. This amendment also identifies the airport, its location, the procedure identification and the amendment number.

This amendment to Part 97 is effective on the date of publication and contains separate SIAPs which have compliance dates stated as effective dates based on related changes in the National Airspace System or the application of new or revised criteria. Some SIAP amendments may have been previously issued by the FAA in a National Flight Data Center (FDC) Notice to Airmen (NOTAM) as an emergency action of immediate flight safety relating directly to published aeronautical charts. The circumstances which created the need for some SIAP amendments may require making them effective in less than 30 days. For the remaining SIAPs, an effective date at least 30 days after publication is provided.

Further, the SIAPs contained in this amendment are based on the criteria contained in the U.S. Standard for Terminal Instrument Approach Procedures (TERPs). In developing these SIAPs, the TERPS criteria were applied to the conditions existing or anticipated at the affected airports. Because of the close and immediate relationship between these SIAPs and safety in air commerce, I find that notice and public

procedure before adopting these SIAPs is unnecessary, impracticable, and contrary to the public interest and, where applicable, that good cause exists for making some SIAPs effective in less than 30 days.

**List of Subjects in 14 CFR Part 97**

Approaches—Standard Instrument, Aviation safety.

**Adoption of the Amendment**

Accordingly, pursuant to the authority delegated to me, Part 97 of the Federal Aviation Regulations (14 CFR Part 97) is amended by establishing, amending, suspending, or revoking Standard Instrument Approach Procedures, effective at 0901 G.M.T. on the dates specified, as follows:

1. By Amending § 97.23 VOR, VOR/DME, VOR or TACAN, and VOR/DME or TACAN SIAPs identified as follows:

** * * Effective August 30, 1984*

Honolulu, HI—Honolulu Intl, VOR or TACAN–A, Orig.
Honolulu, HI—Honolulu Intl, VOR or TACAN RWY 4R, Orig.
Honolulu, HI—Honolulu Intl, VOR or TACAN RWY 8R, Orig.
Honolulu, HI—Honolulu Intl, VOR or TACAN RWY 8R, Amdt. 4, Cancelled
Honolulu, HI—Honolulu Intl, VOR or TACAN RWY 8L, Amdt. 17, Cancelled
Lanai City, HI—Lanai, VOR or TACAN–A, Amdt. 5
Lanai City, HI—Lanai, VOR or TACAN RWY 3, Amdt. 1
Kaunakakai, Molokai, HI—Molokai, VOR or TACAN–A, Amdt. 9
New Lexington, OH—Perry County, VOR/DME RWY 26, Orig.

** * * Effective August 2, 1984*

Flagstaff, AZ—Pulliam, VOR/DME RWY 21, Amdt. 1, Cancelled
El Dorado, AR—Goodwin Field, VOR/DME 1 RWY 4, Orig.
El Dorado, AR—Goodwin Field, VOR/DME RWY 22, Orig.
Watsonville, CA—Watsonville Muni, VOR/DME–A, Orig.
Clinton, IA—Clinton Muni, VOR RWY 3, Amdt. 11
Clinton, IA—Clinton Muni, VOR/DME RWY 21, Amdt. 6 .
Neodesha, KS—Neodesha Muni, VOR RWY 2, Amdt. 1
Cabool, MO—Cabool Memorial, VOR/DME RWY 21, Amdt. 1
Goldsboro, NC—Goldsboro-Wayne Muni, VOR/DME–A Amdt. 3
Goldsboro, NC—Goldsboro-Wayne Muni, VOR–B, Amdt. 2
Mohall, ND—Mohall Muni, VOR/DME RWY 31, Amdt. 1
Oklahoma City, OK—Sundance Airpark, VOR RWY 17, Orig.
Poteau, OK—Robert S. Kerr, VOR/DME RWY 36, Amdt. 2
Portland, OR—Portland Intl, VOR–A, Amdt. 7
Block Island, RI—Block Island State, VOR–A, Amdt. 3, Cancelled
Block Island, RI—Block Island State, VOR/DME RWY 10, Orig.
Block Island, RI—Block Island State, VOR RWY 28, Orig.
Clarksville, TN—Outlaw Field, VOR RWY 34, Amdt. 13
Waco, TX—Waco-Madison Cooper, VOR RWY 14, Amdt. 19
Waco, TX—Waco-Madison Cooper, VOR/DME RWY 32, Amdt. 11

** * * Effective July 5, 1984*

Amarillo, TX—Amarillo Intl, VOR RWY 22, Amdt. 24

** * * Effective May 30, 1984*

Columbus, MS—Columbus-Lowndes County, VOR–A, Amdt. 10

The FAA published an Amendment in Docket No. 24075, Amdt. No. 1269 to Part 97 of the Federal Aviation Regulations (VOL 49 FR No. 103 Page 22071; dated Friday, May 25, 1984) under Section 97.23 effective July 5, 1984, which is hereby amended as follows:

Mansfield, MA—Mansfield Muni, VOR–A, Amdt. 12
Cancellation is rescinded and VOR–A, Amdt. 12 remains in effect.
Marshfield, MA—Marshfield, VOR–A, Amdt. 4
Cancellation is rescinded and VOR–A, Amdt. 4 remains in effect.
Norwood, MA—Norwood Memorial, VOR RWY 35, Amdt. 5
Cancellation is rescinded and VOR RWY 35, Amdt. 5 remains in effect.
Plymouth, MA—Plymouth Muni, VOR RWY 15, Amdt. 2
Cancellation is rescinded and VOR RWY 15, Amdt. 2 remains in effect.
Taunton, MA—Taunton Muni, VOR–A, Amdt. 6
Cancellation is rescinded and VOR–A, Amdt. 6 remains in effect.

2. By amending § 97.25 LOC, LOC/DME, LDA, LDA/DME, SDF, and SDF/DME SIAPs identified as follows:

** * * Effective August 30, 1984*

Honolulu, HI—Honolulu Intl, LDA/DME RWY 26L, Amdt. 2

** * * Effective August 2, 1984*

El Dorado, AR—Goodwin Field, LOC RWY 22, Amdt. 3
Springdale, AR—Springdale Muni, LOC RWY 18, Amdt. 2
Clinton, IA—Clinton Muni, LOC RWY 3, Amdt. 3
Beverly, MA—Beverly Muni, LOC RWY 16, Amdt. 1
Columbia, MO—Columbia Regional, LOC BC RWY 20, Amdt. 8
El Paso, TX—El Paso Intl, LOC BC RWY 4, Amdt. 5
Ashland, VA—Hanover County Muni, SDF RWY 16, Amdt. 1

** * * Effective July 5, 1984*

Westerly, RI—Westerly State, LOC RWY 7, Amdt. 2
Amarillo, TX—Amarillo Intl, LOC BC RWY 22, Amdt. 15

3. By amending § 97.27 NDB and NDB/DME SIAPs identified as follows:

** * * Effective August 30, 1984*

Honolulu, HI—Honolulu Intl, NDB RWY 8L, Amdt. 15

** * * Effective August 2, 1984*

Homerville, GA—Homerville, NDB RWY 14, Orig.
Clinton, IA—Clinton Muni, NDB RWY 14, Amdt. 1
Clinton, IA—Clinton Muni, NDB RWY 3, Amdt. 3
Fort Scott, KS—Fort Scott Muni, NDB RWY 17, Amdt. 7
Warroad, MN—Warroad Intl-Swede Carlson Field, NDB RWY 31, Amdt. 2
Cabool, MO—Cabool Memorial, NDB RWY 3, Amdt. 1
Cabool, MO—Cabool Memorial, NDB RWY 21, Amdt. 1
Goldsboro, NC—Goldsboro-Wayne Muni, NDB RWY 22, Amdt. 2
Wilson, NC—Wilson Muni, NDB RWY 3, Amdt. 4
Mohall, ND—Mohall Muni, NDB RWY 31, Orig.
Middletown, OH—Hook Field Muni, NDB RWY 5, Amdt. 10, Cancelled
Middletown, OH—Hook Field Muni, NDB–A, Orig.
Frederick, OK—Frederick Muni, NDB RWY 17, Amdt. 1, Cancelled
Frederick, OK—Frederick Muni, NDB RWY 35, Orig.
Pendleton, OR—Pendleton Muni, NDB–A, Amdt. 6
Philadelphia, PA—Philadelphia Intl, NDB RWY 27L, Amdt. 5
Pittsburgh, PA—Allegheny County, NDB RWY 10, Amdt. 6, Cancelled
Center, TX—Center Muni, NDB RWY 14, Orig., Cancelled
Ashland, VA—Hanover County Muni, NDB RWY 16, Orig.
Newport News, VA—Patrick Henry Intl, NDB RWY 2, Amdt. 2
Newport News, VA—Patrick Henry Intl, NDB RWY 7, Amdt. 1
Newport News, VA—Patrick Henry Intl, NDB RWY 20, Amdt. 1
Newport News, VA—Patrick Henry Intl, NDB RWY 25, Amdt. 1

** * * Effective July 5, 1984*

Amarillo, TX—Amarillo Intl, NDB RWY 4, Amdt. 15

** * * Effective June 11, 1984*

Blytheville, AR—Blytheville Muni, NDB–A, Amdt. 3

** * * Effective June 7, 1984*

Newark, NJ—Newark Intl, NDB RWY 4R, Amdt. 3
Newark, NJ—Newark Intl, NDB RWY 4L, Amdt. 7
Teterboro, NJ—Teterboro, NDB RWY 6, Amdt. 16

4. By amending § 97.29 ILS ILS/DME, ISMLS, MLS, MLS/DME and MLS/RNAV SIAPs identified as follows:

** * * Effective August 30, 1984*

Honolulu, HI—Honolulu Intl, ILS RWY 4R, Amdt. 8
Honolulu, HI—Honolulu Intl, ILS RWY 8L, Amdt. 17

** * * Effective August 2, 1984*

Sarasota/Bradenton, FL—Sarasota-Bradenton, ILS RWY 14, Orig.
Pendleton, OR—Pendleton Muni, ILS RWY 25, Amdt. 22
Chattanooga, TN—Lovell Field, ILS RWY 20, Amdt. 33
Temple, TX—Draughon-Miller Muni, ILS RWY 15, Amdt. 7

** * * Effective July 5, 1984*

Lihue, HI—Lihue, ILS RWY 35, Orig.
Amarillo, TX—Amarillo Intl, ILS RWY 4, Amdt. 19

** * * Effective June 7, 1984*

Newark, NJ—Newark Intl, ILS RWY 4R, Amdt. 4
Newark, NJ—Newark Intl, ILS RWY 4L, Amdt. 7
Teterboro, NJ—Teterboro, ILS RWY 6, Amdt. 24

5. By amending Part 97.31 RADAR SIAPS identified as follows:

** * * Effective August 2, 1984*

Fort Huachuca, AZ—Libby AAF/Sierra Vista Muni, RADAR-1, Amdt. 2
Eugene, OR—Mahlon Sweet Field, RADAR-1, Orig., Cancelled
Philadelphia, PA—Philadelphia Intl, RADAR-1, Amdt. 17
Waco, TX—Waco-Madison Cooper, RADAR-1, Amdt. 1

** * * Effective July 5, 1984*

Amarillo, TX—Amarillo Intl, RADAR-1, Amdt. 14

6. By amending § 97.33 RNAV SIAPs identified as follows:

** * * Effective August 2, 1984*

Perryville, MO—Perryville Muni, RNAV RWY 19, Amdt. 1
Charlotte, NC—Charlotte/Douglas Intl, RNAV RWY 23, Amdt. 2, Cancelled
Oklahoma City, OK—Sundance Airpark, RNAV RWY 35, Orig.
Philadelphia, PA—Philadelphia Intl, RNAV RWY 17, Amdt. 4

(Secs. 307, 313(a), 601, and 1110, Federal Aviation Act of 1958 (49 U.S.C. 1348, 1354(a), 1421, and 1510); 49 U.S.C. 106(g) (Revised, Pub. L. 97-449, January 12, 1983); and 14 CFR 11.49(b)(3)).

**Note.**—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. For the same reason, the FAA certifies that this amendment will not have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexiblity Act.

Issued in Washington, D.C. on June 15, 1984.

Note.—The incorporation by reference in the preceding document was approved by the Director of the Federal Register on December 31, 1980, and reapproved as of January 1, 1982.

**Kenneth S. Hunt,**

*Director of Flight Operations.*

[FR Doc. 84-16670 Filed 6-21-84; 8:45 am]

BILLING CODE 4910-13-M

## FEDERAL TRADE COMMISSION

### 16 CFR Part 13

**[Dkt. C-3135]**

### Adria Laboratories, Inc.; Prohibited Trade Practices and Affirmative Corrective Actions

**AGENCY:** Federal Trade Commission.

**ACTION:** Consent Order.

**SUMMARY:** In settlement of alleged violations of federal law prohibiting unfair acts and practices and unfair methods of competition, this consent order requires a Dublin, Ohio manufacturer and seller of over-the counter drugs, among other things, to cease promoting "Efficin," or any other over-the counter internal analgesic containing magnesium salicylate, by representing that the product contains no aspirin, or by comparing the product's safety to any product containing aspirin, unless representations are accompanied by prescribed disclosure warnings and substantiated by reliable and competent scientific evidence.

**DATE:** Complaint and Order issued June 5, 1984.[1].

**FOR FURTHER INFORMATION CONTACT:** FTC/PA, T. Bringier McConnell, Washington, DC 20580, (202) 724-1098.

**SUPPLEMENTARY INFORMATION:** On Wednesday, March 28, 1984, there was published in **Federal Register**, 49 FR 11843, a proposed consent agreement with analysis In the Matter of Adria Laboratories, Inc., for the purpose of soliciting public comment. Interested parties were given sixty (60) days in which to submit comments, suggestions or objections regarding the proposed form of order.

No comments having been received, the Commission has ordered the issuance of the complaint in the form contemplated by the agreement, made its jurisdictional findings and entered its order to cease and desist, as set forth in the proposed consent agreement, in disposition of this proceeding.

The prohibited trade practices and/or corrective actions, as codified under 16 CFR Part 13, are as follows: Subpart—Advertising falsely or Misleadingly: § 13.10 Advertising falsely or misleadingly; § 13.20 Comparative data or merits; § 13.20-20 Competitors' products; § 13.45 Content; § 13.135 Nature of product or service; § 13.195 Safety; § 13.195-60 Product; § 13.205 Scientific or other relevant facts. Subpart—Corrective Actions and/or Requirements; § 13.533 Corrective actions and/or requirements; § 13.533-20 Disclosures; § 13.533-45 Maintain records; § 13.533-45(a) Advertising substantiation. Subpart—Misrepresenting Oneself and Goods—Goods: § 13.1575 Comparative data or merits; § 13.1605 Content; § 13.1685 Nature; § 13.1740 Scientific or other relevant facts. Subpart—Neglecting, Unfairly or Deceptively, To Make Material Disclosure: § 13.1850 Content; § 13.1870 Nature; § 13.1890 Safety; § 13.1895 Scientific or other relevant facts.

**List of Subjects in 16 CFR Part 13**

Over-the-counter drugs, Trade practices.

(Sec. 6, 38 Stat. 721; 15 U.S.C. 46. Interprets or applies sec. 5, 38 Stat. 719, as amended; 15 U.S.C. 45, 52)

**Emily H. Rock,**

*Secretary.*

[FR Doc. 84-16673 Filed 6-21-84; 8:45 am]

BILLING CODE 6750-01-M

[1] Copies of the Complaint and the Decision and Order filed with the original document.

## DEPARTMENT OF HEALTH AND HUMAN SERVICES

### Food and Drug Administration

### 21 CFR Part 177

**[Docket No. 82F-0315]**

### 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 terephthalic acid as an alternative reactant in the manufacture of ethylene-1,4-cyclohexylene dimethylene terephthalate copolymer intended for use in contact with food. This action responds to a petition filed by Eastman Kodak Co., Eastman Chemicals Division.

**DATES:** Effective June 22, 1984; objections by July 23, 1984.

**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:** Vir Anand, Center for Food Safety and Applied Nutrition (HFF–334), Food and Drug Administration, 200 C Street SW., Washington, DC 20204, 202–472–5690.

**SUPPLEMENTARY INFORMATION:** In a notice published in the **Federal Register** of October 29, 1982 (47 FR 49092), FDA announced that a petition (FAP 2B3667) had been filed by Eastman Kodak Co., Eastman Chemicals Division, Kingsport, TN 37662, proposing that the food additive regulations be amended to provide for the safe use of terephthalic acid as an alternative diacid moiety for dimethyl terephthalate as a reactant in the manufacture of ethylene-1,4-cyclohexylene dimethylene terephthalate copolymer intended for use in contact with food.

FDA has evaluated data in the petition and other relevant material and concludes that the proposed food additive use is safe and that the regulations should be amended as set forth below.

In accordance with § 171.1(h) (21 CFR 171.1(h)), the petition and the documents that FDA considered and relied upon in reaching its decision to approve the petition are available for inspection at the Bureau of Foods (address above) by appointment with the information contact person listed above. As provided in 21 CFR 171.1(h)(2), 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 and 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 may be seen in the Dockets Management Branch (address above), between 9 a.m. and 4 p.m., Monday through Friday.

**List of Subjects in 21 CFR Part 177**

Food additives, Polymeric food packaging.

## PART 177—INDIRECT FOOD ADDITIVES: POLYMERS

Therefore, under the Federal Food, Drug, and Cosmetic Act (secs. 201(s), 409, 72 Stat. 1784–1788 (21 U.S.C. 321(s), 348)) and under authority delegated to the Commissioner of Food and Drugs (21 CFR 5.10) and redelegated to the Director of the Bureau of Foods (21 CFR 5.61), Part 177 is amended in § 177.1315 by revising paragraph (a) and by revising items 1, 2, and 3 under the heading "Ethylene-1,4-cyclohexylene dimethylene terephthalate copolymers" in the table in paragraph (b), to read as follows:

**§ 177.1315 Ethylene-1,4-cyclohexylene dimethylene terephthalate copolymers.**

* * * * *

(a) *Identity.* For the purposes of this section, ethylene-1,4-cyclohexylene dimethylene terephthalate copolymers (1,4-benzene dicarboxylic acid, dimethyl ester, polymerized with 1,4-cyclohexanedimethanol and 1,2-ethanediol) (CAS Reg. No. 25640–14–6) or (1,4-benzenedicarboxylic acid, polymerized with 1,4-cyclohexanedimethanol and 1,2-ethanediol) (CAS Reg. No. 25038–91–9) are basic copolymers meeting the specifications prescribed in paragraph (b) of this section, to which may have been added certain optional substances required in their production or added to impart desired physical or technical properties.

(b) * * *

| Ethylene-1,4-cyclohexylene dimethylene terephthalate copolymers | Inherent viscosity | Maximum extractable fractions of the copolymer in the finished form at specified temperatures and times (expressed in micrograms of the terephthaloyl moieties/square centimeter of food-contact surface) | Test for orientability | Conditions of use |
|---|---|---|---|---|
| 1. *Non-oriented* ethylene-1,4-cyclohexylene dimethylene terephthalate copolymer is the reaction product of dimethyl terephthalate or terephthalic acid with a mixture containing 99 to 66 mole percent of ethylene glycol and 1 to 34 mole percent of 1,4-cyclohexane-dimethanol (70 percent *trans* isomer, 30 percent *cis* isomer). | * * * | * * * | * * * | * * * |
| 2. *Non-oriented* ethylene-1,4-cyclohexylene dimethylene terephthalate copolymer is the reaction product of dimethyl terephthalate or terephthalic acid with a mixture containing 69±3 mole percent of ethylene glycol and 31±3 mole percent of 1,4-cyclohexane-dimethanol (70 percent *trans* isomer, 30 percent *cis* isomer). | * * * | * * * | * * * | * * * |
| 3. *Oriented* ethylene-1,4-cyclohexylene dimethylene terephthalate copolymer is the reaction product of dimethyl terephthalate or terephthalic acid with a mixture containing 99 to 85 mole percent ethylene glycol and 1 to 15 mole percent of 1,4-cyclohexane-dimethanol (70 percent *trans* isomer, 30 percent *cis* isomer). | * * * | * * * | * * * | * * * |

Any person who will be adversely affected by the foregoing regulation may at any time on or before July 23, 1984, submit to the Dockets Management Branch (address above) written objections thereto and may make a written request for a public hearing on the stated objections. Each objection shall be separately numbered and each numbered objection shall specify with particularity the provision of the regulation to which objection is made. 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 regulation. Received objections may be seen in the office above between 9 a.m. and 4 p.m., Monday through Friday.

*Effective date.* This regulation becomes effective June 22, 1984.

(Secs. 201(s), 409, 72 Stat. 1784–1788 as amended (21 U.S.C.) 321(s), 348))

Dated: June 14, 1984.

**Sanford A. Miller,**

*Director, Center for Food Safety and Applied Nutrition.*

[FR Doc. 84-16659 Filed 6-21-84; 8:45 am]

**BILLING CODE 4160-01-M**

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**21 CFR Part 178**

**[Docket No. 83F-0224]**

## Indirect Food Additives; Adjuvants, Production Aids, and Sanitizers; Antioxidants and/or Stabilizers for 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 tris(2,4-di-*tert*-butylphenyl)phosphite as an antioxidant and/or stabilizer in certain polymers in contact with food. This action responds to a petition filed by the Ciba-Geigy Corp.

**DATES:** Effective June 22, 1984; objections by July 23, 1984.

**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:** Geraldine E. Harris, Center for Food Safety and Applied Nutrition (HFF-334), Food and Drug Administration, 200 C Street SW., Washington, DC 20204, 202-472-5690.

**SUPPLEMENTARY INFORMATION:** In a notice published in the Federal Register of July 29, 1983 (48 FR 34513), FDA announced that a petition (FAP 3B3725) had been filed by the Ciba-Geigy Corp., Hawthorne, NY 20532, proposing that 21 CFR Parts 177 and 178 be amended to provide for the safe use of tris(2,4-di-*tert*-butylphenyl)phosphite as a component of food-packaging polymers.

FDA has evaluated data in the petition and other relevant material, and concludes that the proposed food additive is safe for expanded uses as an antioxidant/stabilizer and that § 178.2010 should be amended as set forth below.

It is not necessary to amend Part 177 to provide for these new uses, because their listing in § 178.2010 permits the use of tris(2,4-di-*tert*-butylphenyl)phosphite in the sections which are referenced.

In accordance with § 171.1(h) (21 CFR 171.1(h)), the petition and the documents that FDA considered and relied upon in reaching its decision to approve the petition are available for inspection at the Center for Food Safety and Applied Nutrition (address above) by appointment with the information contact person listed above. As provided in § 171.1(h)(2), 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 and has concluded that the action will not have a significant impact on the human environment and that an environmental impact statement therefore will not be prepared. The agency's finding of no significant impact and the evidence supporting this finding may be seen in the Dockets Management Branch (address above), between 9 a.m. and 4 p.m., Monday through Friday.

### List of Subjects in 21 CFR Part 178

Food additives, Food packaging, Sanitizing solutions.

Therefore, under the Federal Food, Drug, and Cosmetic Act (secs. 201(s), 409, 72 Stat. 1784-1788 as amended (21 U.S.C. 321(s), 348)) and under authority delegated to the Commissioner of Food and Drugs (21 CFR 5.10) and redelegated to the Center for Food Safety and Applied Nutrition (21 CFR 5.61), Part 178 is amended in § 178.2010(b) for the item "Tris(2,4-di-*tert*-butylphenyl)phosphite" by revising under "Limitations" items 1 and 4 and adding new items 9 and 10 to read as follows:

## PART 178—INDIRECT FOOD ADDITIVES: ADJUVANTS, PRODUCTION AIDS, AND SANITIZERS

### § 178.2010 Antioxidants and/or stabilizers for polymers.

* * * * *

(b) * * *

| Substances | Limitations |
|---|---|
| * * * * * | |
| Tris(2,4-di-*tert*-butylphenyl) phosphite (CAS Reg. No. 31570-04-4). | For use only:<br>1. At levels not to exceed 0.5 percent by weight of elastomers used in rubber articles complying with § 177.2600 of this chapter.<br>* * *<br>4. At levels not to exceeds 0.2 percent by weight of polystyrene and rubber-modified polystyrene polymers complying with § 177.1640 of this chapter: *Provided*, that the finished polymer contacts food only under conditions of use B, C, D, E, F, G, and H described in table 2 of § 176.170(c) of this chapter.<br>* * *<br>9. At levels not to exceed 0.5 percent by weight of acrylic and modified acrylic plastics, semirigid and rigid, complying with § 177.1010 of this chapter.<br>10. At levels not to exceed 0.1 percent by weight of isobutylene polymers complying with § 177.1420 of this chapter. |
| * * * * * | |

Any person who will be adversely affected by the foregoing regulation may at any time on or before July 23, 1984, submit to the Dockets Management Branch (address above), written objections thereto and may make a written request for a public hearing on the stated objections. Each objection shall be separately numbered and each numbered objection shall specify with particularity the provision of the regulation to which objection is made. 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 even 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 regulation. Received objections may be seen in the office above between 9 a.m. and 4 p.m., Monday through Friday.

*Effective date.* This regulation is effective June 22, 1984.

(Secs. 201(s), 409, 72 Stat. 1784-1788 as amended 21 U.S.C. 321(s), 348))

Dated: June 13, 1984.

**Sanford A. Miller,**

*Director, Center for Food Safety and Applied Nutrition.*

[FR Doc. 84-16660 Filed 6-21-84; 8:45 am]

**BILLING CODE 4160-01-M**

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**21 CFR Part 178**

**[Docket No. 82N-0342]**

## Indirect Food Additives: Adjuvants, Production Aids, and Sanitizers; Colorants for Polymers; Reopening of Comment Period

**AGENCY:** Food and Drug Administration, HHS.

**ACTION:** Final rule; reopening of comment period.

**SUMMARY:** The Food and Drug Administration (FDA) is reopening the

period for submitting comments on its food additive regulation that established a category called "colorants for polymers" for coloring agents used in polymeric food-contact materials. FDA is granting this reopening of the comment period in response to a request.

**DATE:** Comments by July 23, 1984.

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

**FOR FURTHER INFORMATION CONTACT:** Mary W. Lipien, Center for Food Safety and Applied Nutrition (formerly Bureau of Foods) (HFF–334), Food and Drug Administration, 200 C St. SW., Washington, D.C. 20204, 202–472–5740.

**SUPPLEMENTARY INFORMATION:** In the **Federal Register** of June 6, 1972 (37 FR 11255), FDA published a proposed regulation entitled "Colorants for plastics" that would establish a section in the Code of Federal Regulations for coloring agents used in plastics intended for food-contact use. In the **Federal Register** of October 14, 1983 (48 FR 46773), FDA published a final rule that established § 178.3297 *Colorants for polymers* (21 CFR 178.3297). (See that document for discussion of the issue.)

Because considerable time had elapsed between the 1972 proposal and publication of the final rule, the agency provided a 30-day period for interested persons to comment on any aspect of the final rule. The agency stated that it would consider making revisions to the final regulation based upon comments received.

FDA has received a request from the Dry Color Manufacturers' Association to extend the comment period. The Association argued that the 30-day comment period did not allow its members sufficient time to review the rule adequately, because there have been a number of changes during the 11-year time period between the proposal and the final regulation in the various regulations and in the organizations and concerns of the parties involved in the regulatory process. The request is on file with the Dockets Management Branch (address above).

FDA has evaluated the request, and concludes that it is appropriate to reopen the comment period. The agency believes that information, such as the Association may submit, will be helpful and it wishes to ensure that other interested parties have the opportunity to comment on this final rule. Therefore, FDA is reopening the comment period to July 23, 1984.

**List of Subjects in 21 CFR Part 178**

Food additives; Food packaging; Sanitizing solutions.

Interested persons may, on or before July 23, 1984, submit to the Dockets Management Branch (address above) written comments regarding this final rule. 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. Received comments may be seen in the office above between 9 a.m. and 4 p.m., Monday through Friday.

Dated: June 15, 1984.

**William F. Randolph,**

*Acting Associate Commissioner for Regulatory Affairs.*

[FR Doc. 84–16658 Filed 6–21–84; 8:45 am]

BILLING CODE 4160–01–M

## DEPARTMENT OF TRANSPORTATION

### Coast Guard

### 33 CFR Part 100

**[CGD2 84–11]**

### Special Local Regulations; Freedom Festival's Thunder on the Ohio

**AGENCY:** Coast Guard, DOT.

**ACTION:** Final rule.

**SUMMARY:** Special local regulations are being adopted for Miles 792.0 to 793.0, Ohio River.

Marine events will be held on June 29, 30, and July 1, 1984, at Evansville, Indiana. These special local regulations are needed to provide for the safety of life and property on navigable waters during the events.

**EFFECTIVE DATES:** These regulations will be effective on June 29, 30, and July 1, 1984.

**FOR FURTHER INFORMATION CONTACT:** Cdr. R. B. Bower, Chief, Boating Technical Branch, Second Coast Guard District, 1430 Olive St., St. Louis, MO 63103 (314) 425–5971.

**SUPPLEMENTARY INFORMATION:** These special local regulations are issued pursuant to 33 U.S.C. 1233 and 33 CFR 100.35, for the purpose of promoting the safety of life and property on the Ohio River between miles 792.0 and 793.0 during the "Freedom Festival's Thunder on the Ohio", June 29, 30 and July 1, 1984. These events will consist of Unlimited Hydroplane Boat Races which could pose hazards to navigation in the area.

Therefore, these special local regulations are deemed necessary for the promotion of safety of life and property in the area during this event. A notice of proposed rule making has not been published for these regulations and they are being made effective less than 30 days from the date of publication. Following normal rule making procedures would have been impracticable. The necessity of establishing special local regulations for this event did not become apparent until June 6, 1984, and there was insufficient time remaining to publish proposed rules in advance of the event, or to provide for a delayed effective date.

These regulations have been reviewed under the provisions of Executive Order 12291 and have been determined not to be a major rule. This conclusion follows from the fact that the duration of the regulated area is short. In addition, these regulations are considered to be nonsignificant in accordance with guidelines set forth in the Policies and Procedures for Simplification, Analysis, and Review of Regulations (DOT Order 2100.5 of 5–22–80). An economic evaluation has not been conducted since, for the reasons discussed above, its impact is expected to be minimal. In accordance with the Regulatory Flexibility Act (5 U.S.C. 601 et seq.), it is also certified that these rules will not have a significant economic impact on a substantial number of small entities. This rule is necessary to insure the protection of life and property in the area during the event.

**Drafting Information**

The drafters of this regulation are BMCM W. L. Giessman, USCGR, Project Officer, Boating Technical Branch, and LT. R. E. Kilroy, USCG, Project Attorney, Second Coast Guard District Legal Office.

**List of Subjects in 33 CFR Part 100**

Marine Safety, Navigation (water).

**Final Regulations**

**PART 100—[AMENDED]**

In consideration of the foregoing, Part 100 of Title 33, Code of Federal Regulations, is amended by adding a temporary § 100.35—0210 to read as follows:

**§ 100.35—0210 OHIO RIVER, miles 792.0 through 793.0.**

(a) *Regulated Area.* The area between Mile 792.0 and 793.0 Ohio River is designated the regatta area, and may be closed to commercial navigation or mooring during the following dates and (local) times:

June 29, 9:00 a.m. to 6:00 p.m.

June 30, 9:00 a.m. to 6:00 p.m.
July 1, 9:00 a.m. to 6:00 p.m.

The above times represent a guideline for possible intermittent river closures not to exceed THREE (3) hours in duration each. Mariners will be afforded enough time between such closure periods to transit the area in a timely manner.

(b) *Special Local Regulations.* Vessels desiring to transit the restricted area may do so only with prior approval of the Patrol Commander and when so directed by that officer. Vessels will be operated at a no wake speed to reduce the wake to a minimum and in a manner which will not endanger participants in the event or any other craft. The rules contained in the above two sentences shall not apply to participants in the event or vessels of the patrol, while they are operating in the performance of their assigned duties.

(1) The Patrol Commander may be reached on Channel 16 (156.8MHZ) when required, by the call sign "Coast Guard Patrol Commander".

(c) A succession of sharp, short signals by whistle or horn from vessels patrolling the areas under the direction of the U.S. Coast Guard Patrol Commander shall serve as a signal to stop. Vessels so signalled shall stop and shall comply with the orders of the Patrol Vessel. Failure to do so may result in expulsion from the area, citation for failure to comply, or both.

(d) The Patrol Commander may establish vessel size and speed limitations and operating conditions.

(e) The Patrol Commander may restrict vessel operation within the marine event area to vessels having particular operating characteristics.

(f) The Patrol Commander may terminate the marine event or the operation of any vessel at any time it is deemed necessary for the protection of life and property.

(g) This § 100.35–0210 will be effective on the following dates and times:

June 29, 9:00 a.m. to 6:00 p.m.
June 30, 9:00 a.m. to 6:00 p.m.
July 1, 9:00 a.m. to 6:00 p.m.
All times listed are local time.

(33 U.S.C. 1233; 49 U.S.C. 108; 49 CFR 1.46(b) and 33 CFR 100.35)

Dated: June 13, 1984.

**S. B. Vaughn,**

*Rear Admiral, U.S. Coast Guard, Commander, Second Coast Guard District.*

[FR Doc. 84–16653 Filed 6–21–84; 8:45 am]

BILLING CODE 4910–14–M

**33 CFR Part 100**

**[CGD2 84–10]**

## Special Local Regulations; River Bend Festival

**AGENCY:** Coast Guard, DOT.

**ACTION:** Final rule.

**SUMMARY:** Special local regulations are being adopted for Miles 463.5 to 464.4, Tennessee River. Marine events will be held on June 23 thru 24, 1984, at Chattanooga, Tennessee. These special local regulations are needed to provide for the safety of life and property on navigable waters during the events.

**EFFECTIVE DATES:** These regulations will be effective on June 23 and 24, 1984.

**FOR FURTHER INFORMATION CONTACT:** Cdr. R.B. Bower, Chief, Boating Technical Branch, Second Coast Guard District, 1430 Olive St., St. Louis, MO 63103 (314) 425–5971.

**SUPPLEMENTARY INFORMATION:** These special local regulations are issued pursuant to 33 U.S.C. 1233 and 33 CFR 100.35, for the purpose of promoting the safety of life and property on the Tennessee River between miles 463.5 and 464.4 during the "Riverbend Festival", June 23 and 24, 1984. These events will consist of Formula 1 Outboard Races which could pose hazards to navigation in the area.

Therefore, these special local regulations are deemed necessary for the promotion of safety of life and property in the area during this event. A notice of proposed rule making has not been published for these regulations and they are being made effective less than 30 days from the date of publication. Following normal rule making procedures would have been impracticable. The revised applications and schedules to hold the event was not received until April 24, 1984, and there was insufficient time remaining to publish proposed rules in advance of the event, or to provide for a delayed effective date.

These regulations have been reviewed under the provisions of Executive Order 12291 and have been determined not to be a major rule. This conclusion follows from the fact that the duration of the regulated area is short. In addition, these regulations are considered to be nonsignificant in accordance with guidelines set forth in the Policies and Procedures of Simplification, Analysis, and Review of Regulations (DOT Order 2100.5 of 5–22–80). An economic evaluation has not been conducted since, for the reasons discussed above, its impact is expected to be minimal. In accordance with the Regulatory Flexibility Act (5 U.S.C. 601 et seq.), it is also certified that these rules will not have a significant economic impact on a substantial number of small entities. This rule is necessary to insure the protection of life and property in the area during the event.

### Drafting Information

The drafters of this regulation are BMCM W. L. Giessman, USCGR, Project Officer, Boating Technical Branch, and Lt. R. E. Kilroy, USCG, Project Attorney, Second Coast Guard District Legal Office.

### List of Subjects in 33 CFR Part 100

Marine safety, Navigation (water).

### PART 100—[AMENDED]

### Final Regulations

In consideration of the foregoing, Part 100 of Title 33, Code of Federal Regulations, is amended by adding a temporary § 100.35–0208 to read as follows:

**§ 100.35–0208 Tennessee River, miles 463.5 through 464.4.**

(a) *Regulated Area.* The area between Mile 463.5 and 464.4 Tennessee River is designated the regatta area, and may be closed to commercial navigation or mooring during the following dates and (local) times:

June 23, 9:00 a.m. to 4:00 p.m.
June 24, 12:00 noon to 4:00 p.m.

The above times represent a guideline for possible intermittent river closures not to exceed Four (4) hours in duration each. Mariners will be afforded enough time between such closure periods to transit the area in a timely manner.

(b) *Special Local Regulations.* Vessels desiring to transit the restricted area may do so only with prior approval of the Patrol Commander and when so directed by that officer. Vessels will be operated at a no wake speed to reduce the wake to a minimum and in a manner which will not endanger participants in the event or any other craft. The rules contained in the above two sentences shall not apply to participants in the event or vessels of the patrol, while they are operating in the performance of their assigned duties.

(1) The Patrol Commander may be reached on Channel 16 (156.8MHZ) when required, by the call sign "Coast Guard Patrol Commander".

(c) A succession of sharp, short signals by whistle or horn from vessels patrolling the areas under the direction of the U.S. Coast Guard Patrol Commander shall serve as a signal to stop. Vessels so signalled shall stop and

shall comply with the orders of the Patrol Vessel. Failure to do so may result in expulsion from the area, citation for failure to comply, or both.

(d) The Patrol Commander may establish vessel size and speed limitations and operating conditions.

(e) The Patrol Commander may restrict vessel operation within the marine event area to vessels having particular operating characteristics.

(f) The Patrol Commander may terminate the marine event or the operation of any vessel at any time it is deemed necessary for the protection of life and property.

(g) This § 100.35–0208 will be effective on the following dates and times;

June 23, 9:00 a.m. to 4:00 p.m.
June 24, 12:00 noon to 4:00 p.m.
All times listed are local time.

(33 U.S.C. 407, 411, 1233–1236; 46 U.S.C. 2106–2107, 2302, 4308, 4311 (a) and (c), 49 U.S.C. 1655(b)(1), 33 CFR 100.35, 100.40, 100.50, 49 CFR 1.46(b), 1.46(n)(1))

Dated: June 13, 1984.

**S. B. Vaughn,**

*Rear Admiral, U. S. Coast Guard, Commander, Second Coast Guard District.*

[FR Doc. 84–16654 Filed 6–21–84; 8:45 am]

BILLING CODE 4910–14–M

## ENVIRONMENTAL PROTECTION AGENCY

### 40 CFR Part 147

[WH–FRL–2610–4]

## Vermont Agency of Environmental Conservation Underground Injection Control Program Approval

**AGENCY:** Environmental Protection Agency.

**ACTION:** Approval of State program.

**SUMMARY:** The State of Vermont has submitted an application under section 1422 of the Safe Drinking Water Act for the approval of an Underground Injection Control (UIC) program governing Classes I, II, III, IV, and V injection wells. After careful review of the application, the Agency has determined that the State's injection well program meets the requirements of section 1422 of the Act. Therefore, this application is approved.

**EFFECTIVE DATE:** This approval shall be promulgated for purposes of judicial review at 1:00 p.m. eastern time on July 6, 1984. This approval shall become effective on July 6, 1984.

**FOR FURTHER INFORMATION CONTACT:** Jerome J. Healey, Water Supply Branch, Environmental Protection Agency, Region I, JFK Federal Building, Boston, Massachusetts 02203. PH: (617) 223–6486.

**SUPPLEMENTARY INFORMATION:** Part C of the Safe Drinking Water Act (SDWA) provides for an Underground Injection Control (UIC) program. Section 1421 of the SDWA requires the Administrator to promulgate minimum requirements for effective State programs to prevent underground injection which endangers drinking water sources. The Administrator is also to list in the **Federal Register** each State for which, in his judgment, a State UIC program may be necessary. Each State listed shall submit to the Administrator an application which contains a showing satisfactory to the Administrator that the State: (i) Has adopted after reasonable notice and public hearings, a UIC program which meets the requirements of regulations in effect under section 1421 of the SDWA; and (ii) will keep such records and make such reports with respect to its activities under its UIC program as the Administrator may require by regulations. After reasonable opportunity for public comment, the Administrator shall by rule approve, disapprove or approve in part and disapprove in part, the State's UIC program.

The State of Vermont was listed as needing a UIC program on March 19, 1980 (45 *FR* 17632). The State submitted an application under section 1422 on January 10, 1984, for a UIC program to be administered by the Vermont Agency of Environmental Conservation (VAEC). On February 3, 1984, EPA published notice of receipt of the application, requested public comments, and offered a public hearing on the UIC program submitted by the VAEC (49 *FR* 4216). Neither requests for public hearing nor requests to offer testimony at such hearings were received by EPA. Therefore, pursuant to the provisions of 40 CFR 145.31(c), the public hearing was cancelled because of lack of sufficient public interest.

After careful review of the application, I have determined that the Vermont UIC program submitted by the VAEC to regulate Classes I, II, III, IV, and V injection wells meets the requirements established by the Federal regulations pursuant to section 1422 of the SDWA and, hereby approve it. The effect of this approval is to establish this program as the applicable underground injection control program under the SDWA for the State of Vermont.

This approval will be codified in 40 CFR 147.2300. State statutes and regulations that contain standards, requirements, and procedures applicable to owners or operators are incorporated by reference. These provisions incorporated by reference, as well as all permit conditions or permit denials issued pursuant to such provisions are enforceable by EPA pursuant to section 1423 of the SDWA.

On May 11, 1984, EPA proposed a Federally administered UIC program for the State of Vermont (49 FR 20238). Approval of the State-administered program withdraws the proposed EPA-administered program (§ 147.2301).

Since this approval, in large part, simply approves as the Federal UIC program State regulations and requirements already in effect under State law, EPA is publishing this approval effective two weeks after the date of publication in the **Federal Register**. This will enable Vermont to begin issuing UIC permits for injection wells under the Federally approved program at the earliest possible date.

The terms listed below comprise a complete listing of the thesaurus terms associated with 40 CFR Part 147, which sets forth the requirements for a State requesting the authority to operate its own permit program of which the Underground Injection Control program is a part. These terms may not all apply to this particular notice.

**List of Subjects in 40 CFR Part 147**

Indians—lands, Reporting and recordkeeping requirements, Incorporation by reference, Intergovernmental relations, Penalties, Confidential business information, Water supply.

**OMB Review**

The Office of Management and Budget has exempted this rule from the requirements of section 3 of Executive Order 12291.

**Certification Under the Regulatory Flexibility Act**

Pursuant to the provisions of 5 U.S.C. 605(b), I certify that approval by EPA under section 1422 of the Safe Drinking Water Act of the application by the Vermont Agency of Environmental Conservation will not have a significant economic impact on a substantial number of small entities, since this rule only approves State actions. It imposes no new requirements on small entities.

Dated: June 14, 1984.

**William D. Ruckelshaus,**

*Administrator.*

Title 40 of the Code of Federal Regulations is amended as follows:

## PART 147—STATE UNDERGROUND INJECTION CONTROL PROGRAMS

### Subpart UU—Vermont

Amend 40 CFR Part 147 by revising § 147.2300 to read as follows:

**§ 147.2300 State-administered program—Class I, II, III, IV, and V wells.**

The UIC program for Class I, II, III, IV, & V wells in the State of Vermont is the program administered by the Vermont Department of Water Resources and Environmental Engineering, approved by EPA pursuant to section 1422 of the SDWA. Notice of this approval was published in the **Federal Register** on June 22, 1984; the effective date of this program is July 6, 1984. This program consists of the following elements, as submitted to EPA in the State's program application.

(a) *Incorporation by reference.* The requirements set forth in the State statutes and regulations cited in this paragraph are hereby incorporated by reference and made a part of the applicable UIC program under the SDWA for the State of Vermont. This incorporation by reference was approved by the Director of the Federal Register July 6, 1984.

(1) Vt. Stat. Ann. tit. 10, sections 1251, 1259, 1263 (1973 and Supp. 1981). Effective date: July 1, 1982.

(2) Vermont Department of Water Resources and Environmental Engineering, Chapter 13 Water Pollution Control Regulations, Subchapter 13.UIC—Underground Injection Control, Discharges to Injection Wells, Effective Date: June 21, 1984.

(b) *Other Laws.* The following statutes and regulations although not incorporated by reference, also are part of the approved State-administered program:

(1) Vt. Stat. Ann. tit. 10, sections 1251 through 1283 (1973 and Supp. 1981).

(2) Vt. Stat. Ann. tit. 10, sections 901 through 911 (1973 and Supp. 1981).

(3) Vt. Stat. Ann. tit. 3, sections 801 through 847 (1973 and Supp. 1981).

(c)(1) The Memorandum of Agreement between EPA Region I and the Vermont Agency of Environmental Conservation signed by the EPA Regional Administrator on January 16, 1984.

(d) *Statement of Legal Authority.* (1) "Vermont Attorney General's Statement for Classes I, II, III, IV and V Injection Wells," signed by Attorney General John J. Easton, Jr., as submitted with Vermont Application for Primary Enforcement Responsibility to Administer the Underground Water Source Protection Program Pursuant to the Safe Drinking Water Act and 40 CFR 145.21–45.24 (December 20, 1983).

(e) The Program Description and any other materials submitted as part of the original application or as supplements thereto.

(42 U.S.C. 300)

[FR Doc. 84–16540 Filed 6–21–84; 8:45 am]
BILLING CODE 6560–50–M

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## 40 CFR Part 420

**[OW-FRL 2609-7]**

## Iron and Steel Manufacturing Point Source Category; Effluent Limitations Guidelines

*Correction*

In FR Doc. 84–16076 appearing on page 24726 in the issue of Friday, June 15, 1984, make the following corrections in the middle column:

**§420.04 [Corrected]**

1. In the first line, "of" should read "or".

2. In the third line, "1." should read "2."

**§ 420.102 [Corrected]**

3. In the tenth line, "§ 240.102(b)(1)" should read "420.102(b)(1)".

BILLING CODE 1505-01-M

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## DEPARTMENT OF HEALTH AND HUMAN SERVICES

### Public Health Service

### 42 CFR Part 57

## Grants for Various Health Professions Projects

*Correction*

In FR Doc. 84–12735 beginning on page 19999 in the issue of Friday, May 11, 1984, make the following corrections:

1. On page 19999, in the third column, in the first complete paragraph, in the sixth line, "no not" should read "do not".

2. On page 20001, in the first column, in § 57.3910, in the sixth line, "proposed" should read "approved".

BILLING CODE 1505-01-M

# Proposed Rules

Federal Register
Vol. 49, No. 122
Friday, June 22, 1984

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 AGRICULTURE

### Agricultural Marketing Service

### 7 CFR Part 989

### Raisins Produced From Grapes Grown in California; Proposed Changes in Weight Dockage System, Incoming and Outgoing Grade Standards, and Reserve Pool Setaside Procedures for Certain Reconditioned Raisins

**AGENCY:** Agricultural Marketing Service, USDA.

**ACTION:** Proposed rule.

**SUMMARY:** This proposal invites comments on modification of the weight dockage system for substandard seedless raisins delivered by producers to raisin packers, changes in the grade standards for seedless raisins delivered by producers to packers, changes in the grade standards for packed seedless raisins moving into commercial channels, and reserve pool setaside procedures for certain reconditioned raisins. The proposed changes in the dockage system and raisin standards would apply to Natural (sun-dried) Seedless, Dipped Seedless, Oleate and Related Seedless, Golden Seedless, and Monukka raisins. They are designed to help the California raisin industry become more competitive with other world producers in terms of maturity levels, promote handler efficiencies of operation, and encourage producers to improve the quality of the raisins they deliver to packers. The proposal permitting setaside of certain reconditioned raisins recognizes that the proposed changes in the dockage system and incoming raisin standards could increase the quantity of raisins needing reconditioning and that there may not be enough unreconditioned raisins to meet reserve obligations. In the interest of providing equity among growers of all raisins covered under the program, this change would apply to all raisins covered under the raisin order. All of the changes were recommended by the Raisin Administrative Committee, which works with the USDA in implementing the order.

**DATE:** Comments must be received by July 23, 1984.

**ADDRESSES:** Send two copies of comments to the Hearing Clerk, U.S. Department of Agriculture, Washington, D.C. 20250, where they will be available for public inspection during regular business hours.

**FOR FURTHER INFORMATION CONTACT:** Frank M. Grasberger, Acting Chief, Specialty Crops Branch, Fruit and Vegetable Division, AMS, USDA, Washington, D.C. 20250 (202) 447-5053.

**SUPPLEMENTARY INFORMATION:** This proposal has been reviewed under USDA guidelines implementing Executive Order 12291 and Secretary's Memorandum No. 1512-1 and has been determined to be a "non-major" rule under criteria contained therein.

William T. Manley, Deputy Administrator, Agricultural Marketing Service, has certified that this proposal will not have a significant economic impact on a substantial number of small entities.

The weight dockage system for substandard raisins is contained in § 989.210 of Subpart—Supplementary Regulations (7 CFR 989.210-989.221; 49 FR 10082). The incoming grade standards for raisins delivered by producers to packers of the varietal types proposed to be changed are contained in § 989.701 of Subpart—Quality Control (7 CFR 989.701-989.702; 49 FR 10082). The outgoing grade standards for packed raisins are contained in § 989.702 of that subpart. The proposal to allow certain reconditioned raisins to be held in satisfaction of reserve pool setaside obligations requires a change in § 989.158(c)(4)(i) of Subpart—Administrative Rules and Regulations (7 CFR 989.102-989.176; 49 FR 18727). These subparts are operative pursuant to the marketing agreement and Order No. 989, both as amended, regulating the handling of raisins produced from grapes grown in California. The marketing agreement and order are hereinafter referred to collectively as the "order". The order is effective under the Agricultural Marketing Agreement Act of 1937, as amended (7 U.S.C. 601-674). Authority for the following proposals is contained in §§ 989.58 and 989.59 of the order.

Section 989.210 prescribes a weight dockage system which permits handlers to acquire as standard raisins any lot of Natural (sun-dried) Seedless, Dipped Seedless, Oleate and Related Seedless, Golden Seedless, and Monukka raisins, even though the lots have been determined to be off-grade because they contain an excess of substandard raisins. The current tolerance for substandard seedless raisins changes from 6 percent to 5 percent beginning with the 1984-85 crop year (49 FR 10082). That crop year begins August 1, 1984. The creditable weight of such lots is computed by multiplying the net weight of the lot by a factor from the dockage tables in § 989.210(g). The factor reduces the weight of the lot by an amount approximating the weight of the substandard raisins needed to be removed from the lot in order for the balance of the lot to meet grade standards.

Under the current weight dockage system, no limit is prescribed on the quantity of substandard raisins in a lot which can be acquired under that system. Raisin lots with large quantities of substandard raisins usually have small quantities of raisins meeting the maturity requirements for U.S. Grade B or better, the maturity level desired by consumers and the trade.[1]

Consequently, handlers experience higher than normal yield losses, and processing costs in delivering the product required by users. The Committee believes that an upper limit on acquisitions under the dockage system will help improve the quality of the raisins delivered by producers for processing, thus enable packers to market raisins with higher maturity levels at lower procesing costs, help the California raisin industry become more cost competitive with foreign producers, and increase the user acceptance of California raisins.

Therefore, the Committee proposed that the dockage system in § 989.210 for Natural (sun-dried) Seedless, Dipped Seedless, Oleate and Related Seedless, Golden Seedless, and Monukka raisins

[1] For the purposes of this document, references to B or better maturity raisins means raisins which are well-matured or reasonably well-matured as defined in the United States Standards for Grades of Processed Raisins (7 CFR 52.1841-52.1858).

be modified to provide for dockage on lots containing substandard raisins in the range from 5.1 percent to 10 percent. Lots containing more than 10 percent substandard raisins would be off-grade and require reconditioning before they can be acquired by handlers as standard raisins. In the absence of reconditioning, the raisins would be returned to the producer who delivered them, or disposed of by the handlers in non-traditional outlets. These dockage system changes would be effective beginning with the 1984–85 crop year; i.e., August 1, 1984.

Experience has shown that raisin users generally prefer raisins which are soft, fleshy, and pliable. Less mature raisins generally are not as soft and pliable as more mature raisins. Based on industry information, foreign produced raisins generally are higher in maturity than California raisins. This results from variances in cultural and harvesting practices between California and other world raisin producers.

To make the California raisins more competitive with foreign produced raisins, the Committee proposed changes in the incoming grade standards for raisins delivered by producers to packers contained in § 989.701 and the grade standards for packed raisins contained in § 989.702. The incoming and outgoing grade changes would apply to Natural (sun-dried) Seedless, Dipped Seedless, Oleate and Related Seedless, Golden Seedless, and Monukka raisins. Beginning August 1, 1985, raisin lots of these varietal types delivered by producers to packers would have to contain a minimum of 50 percent B or better maturity raisins. Raisin lots containing less than 50 percent B or better raisins would be off-grade and have to be reconditioned before they could be acquired by the packer as standard quality raisins.

With regard to packed raisins of these varietal types, the Committee proposed that the requirements in § 989.702 be made tighter with respect to maturity and pieces of stem. For select and mixed-size packed raisins, the minimum grade requirement would be as specified in U.S. Grade C, except that the minimum percent B or better would be raised from 55 percent to 62.5 percent, and the tolerances for pieces of stem, and substandard and undeveloped raisins contained in U.S. Grade B would apply. For small (midget) sized raisins of these varietal types, the Committee proposed that the maturity requirements be increased from the U.S. Grade C level of 55 percent to 62.5 percent, but that the minimum for pieces of stem, and substandard and undeveloped as provided in U.S. Grade C be retained. If the tolerances for pieces of stem, and substandard and undeveloped raisins under U.S. Grade B were applied to lots of small (midget) sized raisins, the supply of that size would virtually disappear. The mechanical facilities available to handlers cannot eliminate U.S. Grade C for small (midget) sized raisins without also eliminating a large amount of otherwise acceptable grade raisins as well.

Since a large inventory of 1983–84 crop raisins remains in the handlers' inventory, the proposed changes in the standards for packed raisins would not be made effective until November 15, 1984. It is also proposed that the 62.5 percent B or better standard would increase to 70 percent B or better for the 1985 crop, effective November 15, 1985.

The foregoing changes will not be applicable to raisins with seeds, such as Zante Currant, Sultana and Muscat (including other raisins with seeds) raisins. The California raisin industry has indicated that the current quality requirements for such raisins are in line with packer and user preferences, and that quality improvements for those raisins are not needed at this time.

Regulations presently preclude handlers from holding reconditioned raisins to satisfy a reserve pool setaside obligation. This appears appropriate for raisins which are reconditioned by full processing, including washing and capstemming. Raisins processed to that point do not store well for any significant period of time and are therefore not suitable for retention in the reserve. However, raisins which are reconditioned through a process known in the industry as "dry conditioning" do store for longer periods of time and are suitable for reserve use. This process involves passing the raisins over screens and under vacuums which remove some large stems and substandard raisins. However, these are not considered processed or packed raisins. These raisins are not washed or capstemmed and are not acceptable for use in commercial channels without processing.

As discussed earlier, current regulations allow handlers to acquire raisins with an unlimited amount of excessive substandard raisins under a dockage system. Such raisins may be held by a handler to satisfy a reserve pool obligation. The instant proposal would require seedless raisin lots with substandard raisins in excess of 10 percent to be reconditioned to remove the excess substandard raisins before they can be acquired by the handler as standard quality raisins. Prohibiting a handler from setting aside raisins which have been dry reconditioned to satisfy a reserve pool obligation is unnecessarily restrictive, denies the handler the right to use raisins previously eligible to satisfy a reserve pool obligation, and could influence the handler to refuse to receive and recondition a producer's raisins with excessive substandard raisins.

The regulations established under the order currently recognize a difference in the effects various reconditioning methods have on raisins. Section 989.158(c)(4)(i) provides that, for purposes of inspection, natural condition raisins which have been reconditioned shall continue to be considered natural condition raisins after such reconditioning if no water or moisture was added in the reconditioning process. It is proposed that this provision be broadened so dry reconditioned raisins can be considered as natural condition raisins and thus be eligible for use in meeting a handler's reserve pool setaside obligation. To accomplish this, the second sentence of § 989.158(c)(4)(i) would be revised to provide that natural condition raisins which have been reconditioned shall continue to be considered natural condition raisins for purposes of reinspection (inspection pursuant to § 989.58(d)) or setaside by a handler to satisfy the handler's reserve pool obligation, after such reconditioning has been completed if no water or moisture has been added; otherwise, such raisins shall be considered as packed raisins. This change would be effective August 1, 1984.

Other provisions of the regulations require handlers to properly store raisins which meet the incoming grade standards, except for normal and natural deterioration. There is no recommendation to modify these provisions. Thus, the integrity of maintaining the growers equity in the reserve pool is preserved. This proposed modification is optional and packers who have any fears relative to holding dry reconditioned raisins to satisfy a reserve pool obilgation may choose not to do so. This recommendation is not imposing additonal restrictions, but rather is relaxing the reserve pool setaside requirements, as far as dry reconditioned raisins are concerned.

The proposed changes hereinafter set forth are part of the Committee's 1984 marketing plan to realign supplies with needs. That plan also includes a price Inventory Adjustment/Domestic Merchandising program. This measure was discussed in a proposal published

in the Federal Register on June 5, 1984 (49 FR 23193).

**List of Subjects in 7 CFR Part 989**

Marketing agreements, Grapes, Raisins, and California.

The proposal is as follows:

1. Section 989.158(c)(4)(i) of Subpart—Administrative Rules and Regulations (7 CFR 989.102–989.176; 49 FR 18727) is amended by changing the second sentence to read as follows:

**§ 989.158 Natural condition raisins.**

* * * * *

(c) * * *

(4) *Reconditioning off-grade raisin—reconditioning requirements. (i)* * * *

Natural condition raisins which have been reconditioned shall continue to be considered natural condition raisins for purposes of reinspection (inspection pursuant to § 989.58(d)) or setaside by a handler to satisfy the handler's reserve pool obligation, after such reconditioning has been completed, if no water or moisture has been added; otherwise, such raisins shall be considered as packed raisins.

* * * * *

2. Section 989.210 (a) and (g) of Subpart—Supplementary Regulations (7 CFR 989.210–989.221; 49 FR 10082) are revised to read as follows:

**§ 989.210 Handling of varietal types of raisins acquired pursuant to a weight dockage system.**

(a) *General.* Subject to prior agreement between handler and tenderer, a handler may acquire as standard raisins any lot of Natural (sun-dried) Seedless, Golden Seedless, Dipped Seedless, Oleate and Related Seedless and Monukka raisins containing more than 6 percent beginning with the 1983–84 crop year, and between 5.1 percent and 10 percent beginning with the 1984–85 crop year, by weight, of substandard raisins under a weight dockage system. A handler also may, subject to prior agreement, acquire as standard raisins any lot of Muscat (including other raisins with seeds), Sultana, and Zante Currant raisins containing more than 12 percent, by weight, of substandard raisins under a weight dockage system. The creditable weight of each lot of raisins acquired in this manner shall be that obtained by multiplying the net weight of the raisins in the lot by the applicable dockage factor from the appropriate dockage table prescribed in paragraphs (g) or (h) of this section.

* * * * *

(g) *Dockage tables applicable to Natural (sun-dried) Seedless, Golden Seedless, Dipped Seedless, Oleate and Related Seedless, And Monukka Raisins.*

| Percent substandard | Dockage factor |
|---|---|
| **Crop Year—1983–84** | |
| 6.0 | (1) |
| 6.1 | .999 |
| 6.2 | .998 |
| 6.3 | .997 |
| 6.4 | .996 |
| 6.5 | .995 |
| **Crop Year—1984–85 and Thereafter** | |
| 5.0 | (1) |
| 5.1 | .999 |
| 5.2 | .998 |
| 5.3 | .997 |
| 5.4 | .996 |
| 5.5 | .995 |
| NO DOCKAGE FOR DELIVERIES IN EXCESS OF 10 PERCENT SUBSTANDARD. | |

[1] No dockage.

**Note.**—Percentage in excess of the last percentage shown in each table shall be expressed in the same increments as the foregoing, and the dockage factor for each such increment shall be .001 less than the dockage factor for the preceding increment.

* * * * *

3. Section 989.701 (a)(3), (b)(3), and (c)(3) of Subpart—Quality Control (7 CFR 989.701–989.702; 49 FR 10082) are revised to read as follows:

**§ 989.701 Minimum grade and condition standards for natural condition raisins.**

(a) * * *

(3) Shall for the 1983–84 crop year contain not more than 6 percent, and for the 1984–85 and subsequent crop years, contain not more than 5 percent, by weight, of substandard raisins (raisins that show development less than that characteristic of raisins prepared from fairly well-matured grapes), and for the 1985–86 and subsequent crop years also contain at least 50 percent well-matured or reasonably well-matured raisins;

* * * * *

(b) * * *

(3) Shall for the 1983–84 crop year contain not more than 6 percent, and for the 1984–85 and subsequent crop years, contain not more than 5 percent, by weight, of substandard raisins (raisins that show development less than that characteristic of raisins prepared from fairly well-matured grapes), and for the 1985–86 and subsequent crop years also contain at least 50 percent well-matured or reasonably well-matured raisins;

* * * * *

(c) * * *

(3) Shall for the 1983–84 crop year contain not more than 6 percent, and for the 1984–85 and subsequent crop years, contain not more than 5 percent, by weight, of substandard raisins (raisins that show development less than that characteristic of raisins prepared from fairly well-matured grapes), and for the 1985–86 and subsequent crop years also contain at least 50 percent well-matured or reasonably well-matured raisins;

* * * * *

3. Section 989.702 of Subpart—Quality Control (7 CFR 989.701–989.702; 49 FR 10082) are revised to read as follows:

**§ 989.702 Minimum grade standards for packed raisins.**

Effective pursuant to § 989.59, the minimum grade standards for packed raisins shall be as follows:

(a) *Natural (sun-dried) Seedless, Dipped Seedless, and Oleate and Related Seedless Raisins.* Packed Natural (sun-dried) Seedless, Dipped Seedless, and Oleate and Related Seedless raisins shall meet the requirements of U.S. Grade C as defined in the effective United States Standards for Grades of Processed Raisins (§§ 52.1841–52.1858 of this title): *Provided,* That at least 62.5 percent, by weight, of the raisins shall be well-matured or reasonably well-matured, effective November 15, 1984. Beginning November 15, 1985, that tolerance shall be 70 percent. With respect to select-sized and mixed-sized raisin lots, the raisins shall at least meet the U.S. Grade B tolerances for pieces of stem, and underdeveloped and substandard raisins, and small (midget) sized raisins shall meet the U.S. Grade C tolerances for those factors.

(b) *Golden Seedless Raisins.* Packed Golden Seedless raisin shall at least meet the requirements prescribed in paragraph (a) of this section, and the color requirements for "colored" as defined in said standards.

(c) *Monukka Raisins.* Packed Monukka raisin shall at least meet the requirements prescribed in paragraph (a) of this section, except that the tolerance for moisture shall be 19 percent rather than 18 percent.

(d) *Muscat (including other raisins with seeds) Raisins.* Packed Muscat (including other raisins with seeds) raisins shall at least meet the requirements of U.S. Grade C of the said standards. Layer Muscat (including other raisins with seeds) raisins shall at least meet U.S. Grade B as defined for "Layer or Cluster Raisins With Seeds" in said standards, except for the provisions therein relating to moisture content.

(e) *Sultana Raisins.* Packed Sultana raisins shall meet the requirements of U.S. Grade C as defined in said standards.

(f) *Zante Currant Raisins.* Packed Zante Currant raisins shall at least meet

the requirements of U.S. Grade B as defined in said standards.

(g) A handler may grind raisins which do not meet the minimum grade standards prescribed in paragraphs (a) through (f) of this section because of mechanical damage or sugaring, into a raisin paste.

(Secs. 1–19, 48 Stat. 31, as amended, 7 U.S.C. 601–674)

Dated: June 19, 1984.

**Thomas R. Clark,**

*Deputy Director, Fruit and Vegetable Division.*

[FR Doc. 84–16759 Filed 6–21–84; 8:45 am]

BILLING CODE 3410–02–M

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

### 14 CFR Part 25

### Proposed Advisory Circular—Flutter Substantiation of Transport Category Airplanes

*Correction*

In FR Doc. 84–16027 appearing on page 24749 in the issue of Friday, June 15, 1984, make the following correction:

On page 24749, second column, the sixth line should read as follows: "Leroy A. Keith, *Aircraft Certification Division,*".

BILLING CODE 1505–01–M

### 14 CFR Part 39

**[Docket No. 84–NM–37–AD]**

### Airworthiness Directives; Boeing Model 737 Series Airplanes

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** This notice proposes an amendment that would supersede an existing airworthiness directive (AD) applicable to certain Boeing Model 737 airplanes. The existing AD requires a one-time visual inspection of the horizontal stabilizer rear spar attach lugs. Subsequent reassessment has shown the need for repetitive inspections. Accordingly, this amendment proposes to establish repetitive inspections. Failure to detect cracks in the horizontal stabilizer rear spar attach lugs may result in separation of the horizontal stabilizer from the airplane.

**DATE:** Comments must be received on or before August 7, 1984.

**ADDRESSES:** The applicable service bulletin may be obtained from the Boeing Commercial Airplane Company, P.O. Box 3707, Seattle, Washington 98124, or may be examined at the address shown below.

**FOR FURTHER INFORMATION CONTACT:** Mr. Carlton A. Holmes, Airframe Branch, ANM–120S, Seattle Aircraft Certification Office, FAA, Northwest Mountain Region, 9010 East Marginal Way South, Seattle, Washington, telephone (206) 431–2926. Mailing Address: Seattle Aircraft Certification Office, FAA, Northwest Mountain Region, 17900 Pacific Highway South, C–68966, Seattle, Washington 98168.

**SUPPLEMENTARY INFORMATION:**

#### Comments Invited

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 below. All communications received on or before the closing date for comments will be considered by the Administrator before taking action on the proposed rule. The proposal contained in this notice may be changed in light of comments received. 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 the proposed AD, will be filed in the Rules Docket.

#### Availability of NPRM

Any person may obtain a copy of this Notice of Proposed Rulemaking (NPRM) by submitting a request to the Federal Aviation Administration, Northwest Mountain Region, Office of the Regional Counsel, Attention: Airworthiness Rules Docket No. 84–NM–37–AD, 17900 Pacific Highway South, C–68966, Seattle, Washington 98168.

#### Discussion

The Boeing Company has conducted a structural reassessment of the Model 737 airplane as part of their program to develop a Supplemental Structural Inspection Document (SSID) for the airplane. In conducting this reassessment, Boeing used advanced analysis techniques which were not available during the original design and certification of the Model 737, and used as guidelines the requirements of Federal Aviation Regulation 25.571, Amendment 25–45. The reassessment included structural details that have a history of cracking. The analysis has revealed that certain of these details should receive increased emphasis in the maintenance program of operators to maintain the structural integrity of the airplane. The attach lugs of the horizontal stabilizer are in this category of details.

The FAA issued Advisory Circular AC 91–56 on May 6, 1981, which provides guidelines for the development and implementation of supplemental structural inspection programs for large transport category airplanes. AC 91–56 states in part "any service bulletin or other service information publications found to be essential for safety during the initial SSID assessment process should be implemented by AD action."

There was a report of a cracked horizontal stabilizer rear spar attach lug on an airplane with 28,704 flight cycles. The crack originated on the forward face of the aft lug of the rear spar upper clevis and is attributed to fatigue. The Boeing Company issued Service Bulletins 737–55–1028 and 737–55A1029 which provide inspection, repair, and preventive modification instructions. The structural reassessment established the inspection threshold and repetitive inspection intervals necessary for detecting cracks prior to their reaching critical length. Failure to detect cracks prior to their reaching critical length may result in loss of the horizontal stabilizer.

Airworthiness Directive 81–11–07, Amendment 39–4122 (46 FR 28147; May 26, 1981), was issued on May 15, 1981, to require a one-time visual inspection of the horizontal stabilizer rear spar attach lugs for cracks in accordance with Boeing Alert Service Bulletin 737–55A1029 dated April 30, 1981. Subsequently, this bulletin was revised (reference Service Bulletin 737–55A1029, Revision 3) to include repetitive high frequency eddy current inspections at intervals of 5700 flights. This amendment would supersede Airworthiness Directive 81–11–07 and require these repetitive inspections.

It is estimated that 200 airplanes of U.S. operators would be affected by this AD. Approximately 4 manhours would be required per airplane to perform the inspection. Based on an average labor cost of $40 per manhour, the total cost to the U.S. fleet for accomplishment of the proposed inspections would be $32,000. Therefore, the proposed rule is not considered a major rule under the criteria of Executive Order 12291. Few, if any, small entities within the meaning of the Regulatory Flexibility Act would be affected.

**List of Subjects in 14 CFR Part 39**

Aviation safety, Aircraft.

**The Proposed Amendment**

Accordingly, the Federal Aviation Administration proposes to amend § 39.13 of Part 39 of the Federal Aviation Regulations (14 CFR 39.13) by adding the following new airworthiness directive:

**Boeing:** Applies to Boeing Model 737 series airplanes, certificated in all categories, listed in Boeing Service Bulletin 737–55A1029, Revision 3, or later FAA approved revision. To insure continued structural integrity of the horizontal stabilizer, accomplish the following, unless previously accomplished:

A. Inspect the rear horizontal stabilizer attach lugs for cracks in accordance with instructions in Boeing Service Bulletin 737–55A1029, Revision 3, or later FAA approved revision, upon the accumulation of the threshold number of landings specified in Table I of the service bulletin or within 200 landings after the effective date of this AD, whichever occurs later. Repeat these inspections at intervals not exceeding those specified in Table I of the service bulletin.

B. Cracked parts must be replaced or repaired in a manner approved by the Manager, Seattle Aircraft Certification Office, FAA, Northwest Mountain Region before further flight.

C. Airplanes may be flown to a maintenance base for repairs or replacement in accordance with FAR 21.197 and 21.199 with prior approval of the Manager, Seattle Aircraft Certification Office, FAA, Northwest Mountain Region.

D. For purposes of complying with the AD, subject to the acceptance by the assigned FAA Maintenance Inspector, the number of landings may be determined by dividing each airplane's hours time in service by the operator's fleet average time from takeoff to landing for the airplane type.

E. Alternate means of compliance which provide an equivalent level of safety may be used when approved by the Manager, Seattle Aircraft Certification Office, FAA, Northwest Mountain Region.

F. Upon request by the operator, an FAA Principal Maintenance Inspector, subject to prior approval by the Manager, Seattle Aircraft Certification Office, FAA, Northwest Mountain Region, may adjust the repetitive inspection interval in this AD, if the request contains substantiating data to justify the increase for the operator.

This supersedes Amendment No. 39–4122 (46 FR 28147; May 26, 1981), AD 81–11–07.

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

(Secs. 313(a), 314(a), 601 through 610, and 1102 of the Federal Aviation Act of 1958 (49 U.S.C. 1354(a), 1421 through 1430 and 1502); 49 U.S.C. 106(g) (Revised, Pub. L. 97–449, January 12, 1983); and 14 CFR 11.85)

**Note.**—For the reasons discussed earlier in the preamble: the FAA has determined that this document (1) involves a proposed regulation which is not major under Executive Order 12291 and (2) is not a significant rule pursuant to the Department of Transportation Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and it is certified under the criteria of the Regulatory Flexibility Act that this proposed rule, if promulgated, will not have a significant economic impact on a substantial number of small entities because few, if any, Boeing Model 737 airplanes are operated by small entities. A copy of a draft regulatory evaluation prepared for this action is contained in the regulatory docket. A copy may be obtained by contacting the person identified under the caption **"FOR FURTHER INFORMATION CONTACT."**

Issued in Seattle, Washington, on June 14, 1984.

**Thomas J. Howard,**

*Acting Director, Northwest Mountain Region.*

[FR Doc. 84–16669 Filed 6–21–84; 8:45 am]

**BILLING CODE 4910–13–M**

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**14 CFR Part 71**

**[Airspace Docket No. 84–ASW–25]**

## Proposed Alteration of Transition Area: El Dorado, AR

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking.

**SUMMARY:** The Federal Aviation Administration proposes to alter the transition area at El Dorado, AR. The intended effect of the proposed action is to provide additional controlled airspace for aircraft executing a new standard instrument approach procedure (SIAP) to Runway 04 at Goodwin Field. This action is necessary since a temporary VOR has been commissioned on Goodwin Field to provide service in place of the El Dorado VORTAC which is temporarily out of service.

**DATE:** Comments must be received on July 23, 1984.

**ADDRESSES:** Send coments on the proposal in triplicate to: Manager, Airspace and Procedures Branch, Air Traffic Division, Southwest Region, Federal Aviation Administration, P.O. Box 1689, Fort Worth, TX 76101.

The official docket may be examined in the Rules Docket, weekdays, except Federal holidays, between 8 a.m. and 4:30 p.m. The FAA Rules Docket is located in the Office of the Regional Counsel, Southwest Region, Federal Aviation Administration, 4400 Blue Mound Road, Forth Worth, TX.

**FOR FURTHER INFORMATION CONTACT:** Kenneth L. Stephenson, Airspace and Procedures Branch, ASW–535, Air Traffic Division, Southwest Region, Federal Aviation Administration, P.O. Box 1689, Forth Worth, TX 76101; telephone: (817) 877–2630.

**SUPPLEMENTARY INFORMATION:**

**History**

Federal Aviation Regulation Part 71, Subpart G § 71.181 as republished in FAA Order 7400.6, Compilation of Regulations, dated January 3, 1984, contains the description of transition areas designated to provide controlled airspace for the benefit of aircraft conducting instrument flight rules (IFR) activity. Alteration of the transition area at El Dorado, AR, will necessitate an amendment to this subpart. This amendment will be required at El Dorado, since a new SIAP will be developed using the temporary VOR located on the Goodwin Field Airport.

**Comments Invitied**

Interested persons 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 of the proposals. (Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the proposals.) Communications should identity 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. 84–ASW–25." 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 proposals contained in this notice may be changed in the light of comments received. All comments submitted will be available for examination in the Rules Docket both before and after the closing date of comments. A report summarizing each substantive public contact with FAA personnel concerned with this rulemaking will be filed in the docket.

**Availability of NPRM**

Any person may obtain a copy of this notice of proposed rulemaking (NPRM)

by submitting a request to the Manager, Airspace and Procedures Branch, Air Traffic Division, Southwest Region, Federal Aviation Administration P.O. Box 1689, Fort Worth, TX 76101, or by calling (817) 877-2630. Communications must identify the notice number of this NPRM. Persons interested in being placed on a mailing list for future NPRM's should contact the office listed above.

**List of Subjects in 14 CFR Part 71**

Control Zones, Transition Areas, Aviation safety.

**The Proposed Amendment**

Accordingly, pursuant to the authority delegated to me, the FAA proposes to amend § 71.161 of Part 71 of the Federal Aviation Regulations (14 CFR Part 71) by adding the following:

**El Dorado, AR Revised**

. . . and within 3 miles each side of a 215-degree bearing from the airport to 11 miles southwest.

(Sec. 307(a), Federal Aviation Act of 1958 (49 U.S.C. 1348(a)); Sec. 6(c), 49 U.S.C. 106(g) (Revised, Pub. L. 97-449, January 12, 1983); and 14 CFR 11.61(c))

Note.—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 economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

Issued in Fort Worth, TX, on June 12, 1984.

**F. E. Whitfield,**

*Acting Director, Southwest Region.*

[FR Doc. 84-16564 Filed 6-21-84; 8:45 am]

BILLING CODE 4910-13-M

## DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

### Office of the Assistant Secretary for Fair Housing and Equal Opportunity

### 24 CFR Part 115

**[Docket No 84-1171; FR-1976]**

### Recognition of Substantially Equivalent Laws

**AGENCY:** Office of the Assistant Secretary for Fair Housing and Equal Opportunity, HUD.

**ACTION:** Proposed rule.

**SUMMARY:** Part 115 of the Code of Federal Regulations describes the procedure for recognition of State and local fair housing laws that provide rights and remedies substantially equivalent to those provided by Title VIII of the Civil Rights Act of 1968 (Act). This proposed rule would amend 24 CFR 115.11 to recognize the laws of several additional local jurisdictions.

**DATES:**

Comment Due August 21, 1984.

**ADDRESS:** Interested persons are invited to submit comments regarding the rule to the Office of General Counsel, Rules Docket Clerk, Room 10276, Department of Housing and Urban Development, 451 Seventh Street, SW., Washington, D.C. 20410. Communications should refer to the above docket number and title. A copy of each communication submitted will be available for public inspection and copying during regular business hours at the above address.

**FOR FURTHER INFORMATION CONTACT:** Steven J. Sacks, Director, Federal, State and Local Programs Division, Room 5214, Department of Housing and Urban Development, 451 Seventh Street, SW., Washington, D.C. 20410, telephone (202) 426-3500. (This is not a toll-free number.)

**SUPPLEMENTARY INFORMATION:**

**I. Recognition of Additional Laws**

The Department is proposing to grant recognition to the fair housing laws of the following additional jurisdictions in accordance with section 810(c) of Title VIII of the Civil Rights Act of 1968: (1) Hillsborough County, Florida; (2) Tampa, Florida; (3) Dubuque, Iowa: (4) Lawrence, Kansas; (5) Jefferson County, Kentucky and (6) Reading Pennsylvania. The evaluation of the laws of these jurisdictions was conducted in accordance with the provisions of 24 CFR Part 115, with particular focus on §§ 115.2(a), 115.3 and 115.8. These sections are set forth below to give appropriate information to all parties with an interest in HUD's proposed action.

*Section 115.2, Procedure for Recognition,* provides, in paragraph (a): Recognition under this part shall be based on a consideration of the following materials and information: (1) The text of the jurisdiction's fair housing law and any regulations or directives issued thereunder; (2) the organization of the agency responsible for administering and enforcing such law; (3) the amount of funds and personnel made available to such agency for fair housing purposes during the current operating year; (4) when considering agencies which have been in operation for 1 year or more, any available indicia of the agency's ability to satifactorily administer its law consonant with the performance standards delineated in § 115.8; and (5) any additional documents which the agency may wish to have considered.

*Section 115.3, Criteria,* provides: In order for a determination to be made that a State or local fair housing law provides rights and remedies for alleged discriminatory housing practices which are substantially equivalent to those provided in the Act, the law or ordinance must: (a) Provide for an administrative enforcement body to receive and process complaints; (b) delegate to the administrative enforcement body comprehensive authority to investigate the allegations of complaints, and power to conciliate complaint matters; (c) not place any excessive burdens on the complainant which might discourage the filing of complaints; (d) not contain exemptions which substantially reduce the coverage of housing accommodations as compared to section 803 of the Act which provides coverage with respect to all dwellings except, under certain circumstances, single-family homes sold or rented by the owner, and units in owner-occupied dwellings containing living quarters for no more than four families; and (e) be sufficiently comprehensive in its prohibitions so as to be an effective instrument in carrying out and achieving the intent and purposes of the Act, i.e., the prohibition of the following acts if they are based on discrimination because of race, color, religion, sex, or national orgin:

[1] Refusal to sell or rent.

[2] Refusal to negotiate for a sale or rental.

[3] Making a dwelling unavailable.

[4] Discriminating in terms, conditions, or privileges of sale or rental, or in the provisions of services or facilities.

[5] Advertising in a discriminatory manner.

[6] Falsely representing that a dwelling is not available for inspection, sale or rental.

[7] Blockbusting.

[8] Discrimination in financing.

[9] Denying a person access to or membership or participation in multiple listing services, real estate brokers' organizations, or other services.

*Provided,* that a law may be determined substantially equivalent if it meets all of the criteria set forth in this section but does not contain adequate prohibitions with respect to one or more

of the acts based on discrimination because of sex, or with respect to one or more of the cases described in paragraphs (e) (7), (8), and (9) of this section; (f) In addition to the factors described in paragraphs (a), (b), (c), (d), and (e) of this section, consideration will be given to the provisions of the law affording judicial protection and enforcement of the rights embodied in the law. However, a law may be determined substantially equivalent even though it does not contain express provisions for access to State or local courts.

*Section 115.8, Performance Standards,* provides: (a) The initial and continued recognition by the Secretary that a State or local fair housing law provides rights and remedies substantially equivalent to those provided in the Act will be dependent upon, where applicable, an assessment of the State or local agency's administration of its fair housing law to ensure that the law is in fact providing substantially equivalent rights and remedies. The performance standards set forth in paragraph (b) of this section will be used in making such assessment; (b) A State or local agency must: (1) Consistently and affirmatively seek the elimination of all prohibited practices under its fair housing law; (2) consistently and affirmatively seek and obtain the type of relief designed to prevent recurrences of such practices; (3) establish a mechanism for monitoring compliance with any agreements or orders entered into with or issued by the State or local agency to resolve discriminatory housing practices; (4) engage in comprehensive and thorough investigative activities; and (5) commence and complete the administrative procesing of a complaint in a timely manner, i.e., the average complaint should, under ordinary circumstances, be investigated and, where applicable, set for conciliation within 30–45 days.

### II. Other Matters

On August 9, 1983, the Department published a proposed rule (48 FR 36133) to revise 24 CFR Part 115. The proposed rule would enable the Department to add or delete jurisdictions through publication of rule-related notices in the **Federal Register.** Since the August 9, 1983 proposed rule is not final, this proceeding continues the past practice of adding or deleting jurisdictions by rule amendments. If the August 9, 1983 proposed rule becomes final and effective before the current proceeding is concluded, however, we will publish our final decision here by a rule-related notice. No such Notice including these jurisdictions will be published, however, until after the close of the comment period for this proposed rule.

This proposed rule does not constitute a "major rule" as that term is defined in section 1(b) of the Executive Order on Federal Regulation issued by the President on February 17, 1981. Analysis of the proposed rule indicates that it does not (1) have an annual effect on the economy of $100 million or more; (2) cause a major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions; or (3) have 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.

In accordance with 24 CFR 50.20(k), this rulemaking is not subject to the environmental assessment requirements of the National Environmental Policy Act of 1969, 42 U.S.C. 4332.

Under 5 U.S.C 605(b) (the Regulatory Flexibility Act), the Undersigned hereby certifies that this rule would not have a significant economic impact on a substantial number of small entities. The rule only carries out the Department's statutory responsibility as set out in section 810(c) of the Fair Housing Act, 42 U.S.C 3610(c).

This rule was not listed in the Department's Semiannual Agenda of Regulations published on April 19, 1984 (49 FR 15902) pursuant to Executive Order 12291 and the Regulatory Flexibility Act.

The Catalog of Federal Domestic Assistance Program numbers and titles are: 14.400, Equal Opportunity in Housing and 14.401, Fair Housing Assistance Program.

### List of Subjects in 24 CFR Part 115

Fair housing, Intergovernmental relations.

## PART 115—RECOGNITION OF SUBSTANTIALLY EQUIVALENT LAWS

Accordingly, the Department proposes to amend 24 CFR Part 115 as follows:

Section 115.11 is amended by adding, in alphabetical order, the following jurisdictions to the list of "Localities" having substantially equivalent laws:

**§ 115.11 Jurisdictions with substantially equivalent laws.**

* * * * *

Hillsborough County, Florida

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Tampa, Florida

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Dubuque, Iowa

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Lawrence, Kansas

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Jefferson County, Kentucky

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Reading, Pennsylvania

* * * * *

**Authority:** Sec. 810(c) of the Civil Rights Act of 1968, 42 U.S.C. 3610, sec. 7(d) of the Department of Housing and Urban Development Act, 42 U.S.C. 3535(d).

Dated: June 13, 1984.

**Antonio Monroig,**

*Assistant Secretary for Fair Housing and Equal Opportunity.*

[FR Doc. 84-16768 Filed 6-21-84; 8:45 am]

BILLING CODE 4210-28-M

## DEPARTMENT OF LABOR

### Employment Standards Administration, Wage and Hour Division

### 29 CFR Part 530

### Employment of Homeworkers in Certain Industries; Reopening of Comment Period

**AGENCY:** Wage and Hour Division, ESA, Labor.

**ACTION:** Proposed rule; reopening of comment period and invitation for additional comments on alternative proposals.

**SUMMARY:** On March 27, 1984, the Department of Labor published a proposed rule rescinding the ban on homework in the knitted outerwear industry currently in effect pursuant to the regulations issued implementing section 11(d) of the Fair Labor Standards Act (FLSA). In addition to soliciting comment on the proposed rescission, the Department sought comments on various alternatives to such action (49 FR 11786). The period for public comment on the proposed rule, after having been extended once, expired on May 11, 1984 (49 FR 17974). The views of more than 6,000 commenters were received. The information contained in these comments is currently being reviewed by the Department.

As noted in the Department's March 27, 1984 proposal, the alternatives to the proposed rescission include employer licensing or registration, expanded homeworker certification criteria and other regulatory measures that would allow individuals to engage in homework in the knitted outerwear industry under certain conditions. To

further assist the Department in evaluating these alternatives, the Department invites interested persons to submit additional written comments, especially those relevant to licensing or registration of employers of homeworkers in the knitted outerwear industry, as alternatives to total rescission of the ban on homework in that industry. For this purpose, the comment period is reopened for 15 days.

**DATE:** Comments should be received on or before July 9, 1984.

**ADDRESS:** Send written comments to William M. Otter, Administrator, Wage and Hour Division, Employment Standards Administration, Room S–3502, U.S. Department of Labor, 200 Constitution Avenue, NW., Washington, D.C. 20210.

**FOR FURTHER INFORMATION CONTACT:** William M. Otter, Administrator, Wage and Hour Division, Employment Standards Administration, Room S–3502, U.S. Department of Labor, 200 Constitution Avenue, NW., Washington, D.C. 20210, (202) 523–8305. This is not a toll free number.

**SUPPLEMENTARY INFORMATION:**

### Background

The background of the current proposal is detailed in the Department's March 27, 1984 Notice of Proposed Rulemaking (49 FR 11786), which is hereby incorporated by reference into this announcement. The Department has received the views of more than 6,000 individuals in response to the Notice. The information contained in these comments is currently being reviewed by the Department. The vast majority of the comments addressed only the proposal to rescind the ban on knitted outerwear homework. Relatively few referred to the four alternatives that were set forth in the **Federal Register** notice.

The Department is continuing to consider the proposed rule and the various alternatives outlined in its March 27, 1984 Notice. At this time, the Department is reopening the comment period to solicit additional comments on the alternatives set forth in that Notice, particularly alternative D, involving the licensing or registration of employers of homeworkers in the knitted outerwear industry, under which an employer would be required to notify the Department that it intends to utilize homeworkers as employees. In order for the Department to consider more fully this alternative, commenters are requested to address the following issues:

1. The procedure by which employers in the knitted outerwear industry would obtain a license or certificate of registration permitting them to hire homeworkers;

2. Whether there should be any limitations on permitting employers to obtain a license or certificate of registration to permit such activity and, if so, what they should be;

3. Whether there should be certain assurances or conditions attached to employer performance under such license or certificate of registration and, if so, what they should be;

4. Whether there should be sanctions for employer non-compliance with licensing or registration requirements and, if so, what they should be and what procedures should be utilized for imposing them;

5. Whether a licensing or registration program, if established, should be administered by the Federal government or should be delegated to those state governments seeking the authority to administer such programs.

Commenters addressing any of the posed alternatives to total rescission may wish to discuss the following:

(1) The difficulties and/or advantages under the particular alternative of enforcing FLSA minimum wage and overtime standards, as compared to total rescission of the ban or maintenance of the ban in its entirety;

(2) The burdens, if any, under the particular alternative, placed on employers desiring to use homeworkers;

(3) The responsiveness of a particular alternative to the needs of employees engaged in homework for knitted outerwear employers.

Commenters wishing to address other alternatives are asked to focus on and address the same criteria, as appropriate.

### Conclusion

In making its decision as to an appropriate final rule regarding homework in the knitted outerwear industry, the Department will consider all timely comments it receives in response to this notice in addition to those already received in response to its March 27, 1984 notice of Proposed Rulemaking. The entire record of this proceeding will be made available for inspection during office hours at Room C–4316, Frances Perkins Buiding, 200 Constitution Avenue, NW., Washington, D.C. 20210.

Signed at Washington, D.C., this 19th day of June, 1984.

**William M. Otter,**

*Administrator.*

[FR Doc. 84–16834 Filed 6–21–84; 8:45 am]

BILLING CODE 4510–7–M

## DEPARTMENT OF TRANSPORTATION

### Coast Guard

### 33 CFR Part 117

**[CGD3 84–15]**

## Drawbridge Operation Regulations; New Jersey Intracoastal Waterway, New Jersey

**AGENCY:** Coast Guard, DOT.

**ACTION:** Proposed rule.

**SUMMARY:** At the request of New Jersey Department of Transportation, the Coast Guard is considering a change to the regulations governing the Route 35 Bridge across the New Jersey Intracoastal Waterway (Manasquan River) at Brielle, NJ by permitting the number of openings to be limited from Memorial Day through Labor Day on weekends and holidays from 10 a.m. to 8 p.m. The bridge is currently required to open on signal. This proposal is being made because peak vehicular traffic generally coincides with peak bridge openings for vessels. This action should accommodate the needs of vehicular traffic and should still provide for the reasonable needs of navigation.

**DATE:** Comments must be received on or before August 6, 1984.

**ADDRESS:** Comments should be submitted to and are available for examination from 9 a.m. to 3 p.m., Monday through Friday, except holidays, at the office of the Commander (oan-br), Third Coast Guard District, Bldg 135A, Governors Island, NY 10004. Comments may also be hand-delivered to this address.

**FOR FURTHER INFORMATION CONTACT:** William C. Heming, Bridge Administrator, Third Coast Guard District (212) 668–7994.

**SUPPLEMENTARY INFORMATION:** Interested persons are invited to participate in this proposed rulemaking by submitting written views, comments, data, or arguments. Persons submitting comments should include their name and address, identify the bridge, and give reason for concurrence with or for any recommended change in the proposal. Persons desiring acknowledgment that their comments have been received should enclose a stamped, self-addressed postcard or envelope.

The Commander, Third Coast Guard District will evaluate all communications received and will determine a final course of action on the proposal. The proposed regulations may

be changed in light of comments received.

**Drafting Information**

The drafters of this notice are Ernest J. Feemster, project manager, and Mary Ann Arisman, project attorney.

**Discussion of Proposed Regulations**

Since New Jersey DOT requested half-hourly openings (from Memorial Day through Labor Day) at the Route 35 Bridge, the Coast Guard issued temporary regulations to evaluate effects of half-hourly openings. Temporary regulations were issued August 5, 1983 through September 15, 1983 allowing the bridge to open only on the hour and half-hour from 10 a.m. to 8 p.m. on weekends and Labor Day.

No unusual problems were reported during the evaluation period and generally favorable comments were received. Many respondents also suggested that half-hourly openings be extended throughout the week. However, bridge opening logs show for 1982–83 (exclusive of the evaluation period) that three or more requests for openings (from 10 a.m. to 8 p.m.) only occur about 2% of the time during the week. Therefore weekday, half-hourly openings would provide little benefit for vehicular traffic.

The Route 35 Bridge has four lanes and carries a high volume of daytime, vehicular traffic during the summer boating season. Vehicular traffic counts, taken during evaluation of timed openings, show that an average of about 1380 vehicles cross the bridge per hour each weekend day (and Labor Day) from 10 a.m. to 8 p.m. Even though the bridge has a minimum 30-foot vertical clearance in the closed position, there are still a moderate number of vessels (mostly sail) which are unable to transit under the closed draw. Bridge openings for these vessels cause traffic "build up" in the vicinity of the bridge, especially so on weekends.

No draft, economic evaluation has been prepared for this action because of minimal impact of this proposed action. No economic consequences will accure to any organization, party or entity. Expected benefits will be derived in the form of less vehicular traffic congestion during peak boating periods without undue delay to vessels.

**Economic Assessment and Certification**

These proposed regulations have been reviewed under the provisions of Executive Order 12291 and have been determined not to be a major rule. In addition, these proposed regulations are considered to be nonsignificant in accordance with guidelines set out in the Policies and Procedures for Simplification, Analysis, and Review of Regulations (DOT Order 2100.5 of 5–22–80). As explained above, an economic evaluation has not been conducted since its impact is expected to be minimal. In accordance with section 605(b) of the Regulatory Flexibility Act (5 U.S.C. 605(b)), it is certified that these rules, if promulgated, would not have a significant economic impact on a substantial number of small entites.

**List of Subjects in 33 CFR Part 117**

Bridges.

**Proposed Regulations**

In consideration of the foregoing, the Coast Guard proposes to amend Part 117 of Title 33, Code of Federal Regulations, by renumbering the existing § 117.733(b) through (g) as § 117.733(c) through (h), respectively and adding a new § 117.733(b) to read as follows:

## PART 117—DRAWBRIDGE OPERATION REGULATIONS

**§ 117.733 New Jersey Intracoastal Waterway.**

(a) * * *

(b) The draw of the Route 35 bridge, mile 1.1 (Manasquan River) at Brielle shall open on signal; except that, from Memorial Day to Labor Day on Saturdays, Sundays, and federal holidays from 10 a.m. to 8 p.m., the draw need only open on the hour and half hour. The draw shall open at all times as soon as possible for passage of a public vessel of the United States, or for a vessel in distress.

* * * * *

(33 U.S.C. 499; 49 CFR 1.46(c)(2); 33 CFR 1.05–1(g)(3))

Dated: June 5, 1984.

**W. E. Caldwell,**

*Vice Admiral, U.S. Coast Guard, Commander, Third Coast Guard District.*

[FR Doc. 84–16599 Filed 6–21–84; 8:45 am]

BILLING CODE 4910–14–M

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## ENVIRONMENTAL PROTECTION AGENCY

### 40 CFR Part 87

**[AMS–FRL 2575–7]**

### Control of Air Pollution From Aircraft and Aircraft Engines; Exemptions for Low Production Engines

**AGENCY:** Environmental Protection Agency.

**ACTION:** Notice of proposed rulemaking.

**SUMMARY:** EPA proposes to grant a petition submitted by the Aerospace Industries Association (AIA) on August 31, 1983, recommending that the maximum annual production limit of 20 engines per year be eliminated from the low production engine provisions of the EPA aircraft engine emission standards. Several other minor revisions are also proposed..

**DATE:** All comments should be submitted by July 23, 1984 or, if a hearing is held, within 30 days after the date of the hearing.

Any person requesting a public hearing on this proposal should submit a request in writing to the information contact identified below no later than July 9, 1984. If a hearing is requested, its date and location will be announced in a subsequent **Federal Register** Notice.

**ADDRESS:** Interested parties may participate in this rulemaking by submitting written comments to the U.S. Environmental Protection Agency, Central Docket section (A–130), Attn: Docket No. A–83–39, 401 M Street, SW, Washington, D.C. 20460. Two copies of comments are requested but not required. The docket may be inspected between 8 a.m. and 4 p.m. on weekdays and a reasonable fee may be charged for copying.

**FOR FURTHER INFORMATION CONTACT:** Mr. George D. Kittredge (AR–455), Office of Mobile Sources, U.S. Environmental Protection Agency, 401 M Street SW, Washington D.C. 20460. Telephone: (202) 382–4981.

**SUPPLEMENTARY INFORMATION:**

**I. Background**

On December 30, 1982 EPA isued final rules which amended emissions standards applicable to aircraft gas turbine engines (47 FR 58462). One change consisted of specifying a number of situations under which engines could qualify for exemption from compliance with emission standards, one of which exempts engines produced in very low quantities from compliance with the standards. The criteria which determine whether an engine qualifies for exemption (§ 87.7(b)) are:

(1) A maximum annual production rate after January 1, 1984 of 20 units covered by the same type certificate; and

(2) A maximum total production after January 1, 1984, of 200 untis covered by the same type certificate.

On August 31, 1983 AIA submitted a petition which recommended that the annual production limit be eliminated, because some low production engines are likely to be ordered and built in quantities above 20 units per year during their final year or two of production.

even though the total number built after January 1, 1984 will not exceed 200.

On September 13, 1983 EPA responded to the AIA petition by requesting that supporting information be submitted which shows actual examples of past and projected future production rates for engines during their final years of production. This information has now been received. Copies of the AIA petition, the EPA response and letters from individual manufacturers in support of the petition are available in Public Docket A–83–39.

## II. Discussion of Issues

### *A. AIA Petition*

The EPA production limits of 20 engines per year and 200 engines total were derived from comments submitted on December 2, 1978 by one manufacturer, General Motors Corporation, in response to the March 24, 1978 Notice of Proposed Rulemaking (43 FR 12615) which resulted in the 1982 rulemaking. No doubt the 20 engines per year projected rate of production was realistic for that manufacturer at that time. However, EPA recognizes that a 20 engine per year maximum limit as one criterion for identifying a "very low production" engine may not hold for all engines produced by all manufacturers today. Review of the information submitted by manufacturers in support of the petition appears to verify that this is the case, with some low production engines showing a sharp rise in rate of production during the last few years they are produced. This may be the result of customer purchases for inventory in anticipation of the future non-availability of engine types scheduled to be phased out.

The air quality impact of eliminating the 20 engine per year annual production limit would consist only of that represented by giving manufacturers the flexibility to apportion segments of their total 200 engine maximum limit over the complete phaseout period in any way necessary to respond to consumer demand. As an extreme example, if a manufacturer chose to build all of its 200 engines in 1984, their lifetime emissions will be compressed into a shorter time span and the annual emissions throughout that time span would be higher than would be the case if it built only 20 engines for each of 10 consecutive years starting with 1984. The lifetime emissions in either case would of course be the same.

The available production estimates suggest that the most likely emissions impact would consist only of minor fluctuations above and below that corresponding to a 20 engine production rate, and that the air quality implications would be negligible. Therefore there is no air quality impact which would justify a decision to reject the AIA recommendation to eliminate the 20 engine per year annual production limit, when balanced against the anticipated production scheduling problems which it may impose, together with possible lost sales.

It appears that the available information supports a decision to respond affirmatively to the AIA recommendation. Therefore, EPA is proposing to eliminate the 20 engine per year limit as a criterion which must be met for an engine to qualify for exemption from emission standards on the basis of very low production.

### *B. Other Issues*

Two other minor amendments are proposed, the first of which concerns the wording of the fuel venting "applicability" provisions of § 87.10, which had been drastically shortened in the 1982 amendments in an attempt to be more concise. In doing so, the original intent of this provision was unintentionally altered by making it appear that only in-use engines built after 1974 must comply, and by omitting the distinction between engines manufactured after January 1, 1974 and January 1, 1975, respectively. While these items may appear unimportant after a ten year lapse in time, they do complicate the enforcement of the fuel venting standards by the Federal Aviation Administration (FAA), which must consider the actual production dates and in-use histories of individual engines manufactured after the 1974 and 1975 dates of compliance as well as of older engines which were retrofitted to comply. Accordingly, it is proposed to return as closely as possible to the original wording of § 87.10, with due allowance for changes in engine classifications, to explicitly show the compliance schedule for new and in-use engines respectively. In addition, the difference in compliance schedule for engines rated above and below the 36 kilonewton thrust threshold use in the original standards to delineate between commercial and general aviation applications is clarified. These changes will improve the consistency in language between the EPA standards and the FAA standards published on December 26, 1983 (48 FR 56735) to enforce them.

The second minor proposed amendment is to revise the test fuel specifications slightly to broaden the ranges of allowable naphthalenes content, hydrogen content, viscosity and final boiling point values. The proposed changes will respond to reported difficulties in procuring fuels meeting the present specifications, which have resulted in several requests to FAA by individual manufacturers for deviations from these two specification requirements. While the changes will result in a difference in test fuel specifications between the United States and International Civil Aviation Organization (ICAO) standards, it is believed that ICAO will soon follow with matching changes.

The revised values for these four fuel properties will allow wider bands of acceptability and will be more representative of fuels available on the current market. The measured emissions characteristics should also be more characteristic of engines operated on currently available fuels.

## III. Regulatory Analysis

Under Executive Order 12291 EPA must judge whether a regulation is "major" and therefore subject to requirements for a Regulatory Impact Analysis. This rulemaking is not major because it will result in annual effects on the economy of less than $100 million. There are no adverse effects on competition, productivity, investment, employment or innovation. For these reasons EPA has not prepared a formal Regulatory Impact Analysis.

This proposal has been sent to the Office of Management and Budget (OMB) for review pursuant to Executive Order 12291. Any OMB comments and EPA responses thereto have been placed in the docket.

## IV. Impacts on Reporting Requirements

This proposal does not contain any information collection requirements subject to OMB review under the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq.*

## V. Regulatory Flexibility Act

Under the Regulatory Flexibility Act, 5 U.S.C. 601 *et seq.*, EPA is required to determine when a regulation will have a significant effect on a substantial number of small entities so as to require a Regulatory Flexibility Analysis. Because no small entities (as defined by the Small Business Act) will be affected, I certify that these amendments will not have a significant impact on a substantial number of small entities; therefore no regulatory flexibility analysis has been prepared.

## List of Subjects in 40 CFR Part 87

Air pollution control, Aircraft.

Dated: June 14, 1984.

William D. Ruckelshaus,

*Administrator.*

(Secs. 231, 301(a), Clean Air Act as amended (42 U.S.C. 7571, 6701(a)))

## PART 87—[AMENDED]

For the reasons set forth above, 40 CFR Part 87 is proposed to be amended as follows:

### § 87.7 [Amended]

1. In § 87.7, paragraph (b)(1) is removed and paragraph (b)(2) is redesignated as (b)(1).

2. Section 87.10 is revised to read as follows:

### § 87.10 Applicability.

(a) The provisions of this subpart are applicable to all new aircraft gas turbines of classes T3, T8, TSS and TF equal to or greater than 36 kilonewton rated output, manufactured on or after January 1, 1974, and to all in-use aircraft gas turbine engines of classes T3, T8, TSS and TF equal to or greater than 36 kilonewton rated output beginning February 1, 1974.

(b) The provisions of this subpart are also applicable to all new aircraft gas turbines of classes TP and TF less than 36 kilonewton rated output manufactured on or after January 1, 1975 and to all in-use aircraft gas turbines of classes TP and TF less than 36 kilonewton rated output beginning January 1, 1975.

3. Section 87.61 is revised to read as follows:

### § 87.61 Turbine Fuel Specifications.

For exhaust emission testing, fuel meeting the specifications listed below shall be used. Additives used for the purpose of smoke suppression (such as organometallic compounds) shall not be present.

*Property and Allowable Range of Values*

Specific gravity at 15 °C: 0.78–0.82.

Distillation temperature, °C: 10% boiling point, 165–201; final boiling Point, 250–285.

Net heat of combustion, kJ/kg: 42,860–43,500.

Aromatics, volume %: 15–20.

Naphthalenes, volume %: 1.0–3.0.

Smoke point, mm: 20–28.

Hydrogen, mass %: 13.5–14.0.

Sulfur, mass %: less than 0.3%.

Kinematic viscosity at −20 °C, mm/s: 4.0–6.5.

[FR Doc. 84-16725 Filed 6-21-84; 8:45 am]

BILLING CODE 6560-50-M

## DEPARTMENT OF TRANSPORTATION

## Federal Railroad Administration

## 49 CFR Part 215

**[FRA Docket No. RSFC-6, Notice 7]**

## Railroad Freight Car Safety Standards

**AGENCY:** Federal Railroad Administration (FRA), Department of Transportation (DOT).

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** FRA proposes to amend the Freight Car Safety Standards (49 CFR Part 215) to clarify the definition of defective wheels. The amendment would make a technical correction to § 215.103 to eliminate confusion over the proper measurement of the extensiveness of discoloration found on freight car wheels due to an oxidation process that occurs after a wheel has been subjected to thermal abuse.

**DATES:** (1) A public hearing will begin at 10:00 a.m. on July 26, 1984.

(2) Prepared statements to be made at the hearing should be submitted to the Docket Clerk at least seven days before the hearing date.

(3) Persons desiring to participate in the hearing should notify the Docket Clerk at least seven days before the hearing.

(4) Written comments concerning this proceeding must be received not later than July 31, 1984. Comments received after that date will be considered to the extent possible without incurring additional expense or delay.

**ADDRESSES:** (1) Hearing location Room 2230, Nassif Building, 400 Seventh Street, SW., Washington, D.C. 20590.

(2) Written comments should be submitted to the Docket Clerk, Office of Chief Counsel, FRA, 400 Seventh Street, SW., Washington, D.C. 20590. Persons desiring to be notified that their written comments have been received by FRA shall submit a stamped, self-addressed postcard with their comments. The Docket Clerk will indicate on the postcard the date on which the comments were received and will return the card to the addressee. Written comments will be available for examination, both before and after the closing date for comments, during regular business hours in Room 5101 of the Nassif Building at the above address.

**FOR FURTHER INFORMATION CONTACT:** Philip Olekszyk, Office of Safety, Federal Railroad Administration, Washington, D.C. 20590, telephone (202) 426–0897.

**SUPPLEMENTARY INFORMATION:**

**Background**

A typical railroad freight car wheel is approximately one-inch thick in the plate area. If a wheel is subjected to thermal abuse, the front and back faces of the plate area receive essentially the same amount of heat. A consequent oxidation process then causes discoloration that appears on both the front and back plate areas to a substantially equal extent. To identify wheels that have been thermally abused, the rail industry has historically relied on a visual observation technique based on that oxidation process.

Since a wheel that has been thermally abused presents a significant risk of sudden failure and consequent derailment, FRA's Freight Car Safety Standards (49 CFR Part 215) define such wheels as defective and prohibit a railroad from keeping a freight car in service if it has a defective wheel. In the absence of effective alternative detection methods, FRA adopted the industry's visual observation technique for identifying thermally abused wheels when it issued its original Freight Car Safety Standards in 1973. Under the industry's standard, a wheel was not considered defective unless discoloration was present on both sides of the plate area. However, in the process of proposing and adopting the initial Freight Car Safety Standards during 1972 and 1973, FRA inadvertently used disjunctive wording in § 215.43 that had the effect of defining a wheel as defective if discoloration was present on either side of a wheel.

Neither the preamble for the proposed rule nor that for the original final rule contained any significant discussion of this provision, and none of the commenters focused on its disjunctive language. In 1974, responding to a petition from the Association of American Railroads for a variety of changes to the rule, FRA issued a notice of proposed rulemaking (39 FR 367) in which FRA proposed to revision of its definition to conform to a recently improved industry standard that was more specific than the FRA rule. The revised industry standard, which continued to require the presence of discoloration on both faces of the wheel before a wheel would be considered defective, was incorporated in FRA's revision of § 215.43 on July 11, 1974 (39 FR 25497).

**Current Rule**

In proposing a complete revision of its standards on January 5, 1979, (44 FR 1419) FRA retained the use of this visual observation technique, but proposed to

reduce the area of the wheel face that must display the discoloration before a wheel is considered defective. FRA proposed to consider discoloration that extended more than four inches into the plate area as an indication of thermal abuse, instead of the more ambiguous, "one-half the distance to the axle" language of the earlier rule. In drafting the proposed regulatory language, FRA inadvertently revived the use of the unintended disjunctive wording of the original rule in attempting to indicate that, although substantial discoloration on both sides is required, only one side of the plate area need exceed the four-inch criterion for the wheel to be considered defective under § 215.103(h). This inartful draftsmanship was compounded when FRA modified the proposed language in adopting the final rule in response to a commenter's concern that FRA has failed to specify the point from which the four-inch measurement was to be taken. FRA's final rule, published on December 31, 1979, (44 FR 77328) defined that point as the bottom of the face of the rim. Since it is physically easier to make such measurements on the back side of a wheel, FRA used back-side-of-the-wheel language in the final rule, without any intent to mandate that procedure because of safety considerations.

The result of the foregoing errors in drafting is that the current language, read literally, has a more restrictive effect than FRA intended. This lack of clarity has caused confusion among those subject to the regulation and prompted a number of communications recently concerning the intent and appropriate interpretation of the language contained in § 215.103(h). To eliminate this confusion and to state the agency's intent more clearly, FRA is proposing to amend § 215.103(h) to specify that (i) discoloration must be present on both faces of a freight car wheel, (ii) measurement can be made on either face, and (iii) measurements are to be made from the inner edge of the wheel rim.

**Public Participation**

FRA has interpreted and enforced § 215.103(h) in accordance with the intent stated explicitly in this notice and implicitly in the current rule. Consequently, this technical amendment will impose no new or additional burdens; indeed it may have the effect of reducing burdens for those who have read the section literally. Although there is no technical basis for retaining the current wording, nor safety implication inherent in revision of the rule language, FRA believes that all interested parties should be given an opportunity to comment on this issue. The opportunity for public comment will also assist in identifying and resolving any problems that may have resulted from the imprecise language of the existing rule.

Interested persons are invited to participate in this proceeding by submitting written data, views, or comments. Communications should identify the regulatory docket number and the notice number and must be submitted in triplicate to the Docket Clerk, Office of the Chief Counsel, Federal Railroad Administration, 400 Seventh Street, SW., Washington, D.C. 20590.

In addition, FRA will hold a public hearing on this proposal in Washington, D.C. The public hearing will be held beginning at 10:00 a.m. on July 26 in Room 2230 of the Nassif Building, located at 400 Seventh Street, SW., Washington, D.C.

**List of Subjects in 49 CFR Part 215**

Railroad safety.

**Regulatory Impact**

This proposed amendment is simply a technical language change to eliminate confusion and would, if adopted, have no substantive impact. FRA has evaluated it in accordance with existing regulatory policies. It is considered to be nonmajor under Executive Order 12291 and nonsignificant under DOT policies and procedures (44 FR 11034; February 26, 1979). It will have no economic impact. Based on these facts, FRA certifies tht the proposed amendment will not have a significant economic impact on a substantial number of small entities under the provisions of the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*).

The proposed amendment will not have any environmental impact and does not involve, directly or indirectly, any information collection requirements.

**The Proposed Rule**

In consideration of the foregoing, it is proposed to amend § 215.103 of Part 215 of Title 49, Code of Federal Regulations, by revising paragraph (h) to read as follows:

**PART 215—[AMENDED]**

**§ 215.103 Defective Wheel.**

* * * * *

(h) A wheel on the car shows signs of having been overheated as evidenced by a reddish brown discoloration, to a substantially equal extent on both the front and the back face of the rim, that extends on either face more than four inches into the place area measured from the inner edge of the front or back face of the rim; or,

* * * * *

(Secs. 202 and 208, Federal Railroad Safety Act of 1970 (45 U.S.C. 431, 437); sec. 1.49(n) of the regulations of the Office of the Secretary, 49 CFR 1.49(n))

Issued in Washington, D.C., on June 14, 1984.

**John H. Riley,**

*Administrator.*

[FR Doc. 84-16690 Filed 6-21-84; 8:45 am]

BILLING CODE 4910-06-M

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**DEPARTMENT OF THE INTERIOR**

**Fish and Wildlife Service**

**50 CFR Part 20**

**Migratory Bird Hunting; Supplemental Proposals for Migratory Game Bird Hunting Regulations**

*Correction*

In FR Doc. 84-15805 beginning on page 24417 in the issue of Wednesday, June 13, 1984, make the following correction on page 24423: In the first column, under the heading "Flyway Council Meetings", the description of the Mississippi Flyway meeting should read as follows: "*Mississippi Flyway*—Collinsville, IL (Hilton Inn) July 28-29".

BILLING CODE 1505-01-M

# Notices

Federal Register
Vol. 49, No. 122
Friday, June 22, 1984

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

### Human Nutrition Board of Scientific Counselors; Meeting

According to the Federal Advisory Committee Act of October 6, 1972 (Pub. L. 92–463, 86 Stat. 770–776), the Office of the Secretary reschedules the following meeting:

Name: Human Nutrition Board of Scientific Counselors.

Date: August 9–10, 1984.

Time and Place: August 9, 1984, 1:00–5:00 p.m.; Room 212–E, Administration Building, U.S. Department of Agriculture, Independence Avenue, between 12th and 14th Streets SW., Washington, D.C.; August 10, 1984, 8:30 a.m.–3:00 p.m.; Crystal 5, Sheraton Crystal City Hotel, 1800 Jefferson Davis Highway, Arlington, Virginia.

Type of Meeting: Open to the public. Persons may participate in the meeting as time and space permit.

Comments: The public may file written comments before or after the meeting with the contact person below.

Purpose: To review and advise the Department as to the scope and quality of the research carried out at the Human Nutrition Research Centers in Houston, Texas; Boston, Massachusetts; San Francisco, California; Grand Forks, North Dakota; and Beltsville, Maryland. The board will also prepare an annual report of its review, including evaluation and recommendations, to be submitted to the Secretary of Agriculture.

Contact Person: Anne Winslow, Confidential Assistant, Office of the Assistant Secretary for Science and Education, U.S. Department of Agriculture, Room 217–W, Administration Building, Washington, D.C. 20250, telephone (202) 447–5035.

Done at Washington, D.C., this 18th day of June, 1984.

**Orville G. Bentley,**

*Assistant Secretary, Science and Education.*

[FR Doc. 84–16686 Filed 6–21–84; 8:45 am]

BILLING CODE 3410–D1–M

### Forest Service

### Lincoln National Forest Grazing Advisory Board; Meeting

The Lincoln National Forest Grazing Advisory Board will meet at 9:00 a.m., July 12, 1984, at the Community Center at Mayhill. The purpose of the meeting is to provide grazing permittees of the Lincoln National Forest means for offering advice and recommendations concerning:

(a) Review of FY84 Improvement Projects;

(b) Status of FY84 Allotment Management Plans;

(c) Management of allotments within the 1974 Spring Burn.

Other items to be discussed include off-road vehicle use, spruce budworm project, ten-year grazing permits, New Mexico Department of Game and Fish regulations related to off-road vehicle use for retrieval of game animals.

Dated: June 12, 1984.

**Donald E. Cunico,**

*Acting Forest Supervisor.*

[FR Doc. 84–16569 Filed 6–21–84; 8:45 am]

BILLING CODE 3410–11–M

## CIVIL AERONAUTICS BOARD

### Applications for Certificates of Public Convenience and Necessity and Foreign Air Carrier Permits; Week Ended June 15, 1984

#### Subpart Q Applications

The due date for answers, conforming application, or motions to modify scope are set forth below for each application. Following the answer period the Board may process the application by expedited procedures. Such procedures may consist of the adoption of a show-cause order, a tentative order, or in appropriate cases a final order without further proceedings.

| Date filed | Docket No. | Description |
|---|---|---|
| June 11, 1984 | 42194 | Air Via, Inc., c/o John W. Simpson, Kelley Drye & Vaughan, 1333 New Hampshire Avenue, NW., Washington, D.C. 20036. Amendment No. 1 to the Application of Air Via, Inc. in response to Order 84–5–93, May 31, 1984. Answer may be filed by July 9, 1984. |
| June 14, 1984 | 42286 | Zas Airlines of Egypt, c/o Howard G. Feldman, Seamon, Wasko & Ozment, 1211 Connecticut Avenue, NW., Washington, D. C. 20036.<br>Application of Zas Airlines of Egypt pursuant to Section 402 of the Act and Subpart Q of the Board's Procedural Regulations requests a foreign air carrier permit authorizing the carriage of property and mail between a point or points in Egypt and New York via:<br>(a) Greece, Italy, Switzerland, France, Ireland and the Netherlands.<br>(b) Greece, Italy, Switzerland, Federal Republic of Germany, United Kingdom, Ireland and the netherlands.<br>Zas also requests that it be granted authority to operate cargo charters subject to the Board's rules and regulations. Answer may be filed by July 12, 1984. |

**Phyllis T. Kaylor,**

*Secretary.*

[FR Doc. 84–16778 Filed 6–21–84; 8:45 am]

BILLING CODE 6320–01–M

[Order 84-6-49; Docket 41961]

### Application of Airwest International, Inc., for Certificate

**AGENCY:** Civil Aeronautics Board.

**ACTION:** Notice of Order Instituting Fitness Investigation.

**SUMMARY:** The Board is instituting the *Airwest International Fitness Investigation* to determine if Airwest International is fit to provide interstate and overseas scheduled air transportation of persons, property, and mail.

**DATES:** Persons wishing to file requests for additional evidence and requests to intervene should do so in Docket 41691 by July 5, 1984.

**ADDRESSES:** Request for additional evidence and requests to intervene should be filed in Docket 41691 and addressed to the Docket Section, Civil Aeronautics Board, Washington, D.C. 20428. Copies of such filings should also be served on Airwest International, Inc.

**FOR FURTHER INFORMATION CONTACT:** Steven B. Farbman, Bureau of Domestic Aviation, Civil Aeronautics Board, 1825 Connecticut Avenue, NW., Washington, D.C. 20428, (202) 673-5340.

**SUPPLEMENTARY INFORMATION:** The complete text of Order 84-6-49 is available from our Distribution Section, Room 100, 1825 Connecticut Avenue, NW., Washington, D.C. 20428. Persons outside the metropolitan area may send a postcard request for Order 84-6-49 to that address.

By the Bureau of Domestic Aviation: June 15, 1984.

**Phyllis T. Kaylor,**

*Secretary.*

[FR Doc. 84-16779 Filed 6-21-84; 8:45 am]

BILLING CODE 6320-01-M

## COMMISSION ON CIVIL RIGHTS

### Florida Advisory Committee Meeting; Cancellation

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 Florida Advisory Committee to the Commission originally scheduled for June 29, 1984, at the Tampa Airport Marriott, Tampa, Florida (FR Doc. 84-15650 on page 24154) has been cancelled.

Dated at Washington, DC, June 18, 1984.

**John I. Binkley,**

*Advisory Committee Management Officer.*

[FR Doc. 84-16678 Filed 6-21-84; 8:45 am]

BILLING CODE 6335-01-M

### Arkansas 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 Arkansas Advisory Committee to the Commission will convene at 9:00 a.m. and will end at 5:00 p.m., on July 17, 1984, at the Riverfront Hilton Inn, Argenta West, 2 Riverfront Place, North Little Rock, Arkansas 72114. The purpose of the meeting is to discuss program plans.

Persons desiring additional information, or planning a presentation to the Committee, should contact the Southwestern Regional Office at (512) 229-5570.

The meeting will be conducted pursuant to the provisions of the Rules and Regulations of the Commission.

Dated at Washington, D.C., June 19, 1984.

**John I. Binkley,**

*Advisory Committee Management Officer.*

[FR Doc. 84-16777 Filed 6-21-84; 8:45 am]

BILLING CODE 6335-01-M

### Illinois 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 Illinois Advisory Committee to the Commission will convene at 10:30 a.m. and will end at 2:00 p.m., on July 13, 1984, at the Springfield and Sangamon County Community Action Inc., 1101 South 15th Street, Conference Room, Springfield, Illinois 62703. The purpose of the meeting is to plan new projects.

Persons desiring additional information, or planning a presentation to the Committee, should contact the Midwestern Regional Office at (312) 353-7479.

The meeting will be conducted pursuant to the provisions of the Rules and Regulations of the Commission.

Dated at Washington, D.C., June 19, 1984.

**John I. Binkley,**

*Advisory Committee Management Officer.*

[FR Doc. 84-16775 Filed 6-21-84; 8:45 am]

BILLING CODE 6335-01-M

### Indiana 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 Indiana Advisory Committee to the Commission will convene at 6:30 p.m. on July 19, 1984, and will end at 12:00 noon, July 20, 1984, at the Fort Wayne Public Library, 901 Webster Street, Fort Wayne, Indiana 46802. The purpose of the meeting is to discuss the status of the proposed block grant project and followup plans respecting the Fort Wayne School desegregation issues.

Persons desiring additional information, or planning a presentation to the Committee, should contact the Midwestern Regional Office at (312) 353-7479.

The meeting will be conducted pursuant to the provisions of the Rules and Regulations of the Commission.

Dated at Washington, D.C., June 18, 1984.

**John I. Binkley,**

*Advisory Committee Management Officer.*

[FR Doc. 84-16679 Filed 6-21-84; 8:45 am]

BILLING CODE 6335-01-M

### Nevada 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 Nevada Advisory Committee to the Commission will convene at 10:00 a.m. and will end at 2:00 p.m., on July 13, 1984, at the Sands Hotel and Casino, Board Room, Arlington at 3rd Street, Reno, Nevada 89501. The purpose of the meeting is to obtain information on civil rights issues in Washoe County.

Persons desiring additional information, or planning a presentation to the Committee, should contact the Western Regional Office at (213) 688-3437.

The meeting will be conducted pursuant to the provisions of the Rules and Regulations of the Commission.

Dated at Washington, D.C., June 19, 1984.

**John I. Binkley,**

*Advisory Committee Management Officer.*

[FR Doc. 84-16774 Filed 6-21-84; 8:45 am]

BILLING CODE 6335-01-M

### West Virginia 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 West Virginia Advisory Committee to the Commission will convene at 11:45 a.m. and will end at 3:00 p.m., on July 20, 1984, at the West Virginia Human Rights Commission, Conference Room, 1036 Quarrier Street, 215 Professional Building, Charleston, West Virginia 25301. The purpose of the meeting is to discuss plans for future projects of the Committee.

Persons desiring additional information, or planning a presentation to the Committee, should contact the Mid-Atlantic Regional Office at (202) 254–6670.

The meeting will be conducted pursuant to the provisions of the Rules and Regulations of the Commission.

Dated at Washington, D.C., June 19, 1984.

**John I. Binkley,**

*Advisory Committee Management Officer.*

[FR Doc. 84–16776 Filed 6–21–84; 8:45 am]

BILLING CODE 6335–01–M

## DEPARTMENT OF COMMERCE

### International Trade Administration, Import Administration

[A–412–012]

### Antidumping Postponement of Final Determination; Choline Chloride From the United Kingdom

**AGENCY:** International Trade Administration, Import Administration, Commerce.

**ACTION:** Notice.

**SUMMARY:** This notice informs the public that the Department of Commerce (the Department) has received a request from counsel for petitioner that the final determination on choline chloride from the United Kingdom be postponed to facilitate a thorough investigation of his sales below cost of production allegation, and that the Department has determined to postpone its final determination as to whether sales of choline chloride from the United Kingdom have occurred at less than fair value, until not later than September 12, 1984.

**EFFECTIVE DATE:** June 22, 1984.

**FOR FURTHER INFORMATION CONTACT:** David Johnston, Office of Investigations, Import Administration, International Trade Administration, United States Department of Commerce, 14th Street and Constitution Avenue, NW., Washington, D.C. 20230; telephone (202) 377–2239.

**SUPPLEMENTARY INFORMATION:** On December 5, 1983, the Department of Commerce published a notice in the **Federal Register** that it was initiating, under section 732(b) of the Act (19 U.S.C. 1673a(b)), an antidumping investigation to determine whether choline chloride from the United Kingdom is being, or is likely to be, sold at less than fair value. On April 30, 1984, the Department published a negative preliminary determination (49 FR 18345). The notice stated that if this investigation proceeded normally we would make a final determination by July 9, 1984. Section 735(a)(2)(B) of the Act provides that the Department may postpone its final determination concerning sales at less than fair value if the petitioner requests an extension after a negative preliminary determination.

Accordingly, the Department will issue a final determination in this case not later than September 12, 1984. The hearing originally scheduled for May 24, 1984 has been postponed. The new hearing date is August 6, 1984, at 2:00 p.m., in Room 3708, Department of Commerce, 14th Street and Constitution Avenue, NW., Washington, D.C. 20230. Individuals who wish to participate in the hearing must submit a request to the Deputy Assistant Secretary for Import Administration, Room 3099B, at the above address within 10 days of this notice's publication.

Requests should contain: (1) The party's name, address, and telephone number, (2) the number of participants, (3) the reason for attending, and (4) a list of the issues to be discussed. In addition, prehearing briefs in at least 10 copies must be submitted to the Deputy Assistant Secretary by August 30, 1984. All written views should be filed in accordance with 19 CFR 353.46, at the above address and in at least 10 copies not later than the date established for the submission of post-hearing briefs which will be announced at the hearing. If no hearing is held, all written views should be submitted not later than August 20, 1984.

This notice is published pursuant to section 735(d) of the Act.

Dated: June 14, 1984.

**Alan F. Holmer,**

*Deputy Assistant Secretary for Import Administration.*

[FR Doc. 84–16732 Filed 6–21–84; 8:45 am]

BILLING CODE 3510–DS–M

[A–588–032]

### Large Power Transformers From Japan; Preliminary Results of Administrative Review of Antidumping Finding

**AGENCY:** International Trade Administration/Import Administration, Commerce.

**ACTION:** Notice of preliminary results of administrative review of antidumping finding.

**SUMMARY:** The Department of Commerce has conducted an administrative review of the antidumping finding on large power transformers from Japan. The review covers two of the three known manufacturers of this merchandise and consecutive periods from July 1, 1980 through May 31, 1983.

As a result of the review, because both firms provided inadequate responses to the Department's questionnaire, the Department has preliminarily determined to assess dumping duties on those firms' sales during the periods using the best information available.

Interested parties are invited to comment on these preliminary results.

**EFFECTIVE DATE:** June 22, 1984.

**FOR FURTHER INFORMATION CONTACT:** Michael J. Altier or John R. Kugelman, Office of Compliance, International Trade Administration, U.S. Department of Commerce, Washington, DC 20230, telephone: (202) 377–3601.

**SUPPLEMENTARY INFORMATION:**

**Background**

On June 8, 1983, the Department of Commerce ("the Department") published in the **Federal Register** (47 FR 26498) the final results of its last administrative review of the antidumping finding on large power transformers from Japan (37 FR 11773, June 14, 1972) and announced its intent to conduct the next administrative review. As required by section 751 of the Tariff Act of 1930 ("the Tariff Act"), the Department has now conducted that administrative review.

**Scope of the Review**

Imports covered by the review are shipments of large power transformers ("transformers"), that is, all types of transformers rated 10,000 KVA (kilovolt-amperes) or above, by whatever name designated, used in the generation, transmission, distribution, and utilization of electric power. The term "transformers" includes, but is not limited to, shunt reactors,

autotransformers, rectifier transformers, and power rectifier transformers. Not included are combination rectifier-transformer units, commonly known as rectiformers, if the entire integrated assembly is imported in the same shipment and entered on the same entry and the assembly has been ordered and invoiced as a unit, without a separate price for the transformer portion of the assembly. Transformers covered by this finding are currently classifiable under items 682.0755, 682.0765, and 682.0775 of the Tariff Schedules of the United States Annotated.

The review covers two of the three known manufacturers of Japanese large power transformers, Hitachi, Ltd. and Tokyo Shibaura Electric Co., Ltd. ("Toshiba") and consecutive periods from July 1, 1980 through May 31, 1983. We will cover the third firm, Fuji Electric Co., Ltd., in a separate notice.

Hitachi and Toshiba failed to provide adequate responses to our questionnaire. For those non-responsive firms we used the best information available for assessment and estimated antidumping duties cash deposit purposes. The best information available includes information from the U.S. Customs Service and the petitioner, Westinghouse Electric Corporation.

**Preliminary Results of the Review**

As a result of our reveiw, we preliminarily determine that the following margins exist:

| Manufacturer | Period | Margin (percent) |
|---|---|---|
| Hitachi | 07/01/80-07/23/81 | 12.09 |
| | 07/24/81-05/31/83 | [1] 12.09 |
| Toshiba | 07/01/80-10/17/81 | [1] 8.65 |
| | 10/18/81-05/31/82 | 27.50 |
| | 06/01/82-05/31/83 | [1] 27.50 |

[1] No shipments during the period.

Interested parties may submit written comments on these preliminary results within 30 days of the date of publication of this notice and may request disclosure and/or a hearing within 10 days of the date of publication. Any hearing, if requested, will be held 45 days after the date of publication or the first workday thereafter. Any request for an administrative protective order must be made no later than 5 days after the date of publication. The Department will publish the final results of the administrative review including the results of its analysis of any such comments or hearing.

The Department shall determine, and the Customs Service shall assess, dumping duties on all appropriate entries. The Department will issue appraisement instructions directly to the Customs Service.

Further, as provided for by § 353.48(b) of the Commerce Regulations, a cash deposit of estimated antidumping duties based upon the most recent of the above margins shall be required for those firms. For any future entries from a new firm not covered in this or prior reviews, whose first shipments of transformers occurred after May 31, 1983 and who is unrelated to any reviewed firm, a cash deposit of 10.63 percent shall be required. These deposit requirements are effective for all shipments of Japanese large power transformers entered, or withdrawn from warehouse, for consumption on or after the date of publication of the final results of this administrative review.

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 § 353.53 of the Commerce Regulations (19 CFR 353.53).

Dated: June 18, 1984.

**Alan F. Holmer,**

*Deputy Assistant Secretary for Import Administration.*

[FR Doc. 84-16642 Filed 6-21-84; 8:45 am]

BILLING CODE 3510-DS-M

## Perchlorethylene From France; Preliminary Results of Administrative Review of Antidumping Finding and Intent To Revoke

**AGENCY:** International Trade Administration/Import Administration, Commerce.

**ACTION:** Notice of preliminary results of administrative review of antidumping finding and intent to revoke.

**SUMMARY:** The Department of Commerce has conducted an administrative review of the antidumping finding on perchlorethylene from France. The review covers the one known exporter of this merchandise to the United States, Atochem, and the period May 19, 1983 through August 19, 1983, the date of publication of our tentative determination to revoke. There were no known shipments of this merchandise to the United States during the period and there are no known unliquidated entries.

The Department intends to revoke the finding on perchlorethylene from France. Interested parties are invited to comment on these preliminary results and intent to revoke.

**EFFECTIVE DATE:** June 22, 1984.

**FOR FURTHER INFORMATION CONTACT:** Arthur N. DuBois or Susan Crawford, Office of Compliance, International Trade Administration, U.S. Department of Commerce, Washington, D.C. 20230, telephone: (202) 377-1130.

**SUPPLEMENTARY INFORMATION:**

**Background**

On February 1, 1984, the Department of Commerce ("the Department") published in the **Federal Register** (49 FR 4029) the final results of its last administrative review of the antidumping finding on perchlorethylene from France (44 FR 29045, May 18, 1979) and announced its intent to conduct immediately the next review. As required by section 751 of the Tariff Act of 1930 ("the Tariff Act"), the Department has now conducted that administrative review.

**Scope of the Review**

Imports covered by the review are shipments of perchlorethylene, including technical grade and purified grade perchlorethylene. Perchlorethylene is a clear water-white liquid at ordinary temperature with a sweet odor and is completely capable of being mixed with most organic liquids. It is a chlorinated solvent used mainly for drycleaning of clothing, but is also used in other applications such as vapor degreasing of metals. Such merchandise is currently classifiable under item 429.3400 of the Tariff Schedules of the United States Annotated.

The review covers the one known exporter of French perchlorethylene to the United States, Atochem, and the period May 19, 1983 through August 19, 1983. There were no known shipments of this merchandise to the United States during the period and there are no known unliquidated entries.

**Preliminary Results of the Review and Intent To Revoke**

As a result of our review, we intend to revoke the finding on perchlorethylene from France. Atochem has not shipped this merchandise to the United States from May 18, 1979, the date of the finding, through August 19, 1983, the date of our tentative determination to revoke.

As provided for in § 353.54(e) of the Commerce Regulations, Atochem has agreed in writing to an immediate suspension of liquidation and reinstatement of the finding (as an order) if circumstances develop which indicate that perchlorethylene manufactured by Atochem and thereafter imported into the United States is being sold by Atochem at less than fair value. 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 August 19, 1983. The Department shall instruct the Customs Service to continue to suspend the liquidation of entries pending the Department's final determination of whether or not to revoke the finding.

Interested parties may submit written comments on these preliminary results and intent to revoke within 30 days of the date of publication of this notice and may request disclosure and/or a hearing within 10 days of the date of publication. Any hearing, if requested, will be held 45 days after the date of publication or the first workday thereafter. The Department will publish the final results of the administrative review including the results of its analysis of any such comments or hearing.

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 §§ 353.53 and 353.54 of the Commerce Regulations (19 CFR 353.53, 353.54).

Dated: June 15, 1984.

**Alan F. Holmer,**

*Deputy Assistant Secretary for Import Administration.*

[FR Doc. 84-16694 Filed 6-21-84; 8:45 am]

BILLING CODE 3510-DS-M

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[A-428-061]

## Precipitated Barium Carbonate From the Federal Republic of Germany; Final Results of Adminitrative Review of Antidumping Duty Order

**AGENCY:** International Trade Administration/Import Administration, Commerce.

**ACTION:** Notice of final results of administrative review of antidumping duty order.

**SUMMARY:** On February 24, 1984, the Department of Commerce published the preliminary results of its administrative review of the antidumping duty order on precipitated barium carbonate from the Federal Republic of Germany. The review covers the two known manufacturers and/or exporters of this merchandise to the United States and generally the period February 18, 1981 through June 30, 1982.

We gave interested parties an opportunity to submit oral or written comments on the preliminary results. At the request of E. Merck, a manufacturer/exporter, we held a public hearing on April 16, 1984. Based on our analysis of the comments received, the final results remain unchanged from those presented in the preliminary results of review.

**EFFECTIVE DATE:** June 22, 1984.

**FOR FURTHER INFORMATION CONTACT:** John M. Andersen or David R. Chapman, Office of Compliance, International Trade Administration, U.S. Department of Commerce, Washington, D.C. 20230, telephone: (202) 377-2923.

**SUPPLEMENTARY INFORMATION:**

### Background

On February 24, 1984, the Department of Commerce ("the Department") published in the **Federal Register** (49 FR 6957-8) the preliminary results of its administrative review of the antidumping duty order on precipitated barium carbonate from the Federal Republic of Germany (46 FR 32864, June 25, 1981). The Department has now completed that adminstrative review.

Imports covered by the review are shipments of precipitated barium carbonate, a chemical compound ($BaCO_3$), currently classifiable under item 472.0600 of the Tariff Schedules of the United States Annotated.

The review covers the two known manufacturers and/or exporters of German precipitated barium carbonate to the United States and generally the period February 18, 1981 through June 30, 1982.

### Analysis of Comments Received

We gave interested parties an opportunity to submit oral or written comments on the preliminary results. At the request of one of the respondents, E. Merck, we held a public hearing on April 16, 1984.

*Comment 1:* Merck and EM Science, Merck's subsidiary, contend that prices for sales to the United States were established in good faith because those prices were set by market conditions in the United States for barium carbonate. Such prices were acceptable to Merck because they included a reasonable margin of profit.

*Department's Position:* Dumping is not determined by profit margins, or the lack thereof. Under certain market conditions, a firm may actually maximize profits by engaging in price discrimination in various markets. Sales at less than fair value occur if a firm's ex-factory packed price to the United States is less than the foreign market value of such or similar merchandise.

*Comment 2:* Merck maintains that its exports did not injure any U.S. industry. Moreover, Merck points out that it manufactures several grades of barium carbonate. Guaranted reagent grade is the only grade sold by Merck through EM Science. Merck argues that guaranteed reagent grade barium carbonate was not actually covered by the original antidumping order.

*Department's Position:* Questions concerning injury to a United States industry are within the jurisdiction of the U.S. International Trade Commission and are not of concern to the Department.

On matters concerning the scope of a finding or order, our primary bases for determining whether a product is covered are the descriptions of the products contained in the petition, the initial investigation, and the International Trade Commission, Treasury, or Commerce determinations.

When, because of vagueness in the description of the product, we cannot make a determination concerning the scope of a finding or order based upon the documentation mentioned above, we use four additional criteria to make a determination on scope.

These criteria are:

1. The physical characteristics of the merchandise;
2. The uses for which the merchandise is imported;
3. The expectations of the ultimate purchaser;
4. The channels of trade in which the merchandise moves.

With respect to guaranteed reagent grade barium carbonate, we did not consider it necessary to use the four criteria because the order clearly covers all precipitated barium carbonate.

*Comment 3:* Merck argues that the Department failed to take into account that the home market sales were of pre-packaged precipitated barium carbonate in quantities of 250 grams to one kilo, whereas the United States sales were of bulk quantities in fifty kilo drums. The pre-packed quantities sold in the home market are directly sold to laboratories for consumption, whereas the larger quantity U.S. sales are to bulk users who reanalyze the chemical, repackage it with their own labels, or use the chemical in the manufacture of other products. Thus, the Department's chosen comparisons are inappropriate.

*Department's Position:* Merck has not adequately quantified an adjustment based on differences in levels of trade, as required by § 353.19 of the Commerce Regulations, now shown either evidence of quantity discounts or cost savings due to the larger quantities sold to the U.S.

Therefore, we have not made an adjustment to the foreign market value for differences in level of trade or differences in quantities.

### Final Results of the Review

After analysis of all the comments received, the final results of our review are the same as those presented in the preliminary results of review, and we determine that the following margins exist:

| Manufacturer/exporter | Time period | Margin (percent) |
|---|---|---|
| Kali-Chemie AG | 6/25/81-6/30/82 | 0 |
| E. Merck | 2/18/81-6/30/82 | 39.36 |

The Department shall determine, and the Customs Service shall assess, antidumping duties on all appropriate entries. Individual differences between United States price and foreign market value may vary from the percentage stated above. The Department will issue appraisement instructions on each exporter directly to the Customs Service.

Further, as provided for by § 353.48(b) of the Commerce Regulations, a cash deposit of estimated antidumping duties based on the above margins shall be required for these firms. For future entries from a new exporter not covered in this or prior reviews, whose first shipments occurred after June 30, 1982, and who is unrelated to any reviewed firm, a cash deposit of 39.36 percent shall be required. These deposit requirements are effective for all shipments of German percipitated barium carbonate entered, or withdrawn from warehouse, for consumption on or after the date of publication of this notice and shall remain in effect until publication of the final reuslts of the next administrative review. The Department intends to begin immediately the next adminstrative review.

The Department encourages interested parties to review the public record and submit applications for protective orders as early as possible after the Department's receipt of the requested information.

This administrative review and notice are in accordance with section 751(a)(1) of the Tariff Act of 1930 (19 U.S.C. 1675(a)(1)) and § 353.53 of the Commerce Regulations (19 CFR 353.53).

Dated: June 14, 1984.

**Alan F. Holmer,**

*Deputy Assistant Secretary for Import Administration.*

[FR Doc. 84-16695 Filed 6-21-84; 8:45 am]

BILLING CODE 3510-DS-M

[A-588-014]

## Tuners (of the Type Used in Consumer Electronic Products) From Japan; Preliminary Results of Administrative Review of Antidumping Finding and Tentative Determination To Revoke in Part

**AGENCY:** International Trade Administration, Commerce.

**ACTION:** Notice of preliminary results of administrative review of antidumping finding and tentative determination to revoke in part.

**SUMMARY:** The Department of Commerce has conducted an administrative review of the antidumping finding on tuners (of the type used in consumer electronic products) from Japan. The review covers 39 of the 65 known manufacturers and/or exporters of this merchandise to the United States currently covered by the finding and various periods through November 30, 1982. The review indicates the existence of dumping margins in particular periods for certain firms.

As a result of the review, the Department has preliminarily determined to assess dumping duties equal to the calculated differences between United States price and foreign market value on each of their sales during the periods of review. Where company-supplied information was inadequate or firms failed to respond to our questionnaire, we used the best information available for assessment and estimated antidumping duties cash deposit purposes.

The Department has also tentatively determined to revoke the finding with respect to Alps Electric Co., Ltd., Hitachi Ltd., Mitsumi Electric Co., Ltd., and Nippon Electric Company.

Interested parties are invited to comment on these preliminary results and tentative determination to revoke in part.

**EFFECTIVE DATE:** June 22, 1984.

**FOR FURTHER INFORMATION CONTACT:** Edward F. Haley or John R. Kugelman, Office of Compliance, International Trade Administration, U.S. Department of Commerce, Washington, D.C. 20230, telephone: (202) 377-3601.

**SUPPLEMENTARY INFORMATION:**

### Background

On December 12, 1970, the Treasury Department ("Treasury") published in the **Federal Register** as Treasury Decision 70-257 (35 FR 18914) an antidumping finding with respect to tuners (of the type used in consumer electronic products) from Japan. Susequently, Treasury modified the finding to exclude tuners produced and/or sold by the following companies:

Matsushita Electric Industrial Co., Ltd. and Matsushita Electric Trading Co., Ltd., T.D. 75-80 (40 FR 14591, 4/2/75);

Victor Company of Japan Ltd., T.D. 75-80 (40 FR 14591, 4/2/75);

Sanyo Electric Co., Ltd. and Sanyo Electric Trading Co., Ltd., T.D. 76-215 (41 FR 32421, 8/3/76);

Tokyo Shifaura Electric Co., Ltd. (Toshiba), T.D. 76-143 (41 FR 21185, 5/24/76);

Sony Corporation of Japan, T.D. 77-26 (42 FR 2501, 1/12/77).

On January 19, 1977, Treasury published a tentative revocation of the antidumping finding in the **Federal Register** (42 FR 3725).

On January 1, 1980, the provisions of title I of the Trade Agreements Act of 1979 became effective. Title I replaced the provisions of the Antidumping Act of 1921 ("the 1921 Act") with a new title VII to the Tariff Act of 1930 ("the Tariff Act"). On January 2, 1980, the authority for administering the antidumping duty law was transferred from Treasury to the Department of Commerce ("the Department"). The Department published in the **Federal Register** of March 28, 1980 (45 FR 20511) its intent to conduct administrative reviews of all outstanding dumping findings. On February 8, 1984, the Department published in the **Federal Register** (49 FR 4811) a partial revocation of the finding with regard to merchandise from the Sharp Corporation. As required by section 751 of the Tariff Act, the Department has now conducted an administrative review of the antidumping finding on tuners (of the type used in consumer electronic products) from Japan. The substantive provisions of the 1921 Act and the appropriate Customs Service regulations apply to all unliquidated entries made prior to January 1, 1980.

### Scope of the Review

Imports covered by the review are shipments of tuners (of the type used in consumer electronic products) consisting primarily of television receiver tuners and tuners used in radio receivers such as household radios, stereo and high fidelity radio systems, and automobile radios. They are virtually all in modular form, aligned, and ready for simple assembly into the consumer electronic product for which they were designed. The term "consumer electronic products" relates to television sets, radios, and other electronic products of a type commonly bought at retail by household

consumers, whether or not used in or around the household. Excluded are complete stereophonic tuners which are consumer products themselves, but not excluded are modular-type stereophonic tuners, which are intended to become component parts of such stereophonic tuners. These tuners are currently classifiable under items 685.1700 and 685.2976 of the Tariff Schedules of the United States Annotated.

The review covers 39 of the 65 known manufacturers and/or exporters of Japanese tuners to the United States currently covered by the finding and various periods through November 30, 1982. We are deferring our review of the remaining 26 firms until a subsequent administrative review.

Seventeen firms failed to respond to our questionnaire or provided inadequate responses to our questionnaire for certain periods. We could not locate three firms. For those 20 non-responsive firms we used the best information available to determine the assessment and estimated antidumping duties cash deposit rates. The best information available is the highest rate for responding firms with shipments during the applicable period.

Nineteen firms did not ship this merchandise to the United States during certain periods. For these firms the estimated antidumping duties cash deposit rate will be the last margin found for each firm or the margin found for the fair value investigation.

Treasury's tentative revocation of the finding was based on reports of *de minimis* antidumping assessments on shipments of this merchandise to the United States by only 12 firms. Subsequent review of entry records indicates that a number of shipments during periods prior to the date of the tentative revocation (January 19, 1977), covered by assessment instructions ("master lists") issued prior to January 1, 1980, have not been appraised, and the extent of possible antidumping duties liabilities is unknown. Therefore, we will not consider Treasury's tentative revocation of the entire finding during this administrative review.

## United States Price

In calculating United States price the Department used purchase price or exporter's sales price ("ESP"), as defined in section 772 of the Tariff Act or sections 203 and 204 of the 1921 Act, as appropriate. Purchase price was based on the f.o.b., packed price to unrelated purchasers in the United States or to a Japanese trading company for export to the United States. Exporter's sales price was based on the delivered, packed price to the first unrelated purchaser in the United States. Where applicable, we made deductions for foreign and U.S. inland freight, ocean freight, insurance, foreign shipping charges, sales commissions to unrelated parties, U.S. import duties, U.S. brokerage charges, and the U.S. subsidiary's selling expenses. No other adjustments were claimed or allowed.

## Foreign Market Value

In calculating foreign market value the Department used home market price, as defined in section 773 of the Tariff Act or section 205 of the 1921 Act, as appropriate, since sufficient quantities of such or similar merchandise were sold in the home market to provide a basis for comparison. Home market price was based on the delivered, packed price to unrelated purchasers with adjustments, where applicable, for foreign inland freight and differences in credit, advertising, packing, and the physical characteristics of the merchandise. We made further adjustments for indirect selling expenses to offset U.S. selling expenses for ESP calculations. We denied claimed adjustments for education expenses and a "subsidy," because they are not selling expenses. No other adjustments were claimed or allowed.

## Preliminary Results of the Review and Tentative Determination To Revoke in Part

As a result of our comparison of United States price to foreign market value, we preliminarily determine that the following margins exist:

| Manufacturer/exporter | Time period | Margin (percent) |
|---|---|---|
| Aimor Electronics Co., Ltd. | 04/01/70-07/27/76 | 1.9 |
| | 07/28/76-11/30/81 | 23.66 |
| Aiwa Co., Ltd. | 12/01/72-11/30/82 | [1]0 |
| Akai Electric Co., Ltd. | 04/01/70-12/31/79 | [1]1.9 |
| Alpine Electronics, Inc. (formerly Alps-Motorola. | 04/01/70-01/19/77 | [1]1.9 |
| Alps Electric Co., Ltd. | 01/20/77-11/30/82 | 0 |
| AVNET International, Inc. (formerly Channel Master). | 01/01/76-11/30/82 | [1]0 |
| Beltek | 04/01/70-07/27/76 | 1.9 |
| | 07/28/76-11/30/82 | 23.66 |
| Chinon Industries Inc | 04/01/70-11/30/81 | [1]1.9 |
| Chuomusen Co., Ltd. | 04/01/70-01/19/77 | [1]1.9 |
| Clarion Shoji | 01/01/75-07/27/76 | 1.9 |
| | 07/28/76-01/19/77 | 23.66 |
| Crown Radio Corp | 04/01/70-12/31/74 | [1]1.9DP1.9 |
| | 01/01/75-07/27/76 | |
| | 07/28/76-11/30/81 | 23.66 |
| | 12/01/81-11/30/82 | 23.66 |
| Daiei Electric Co., Ltd. | 04/01/70-06/30/80 | [1]1.9 |
| Dai-Ichi Shoji Co., Ltd. | 04/01/70-04/30/76 | [1]1.9 |
| Fujitsu Ten Limited | 04/01/70-07/27/76 | 1.9 |
| | 07/28/76-11/30/81 | |
| Kanematsu-Gosho Ltd. | 02/01/77-11/30/82 | |
| | 23.66 | |
| Kiyo Inc. | 04/01/70-07/27/76 | 1.9 |
| | 07/28/76-11/30/81 | 23.66 |
| Kraco Enterprises | 04/01/70-07/27/76 | 1.9 |
| | 07/28/76-11/30/82 | 23.66 |
| Marantz Japan, Inc. (formerly Standard Radio Corp.). | 01/01/75-01/19/77 | [1]0 |
| Marubeni Corp. (formerly Marubeni-Iida Co., Ltd.). | 04/01/70-11/30/81 | [1]1.9 |
| | 12/01/81-11/30/82 | 23.66 |
| Maruwa Electronic & Chemical Co., Ltd. | 01/01/75-07/27/76 | 1.9 |
| | 07/28/76-11/30/82 | 23.66 |
| Midland Overseas Ltd. | 04/01/70-01/19/77 | [1]1.9 |
| | 01/20/77-11/30/82 | 23.66 |
| Mitsumi Electric Co., Ltd. | 01/20/77/11-30/82 | 0 |
| Murata Manufacturing Co., Ltd. | 01/01/73-11/30/82 | 11.9 |
| Nansei Denki | 04/01/70-07/27/76 | 1.9 |
| | 07/28/76-12/31/80 | 23.66 |
| Nichimen Co., Ltd. | 06/01/71-07/27/76 | [1]1.9 |
| | 07/28/76-05/31/77 | 23.66 |
| Nihon Tuner K.K. | 01/01/76-07/27/76 | 1.9 |
| | 07/28/76-11/30/82 | 23.66 |
| Nippon Rokki | 04/01/70-07/27/76 | 1.9 |
| | 07/28/76-11/30/82 | 23.66 |
| Orion Electric Co., Ltd. | 04/01/70-01/19/77 | [1]1.9 |
| Pioneer Electronic Corp. | 04/01/70-12/31/77 | [1]1.9 |
| Roadstar Corp. | 04/01/70-07/27/76 | 1.9 |
| | 07/28/76-11/30/82 | 23.66 |
| The Rotel Co., Ltd. (formerly Roland Electronics Co., Ltd.). | 02/01/77-11/30/82 | [1]0 |
| Sanshin Electronics Co., Ltd. | 02/01/77-11/30/82 | 23.66 |
| Shiba Electric Co., Ltd. | 04/01/70-07/27/76 | 1.9 |
| | 07/28/76-11/30/82 | 23.66 |
| Toa Electric Co., Ltd. | 01/20/77-11/30/82 | [1]1.9 |
| Tokyo Cabinet Kogyo Co., Ltd. | 04/01/70-07/27/76 | [1]1.9 |
| | 07/28/76-11/30/81 | 23.66 |
| | 12/01/81-11/30/82 | [1]23.66 |
| Tuner Shoji Co., Ltd. | 01/20/77-11/30/82 | 23.66 |
| Waken Electronics | 04/01/70-07/27/76 | 1.9 |
| | 07/28/76-01/19/77 | 23.66 |

[1] No shipments during the period.

The Department has concluded that Alps Electric Company, Ltd., Hitachi Ltd., Mitsumi Electric Co., Ltd., and Nippon Electric Company (NEC), made all sales of tuners (of the type used in consumer electronic products) to the United States at not less than fair value for at least a two-year period. As provided for in § 353.54(e) of the Commerce Regulations, the firms have agreed in writing to an immediate suspension of liquidation and reinstatement in the finding if circumstances develop which indicate that tuners manufactured and exported to the United States by Alps, Hitachi, Mitsumi, or NEC are being sold at less than fair value.

Therefore, we tentatively determine to revoke the finding on Japanese tuners (of the type used on consumer electronic products) with regard to Alps, Hitachi, Mitsumi, and NEC. If this partial revocation is made final, it will apply to all unliquidated entries of this merchandise manufactured and exported by Hitachi or NEC and entered, or withdrawn from warehouse, for consumption on or after January 19, 1977, and it will apply to all unliquidated entries of this merchandise manufactured and exported by Alps or Mitsumi and entered, or withdrawn from warehouse, for consumption on or after the date of publication of this notice.

Interested parties may submit written comments on these preliminary results and tentative determination to revoke in part within 30 days of the date of publication of this notice and may request disclosure and/or a hearing within 10 days of the date of publication. Any hearing, if requested, will be held 45 days after the date of publication or the first workday thereafter. Any request for an administrative protective order must be made no later than 5 days after the date of publication. The Department will publish the final results of the administrative review including the results of its analysis of any such comments or hearing.

The Department shall determine, and the Customs Service shall assess, dumping duties on all appropriate entries. Individual differences between United States price and foreign market value may vary from the percentages stated above. The Department will issue appraisement instructions directly to the Customs Service.

Further, as provided for by § 353.48(b) of the Commerce Regulations, the Department shall require a cash deposit of estimated antidumping duties based upon the most recent of the above margins for those firms. For any future entries from a new exporter not covered in this review, whose first shipments of tuners (of the type used in consumer electronic products) occurred after November 30, 1982, and who is unrelated to any reviewed firm, we shall not require a cash deposit. These deposit requirements are effective for all shipments of Japanese tuners (of the type used in consumer electronic products) entered, or withdrawn from warehouse, for consumption on or after the date of publication of the final results of this review.

This administrative review, tentative determination to revoke in part, 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 §§ 353.53 and 353.54 of the Commerce Regulations (19 CFR 353.53, 353.54).

Dated: June 16, 1984.

**Alan F. Holmer,**

*Deputy Assistant Secretary for Import Administration.*

[FR Doc. 84-16697 Filed 6-21-84; 8:45 am]

BILLING CODE 3510-DS-M

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[A429-101]

## Unrefined Montan Wax From the German Democratic Republic; Final Results of Administrative Review of Antidumping Duty Order

**AGENCY:** International Trade Administration/Import Administration, Commerce.

**ACTION:** Notice of final results of administrative review of antidumping duty order.

**SUMMARY:** On April 30, 1984, the Department of Commerce published the preliminary results of its administrative review and tentative determination to revoke the antidumping duty order on unrefined montan wax from the German Democratic Republic. The review covers the one known exporter of this merchandise to the United States and the period September 1, 1982, through August 31, 1983.

We gave interested parties an opportunity to submit oral or written comments on the preliminary results and tentative determination to revoke. We received no comments. Based on our analysis, the final results of our review are the same as the preliminary results.

**EFFECTIVE DATE:** June 22, 1984.

**FOR FURTHER INFORMATION CONTACT:** Laurie A. Lucksinger or Susan M. Crawford, Office of Compliance, International Trade Administration, U.S. Department of Commerce, Washington, D.C. 20230, telephone: (202) 377-1130.

**SUPPLEMENTARY INFORMATION:**

### Background

On April 30, 1984, the Department of Commerce ("the Department") published in the **Federal Register** (49 FR 18843-18844) the preliminary results of its administrative review and tentative determination to revoke the antidumping duty order on unrefined montan wax from the German Democratic Republic (the GDR) (46 FR 45177-45178, September 10, 1981). The Department has now completed that administrative review.

### Scope of the Review

Imports covered by the review are shipments of unrefined montan wax which is a non-oxidized mineral extracted from lignite, not advanced beyond extraction or cleaning by solvent. This product is primarily used as a flow agent in one-time carbon ink formulas. It is also used for producing polishes, mold release agents for casting, and is currently classifiable under item 494.2000 of the Tariff Schedules of the United States Annotated.

The review covers the one known exporter of unrefined montan wax from the GDR to the United States, VEB Braunkohlenwerk "Gustav Sobottka", and the period September 1, 1982, through August 31, 1983.

### Final Results of the Review

We gave interested parties an opportunity to comment on the preliminary results and tentative determination to revoke. The Department received no written comments or requests for a hearing. Based on our analysis, the final results of our review are the same as the preliminary results, and we determine that no dumping margins exist for the period.

The Department shall instruct the Customs Service not to assess antidumping duties on appropriate entries. Further, the Department shall not require a cash deposit of estimated antidumping duties, as provided for in § 353.48(b) of the Commerce Regulations, on any shipments of unrefined montan wax from the GDR entered, or withdrawn from warehouse, for consumption on or after the date of publication of this notice and this requirement shall remain in effect until publication of the final results of the next administrative review. The Department intends to begin

immediately the next administrative review.

We will examine exports by Gustav Sobottka made during the period September 1, 1983, through April 30, 1984, the date of our tentative determination to revoke the order, in our next administrative review.

The Department encourages interested parties to review the public record and submit applications for protective orders, if desired, as early as possible after the Department's receipt of the information during the next administrative review.

This administrative review and notice are in accordance with section 751(a)(1) of the Tariff Act of 1930 (19 U.S.C. 1675(a)(1)) and § 353.53 of the Commerce Regulations (19 CFR 353.53).

Dated: June 15, 1984.

**Alan F. Holmer,**

*Deputy Assistant Secretary for Import Administration.*

[FR Doc. 84-16696 Filed 6-21-84; 8:45 am]

BILLING CODE 3510-DS-M

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[C-351-021]

## Countervailing Duty Order; Certain Carbon Steel Products From Brazil

**AGENCY:** International Trade Administration, Commerce.

**ACTION:** Notice.

**SUMMARY:** In separate investigations, the United States Department of Commerce (the Department) and the United States International Trade Commission (ITC) have determined that certain carbon steel products from Brazil are receiving benefits which constitute subsidies within the meaning of the countervailing duty law and that certain carbon steel products from Brazil are materially injuring a United States industry. Additionally, although the Department found that "critical circumstances" existed with respect to certain carbon steel products from Brazil, the ITC found that "critical circumstances" did not exist in this case. Therefore, based on these findings, all entries, or withdrawals from warehouse, for consumption, of certain carbon steel products from Brazil made on or after February 10, 1984, the date on which the Department published its notice of "Preliminary Affirmative Countervailing Duty Determinations" in the **Federal Register**, will be liable for the possible assessment of countervailing duties. Furthermore, a cash deposit of estimated countervailing duties must be made on all such entries, and withdrawals from warehouse, for consumption, on or after the date of publication of this order in the **Federal Register**.

Since the ITC made a negative finding regarding "critical circumstances" under section 705(b)(4)(A) of the Tariff Act of 1930, as amended (the Act) [19 U.S.C. 1671d(b)(4)(A)], the suspension of liquidation, previously ordered 90 days retroactively from the date on which the Department published its notice of "Preliminary Affirmative Countervailing Duty Determinations" in the **Federal Register**, is no longer in effect. Therefore, customs officials will be directed to terminate any retroactive suspension of liquidation, release any bond or other security, refund any cash deposit, and liquidate all entries, or withdrawals from warehouse, for consumption, of certain carbon steel products from Brazil made before February 10, 1984.

**EFFECTIVE DATE:** June 22, 1984.

**FOR FURTHER INFORMATION CONTACT:** Alain Letort, Office of Investigations, Import Administration, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue, NW., Washington, D.C. 20230; telephone: (202) 377-5050.

### Scope of Investigations

The merchandise covered by this order consists of certain carbon steel products, which are described in the Appendix to this notice.

In accordance with section 703 of the Act (19 U.S.C. 1671b), on February 10, 1984, the Department published its preliminary determinations that there was reason to believe or suspect that certain carbon steel products from Brazil received benefits which constitute subsidies within the meaning of the countervailing duty law (49 FR 5157). On March 29, 1984, in accordance with section 703(e) of the Act [19 U.S.C. 1671b(e)], the Department published its preliminary determination that "critical circumstances" existed with respect to imports of certain carbon steel products from Brazil (49 FR 13726). In accordance with section 705 of the Act (19 U.S.C. 1671d), on April 26, 1984, the Department published its final determinations that these imports are being subsidized and that "critical circumstances" exist with respect to these imports (49 FR 17988).

On June 11, 1984, in accordance with section 705(d) of the Act [19 U.S.C. 1671d(d)], the ITC notified the Department that such importations are materially injuring a United States industry. The ITC made a negative determination regarding "critical circumstances."

Therefore, in accordance with sections 706 and 751 of the Act (19 U.S.C. 1671e and 1675), the Department directs United States Customs officers to assess, upon further advice by the administering authority pursuant to section 706(a)(1) of the Act [19 U.S.C. 1671e(a)(1)], countervailing duties equal to the amount of the net subsidy for all entries of certain carbon steel products from Brazil. These countervailing duties will be assessed on certain carbon steel products entered, or withdrawn from warehouse, for consumption, on or after February 10, 1984, the date on which the Department published its notice of "Preliminary Affirmative Countervailing Duty Determinations" in the **Federal Register**.

The Department further directs United States Customs officers to terminate any retroactive suspension of liquidation, release any bond or other security, refund any cash deposit, and liquidate all entries, or withdrawals from warehouse, for consumption, of certain carbon steel products from Brazil made before February 10, 1984.

On and after the date of publication of this notice, United States Customs officers must require, at the same time as importers would normally deposit estimated Customs duties on this merchandise, a cash deposit equal to the estimated net subsidy as listed in the table below:

| Manufacturer/producer/exporter | Ad valorem rate (percent) |
|---|---|
| Companhia Siderurgica Paulista (COSIPA) | 36.48 |
| Companhia Siderurgica Nacional (C.S.N.) | 62.18 |
| Usinas Siderurgicas de Minas Gerais (USI-MINAS) | 17.49 |
| All other manufacturers/producers/exporters | 36.95 |

The amounts listed are expressed as a percentage of the FOB price.

These determinations constitute a countervailing duty order with respect to certain carbon steel products from Brazil, pursuant to section 706 of the Act (19 U.S.C. 1671e) and § 355.36 of the Commerce Regulations (19 CFR 355.36).

We have deleted from the Commerce Regulations Annex 1 to 19 CFR Part 355, which listed countervailing duty findings and orders currently in effect. Instead, interested parties may contact the Office of Information Services, Import Administration, for copies of the updated list of orders currently in effect.

### Notice of Review

In accordance with section 751(a)(1) of the Act [19 U.S.C. 1675(a)(1)], the Department hereby gives notice that it is commencing an administrative review of this order on June 22, 1984. For further information regarding this review,

contact Mr. Richard Moreland (202) 377–2786.

This notice is published in accordance with section 706 of the Act (19 U.S.C. 1671e) and § 355.36 of the Commerce Regulations (19 CFR 355.36).

Dated: June 17, 1984.

**Alan F. Holmer,**

*Deputy Assistant Secretary for Import Administration.*

**Appendix**

For purposes of these investigations:

1. The term "*carbon steel plate in coil*" covers the following hot-rolled carbon steel products. Hot-rolled carbon steel plate in coils is a flat-rolled carbon steel product in coils, 0.1875 inch or more in thickness and over 8 inches in width, currently provided for in item 607.6610 of the *Tariff Schedules of the United States, Annotated (TSUSA).*

2. The term "*hot-rolled carbon steel sheet*"[1] covers the following hot-rolled carbon steel products. Hot-rolled carbon steel sheet is a flat-rolled carbon steel product, whether or not corrugated or crimped and whether or not pickled; not cold-rolled; not cut, not pressed, and not stamped to non-rectangular shape; not coated or plated with metal; 0.1875 inch or more in thickness and over 8 inches in width and pickled, as currently provided for in item 607.8320 of the *TSUSA;* or under 0.1875 inch in thickness an over 12 inches in width, whether or not pickled, as currently provided for in items 607.6710, 607.6720, 607.6730, 607.6740, or 607.8342 of the *TSUSA.* PLEASE NOTE THAT THE DESCRIPTION OF HOT-ROLLED CARBON STEEL SHEET INCLUDES SOME PRODUCTS CLASSIFIED AS PLATE IN THE *TSUSA.*

3. The term "*cold-rolled carbon steel sheet*" [1] covers the following cold-rolled carbon steel products. Cold-rolled carbon steel sheet is a flat-rolled carbon steel product, whether or not corrugated or crimped, whether or not painted or varnished and whether or not pickled; not cut, not pressed and not stamped to non-rectangular shape; not coated or plated with metal; over 12 inches in width, and 0.1875 or more in thickness, as currently provided for item 607.8320 of the *TSUSA;* or over 12 inches in width and under 0.1875 inches in thickness; as currently provided for in items 607.8350, 607.8355, or 607.8360 of the *TSUSA.* PLEASE NOTE THAT THE DESCRIPTION OF COLD-ROLLED CARBON STEEL SHEET INCLUDES SOME PRODUCTS, CLASSIFIED AS "PLATE" IN THE *TSUSA.*

[FR Doc. 84-16698 Filed 6-21-84; 8:45 am]

BILLING CODE 3510-DS-M

[1] "Sheet" is a generic term used in the steel industry for certain flat-rolled products. We have used the terms "hot-rolled carbon steel sheet" and "cold-rolled carbon steel sheet" for purposes of clarity. These products are also known as "hot-rolled carbon steel flat-rolled products" and "cold-rolled carbon steel flat-rolled products."

[C-201-018]

## Preliminary Affirmative Countervailing Duty Determination; Lime from Mexico

**SUMMARY:** We preliminarily determine that certain benefits which constitute bounties or grants within the meaning of the countervailing duty law are being provided to manufacturers or exporters in Mexico of lime. The estimated net bounty or grant for each firm is listed in the "Suspension of Liquidation" section of this notice. Therefore, we are directing the U.S. Customs Service to suspend liquidation of all entries of lime from Mexico which are entered, or withdrawn from warehouse, for consumption, and to require a cash deposit or bond on this merchandise in the amount equal to the estimated net bounty or grant.

If this investigation proceeds normally, we will make our final determination by August 28, 1984.

**EFFECTIVE DATE:** June 22, 1984.

**FOR FURTHER INFORMATION CONTACT:** Kenneth Haldenstein or Vincent Kane, Office of Investigations, Import Administration, Department of Commerce, 14th Street and Constitution Avenue, NW., Washington, D.C. 20230, telephone: (202) 377–4136 or 5414.

**SUPPLEMENTARY INFORMATION:**

### Preliminary Determination

Based upon our investigation, we have determined that certain benefits which constitute bounties or grants within the meaning of section 303 of the Tariff Act of 1930, as amended (the Act), are being provided to manufacturers or exporters in Mexico of Lime, as described in the "Scope of Investigation" section of this notice. For purposes of this investigation, the following programs are found to confer bounties or grants:

- Fund for the Promotion of Exports of Mexican Manufactured Products (FOMEX)
- Import Duty Reductions and Exemptions
- Fund for Industrial Development (FONEI)
- Preferential Federal Tax Incentives (CEPROFI)
- Guarantee and Development Fund for Medium and Small Industries (FOGAIN)
- Accelerated Depreciation Allowances
- Certain Equity Infusions
- Loans from the Mexican Trust for Non-Metallic Minerals.

We preliminary determine the estimated bounty or grant to be the rate specified for each company in the "Suspension of Liquidation" section of this notice.

### Case History

On March 21, 1984, we received a petition from the Paul Lime Division of Can-Am Corporation, Chemical Lime Inc., Genstar Lime Company, and the United Cement, Lime, Gypsum and Allied Workers International Union, AFL-CIO/CLC, filed on behalf of U.S. lime manuacturers. In compliance with the filing requirements of § 355.26 of the Commerce Regulations (19 CFR 355.26), the petition alleges that manufacturers or exporters in Mexico of lime receive bounties or grants within the meaning of section 303 of the Tariff Act of 1930, as amended (the Act).

Since Mexico is not a "country under the Agreement" within the meaning of section 701(b) of the Act, section 303 of the Act applies to this investigation. Because the subject merchandise is nondutiable and there is no "international obligation" within the meaning of section 303(a)(2) of the Act which requires an injury determination for nondutiable merchandise from Mexico, the domestic industry is not required to allege that, and the U.S. International Trade Commission is not required to determine whether, imports of these products cause or threaten to cause material injury to a U.S. insustry.

We presented a questionnaire concerning the allegations to the government of Mexico in Washington, D.C. on April 10, 1984. On May 21 and 29, 1984, we received responses to the questionnaire.

### Scope of Investigation

The products covered by this investigation are calcium oxide (CaO), commonly called quicklime or lime, and calcium hydroxide ($Ca(OH)_2$), commonly called hydrated lime or hydrate. Hydrated lime is currently classified under 512.1100 of the *Tariff Schedules of the United States Annotated* (TSUSA) and lime, other than hydrated, is currently classified under TSUSA item number 512.1400.

There are three known manufacturers and exporters in Mexico of lime which export to the United States and eight other producers that have applied for exclusion from this investigation. We have received information from the government of Mexico regarding Sonocal, S.A., Mexicana de Cobre, S.A., Productos Calizos de Baja California, S.A. (PCBC), Incalpa, S.A., Materiales BYM, S.A., Cales de Chiapas, S.A., Cal de Apasco, S.A., Cales de Puebla, S.A., Materiales Titan, S.A., Industrias Quimicas de Yucatan, S.A. (IQY), and Calteco, S.A.

The period for which we are measuring benefits is the most recent fiscal or calendar year for which we have complete data, calendar year 1983. In their responses, the government of Mexico and respondents provided data for the applicable period.

**Analysis of Programs**

Throughout this notice, we have applied to the facts of the current investigation general principles described in detail in the Subsidies Appendix of the "Final Affirmative Countervailing Duty Determination and Countervailing Duty Order: Cold-Rolled Carbon Steel Flat-Rolled Products from Argentina"; 49 FR 18006 (April 26, 1984). As per the Subsidies Appendix, we have used the national average commercial rate as the benchmark for short-term peso-denominated borrowing. For this purpose, we chose the nominal rate published monthly by the Banco de Mexico in the *Indicadores Economicos* ("IE rate"). These rates are the weighted averages of the rates charged by commercial banks on peso loans. Because we lack information to construct company-specific long-term benchmarks, we have also used this benchmark on long-term peso loans as the best information available. The "IE" rate is a representative benchmark for both short and long-term borrowing rates because Mexico's recent inflationary experience has virtually eliminated all long-term fixed-rate financing. Long-term loans are generally provided at variable short-term interest rates.

As specified in 19 CFR 355.28(a)(3), "if separate enterprises have received materially different benefits, such differences shall also be estimated and stated." Because of the differences in the size and structure of the companies under investigation and in company usage of the programs determined to confer bounties or grants, we have calculated company-specific rates.

We have consistently held that government provision of, or assistance in, obtaining capital or debt does not *per se* constitute a subsidy. Government equity purchases or financial backing bestows a countervailable benefit only when it is on terms inconsistent with commercial considerations. To determine if such action is commercially unsound, we review and assess financial data for the company in question. With regard to whether a company is a reasonable equity investment (a condition we have termed "equityworthiness"), we examined the financial ratios, operating profits or losses and other relevant data to evaluate the company's current and future ability to earn a reasonable rate of return on equity investments.

Based on our examination of these factors with respect to Sonocal, a company alleged to be unequityworthy, we preliminarily determined that this company was unequityworthy as of 1981. Our examination of these factors for Mexicana de Cobre revealed preliminarily that this company has been equityworthy.

Based upon our analysis of the petition and the responses to our questionnaire, we preliminarily determine the following:

**I. Programs Preliminarily Determined to Confer Bounties or Grants**

We preliminarily determine that bounties or grants are being provided to manufacturers or exporters in Mexico of lime under the following programs:

*A. FOMEX*

FOMEX is a trust established by the government of Mexico to promote the manufacture and sale of exported products. The fund is administered by the Mexican Treasury Department with the Bank of Mexico acting as the trustee. The Bank of Mexico administers the financing of FOMEX loans through financial institutions, which establish contracts for lines of credit with manufacturers and exporters. On July 27, 1983, FOMEX was formally incorporated into the National Bank of Foreign Trade.

In order for a company to be eligible for FOMEX financing for exports, the following requirements must be met: (1) The product to be manufactured must be included on a list made public by FOMEX; (2) the company must have majority Mexican capital; (3) the articles to be exported must have a minimum of 30 percent national content in direct production costs; (4) loans granted for pre-export must be in Mexican currency, while loans for export sales are established in U.S. dollars or any other foreign currency acceptable to the Bank of Mexico; and (5) the exporter must carry insurance against commercial risks to the extent of the loans. The maximum annual interest rate for FOMEX pre-export financing is 8 percent and for FOMEX export financing, 6 percent.

Sonocal received short-term export financing from FOMEX for exports to the U.S. of the subject merchandise. Since FOMEX export financing provides loans for export-related purposes at interest rates significantly less than those for comparable commercially available loans, we preliminarily determine that this program confers a bounty or grant upon the exportation of lime.

Sonocal has not paid either interest or principal on these loans, which were due to be repaid in early 1983. Because these loans have not been repaid to date, we treated them as zero interest rate loans. We used as our benchmark, for purposes of calculating the bounty or grant, the "IE" rate, as described *supra*. We allocated the benefit over the value of Sonocal's 1983 U.S. exports of lime and calculated a bounty or grant in the amount of 4.48 percent *ad valorem*.

*B. Fund For Industrial Development (FONEI)*

FONEI is a specialized financial development fund, administered by the Bank of Mexico, which grants long-term credit at below-market rates for the creation, expansion or modernization of enterprises in order to foster industrial decentralization and the efficient production of goods capable of competing in the international market. FONEI loans are available under various programs having different eligibility requirements.

Sonocal had one FONEI loan outstanding during the period for which we are measuring bounties or grants. It received the loan for plant expansion.

We have evidence that FONEI loans for plant expansion are only available to companies located outside of Zone IIIA (Mexico City and environs). Because such loans are limited to particular geographic regions and are made at below-market rates, we preliminarily determine that FONEI loans for plant expansion confer a bounty or grant upon Sonocal.

We have determined the benefits from this loan according to the methodology outlined in the Subsidies Appendix. We used as our benchmark the IE rate, as described *supra*. We allocated the benefit over Sonocal's total sales value of lime and determined a bounty or grant in the amount of 1.07 percent *ad valorem*.

*C. CEPROFI*

CEPROFIs are tax credits used to promote National Development Plan (NDP) goals, which include increased employment, encouragement of regional decentralization, and industrial development, particularly of small and medium sized firms.

CEPROFI certificates are tax certificates of fixed value which may be used for a five-year period to pay federal taxes. Certain CEPROFI certificates are granted for carrying out investments in "priority" industrial

activities; others are available to all industries on equal terms.

Industrials Quimicas de Yucatan received CEPROFIs for carrying out investments in priority industrial activities. These CEPROFIs were for investment to increase productivity. Because this type of CEPROFI is limited to a specific group of industries or to companies located in specific regions, we preliminarily determine that this program confers a bounty or grant.

Article 25 of the decree authorizing the issuance of CEPROFIs, published in the *Diario Oficial de la Federacion (Diario Oficial)* on March 6, 1979, provides for a 4 percent supervision fee. We determine that the 4 percent supervision fee is "paid in order to qualify for, or to receive" the CEPROFIs, and is therefore an allowable offset from the gross bounty or grant, as provided in section 771(6)(A) of the Act. Therefore, the benefit provided by CEPROFIs is the amount of the certificate received less the supervision fee.

We allocated the CEPROFI benefit over the total sales of Industrias Quimicas de Yucatan and determined a bounty or grant in the amount of 2.25 percent *ad valorem.*

*D. Import Duty Reductions and Exemptions.*

Petitioner alleged that lime exporters receive import duty reductions or exemptions on equipment used in the production of lime. Mexicana de Cobre received reductions on import duties for equipment used in manufacturing lime under a special tax agreement between it and the government of Mexico. Because this reduction was limited to a specific company, we preliminarly determine that it conferred a bounty or grant on Mexicana de Cobre. We calculated the benefit by dividing the amount of the reduction in 1983 by total sales of lime of the company to calculate a bounty or grant of 0.07 percent *ad valorem.*

*E. Accelerated Depreciation Allowances*

Petitioner alleged that the lime industry benefited from federal income tax reductions through accelerated depreciation.

For purposes of economic development, the Income Tax Department may grant accelerated depreciation allowances to industries in certain geographical regions or for designated industrial activities. Mexicana de Cobre used accelerated depreciation in 1983 under an agreement with the government of Mexico.

We preliminarily determine that accelerated depreciation allowances confer a bounty or grant because such allowances are limited to a specific group of industries or to companies located in specific regions.

To determine the benefit received under this program, we took, as best information available, the amount of tax savings realized by Mexicana de Cobre from accelerated depreciation in 1983 and allocated that amount over the company's total 1983 sales of lime. On this basis, we calculated a bounty or grant of 1.73 percent *ad valorem.* At verification we will seek information on the company's use of the program on its income tax return for the 1982 tax year, which was filed in 1983, following our policy of recognizing income tax benefits in the year when the tax return is actually filed.

*F. Certain Equity Infusions*

Petitioner alleged that the government of Mexico has provided bounties or grants through equity infusions to Mexican companies on terms inconsistent with commercial considerations. NAFINSA, a government-owned development bank, purchased stock in Sonocal, a company whose stock is not publicly traded, between 1976 and 1983. Using the criteria described in the "Analysis of Programs" section of this notice, we determined that Sonocal became an unequityworthy company as of 1981. Therefore, we preliminarily determine that the investments in 1981 and after confer a bounty or grant because they were made on terms inconsistent with commercial considerations.

We calculated the benefits from these purchases according to the methodologies outlined in the Subsidies Appendix. We applied the rate of return shortfall and allocated the amount of Sonocal's benefit over its total sales value for 1983. We used as our discount rate the "IE" rate, as described *supra.* We calculated a bounty or grant of 47.45 percent *ad valorem.* Government equity infusions in another lime company are described in the "Programs Determined Not to Confer Bounties or Grants" section of this notice.

*G. Loans From the Mexican Trust for Non-Metallic Minerals*

Sonocal received a loan from the Mexican Trust for Non-Metallic Minerals. Since this loan was provided at interest rates lower than those for comparable commercially available loans and appears to be limited to a specific industry or group of industries, we preliminarily determine that this loan conferred a bounty or grant on Sonocal.

Since this loan has variable interest rates, we treated the loan as a series of short-term loans. For purposes of this preliminary determination, we are using as our benchmark the IE rate, as described *supra.* We allocated the amount of the benefit over Sonocal's total 1983 sales value of lime and determined a bounty or grant of 1.44 percent *ad valorem.*

*H. Guarantee and Development Fund for Medium and Small Industries (FOGAIN)*

Productos Calizos de Baja California (PCBC), Materiales BYM, and Industrias Quimicas de Yucatan (IQY) received FOGAIN loans that had outstanding principal during the period of investigation. We preliminarily determine that the FOGAIN program confers a benefit which constitutes a bounty or grant within the meaning of the countervailing duty law upon the respondent lime companies. The FOGAIN program provides preferential financing at interest rates below prevailing commercial rates to all small and medium sized firms in Mexico. However, interest rates will vary depending upon: (a) Whether a small or medium sized business has a designated priority status, and (b) the geographical location of the business. Small and medium sized businesses with priority designation and located in specific zones targeted for industrial growth receive the most preferential rate. Medium sized businesses, not designated as priority and located in an area of controlled industrial growth, may receive the least preferential FOGAIN interest rate. We preliminarily determine this program to be countervailable because it provides preferential financing on the basis of priority status for designated industries and regional preferences within the program. Without these designations, FOGAIN would not be countervailable, since all small and medium sized firms in Mexico are at least eligible to receive FOGAIN loans at the least preferential rate of interest available under this program. Therefore, we determine the program is countervailable to the extent that the interest rate received by a particular company is below the least preferential rate that a company would receive under FOGAIN.

To determine the estimated bounty or grant conferred upon these companies, we used as our benchmark the least preferential interest rate available under FOGAIN. PCBC, Materiales BYM and IQY obtained FOGAIN financing in July 1983, May 1982, and March 1982, respectively; the least preferential rates applicable on those dates were 45%, 37% and 35%, respectively. PCBC and Materiales BYM obtained their loans at

rates lower than the least preferential rates applicable.

Since the FOGAIN loans have variable interest rates we treated the loans as a series of short-term loans and computed the difference in interest payments between the FOGAIN loans received by PCBC and Materiales BYM and those which would have been incurred had the loans been made at the least preferential rate of interest under this program. We allocated the amount of benefit from the loans over the company's total value of sales of all products during 1983. We determine the net amount of the bounty or grant to be 0.21 percent *ad valorem* for PCBC and 1.39 percent *ad valorem* for Materiales BYM.

**II. Programs Preliminarily Determined Not To Confer Bounties or Grants**

We preliminarily determine that bounties or grants are not being provided to manufacturers or exporters in Mexico of lime under the following programs:

*A. Other Equity Infusions*

Both NAFINSA and the Comision de Fomento Minero, a publicly-owned lending institution, purchased stock in Mexicana de Cobre. Private investors made purchases of the company's stock at comparable terms on approximately the same dates. Using the criteria described in the "Analysis of Programs" section of this notice, and considering the fact that government investment in this company was or the same terms and conditions as private investment, we preliminarily determine that government equity investment did not confer a bounty or grant on Mexicana de Cobre.

*B. Dual Level Currency Exchange Rate System*

Petitioner alleged that the dual level exchange rate system existing in Mexico constitutes a countervailable benefit to the lime industry. Petitioner alleged that priority industries, including lime, when exchanging pesos for dollars to make foreign purchases, are allowed to convert currency at a "controlled" rate, but that other industries must make foreign purchases at the free market rate. Currently, the controlled rate is less than the "free" rate of exchange.

According to the responses of the respondent companies, all industries in Mexico, including lime, obtain dollars from the government under the same terms to purchase imports. Therefore, we preliminarily determine that the dual currency exchange rate system does not confer a bounty or grant to the manufacturers or exporters in Mexico of lime.

*C. CEPROFIs for Salary Increases*

Sonocal received CEPROFIs for salary increases. We preliminarily determine that this type of CEPROFI does not confer a bounty or grant because it is not limited to a specific industry, group of industries, or to companies located in specific regions of the country.

**III. Programs Preliminarily Determined Not To Be Used**

We preliminarily determine that the following programs have not been used by manufacturers or exporters of lime.

*A. Article 94 Loans*

Under section II of Article 94 of the *General Law of Credit Institutions and Auxiliary Organizations* (the Banking Law), the Bank of Mexico establishes channels of credit to different sectors of economic activity. There are 12 categories of credit under section II.

Most categories carry their own maximum interest rate which is set by the Bank of Mexico. Loans granted under category 12 are targeted to exports of manufactured products. The maximum interest rate under this category is 8 percent. The Mexican government stated in its responses that these loans were not used by the companies under investigation.

*B. FOMEX and BANCOMEXT Loans to U.S. Importers*

U.S. customers of lime were alleged to have received FOMEX and BANCOMEXT loans. The government of Mexico stated in its responses that no U.S. customers of lime received FOMEX or BANCOMEXT loans that had outstanding principal during the period of investigation.

*C. National Preinvestment Fund for Studies and Projects (FONEP)*

FONEP, administered by the NAFINSA, finances economic, technical and feasibility studies, as well as basic and detailed engineering projects. The Mexican government stated in its responses that this program was not used by the companies under investigation.

*D. Trust for Industrial Parks, Cities, and Commercial Centers (FIDEIN)*

This program is aimed at developing industrial parks and cities. The Mexican government stated in its responses that this program was not used by the companies under investigation.

*E. Fondo Nacional de Fomento Industrial (FOMIN)*

FOMIN operates as a trust fund, providing funding to certain small and medium sized companies by either buying stock or providing loans at rates below those of commercial lending institutions. The Mexican government stated in its responses that this program was not used by the companies under investigation.

*F. PROFIDE*

PROFIDE has been established under the auspices of FOMEX to administer a new financing program to provide exporters with foreign currency financing needed for imports. The Mexican government stated in its responses that this program was not used by the companies under investigation.

*G. Preferential Prices for Natural Gas, Oil, Electricity, Diesel Fuel and Petrochemicals*

Petitioner alleged that prices for natural gas, oil, diesel fuel, petrochemicals and electricity are set by the Mexican government and could include a 30 percent discount for respondents. The government of Mexico stated in its responses that the lime industry has not received price discounts for these items.

**IV. Programs for Which Additional Information Is Needed**

We preliminarily determine that more information is needed to determine whether the following programs conferred a bounty or grant on manufacturers or exporters of lime.

*A. Nacional Financiera, S.A., Loans*

Mexicana de Cobre received loans from the Nacional Financiera, S.A. (NAFINSA), a government-owned development bank, during the last month of the period of investigation. More information is needed concerning the terms of these loans before a determination can be made as to whether they conferred a bounty or grant on Mexicana de Cobre.

*B. BANCOMEXT Financing*

Petitioner alleged that lime producers receive financing from the Mexican National Bank for Foreign Trade (BANCOMEXT). Sonocal appears to have received BANCOMEXT financing for uses other than the operation of its lime plant. We will seek more information about this financing at verification. The government of Mexico stated in its responses that no other

respondent received BANCOMEXT financing.

*C. Tax Exemptions on Interest Paid to Foreign Lenders and Income Tax Rate Reductions*

Mexicana de Cobre received a tax exemption on interest paid to foreign lenders and an income tax rate reduction under an agreement with the Mexican Department of the Treasury. The company stated in its response that these tax benefits did not apply because it did not have taxable income in tax year 1982. We will seek further information on these programs at verification.

*D. Loan Guarantees Provided by NAFINSA*

Petitioner alleged that various Mexican government entities guaranteed loans to the lime industry. During the period of investigation, Mexicana de Cobre had several outstanding loans guaranteed by NAFINSA, a government-controlled institution which is a shareholder of Mexicana de Cobre. Mexicana de Cobre paid a guarantee fee to NAFINSA and provided security for the guarantees.

We plan to investigate whether it is standard practice in Mexico for a shareholder to provide such guarantees and the normal commercial terms for loan guarantees at verification.

**Verification**

In accordance with section 776(a) of the Act, we will verify information used in making our final determination.

**Suspension of Liquidation**

In accordance with section 703(d) of the Act, we are directing the U.S. Customs Service to suspend liquidation of all entries of lime from Mexico which are entered, or withdrawn from warehouse, for consumption on or after the date of publication of this notice in the **Federal Register** and to require a cash deposit or bond for each such entry of this merchandise.

All of the respondent companies claim and certain of them appear to have received either no benefits or benefits in *de minimis* amounts from the programs under investigation. Those apparently receiving no benefits or benefits in *de minimis* amounts are: PCBC, Incalpa, Cales de Chiapas, Cal de Apasco, Cales de Puebla, Materiales Titan, and Calteco. If during verification we determine that these firms have received either no benefits or benefits in *de minimis* amounts, we will exclude these firms in the event of a final affirmative determination.

The net bounty or grant for duty deposit purposes for each of the firms is as follows:

| Manufacturer/Exporter | Ad valorem rate (percent) |
|---|---|
| Sonocal | 54.44 |
| All Other Manufacturers/Exporters | 1.00 |

The rate for all other manufacturers/exporters is the average of the rates for Mexicana de Cobre and PCBC. Since we have no evidence of unequityworthiness for any respondent company other than Sonocal, we considered it inappropriate to include Sonocal in this average.

**Public Comment**

In accordance with § 355.35 of the Commerce Department Regulations, if requested, we will hold a public hearing to afford interested parties an opportunity to comment on this preliminary determination at 10 a.m. on July 12, 1984, at the U.S. Department of Commerce, Conference Room D, 14th Street & Constitution Avenue, NW., Washington, D.C. 20230. Individuals who wish to participate in the hearing must submit a request to the Deputy for Policy to the Deputy Assistant Secretary for Import Administration, Room 3099B, at the above address within ten days of publication of this notice.

Requests should contain: (1) The party's name, address, and telephone number; (2) the number of participants; (3) the reason for attending; and (4) a list of the issues to be discussed. In addition, prehearing briefs must be submitted in at least 10 copies to the Deputy Assistant Secretary by July 5, 1984. Oral presentations will be limited to issues raised in the briefs.

Written comments should be submitted in accordance with 19 CFR 355.33(d) and 355.34(a), within thirty days of publication of this notice, at the above address and in at least 10 copies.

Dated: June 14, 1984.

**Alan F. Holmer,**

*Deputy Assistant Secretary for Import Administration.*

[FR Doc. 84-16693 Filed 6-21-84; 8:45 am]

BILLING CODE 3510-DS-M

## Decision on Application for Duty-Free Entry of Scientific Instrument; U.S. Department of Agriculture

This decision is made pursuant to section 6(c) of the Educational, Scientific, and Cultural Materials Importation Act of 1966 (Pub. L. 89-651, 80 Stat. 897; 15 CFR Part 301). Related records can be viewed between 8:30 AM and 5:00 PM in Room 1523, U.S. Department of Commerce, 14th and Constitution Avenue, NW., Washington, DC.

Docket No.: 84-110. Applicant: U.S. Department of Agriculture, Urbana, IL 61801. Instrument: Oxygen Electrode Unit. Manufacturer: Hansatech Limited, United Kingdom. Intended use: See notice at 49 FR 13734.

Comments: None received. Decision: Approved. No instrument of equivalent scientific value to the foreign instrument, for such purposes at it is intended to be used, is being manufactured in the United States. Reasons: The foreign instrument simultaneously measures oxygen evolution and fluorescence occurring during photosynthesis. The National Institutes of Health advises in its memorandum dated June 1, 1984 that (1) the capability of the foreign instrument described above is pertinent to the applicant's intended purpose and (2) it knows of no domestic instrument or apparatus of equivalent scientific value to the foreign instrument for the applicant's intended use.

We know of no other instrument or apparatus of equivalent scientific value to the foreign instrument which is being manufactured in the United States.

(Catalog of Federal Domestic Assistance Program No. 11.105, Importation of Duty-Free Educational and Scientific Materials.)

[FR Doc. 84-16726 Filed 6-21-84; 8:45 am]

BILLING CODE 3510-DS-M

## Consolidated Decision on Applications for Duty-Free Entry of Electron Microscopes; Minneapolis Medical Research Foundation, et al.

This is a decision consolidated pursuant to section 6(c) of the Educational, Scientific, and Cultural Materials Importation Act of 1966 (Pub. L. 89-651, 80 Stat. 897; 15 CFR Part 301). Related records can be viewed between 8:30 A.M. and 5:00 P.M. in Room 1523, U.S. Department of Commerce, 14th and Constitution Avenue, NW., Washington, D.C.

Docket No.: 84-85. Applicant: Minneapolis Medical Research Foundation, Minneapolis, MN 55415. Instrument: Electron Microscope, Model JEM-100CX with Accessories. Manufacturer: JEOL Co., Ltd., Japan. Intended Use: See notice at 49 FR 8056.

Instrument Ordered: December 14, 1983.

Docket No.: 84-89. Applicant: Duke University Medical Center, Durham, NC 27710. Instrument: Electron Microscope, Model JEN-1200EX/SEG with

Accessories. Manufacturer: JEOL Co., Ltd., Japan. Intended Use: See notice at 49 FR 10139.

Instrument Ordered: August 27, 1982.

Docket No.: 84–90. Applicant: University of Virginia School of Medicine, Charlottesville, VA 22908. Instrument: Electron Microscope, Model EM 10CA with Accessories. Manufacturer: Carl Zeiss, West Germany. Intended Use: See notice at 49 FR 10139. Instrument Ordered: January 16, 1984.

Docket No.: 84–91. Applicant: Albany Medical College of Union University, Albany, NY 12208. Instrument: Electron Microscope, Model JEM–100CX with Accessories. Manufacturer: JEOL Ltd., Japan. Intended Use: See notice at 49 FR 10139. Instrument Ordered: January 27, 1984.

Docket No.: 84–92. Applicant: Johns Hopkins University, Baltimore, MD 21218. Instrument: Electron Microscope, Model JEM–100CX with Accessories. Manufacturer: JEOL Ltd., Japan. Intended Use: See notice at 49 FR 10139. Instrument Ordered: January 19, 1984.

Comments: None received. Decision: Approved. No instrument of equivalent scientific value to the foreign instrument, for such purposes as these instruments are intended to be used, was being manufactured in the United States at the time the instruments were ordered. Reasons: Each foreign instrument is a conventional transmission electron microscope (CTEM) and is intended for research or scientific educational uses requiring a CTEM. We know of no CTEM, or of any other instrument suited to these purposes, which was being manufactured in the United States either at the time of order of each instrument or at the time of receipt of application by the U.S. Customs Service.

(Catalog of Federal Domestic Assistance Program No. 11.105, Importation of Duty-Free Educational and Scientific Materials.)

**Frank W. Creel,**

*Acting Director, Statutory Import Programs Staff.*

[FR Doc. 84–16728 Filed 6–21–84; 8:45 am]

BILLING CODE 3510–DS–M

## Vanderbilt University; Decision on Application for Duty-Free Entry of Scientific Instrument

This decision is made pursuant to section 6(c) of the Educational, Scientific, and Cultural Materials Importation Act of 1966 (Pub. L. 89–651, 80 Stat. 897; 15 CFR Part 301). Related records can be viewed between 8:30 AM and 5:00 PM in Room 1523, U.S. Department of Commerce, 14th and Constitution Avenue, NW., Washington, D.C.

Docket No.: 84–127. Applicant: Vanderbilt University, Nashville, TN 37232. Instrument: (2) Gas Chromatograph/Mass Spectrometers, Model 1000. Manufacturer: Nermag, France. Intended use: See notice at 49 FR 19563.

Comments: None received. Decision: Approved. No instrument of equivalent scientific value to the foreign instrument, for such purposes as it is intended to be used, is being manufactured in the United States. Reasons: The foreign instrument is of high performance quadrupole design and it can measure compounds of interest down to the tens of femtograms ($1.0 \times 10^{-15}$). It is about ten times more sensitive than the most comparable domestic instrument. The National Institutes of Health advises in its memorandum dated June 1, 1984 that (1) the capability of the foreign instrument described above is pertinent to the applicant's intended purpose and (2) it knows of no domestic instrument or apparatus of equivalent scientific value to the foreign instrument for the applicant's intended use.

We know of no other instrument or apparatus of equivalent scientific value to the foreign instrument which is being manufactured in the United States.

(Catalog of Federal Domestic Assistance Program No. 11.105, Importation of Duty-Free Educational and Scientific Materials.)

**Frank W. Dreel,**

*Acting Director, Statutory Import Programs Staff.*

[FR Doc. 84–16727 Filed 6–21–84; 8:45 am]

BILLING CODE 3510–DS–M

# National Oceanic and Atmospheric Administration

## Pacific Fishery Management Council; Public Meetings

**AGENCY:** National Marine Fisheries Service, NOAA, Commerce.

The Pacific Fishery Management Council will meet in San Diego, CA, on July 11–12, 1984. On July 11, the Council will adopt a proposed FY85 budget; review the performance of the 1983–84 anchovy fishery and an estimate of the 1984–85 spawning biomass and preliminary quotas; adopt inseason groundfish management measures; and conduct a public comment period. On July 12, the Council will hear a status report on the salmon fishery and discuss policy and procedural issues.

The Council's Scientific and Statistical Committee (SSC) will meet in San Diego, July 10–11 to discuss the same subjects. The Groundfish Advisory Panel (GAP) and Groundfish Task Force (GTF) will meet jointly at the same time and place to discuss groundfish items. A detailed agenda for Council, SSC, GAP/GTF meetings will be available to the public about June 29. All meetings are open to the public. For further information contact Joseph C. Greenley, Executive Director, Pacific Fishery Management Council, 526 SW. Mill St., Portland, OR 97201; telephone: (503) 221–6352.

Dated: June 19, 1984.

**Roland Finch,**

*Director, Office of Fisheries Management, National Marine Fisheries Service.*

[FR Doc. 84–16688 Filed 6–21–84; 8:45 am]

BILLING CODE 3510–22–M

## North Pacific Fishery Management Council; Public Meetings

**AGENCY:** National Marine Fisheries Service, NOAA, Commerce.

The North Pacific Fishery Management Council will convene three public workgroup meetings as follows:

(1) *Groundfish Data Technical Team* will meet at 9 a.m. on June 26–27, 1984, in Room 369 of the Northwest and Alaska Fisheries Center, National Marine Fisheries Service (NMFS), 2725 Montlake Blvd., East, Seattle, WA, to discuss data needs for management of the U.S. groundfish fishery off Alaska.

(2) *Advisory Panel Operations Workgroup* will meet at 8:30 a.m. on June 27, 1984, in Room 438E of the Northwest and Alaska Fisheries Center (see address above), to discuss the role and composition of the Council's Advisory Panel and whether operational improvements should be made.

(3) *Workgroup on Joint Venture and Permit Review* will meet at 9 a.m. on June 28–29, 1984, in Room 203 of the Bill Ray Center, 1108 F Street, Juneau, AK, to discuss criteria for reviewing joint venture permit applications and foreign fishing vessel permits and formulate recommendations to the Council for review in September.

For further information contact Jim H. Branson, Executive Director, North Pacific Fishery Management Council, P.O. Box 103136, Anchorage, AK 99510; telephone: (907) 274–4563.

Dated: June 19, 1984.

**Roland Finch,**

*Director, Office of Fisheries Management, National Marine Fisheries Service.*

[FR Doc. 84–16689 Filed 6–21–84; 8:45 am]

BILLING CODE 3510–22–M

## COMMITTEE FOR THE IMPLEMENTATION OF TEXTILE AGREEMENTS

### Announcing Import Restraint Limits for Certain Cotton Apparel Exported From India

June 19, 1984.

On April 18, 1984 a notice was published in the **Federal Register** (49 FR 15254) announcing that, on March 27, 1984, the United States Government, under the terms of the Bilateral Cotton, Wool and Man-Made Fiber Textile Agreement of December 21, 1982, had requested the Government of India to enter into consultations concerning exports to the United States of cotton playsuits in Category 337 and cotton coveralls, overalls, and jumpsuits in Category 359pt., produced or manufactured in India.

Consultations have been held concerning these categories, but no agreement has been reached on a mutually satisfactory solution. The United States Government has decided, therefore, until such time as a different solution is agreed, to control imports of cotton apparel in Category 337 and 359pt. (only T.S.U.S.A numbers 379.6410 and 383.5035), at the prorated twelve-month limits of 53,475 dozen for Category 337 and 84,963 dozen for Category 359pt., exported during the period which began on March 27, 1984 and extends through December 31, 1984. These limits are subject to flexibility adjustments under the terms of the agreement.

The limits may be adjusted to reflect final 1983 exports from India through April 30, 1984. For purposes of establishing the limits for the present restraint period, the count of 1983 exports from India in these categories at the end of April 1984 is considered final by the U.S. Government, and there will be no further adjustment made to these limits to reflect 1983 exports.

Accordingly, in the letter published below, the Chairman of the Committee for the Implementation of Textile Agreements directs the Commissioner of Customs to prohibit entry into the United States for consumption, or withdrawal from warehouse for consumption, of cotton apparel products in Categories 337 and 359pt., exported during the designated period.

Effective Date: June 26, 1984.

For Further Information Contact: Ross Arnold, International Trade Specialist, Office of Textiles and Apparel, U.S. Department of Commerce, Washington, D.C. (202/377–4212).

**Ronald I. Levin,**

*Acting Chairman, Committee for the Implementation of Textile Agreements.*

June 19, 1984.

**Committee for the Implementation of Textile Agreements**

Commissioner of Customs,
*Department of the Treasury, Washington, D.C.*

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 extended on December 15, 1977 and December 22, 1981; pursuant to the Bilateral Cotton, Wool and Man-Made Fiber Textile Agreement of December 21, 1982, between the Governments of the United States and India; and in accordance with the provisions in Executive Order 11651 of March 3, 1972, as amended, you are directed to prohibit, effective on June 26, 1984, entry into the United States for consumption and withdrawal from warehouse for consumption of cotton textile products in Categories 337 and 359pt.[1], produced or manufactured in India and exported during the indicated period, in excess of the following limits:

| Category | Prorated 12-month limit[2] | Period |
|---|---|---|
| 337 | 53,475 dozen | Mar. 27 to Dec. 31, 1984. |
| 359pt[1] | 84,963 dozen | Mar. 27 to Dec. 31, 1984. |

[1] In Category 359, only TSUSA numbers 379.6410 and 383.5035.
[2] The limit has not been adjusted to reflect any imports exported after March 26, 1984.

Textile products in Categories 337 and 359pt.[1] which have been exported to the United States during the ninety-day period which began on March 27, 1984, shall be subject to this directive.

A description of the textile categories in terms of T.S.U.S.A. numbers was published in the **Federal Register** on December 13, 1982 (47 FR 55709), as amended on April 7, 1983 (48 FR 15175), May 3, 1983 (48 FR 19924), and December 14, 1983 (48 FR 55607), December 30, 1983 (48 FR 57584), and April 4, 1984 (49 FR 13397).

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 action taken with respect to the Government of India and with respect to imports of cotton textile products from India has been determined by the Committee for the Implementation of Textile Agreements to involve foreign affairs functions of the United States. Therefore, these directions to the Comissioner of Customs, which are necessary for the implementation of such actions, fall within the foreign affairs exception to the rule-making provisions of 5 U.S.C. 553. This letter will be published in the **Federal Register.**

Sincerely,

Ronald I. Levin,

*Acting Chairman, Committee for the Implementation of Texitle Agreements.*

[FR Doc. 84–16729 Filed 6–21–84; 8:45 am]

BILLING CODE 3510–DR–M

[1] In Category 359, only TSUSA numbers 379.6410 and 383.5035.

### Request for Public Comment on Bilateral Textile Consultations With the Government of Pakistan To Review Trade In Category 335 (Cotton Coats)

June 19, 1984.

On May 29, 1984, the Government of the United States requested consultations with the Government of Pakistan with respect to Category 335. This request was made on the basis of the agreement between the Governments of the United States and Pakistan relating to trade in cotton textiles and cotton textile products of March 9 and 11, 1982. The agreement provides for consultations when the orderly development of trade between the two countries may be impeded by imports due to market disruption, or the threat thereof.

The purpose of this notice is to advise the public that if no solution is agreed upon in consultations between the two governments, CITA, pursuant to the Agreement, may establish a prorated specific limit of 22,904 dozen for the entry and withdrawal from warehouse for consumption of cotton textile products in Category 335, produced or manufactured in Pakistan and exported to the United States during the period beginning on May 29, 1984 and extending through December 31, 1984.

The Government of the United States has decided, pending a mutually satisfactory alternative solution, to control imports in this category during the 90-day consultation period which began on May 29 and extends through August 26, 1984 at a limit of 10,460 dozen.

In the event the limit established for Category 335 during the ninety-day period is exceeded, such excess amount, if allowed to enter, may be charged to

the limit established during the subsequent restraint period.

The United States remains committed to finding a solution concerning this category. Should such a solution be reached in consultations with the Government of Pakistan, further notice will be published in the **Federal Register.**

A summary market statement for this category follows this notice.

A description of the textile categories in terms of T.S.U.S.A. numbers was published in the **Federal Register** on December 13, 1982 (47 FR 55709), as amended on April 7, 1983 (48 FR 15175), May 3, 1983 (48 FR 19924) and December 14, 1983 (48 FR 55607), December 30, 1983 (48 FR 57584), and April 4, 1984 (49 FR 13397).

Anyone wishing to comment or provide data or information regarding the treatment of Category 335 under the Bilateral Cotton Textile Agreement with the Government of Pakistan, or on any other aspect thereof, or to comment on domestic production or availability of textile products included in the category, is invited to submit such comments or information in ten copies to Mr. Walter C. Lenahan, Chairman, Committee for the Implementation of Textile Agreements, International Trade Administration, U.S. Department of Commerce, Washington, D.C. 20230. Because the exact timing of the consultations is not yet certain, comments should be submitted promptly. Comments or information submitted in response to this notice will be available for public inspection in the Office of Textiles and Apparel, Room 3100, U.S. Department of Commerce, 14th and Constitution Avenue, NW., Washington, D.C., and may be obtained upon written request.

Further comment may be invited regarding particular comments or information received from the public which the Committee for the Implementation of Textile Agreements considers appropriate for further consideration.

The solicitation of comments regarding any aspect of the agreement or the implementation thereof is not a waiver in any respect of the exemption contained in 5 U.S.C. 553(a)(1) relating to matters which constitute "a foreign affairs function of the United States."

Supplementary Information: On December 16, 1983 a letter was published in the **Federal Register** (48 FR 55892) to the Commissioner of Customs from the Chairman of the Committee for the Implementation of Textile Agreements which established levels of restraint for certain categories of cotton textiles and cotton textile products, produced or manufactured in Pakistan and exported during the twelve-month period which began on January 1, 1984. In the letter published below, the Chairman of the Committee for the Implementation of Textile Agreements pursuant to the bilateral agreement, directs the Commissioner of Customs, pending agreement on a different solution, to prohibit entry for consumption or withdrawal from warehouse for consumption, of cotton textile products in Category 335, produced or manufactured in Pakistan and exported during the indicated ninety-day period, in excess of 10,460 dozen.

Effective date: June 25, 1984.

**Ronald I. Levin,**

*Acting Chairman, Committee for the Implementation of Textile Agreements.*

**Pakistan—Market Statement**

*Category 335—Women's, Girls' and Infants' Cotton Coats*

May 1984.

U.S. imports of Category 335 from Pakistan increased from 13,202 dozen for the year ending March 1983 to 34,978 dozen for the year ending March 1984, up 164.9 percent. Imports during the first quarter of 1984 were 18,993 dozen, more than two and one-half times the imports of the first quarter of 1983. These are substantial increases of imports in a category already adversely affected by imports. Pakistan is the largest supplier whose exports of Category 335 are not subject to a specific limit.

U.S. domestic production of Category 335 trended downward during the past decade. Production in 1982 was 647,000 dozen, down 8 percent from 1981. Imports, on the other hand, trended strongly upward during the decade ending in 1981, declined by small quantities in 1982 and 1983, but resumed the upward trend in 1984. Imports during the year ending March 1984 from all sources were 1,842,432 dozen, higher than any calendar year on record. This increase occurred during the first quarter of 1984 when 577,747 dozen were imported, up 57.4 percent from the same period in 1983, and at an annual rate of 2.3 million dozen. The ratio of imports to domestic production was 253.6 percent in 1981 and 268.0 percent in 1982.

June 19, 1984.

**Committee for the Implementation of Textile Agreements**

Commissioner of Customs,
*Department of the Treasury, Washington, D.C.*

Dear Mr. Commissioner: This directive further amends, but does not cancel, the directive of December 13, 1983 from the Chairman of the Committee for the Implementation of Textile Agreements which directed you to prohibit entry of certain cotton textile products, produced or manufactured in Pakistan and exported during 1984.

Effective on June 25, 1984, paragraph one of the directive of December 13, 1983 is hereby further amended to include a limit of 10,460 dozen [1] for cotton textile products in Category 335 exported during the period which began on May 29 and extends through August 26, 1984.

Textile products in Category 335 which have been exported to the United States before May 29, 1984 shall not be subject to this directive.

Textile products in Category 335 which have been released from the custody of the U.S. Customs Service under the 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.

The action taken with respect to the Government of Pakistan and with respect to imports of cotton textile products from Pakistan has been determined by the Committee for the Implementation of Textile Agreements to involve foreign affairs functions of the United States. Therefore, these directions to the Commissioner of Customs, which are necessary for the implementation of such actions, fall within the foreign affairs exception to the rule-making provisions of 5 U.S.C. 553. This letter will be published in the **Federal Register.**

Sincerely,

Ronald I. Levin,

*Acting Chairman, Committee for the Implementation of Textile Agreements.*

[FR Doc. 84-16730 Filed 6-21-84; 8:45 am]

**BILLING CODE 3510-DR-M**

## COMMITTEE FOR PURCHASE FROM THE BLIND AND OTHER SEVERELY HANDICAPPED

### Procurement List of 1984; Additions

**AGENCY:** Committee for Purchase from the Blind and Other Severely Handicapped.

**ACTION:** Additions to procurement list.

**SUMMARY:** This action adds to Procurement List 1984 a commodity to be produced by and a service to be provided by workshops for the blind and other severely handicapped.

**EFFECTIVE DATE:** June 22, 1984.

**ADDRESS:** Committee for Purchase from the Blind and Other Severely Handicapped, Crystal Square 5, Suite 1107, 1755 Jefferson Davis Highway, Arlington, Virginia 22202.

**FOR FURTHER INFORMATION CONTACT:** C. W. Fletcher, (703) 557-1145.

**SUPPLEMENTARY INFORMATION:** On March 2, and March 16, 1984 the Committee for Purchase from the Blind and Other Severely Handicapped published notices (49 FR 7844 and 49 FR 9941) of proposed additions to Procurement List 1984, October 18, 1983 (48 FR 48415).

[1] The limit has not been adjusted to account for any imports exported after May 28, 1984.

After consideration of the relevent matter presented, the Committee has determined that the commodity and service listed below are suitable for procurement by the Federal Government under 41 U.S.C. 46–48c, 85 Stat. 77.

I certify that the following actions will not have a significant impact on a substanial number of small entities. The major factors considered were:

a. The actions will not result in any additional reporting, recordkeeping or other compliance requirements.

b. The actions will not have a serious economic impact on any contractors for the commodity and service listed.

c. The actions will result in authorizing small entities to produce or provide a commodity and a service procured by the Government.

Accordingly, the following commodity and service are hereby added to Procurement List 1984:

*Class 5120*

Vise, Multiposition, 5120–00–991–1907

*SIC 7349*

Janitorial Service, Federal Aviation Administration, Air Traffic Control Tower, Atlanta, Georgia

**C. W. Fletcher,**

*Executive Director.*

[FR Doc. 84–16761 Filed 6–21–84; 8:45 am]

BILLING CODE 6820–33–M

## Procurement List 1984; Proposed Additions

**AGENCY:** Committee for Purchase from the Blind and Other Severely Handicapped.

**ACTION:** Proposed additions to procurement List.

**SUMMARY:** The Committee has received proposals to add to Procurement List 1984 commodities and military resale commodities to be produced by and services to be provided by workshops for the blind and other severely handicapped.

Comments Must Be Received On or Before: July 25, 1984.

**ADDRESS:** Committee for Purchase from the Blind and Other Severely Handicapped, Crystal Square 5, Suite 1107, 1755 Jefferson Davis Highway, Arlington, Virginia 22202.

**FOR FURTHER INFORMATION CONTACT:** C. W. Fletcher, (703) 557–1145.

**SUPPLEMENTARY INFORMATION:** This notice is published pursuant to 41 U.S.C. 47(a)(2), 85 Stat. 77. Its purpose is to provide interested persons an opportunity to submit comments on the possible impact of the proposed actions.

If the Committee approves the proposed additions, all entities of the Federal Government will be required to procure the commodities, military resale commodities, and services listed below from workshops for the blind or other severely handicapped.

It is proposed to add the following commodities, military resale commodities, and services to Procurement List 1984, October 18, 1983 (48 FR 48415):

*Class 5140*

Belt, Tool, Repairman's
5140–00529–2517
5140–00529–2694
5140–00529–2691

*Class 9310*

Paper, Index
9310–00–955–0217
9310–00–160–7835
9310–00–555–4968

*Military Resale Item Nos. and Names*

No. 620 Tablecloth, Solid, 52 × 52
No. 621 Tablecloth, Solid, 52 × 70
No. 622 Tablecloth, Solid, 52 × 70
No. 623 Tablecloth, Solid, 60 × 84
No. 624 Tablecloth, Solid, 60 × 84
No. 625 Tablecloth, Solid, 60″ × Round
No. 630 Tablecloth, Printed, 52 × 52
No. 631 Tablecloth, Printed, 52 × 70
No. 632 Tablecloth, Printed, 52 × 70
No. 633 Tablecloth, Printed, 60 × 84
No. 634 Tablecloth, Printed, 60 × 84
No. 635 Tablecloth, Printed, 60″ × Round

*SIC 0782*

Grounds Maintenance, Recreation Areas, Naval Air Station, Lemoore, California.

*SIC 7349*

Janitorial Service, Federal Building and U.S. Courthouse, 517 East Wisconsin Avenue, Milwaukee, Wisconsin

*SIC 9199*

Administrative Services, Environmental Protection, Agency, 1600 Lincoln Street, Denver, Colorado

Administrative Services, DCASR Building B–95, 805 Walker Street, Marietta, Georgia

**C. W. Fletcher,**

*Executive Director.*

[FR Doc. 84–16762 Filed 6–21–84; 8:45 am]

BILLING CODE 6820–33

## DEPARTMENT OF DEFENSE

### Office of the Secretary

### DoD-University Forum Working Group on Export Control; Advisory Committee Meeting; Cancellation

The meeting of the DoD-University Forum Working Group on Export Control, scheduled for June 28, 1984, from 9:30 a.m. until 4:00 p.m., at Number 11 Dupont Circle, Washington, D.C. 20036, and announced in the **Federal Register** issue of Monday, June 11, 1984 (49 FR 24044) is hereby cancelled.

Dated: June 19, 1984.

**M. S. Healy,**

*OSD Federal Register Liaison Officer, Washington Headquarters Services, Department of Defense.*

[FR Doc. 84–16682 Filed 6–21–84; 8:45 am]

BILLING CODE 3810–01–M

### Department of the Army

### Army Science Board; Closed Meeting

In accordance with section 10(a)(2) of the Federal Advisory Committee Act (Pub. L. 92–463), announcement is made of the following Committee Meeting:

Name of the Committee: Army Science Board (ASB).

Dates of Meeting: Wednesday & Thursday, 11 & 12 July 1984.

Times of Meeting: 0830–1700 hours, both days (Closed).

Place: Fort Belvoir, Virginia.

Agenda: The Army Science Board 1984 Summer Study Panel on Technology to Improve Logistics and Weapon Support for Army 21 will meet for classified orientation briefings and in-depth discussions regarding logistic support for the Army on 11 July. The panel will begin to organize and draft the report on 12 July. This meeting will be closed to the public in accordance with section 552b(c) of Title 5, U.S.C., specifically subparagraph (1) thereof, and Title 5, U.S.C., Appendix 1, subsection 10(d). The classified and non-classified matters to be discussed are so inextricably intertwined so as to preclude opening any portion of the meeting. The Army Science Board Administrative Officer, Sally Warner, may be contacted for further information at (202) 695–3039 or 695–7046.

**Sally A. Warner,**

*Administrative Officer, Army Science Board.*

[FR Doc. 84–16683 Filed 6–21–84; 8:45 am]

BILLING CODE 3710–08–M

### Army Science Board; Open Meeting

In accordance with section 10(a)(2) of the Federal Advisory Committee Act (Pub. L. 92–463), announcement is made of the following Committee Meeting:

Name of the Committee: Army Science Board (ASB).

Date of Meeting: Tuesday, 17 July 1984.

Time: 0900–1700 hours (Open).

Place: The Pentagon, Washington, DC.

Agenda: The study Chairman and Subpanel Chairman (Leadership, Manning a Ready Force, and Personnel Factors in Weapons Systems Performance Subpanels) of the Army Science Board 1984 Summer Study on Leading and Manning Army 21 will meet to review study progress to date, draft tentative findings, and prepare for the Summer Study writing session. This meeting is open to the public. Any interested person may attend, appear before, or file statements with the committee at the time and in the manner permitted by the committee. The ASB Administrative Officer, Sally Warner, may be contacted for further information at (202) 695–3030/7046.

**Sally A. Warner,**

*Administrative Officer, Army Science Board.*

[FR Doc. 84–16684 Filed 6–21–84; 8:45 am]

BILLING CODE 3710–08–M

## Army Science Board; Closed Meeting

In accordance with section 10(a)(2) of the Federal Advisory Committee Act (Pub. L. 92–463), announcement is made of the following Committee Meeting:

Name of the Committee: Army Science Board (ASB).

Dates of Meeting: Thursday and Friday, 19 & 20 July 1984.

Times of Meeting: 0830–1700 hours, both days (Closed).

Place: U.S. Army Communications Electronics Command, Fort Monmouth, New Jersey.

Agenda: The Army Science Board Ad Hoc Subgroup on Nondevelopmental C¶ Items will meet for classified briefings and discussion on intelligence systems. The purpose of the study is to effect an increase in the purchase of "off the shelf" equipment for the Army when feasible. This meeting will be closed to the public in accordance with section 552b(c) of Title 5, U.S.C., specifically subparagraph (1) thereof, and Title 5, U.S.C., Appendix 1, subsection 10(d). The classified and nonclassified matters to be discussed are so inextricably intertwined so as to preclude opening any portion of the meeting. The Army Science Board Administrative Officer, Sally Warner, may be contacted for further information at (202) 695–3039 or 695–7046.

**Sally A. Warner,**

*Administrative Officer, Army Science Board.*

[FR Doc. 84–16685 Filed 6–21–84; 8:45 am]

BILLING CODE 3710–08–M

## Corps of Engineers

## Accepting Services of Volunteers; New Program

Notice is hereby given that pursuant to the authority contained in Pub. L. 98–63 the Corps of Engineers is accepting the services of volunteers to carry out activities of the agency except policy making or law or regulatory enforcement. In some instances the incidental expenses of volunteers may be reimbursed.

Individual volunteers or groups wishing to sponsor a number of volunteers should apply to the nearest Corps of Engineers facility for details of specific volunteer activities available. Opportunities for volunteers will vary with facility needs but in most instances will be associated with the administration, operations, and maintenance of water resource development projects.

Voluntary service will be accepted without regard to race, creed, religion, age, sex, color, national origin or handicap.

Dated: June 15, 1984.

**Michael Volpe,**

*Colonel, Corps of Engineers, Executive Director of Civil Works.*

[FR Doc. 84–16691 Filed 6–21–84; 8:45 am]

BILLING CODE 3710–08–M

## Intent To Prepare a Draft Environmental Impact Statement (DEIS) on Construction of Authorized Channel Enlargement

**AGENCY:** U.S. Army Corps of Engineers, Defense.

**ACTION:** Notice.

Summary:

1. *Proposed Action:* The proposed action is to provide a solution to flood problems in the Boeuf River and Tributaries area of northeastern Louisiana. The purpose of the study is to reevaluate the authorized channel improvements on Big and Colewa Creeks and Bayou LaFourche that were stopped as a result of the 1977 Presidential Review. In additon, the study will assess flood damages downstream of the authorized work in the Lower Boeuf River area and formulate potential solutions for this area.

2. *Alternatives:* Nonstructural alternatives considered included no action, flood plain zoning, flood insurance, flowage easements, sediment control buffer strips, and reforestation of cleared flood-prone lands. Structural alternatives included diversions of floodwaters, levee systems, floodwater pumping plants and varying degrees of channel enlargement.

3. *Description of Scoping Process:*

a. *Public Involvement.* Public meetings were held in Jonesville and Rayville, Louisiana, in March 1977, as a result of the 1977 Presidential Review of the overall Tensas Basin Project, Louisiana and Arkansas. Subsequently, in March 1979, public meetings were held in Columbia and Winnsboro, Louisiana, to inform the public of the initiation of the Boeuf-Tensas Basin Study and to obtain public input relating to the study. Various coordination meetings have since been held with the USDA Soil Conservation Service, the U.S. Fish and Wildlife Service, the Louisiana Office of Public Works, the Louisiana Department of Wildlife and Fisheries, the Tensas Basin Levee District, and various state and local officials. A public meeting is planned for the summer of 1984 to present findings of the study and receive comments from the public concerning the tentatively selected plan.

b. *Issues Analyzed in the EIS.* Impacts of the channel enlargement on the aquatic ecosystem, water quality, terrestrial ecosystems, endangered species, the Russell Sage, Ouachita, and Boeuf Wildlife Management Areas, and cultural resources will be analyzed in the EIS.

c. *Assignments for Input into the EIS.* No specific assignments other than the Corps of Engineers as the lead agency.

d. *Environmental Review and Consultation Requirements.* Review of the Draft Report and EIS by appropriate Federal, state, and local agencies and interested groups and individuals will be achieved, and comments and views will be addressed and incorporated in the Final Report and EIS.

4. *Scoping Meetings Scheduled:* A plan of study has been coordinated with Federal, state, and local agencies and serves as the initial phase of the scoping process in lieu of formal scoping meetings.

5. *Date DEIS Will Be Available to Public:* The current study schedule estimates that the DEIS will be available to the public in July 1984 with a public meeting scheduled for August 1984.

**ADDRESS:** Questions concerning the DEIS can be answered by: Mr. Charles E. Crowther, U.S. Army Corps of Engineers, Vicksburg District, Attn: LMKPD–Q Post Office Box 60 Vicksburg, Mississippi 39180, Telephone: FTS 542–5430, Commercial (601) 634–5430.

**John O. Roach, II,**

*Department of the Army, Liaison Officer with the Federal Register.*

[FR Doc. 84–16692 Filed 6–21–84; 8:45 am]

BILLING CODE 3710–PU–M

## Department of the Navy

### Chief of Naval Operations Executive Panel Advisory Committee; Anti-Submarine Warfare Task Force; Closed Meeting; Correction

Notice was given June 12, 1984, at 49 FR 24163 of a meeting of the Chief of Naval Operations Executive Panel Advisory Committee Anti-Submarine Warfare Task Force on June 27–28, 1984, from 9 a.m. to 5 p.m. each day. The dates and times for the meeting have been changed to July 9, 1984, from 9 a.m. to 5 p.m. All other information in the previous notice remains effective.

For further information on this meeting contact Lieutenant Thomas E. Arnold, Executive Secretary of the Chief of Naval Operations Executive Panel Advisory Committee, telephone (703) 756–1205.

Dated: June 19, 1984.

**William F. Roos, Jr.,**

*Lieutenant, JAGC, U.S. Naval reserve, Federal Register Liaison Officer.*

[FR Doc. 84-16764 Filed 6-21-84; 8:45 am]

BILLING CODE 3810-AE-M

### Naval Research Advisory Committee; Closed Meeting

Pursuant to the provisions of the Federal Advisory Committee Act (5 U.S.C. App. I), notice is hereby given that the Naval Research Advisory Committee Panel on Man-in-the-Loop Targeting will meet on July 12–14, 1984, at the Naval Postgraduate School, Monterey, California. Sessions of the meeting will commence at 8:00 a.m. and terminate at 4:40 p.m. each day. All sessions of the meeting will be closed to the public.

The purpose of the meeting is to review material and presentations previously received by the Panel and to conduct a working session to draft the final report. These matters constitute classified information that is specifically authorized under criteria established by Executive order to be kept secret in the interest of national defense and is in fact properly classified pursuant to such Executive order. The classified and nonclassified matters to be discussed are so inextricably intertwined as to preclude opening any portion of the meeting. Accordingly, the Secretary of the Navy has determined in writing that the public interest requires that all sessions of the meeting be closed to the public because they will be concerned with matters listed in section 552b(c)(1) of title 5, United States Code.

For further information concerning this meeting contact: Commander M. B. Kelley, U.S. Navy, Office of Naval Research (Code 100N), 800 North Quincy Street, Arlington, VA 22217, Telephone number (202) 696–4870

Dated: June 19, 1984.

**William R. Roos, Jr.,**

*Lieutenant, JAGC, U.S. Naval Reserve, Federal Register Liaison Officer.*

[FR Doc. 84-16765 Filed 6-21-84; 8:45 am]

BILLING CODE 3810-AE-M

## DEPARTMENT OF ENERGY

## Office of Energy Research

### Health and Environmental Research Advisory Committee; Open Meeting

Pursuant to the provision of the Federal Advisory Committee Act (Pub. L. 92–463, 86 Stat. 770), notice is hereby given of the following meeting:

Name: Health and Environmental Research Advisory Committee (HERAC)

Date and Time: July 19, 1984—9:00 a.m.—5:00 p.m. July 20, 1984—9:00 a.m.—Noon.

Place: U.S. Department of Energy, Room A-453, Germantown, Maryland 20545.

Contact: David A. Smith, Department of Energy, Office of Health and Environmental Research (ER–72), Office of Energy Research, Washington, D.C. 20545, Telephone: 301/353–2987.

Purpose of the Committee: To provide advice on a continuing basis to the Secretary of the Department of Energy (DOE), through the Director of Energy Research, on the many complex scientific and technical issues that arise in the development and implementation of the Health and Environmental Research (HER) program.

Tentative Agenda: Briefings and discussions of:

*Thursday, July 19, 1984*

- Discuss Complex Mixture Subcommittee Report
- Discuss Epidemiology Subcommittee Report
- Discuss Report on HER Program Plan
- Public comment (10 minute rule)

*Friday, July 20, 1984*

- Discuss Report on HER Program Plan
- Public comment (10 minute rule)

Public Particiaption: The meeting is open to the public. Written statements may be filed with the Committee either before or after the meeting. Members of the public who wish to make oral statements pertaining to agenda items should contact David A. Smith at the address or telephone number listed above. Requests must be received 5 days prior to the meeting and reasonable provision will be made to include the presentation on the agenda. The Chairperson of the Committee is empowered to conduct the meeting in a fashion that will facilitate the orderly conduct of business.

Transcripts: The transcript of the meeting will be available for public review and copying at the Freedom of Information Public Reading Room, IE–190, Forrestal Building, 1000 Independence Avenue, SW., Washington, D.C., between 8:30 a.m. and 4:00 p.m., Monday through Friday, except Federal holidays.

Issued at Washington, D.C., on June 19, 1984.

**Howard H. Raiken,**

*Deputy Advisory Committee Management Officer.*

[FR Doc. 84-16763 Filed 6-21-84; 8:45 am]

BILLING CODE 6450-01-M

## Federal Energy Regulatory Commission

**[Docket No. CP84-453-000]**

### ANR Pipeline Co.; Proposed Blanket Authorization Activity

June 19, 1984.

Take notice that on June 1, 1984, ANR Pipeline Company (ANR), 500 Renaissance Center, Detroit, Michigan 48243, filed in Docket No. CP84–453–000 a request pursuant to § 157.205 of the Commission's Regulations under the Natural Gas Act (18 CFR 157.205) that ANR proposes to undertake a transportation service on behalf of Sohio Chemical Company (Sohio), an eligible end-user, under its authorization issued in Docket No. CP82–480–000 pursuant to Section 7 of the Natural Gas Act, all as more fully set forth in the request on file with Commission and open to public inspection.

It is stated that the gas to be transported would be sold to Sohio by Sohio Petroleum Company (Sohio Petroleum), Oklahoma Natural Gas Company (ONG), and ANR Gathering Company (Gathering), all referred to also as Sellers. ANR would take receipt of up to 90 billion Btu equivalent of gas per day which the Sellers would tender or cause to tender to ANR for Sohio's account. ANR states that its system is interconnected with that of the Sellers, at various existing and proposed points of interconnection in the States of Kansas, Oklahoma, Texas and Louisiana. ANR would transport and deliver the volumes to Sohio and/or Columbia Gas Transmission Corporation (Columbia) for Sohio's account. It is explained that ANR's pipeline system is interconnected with the facilities of Sohio near Haviland, Ohio, and with the pipeline system of Columbia in Paulding County, Ohio. ANR advises that, where necessary, Columbia would provide additional transportation service for Sohio.

It is further stated that the gas to be transported would be used as boiler fuel, feedstock, and process gas in Sohio's Lima, Ohio, plant.

In addition to the request for authority to undertake the specific transportation service, ANR requests flexible authority to provide transportation on behalf of Sohio. It is explained that the additional transportation service would be to Sohio's facility in Lima, Ohio, and would be within the peak day, average day and annual transportation volumes stated in the request. ANR further states that in the event Sohio should acquire other sources of natural gas requiring transportation service by ANR, or obtain gas at other points of receipt, or require delivery at other points of delivery, ANR would provide such transportation under the flexible authority requested and would advise the Commission within 30 days of any addition or deletion of any gas suppliers and/or receipt or delivery points.

It is stated that as consideration for providing the transportation service, ANR would receive 54.7 cents per dt equivalent for all gas transported from points of receipt in Kansas, Oklahoma and Texas and delivered to, or for Sohio's account; and/or 51.5 cents per dt equivalent for all gas transported from points of receipt in Louisiana and delivered to, or for Sohio's account. ANR states that Sohio would reimburse ANR for the transportation costs ONG incurs in transporting the gas from Sohio Petroleum's facilities to ANR's facilities, which costs are determined by taking the total of the amounts received by (i) multiplying the volumes of "dedicated gas" transported by zero cents and (ii) multiplying the volumes of "released gas" transported by ten cents. It is further stated that Sohio would pay ANR a metering charge of 2.0 cents per dt for all gas ANR delivers to Columbia for Sohio's account until an aggregate of 28,364,000 dt has been delivered to Columbia under this and all other agreements utilizing the Paulding County, Ohio, interconnection.

Any person or the Commission's staff may, within 45 days after 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 therefor, 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.

**Kenneth F. Plumb,**

*Secretary.*

[FR Doc. 84-16706 Filed 6-21-84; 8:45 am]

BILLING CODE 6717-01-M

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**[Docket No. CP84-438-000]**

## Arkansas Louisiana Gas Co., a Division of Arkla, Inc.; Application

June 19, 1984.

Take notice that on May 23, 1984, Arkansas Louisiana Gas Company, a division of Arkla, Inc. (Applicant), P.O. Box 21734, Shreveport, Louisiana 71151, filed in Docket No. CP84-438-000 an application pursuant to section 7(c) of the Natural Gas Act for a certificate of public convenience and necessity authorizing the transportation of natural gas for an existing industrial customer, Agrico Chemical Company (Agrico), all as more fully set forth in the application which is on file with the Commission and open to public inspection.

Applicant states that it has instituted a transportation program for various of its existing large industrial customers called the ECOSHARE plan. Applicant indicates that the ECOSHARE plan was developed as part of a settlement in a general retail rate increase proceeding at the Arkansas Public Service Commission involving Applicant's Rate Schedule No. 4. It is stated that under the ECOSHARE program instead of buying all its plant requirements from Applicant, the customer may purchase spot gas from other suppliers which would be transported by Applicant to the customer's plant. It is further stated that Applicant would continue to sell a substantial part of the plant's gas requirements and that the total volume of gas delivered by Applicant to the plant, including both transported volumes and sales volumes may not exceed the maximum daily quantity of gas specified in Applicant's Arkansas Public Service Commission Rate Schedule 4 service agreement covering the plant. It is said that Applicant under the ECOSHARE program has the option to purchase for its own system supply 50 percent of the spot gas arranged for by the large industrials.

Specifically, Applicant proposes to transport, on a firm basis, natural gas for Agrico from three delivery points located in Custer County, Oklahoma, Grady County, Oklahoma, and Franklin County, Arkansas, to Agrico's Blytheville, Arkansas fertilizer plant. Applicant also requests blanket authorization for the addition and deletion of delivery points as necessary. The transportation service for Agrico is proposed for term ending on May 1, 1987. Applicant proposes to charge Agrico $0.3484 per million Btu for a gas delivered directly into Applicant's transmission system and $0.5338 per million Btu for gas delivered into Applicant's gathering facilities. It is said that these charge are based on the methodology and billing determinants used in designing rates to recover the transmission, storage, and gathering costs in Arkla's presently effective FERC Gas Rate Schedule Nos. X-26 and G-2. Applicant indicates that because volumes transported under the ECOSHARE program would mean reduced sales volumes, Applicant cannot afford to continue the program unless it can recover its unit systemwide transmission, storage and gathering costs associated with transporting a portion of a plant's requirements instead of selling that gas to the plant. It is also indicated that under Applicant's Arkansas Public Service Commission Rate Schedule 4, The ECOSHARE transportation service may be terminated unless Applicant's costs are fully recoverable by it and are not required to be credited to Account 191.

Applicant states that the ECOSHARE transportation program offers opportunities to alleviate take-or-pay supply arrangements on its system, while at the same time benefiting the industrial customer involved, the producer involved and the other customers on Applicant's system.

Any person desiring to be heard or to make any protest with reference to said application should on or before July 10, 1984, file with the Federal Energy Regulatory Commission, Washington, D.C. 20426, a motion to intervene or a protest in accordance with the requirements of the Commission's Rules or Practice and Procedure (18 CFR 385.214 or 385.211) 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 invervene 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 application 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 cetificate 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 Applicant to appear or be represented at the hearing.

**Kenneth F. Plumb,**

*Secretary.*

[FR Doc. 16707 Filed 6-21-84; 8:45 am]

BILLING CODE 6707-01-M

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**[Docket No. CP84-463-000]**

## Florida Gas Transmission Co.; Application

June 19, 1984.

Take notice that on June 4, 1984, Florida Gas Transmission Company (FGT), P.O. Box 44, Winter Park, Florida 32790, filed in Docket No. CP84-463-000 an application pursuant to section 7(b) of the Natural Gas Act for permission and approval to abandon a transportation service for Mid Louisiana Gas Company (Mid Louisiana) and facilities constructed therefor, all as more fully set forth in the application which is on file with the Commission and open to public inspection.

FGT states that it was transporting up to 3.5 billion Btu of natural gas per day for Mid Louisiana from the Bayou Bleu Field Area in Iberville Parish, Louisiana, to East Baton Rouge Parish, Louisiana, pursuant to a transportation agreement dated July 30, 1979. It is asserted that both FGT and Mid Louisiana constructed connections to their existing facilities and installed meters to effect the transportation service. FGT now proposes to abandon the transportation service and associated facilities because the production of gas in the Bayou Bleu Field ceased in September 1983, and further production is unwarranted.

Any person desiring to be heard or to make any protest with reference to said application should on or before July 10, 1984, file with the Federal Energy Regulatory Commission, Washington, D.C. 20426, a motion to intervene or a protest in accordance with the requirements of the Commission's Rules of Practice and Procedure (18 CFR 385.214 or 385.211) 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 the 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 application if no motion to intervene is filed within the time required herein, if the Commission on it own review of the matter finds that and permission and approval for the proposed abandonment are 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 FGT to appear or be represented at the hearing.

**Kenneth F. Plumb,**

*Secretary.*

[FR Doc. 84-16708 Filed 6-21-84; 8:45 am]

BILLING CODE 6717-01-M

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**[Docket No. CP84-251-001]**

## K N Energy, Inc.; Amendment to Application

June 19, 1984.

Take notice that on June 14, 1984, K N Energy, Inc. (K N), P.O. Box 15265, Lakewood, Colorado 80215, filed in Docket No. CP84-251-001 an amendment to the pending application filed in Docket No. CP84-251-000 pursuant to section 7(c) of the Natural Gas Act for a certificate of public convenience and necessity requesting waiver of §13.b(1)(a) of K N's FERC Gas Tariff with respect to the sale of gas to Iams Company, Inc. (Iams), all as more fully set forth in the amendment which is on file with the Commission and open to public inspection.

K N explains that it has an application on file with the Commission in Docket No. CP84-251-000 for authorization to render service to Iams near Aurora, Nebraska. It is further stated that the application involves, in part, an existing customer's transferring a portion of its annual volumetric limitation to Iams.

K N herein amends its application to request permanent waiver of § 13.b(1)(a) of its FERC Gas Tariff so as to permit Iams to use, on an annual basis, in excess of 100,000 Mcf of gas. K N states that this tariff provision restricts the boiler fuel use of a new customer to 100,000 Mcf of gas annually. Under the certificate authorization sought in this docket and the waiver requested herein, K N would provide natural gas service to Iams' boiler and non-boiler fuel requirements, it is stated. The estimated maximum peak day capability of the equipment to be initially installed would be about 300 Mcf for boiler fuel and 108 Mcf for dryer fuel, with natural gas to be also used for industrial non-boiler fuel human needs requirements. Within three years, Iams anticipates installing additional gas fuel equipment resulting in a peak day capability to approximately 454 Mcf for boiler fuel and 217 Mcf for dryer fuel, it is stated.

The non-boiler fuel use would be an essential agricultural use and would be classified in Priority 2 under K N's curtailment plan, K N alleges. It is explained that as the boiler fuel would be used for pet food manufacture, it does not qualify as essential agricultural use and would fall within Priority 3(b) of K N's curtailment plan initially, subject to reclassification later based upon actual peak day usage.

Any person desiring to be heard or to make any protest with reference to said amendment should on or before July 3, 1984, file with the Federal Energy Regulatory Commission, Washington, D.C. 20426, a motion to intervene or a protest in accordance with the requirements of the Commission's Rules of Practice and Procedure (18 CFR 385.214 or 385.211) 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. All persons who have heretofore filed need not file again.

**Kenneth F. Plumb,**

*Secretary.*

[FR Doc. 84-16709 Filed 6-21-84; 8:45 am]

BILLING CODE 6717-01-M

[Docket No. CP4-451-000]

## Michigan Gas Storage Co.; Application

June 19, 1984.

Take notice that on May 31, 1984, Michigan Gas Storage Company (Applicant), 212 West Michigan Avenue, Jackson, Michigan 49201, filed in Docket No. CP84-451-000 an application pursuant to Section 7 of the Natural Gas Act and Subpart F of Part 157 of the Commission's Regulations for a blanket certificate of public convenience and necessity authorizing the construction, acquisition and operation of facilities and the transportation and sale of natural gas and for permission and approval to abandon certain facilities and services, all as more fully set forth in the application 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 application should on or before July 10, 1984, file with the Federal Energy Regulatory Commission, Washington, D.C. 20426, a motion to intervene or a protest in accordance with the requirements of the Commission's Rules of Practice and Procedure (18 CFR 385.214 or 385.211) 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 the 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 application 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 and permission and approval for the proposed abandonment are 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 Applicant to appear or be represented at the hearing.

**Kenneth F. Plumb,**

*Secretary.*

[FR Doc. 84-16710 Filed 6-21-84; 8:45 am]

BILLING CODE 6717-01-M

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[Docket No. ER84-486-000]

## Niagara Mohawk Power Corp.; Filing

June 19, 1984.

The filing Company submits the following:

Take notice that on June 11, 1984, Niagara Mohawk Power Corporation (Niagara) tendered for filing a proposed rate schedule between Niagara and the Power Authority of the State of New York (PASNY) dated March 3, 1983.

Niagara presently has on file an agreement with PASNY dated March 3, 1983. This agreement with PASNY provides for Niagara to deliver for PASNY over Niagara's transmission system power and energy of PASNY to Pennsylvania Electric Company at the New York-Pennsylvania State Line.

Niagara states that the instant filing agreement proposes to revise the transmission rates for transmitting power and energy for PASNY. The proposed rates are those contained in the settlement agreement of Docket No. ER83-652-000. An effective date of May 1, 1984 is proposed.

Copies of this filing were served upon Allegheny Electric Cooperative, Inc., the Power Authority of the State of New York and the Public Service Commission of the State of New York.

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, D.C. 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211, 385.214). All such motions or protests should be filed on or before July 2, 1984. 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.

**Kenneth F. Plumb,**

*Secretary.*

[FR Doc. 84-16712 Filed 6-21-84; 8:45 am]

BILLING CODE 6717-01-M

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[Docket No. ER84-487-000]

## Niagara Mohawk Power Corp.; Filing

June 19, 1984.

The filing Company submits the following:

Take notice that on June 11, 1984, Niagara Mohawk Power Corporation (Niagara) tendered for filing a proposed rate schedule between Niagara and the Power Authority of the State of New York (PASNY) dated March 22, 1983.

Niagara presently has on file an agreement with PASNY dated March 22, 1983. This agreement with PASNY provides for Niagara to deliver for PASNY over Niagara's transmission system power and energy of PASNY to Pennsylvania Electric Company at the New York-Pennsylvania State Line.

Niagara states that the instant filing agreement proposes to revise the transmission rates for transmitting power and energy for PASNY. The proposed rates are those contained in the settlement agreement of Docket No. ER83-652-000. An effective date of May 1, 1984 is proposed.

According to Niagara copies of this filing have been served upon the Division of Light and Power of the City of Cleveland, the Power Authority of the State of New York, and the Public Service Commission of the State of New York.

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, D.C. 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211, 385.214). All such motions or protests should be filed on or before July 2, 1984. 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.

**Kenneth F. Plumb,**

*Secretary.*

[FR Doc. 84-16713 Filed 6-21-84; 8:45 am]

BILLING CODE 6717-01-M

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[Docket No. CP84-420-000]

## Northern Border Pipeline Co.; Application

June 19, 1984.

Take notice that on May 18, 1984, Northern Border Pipeline Company

(Northern Border), 224 South 108th Avenue, Omaha, Nebraska 68154, filed in Docket No. CP84-420-000 an application pursuant to section 7 of the Natural Gas Act and Subpart F of Part 157 of the Commission's Regulations for a blanket certificate of public convenience and necessity authorizing the construction, acquisition, and operation of certain facilities and the transportation and sale of natural gas and for permission and approval to abandon certain facilities and service, all as more fully set forth in the application 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 application should on or before July 10, 1984, file with the Federal Energy Regulatory Commission, Washington, D.C. 20426, a motion to intervene or a protest in accordance with the requirements of the Commission's Rules of Practice and Procedure (18 CFR 385.214 or 385.211) 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 the 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 application if no motion to intervene is filed within the time required herein, if the Commission on its own review of the matter finds that permission and approval for the proposed abandonment are 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 Northern Border to appear or be represented at the hearing.

**Kenneth F. Plumb,**

*Secretary.*

[FR Doc. 84-16714 Filed 6-21-84; 8:45 am]

BILLING CODE 6717-01-M

**[Docket No. CP82-229-001]**

## Northwest Central Pipeline Corp.; Petition To Amend

June 19, 1984.

Take notice that on May 25, 1984, Northwest Central Pipeline Corporation (Northwest), P.O. Box 25128, Oklahoma City, Oklahoma 73125, filed in Docket No. CP82-229-001 a petition pursuant to section 7 of the Natural Gas Act to amend the order issued August 25, 1982, in Docket No. CP82-229-000, as amended, so as to authorize a company-owned 230 horsepower compressor unit to be installed in place of a 270 horsepower rental compressor unit at Northwest's South Welda Storage Field located in Anderson County, Kansas, all as more fully set forth in the petition to amend which is on file with the Commission and open to public inspection.

It is stated that the additional horsepower was required to reinject storage field gas which was being released from the reservoir as a result of drilling to other zones by oil producers. The development of the area by the producers was slower than anticipated and only now is additional horsepower actually required. Northwest states that in the interim it has returned to stock a 230 horsepower company-owned compressor unit which would fulfill the present and anticipated future additional compression requirements at the South Welda Storage Field.

Northwest states that the cost of installing the company-owned compressor unit is estimated to be $162,211 which compares to the 1982 estimate of $29,590 to install the rental compresor unit; however, the monthly rental charge of $5,991.50 would be avoided by installing the company-owned unit.

Any person desiring to be heard or to make any protest with reference to said petition to amend should on or before July 10, 1984, file with the Federal Energy Regulatory Commission, Washington, D.C. 20426, a motion to intervene or a protest in accordance with the requirements of the Commission's Rules of Practice and Procedure (18 CFR 385.214 or 385.211) 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.

**Kenneth F. Plumb,**

*Secretary.*

[FR Doc. 84-16715 Filed 6-21-84; 8:45 am]

BILLING CODE 6717-01-M

**[Docket Nos. CP82-322-006 and CP82-322-007]**

## Northwest Pipeline Corp.; Petition To Amend

June 19, 1984.

Take notice that on May 18, 1984, Northwest Pipeline Corporation (Northwest), P.O. Box 8900, Salt Lake City, Utah 84108-0900, filed in Docket No. CP82-322-006 a petition to amend further the order issued September 30, 1982, as previously amended, in Docket No. CP82-322-000 pursuant to section 7 of the Natural Gas Act so as to authorize the addition of a receipt point and an extension of the term of the certificated transportation service authorized to be provided for the account of J.R. Simplot Company (Simplot), all as more fully set forth in the petition to amend which is on file with the Commission and open to public inspection.

Northwest requests herein that the Commission amend its orders of September 30, 1982, and May 13, 1983, so as to authorize the transportation service until May 20, 1987. Northwest also requested authorization to add a receipt point in Rio Arriba County, New Mexico, but on May 25, 1984, filed in Docket No. CP82-322-007 an amendment to the subject petition to amend to rescind that request. Northwest indicates that it would continue to receive up to 10 billion Btu of natural gas purchased by Simplot from Southern Union Gathering Company and redeliver gas to Simplot near Pocatello, Idaho.

Northwest states that Simplot continues to require purchases of natural gas in the operation of its Pocatello plant. Northwest indicates that it proposes by this petition no other changes to the existing authorization.

Any person desiring to be heard or to make any protest with reference to said petition to amend should on or before July 10, 1984, file with the Federal Energy Regulatory Commission, Washington, D.C. 20426, a motion to intervene or a protest in accordance with the requirements of the Commission's Rules of Practice and Procedure (18 CFR 385.214 or 385.211) 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.

Kenneth F. Plumb,

*Secretary.*

[FR Doc. 84-16716 Filed 6-21-84; 8:45 am]

BILLING CODE 6717-01-M

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[Docket No. CP84-442-000]

## Northwest Pipeline Corp.; Application

June 19, 1984.

Take notice that on May 24, 1984, Northwest Pipeline Corporation (Northwest), 295 Chipeta Way, Salt Lake City, Utah 84110, filed in Docket No. CP84-442-000 an application pursuant to section 7(c) of the Natural Gas Act for a certificate of public convenience and necessity authorizing Northwest to continue exchanging natural gas with Colorado Interstate Gas Company (CIG), all as more fully set forth in the application which is on file with the Commission and open to public inspection.

Northwest requests that the Commission authorize service pursuant to two transportation and exchange agreements between Northwest and CIG so as to add the CIG-Green River meter as an exchange redelivery point under the exchange agreements. It is stated that the subject exchange agreements constitute Rate Schedules X-26 and X-66 in Northwest's FERC Gas Tariff and that service under Rate Schedule X-26 was certificated in Docket Nos. CP75-295 and CP78-119 and that service under Rate Schedule X-66 was certificated in Docket No. CP78-122. It is further stated that the CIG-Green River meter would be located on the suction side of Northwest's Green River Compressor Station in Sweetwater County, Wyoming, and would enable Northwest physically to receive gas from CIG under the exchange agreements.

Northwest explains that it sells gas to CIG under Rate Schedule PL-1 and physically delivers such gas to CIG at an existing sales delivery point located on the discharge side of Northwest's Green River Compressor Station in Sweetwater County. It is further explained that the Northwest-Green River meter is the only certificated redelivery point from CIG to Northwest under the exchanges and that CIG's redeliveries under the exchanges are accomplished at the Northwest-Green River meter by displacement of the physical deliveries of gas which Northwest would otherwise make to CIG under Rate Schedule PL-1.

Northwest states that CIG filed an application in Docket No. CP84-290 requesting authorization to construct and operate the CIG-Green River meter in order to deliver gas physically to Northwest under the exchange agreements. It is further indicated that the CIG-Green River meter would be used to provide for the redelivery of Northwest's gas under the exchange agreements during periods when CIG is not purchasing gas at the Northwest-Green River meter.

Other than the addition of the CIG-Green River meter as an authorized exchange redelivery point from CIG, Northwest states that it proposes no changes to the certificated service currently provided under the exchange agreements. Northwest explains that upon Commission approval of its application it would timely file revisions to Rate Schedules X-26 and X-66 of its FERC Gas Tariff to incorporate the CIG-Green River meter as a redelivery point thereunder.

Any person desiring to be heard or to make any protest with reference to said application should on or before July 10, 1984, file with the Federal Energy Regulatory Commission, Washington, D.C. 20426, a motion to intervene or a protest in accordance with the requirements of the Commission's Rules of Practice and Procedure (18 CFR 385.214 or 385.211) 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 application 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 Northwest to appear or be represented at the hearing.

Kenneth F. Plumb,

*Secretary.*

[FR Doc. 84-16717 Filed 6-21-84; 8:45 am]

BILLING CODE 6717-01-M

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[Docket No. TA84-2-28-000]

## Panhandle Eastern Pipe Line Co.; Change in Tariff

June 19, 1984.

Take notice that on June 15, 1984, Panhandle Eastern Pipe Line Company (Panhandle) tendered for filing the following revised sheets to its FERC Gas Tariff, Original Volume No. 1:

Forty-Ninth Revised Sheet No. 3-A
Twenty-Sixth Revised Sheet No. 3-B

An effective date of July 1, 1984 is proposed.

Panhandle stated that these revised tariff sheets reflect a reduced PGA rate adjustment of (11.39¢) per Dt. in Panhandle's applicable commodity and one-part rates.

This proposed rate reduction represents a downward revision of the PGA rate adjustment which became effective March 1, 1984 in Docket No. TA84-1-28, and is being filed at this time in compliance with various Commission orders in the Docket No. TA84-1-28 and Docket No. TA83-2-28, as more fully explained below.

### Docket Nos. TA84-1-28-002 and TA84-1-28-004

Ordering Paragraph (B) of the Commission's *Order Accepting Revised Tariff Sheets, Subject to Conditions,* dated May 25, 1984 in Docket Nos. TA84-1-28-002 and TA84-1-28-004, conditioned acceptance of the previously filed tariff sheets effective March 1, 1984, upon Panhandle filing revised tariff sheets within thirty days to reflect the removal of certain carrying charges from Account No. 191 associated with the unrecovered gas costs for the months of June 1983 through August 1983. This adjustment represents a (0.21¢) per Dt. reduction in the carrying charge surcharge, and is reflected in the instant filing, in compliance with the Commission's May 25, 1984 Order, without prejudice to Panhandle's right to seeking judicial review of the Commission's Order dated May 25, 1984.

With respect to the refunds that result from this (0.21¢) per Dt. reduction in

rates, effective March 1, 1984, Panhandle is proposing to refund these amounts by crediting Account No. 191.1306, in the amount of $257,382, which will result in an immediate reduction in Panhandle's rates effective July 1, 1984. The refund amount to be flowed through reflects the actual excess carrying charges collected during the period March through May 1984, and estimated excess charges applicable to June, 1984, together with appropriate interest.

**Docket No. TA83-2-28-000**

The Commission issued Opinion No. 223 dated June 1, 1984 which upheld the Initial Decision issued by Administrative Law Judge Murray on February 16, 1984, in the above-referenced proceeding. The effect of the Commission's June 1, 1984 Order was to deny Panhandle's request for carrying charges to be contemporaneous with the approved amortization period. Without prejudice to Panhandle's rights with respect to seeking judicial review of the June 1, 1984 Order, Panhandle has included in the instant filing a reduction of (2.87¢) per Dt. to reflect the elimination of carrying charges associated with the amortized deferred account subsequent to June 1, 1984, which was the end of the twelve-month period during which the Commission approved collection of carrying charges applicable to the amortized deferred account.

The remaining balance in Sub-Account 191.1304, which is solely related to the carrying charges permitted by the Commission during the first twelve months of the three-year amortization period of the Deferred Purchased Gas Costs, is being transferred to the current Sub-Account 191.1306, which will be recovered during this PGA period.

In addition to the above-described adjustments, the instant filing also reflects a reduction of (8.31¢) per Dt. to the applicable surcharges related to the "Current", as contrasted with the Amortized, Deferred Purchased Gas Cost Account and the Deferred Purchased Gas Cost Carrying Charge Account, respectively. This rate reduction reflects a diminution in the current deferred account balance, which reduction would normally be filed to become effective September 1, 1984, in conjunction with Panhandle's normally scheduled PGA rate adjustment. However, in light of the above-described compliance rate adjustments, Panhandle believes it is appropriate to include this reduction in the instant filing, to provide this rate relief to its customers at the earliest practicable date, and to provide a measure of rate stability on its system, by avoiding any additional rate changes.

Panhandle further states that in order to implement this rate reduction, it is necessary for Panhandle to request waiver of several requirements in the normal PGA and tariff procedures. All necessary waivers are hereby respectfully requested, including, but not limited to:

(a) Waiver of the twice a year PGA limitation in order to permit this intermediate PGA rate reduction to become effective July 1, 1984, in compliance with the various Commission Orders previously described. As the Commission is aware, the normal PGA rate adjustment dates for Panhandle are March 1 and September 1.

(b) Waiver of the 45 days' notice period for PGA rate adjustments specified in Section 18.1 of Panhandle's tariff, in order to bring the benefits of the lower rates to the resale customers as soon as practicable.

(c) Waiver of the provisions of the PGA tariff and regulations to permit this slight adjustment to the normal six month collection period to permit the collection of the deferred purchased gas cost account and the deferred purchased gas cost carrying charge account over a period of eight (8) months to coincide with the timing of Panhandle's next regularly scheduled PGA at March 1, 1985.

(d) Waiver of the provisions of the PGA tariff to permit the flow-through, by credit to Account 191.1306, of the excess carrying charges collected, including interest, during the period March–June, 1984.

To the extent required, if any, Panhandle requests that the Commission grant such other waivers as may be necessary for the acceptance of these tariff sheets to become effective July 1, 1984.

Supporting computation sheets are enclosed and copies of this letter and enclosures are being served on all jurisdictional customers and applicable state regulatory agencies.

Any person desiring to be heard or to protest said filing should file a petition to intervene or protect with the Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington, D.C. 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 385.214). All such petitions or protests should be filed on or before June 27, 1984. 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. Copies of this filing are on file with the Commission and are available for public inspection.

**Kenneth F. Plumb,**

*Secretary.*

[FR Doc. 84-16718 Filed 6-21-84; 8:45 am]

BILLING CODE 6717-01-M

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**[Docket No. CP84-460-000]**

## Southern Natural Gas Co.; Application

June 19, 1984.

Take notice that on June 1, 1984, Southern Natural Gas Company (Southern), P.O. Box 2563, Birmingham, Alabama 35202, filed in Docket No. CP84-460-000 an application pursuant to section 7(c) of the Natural Gas Act for a certificate of public convenience and necessity authorizing the transportation of up to 3 billon Btu of natural gas per day for Florida Gas Transmission Company (Florida Gas), all as more fully set forth in the application which is on file with the Commission and open to public inspection.

Southern proposes to implement the terms of an agreement between Southern and Florida Gas dated March 6, 1984, whereby Southern has agreed to transport, on an interruptible basis, up to 3 billion Btu of gas per day for Florida Gas for an initial period of 3 years and year to year thereafter. Southern proposes a rate as may be set forth in its FERC Gas Tariff, Rate Schedule K-2, which is currently 32.7 cents per million Btu.

Southern states that the gas to be transported has been purchased by Florida Gas from Callon Petroleum Company, *et al.*, and would be received by Southern at the existing interconnection between the outlet of the Amine Processing Plant of Petroleum Corporation of Delaware and the inlet of Southern's existing measuring facilities located in Lawrence County, Mississippi. Southern would redeliver a thermally equivalent quantity of gas to Florida Gas at the flange or weld connecting the facilities of Florida Gas with the facilities of Southern near mile post 127.357 on Southern's 20-inch Main Pass—Franklinton Line, Washington Parish, Louisiana.

It is submitted that no new facilities are required in order to perform the transportation service.

Any person desiring to be heard or to make any protest with reference to said application should on or before July 10, 1984, file with the Federal Energy Regulatory Commission, Washington, D.C. 20426, a motion to intervene or a

protest in accordance with the requirements of the Commission's Rules of Practice and Procedure (18 CFR 385.214 or 385.211) 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 application 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 Applicant to appear or be represented at the hearing.

**Kenneth F. Plumb,**

*Secretary.*

[FR Doc. 84-16719 Filed 6-21-84; 8:45 am]

BILLING CODE 6717-01-M

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**[Docket No. CP84-459-000]**

## Stingray Pipeline Co.; Application

June 19, 1984.

Take notice that on June 1, 1984, Stingray Pipeline Company (Applicant), P.O. Box 1642, Houston, Texas 77001, filed in Docket No. CP84-459-000 an application pursuant to section 7(c) of the Natural Gas Act for a certificate of public convenience and necessity authorizing the addition of a new point of receipt on its existing offshore system of natural gas to be transported by Applicant for United Gas Pipe Line Company (United), all as more fully described in the application which is on file and open to public inspection.

Applicant states that the proposed additional point of delivery would be at the inlet side of an existing measuring station located on Exxon's production platform in West Cameron Block 630, offshore Louisiana, and would be utilized to transport United's gas from West Cameron Block 637.

Applicant further states that the gas would be transported pursuant to Rate Schedule T-2 of Applicant's FERC Gas Tariff, Original Volume No. 1, to the northern terminus of Applicant's system near Holley Beach, Louisiana, as a part of United's existing transportation capacity in Applicant's system.

Any person desiring to be heard or to make any protest with reference to said application should on or before July 10, 1984, file with the Federal Energy Regulatory Commission, Washington, D.C. 20426, a motion to intervene or a protest in accordance with the requirements of the Commission's Rules of Practice and Procedure (18 CFR 385.214 or 385.211) 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 application 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 on such hearing will be duly given.

Under the procedure herein provided for, unless otherwise advised, it will be unnecessary for Applicant to appear or be represented at the hearing.

**Kenneth F. Plumb,**

*Secretary.*

[FR Doc. 84-16720 Filed 6-21-84; 8:45 am]

BILLING CODE 6717-01-M

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**[Docket No. G-76, et al.]**

## Mobil Oil Corp., et al.; Applications for Certificates, Abandonments of Service and Petitions to Amend Certificates[1]

June 19, 1984.

Take notice that each of the Applicants listed herein has filed an application or petition pursuant to section 7 of the Natural Gas Act for authorization to sell natural gas in interstate commerce or to abandon service as described herein, all as more fully described in the respective applications and amendments 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 6, 1984, file with the Federal Energy Regulatory Commission, Washington, D.C. 20426, petitions to intervene or protests in accordance with the requirements of the Commission's Rules of Practice and Procedure (18 CFR 385.211, 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. Persons wishing to become parties to a proceeding or to participate as a party in any hearing therein must file petitions 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.

**Kenneth F. Plumb,**

*Secretary.*

| Docket No. and date filed | Applicant | Purchaser and location | Price per 1,000 ft.[2] | Pressure base |
|---|---|---|---|---|
| G-7642-007, D, June 4, 1984 | Mobil Oil Corp., Nine Greenway Plaza, Suite 2700, Houston, TX 77046. | Northern Natural Gas Co., Hugoton Field, Stevens and Morton Counties, KS. | (1) | |
| G-7645-004, D, June 4, 1984 | ...do | Northwest Central Pipeline Corp., Guymon-Hugoton Field, Texas County, OK. | (1) | |

[1] This notice does not provide for consolidation

| Docket No. and date filed | Applicant | Purchaser and location | Price per 1,000 ft.³ | Pressure base |
|---|---|---|---|---|
| G-7645-005, D, June 4, 1984 | ....do | Northwest Central Pipeline Corp., Guymon-Hugoton Field, Texas County, OK. | (1) | |
| CI84-429-000, E, June 5, 1984 | The George R. Brown Partnership (successor in interest to George R. Brown), 800 San Jacinto Bldg., Houston, TX 77002. | Texas Eastern Transmission Corp., Lochridge and South Lochridge Fields, Brazoria County, TX. | (2) | |
| CI84-434-000, E, June 7, 1984 | Proven Properties, Inc. (successor in interest to Petro-Lewis Funds, Inc.), P.O. Box 2049, Houston, TX 77252-2049. | Transcontinental Gas Pipe Line Corp., High Island Block A-563 Field, High Island Area, South Addition Offshore Texas, Outer Continental Shelf Area. | (3) | |
| CI84-435-000, A, June 7, 1984 | Cities Service Oil & Gas Corp., P.O. Box 300 Tulsa, OK 74102. | Transcontinental Gas Pipe Line Corp., Block A-133 Field, Brazos Area (South Addition), Offshore TX. | (4) | 14.73 |
| CI84-436-000, E, June 7, 1984 | Mitchell Energy Corp. (successor in interest to Walter Exploration, Inc.), P.O. Box 4000, The Woodlands, TX 77380. | Natural Gas Pipeline Co. of America, E.L. Birdwell Gas Unit No. 1, Wise County, TX. | (5) | |
| CI84-437-000, E, June 8, 1984 | Shell Oil Co. (successor in interest to Partnership Properties Co.), P.O. Box 2463, Houston, TX 77001. | Northern Natural Gas Co., Prentice Plant, Yoakum County, TX. | (6) | |
| CI84-438-000, E, June 8, 1984 | Phillips Oil Co. (successor in interest to Phillips Petroleum Co.), 336 HS&L Bldg., Bartlesville, OK 74004. | Florida Gas Transmission Co., Lake Chicot Field, St. Martin Parish, LA. | (7) | |
| CI84-440-000 (CI79-112), B, June 4, 1984 | Gulf Oil Corp., P.O. Box 2100, Houston, TX 77252 | Southern Natural Gas Co., Fort Jackson Field, Plaquemines Parish, LA. | (8) | |
| CI84-439-000, F, June 11, 1984 | Shell Offshore, Inc. (partial successor in interest to Petro-Lewis Funds, Inc.), P.O. Box 4480, Houston, TX 77210. | Transcontinental Gas Pipe Line Corp., Mississippi Canyon Block 194 Field, Offshore Louisiana. | (9) | |
| CI84-441-000, E, Jan. 30, 1984 | Sun Exploration & Production Co. (successor in interest to Maurice L. Brown Co.), P.O. Box 2880, Dallas, TX 75221-2880. | United Gas Pipe Line Co., Bethany Field, Harrison and Panola Counties, TX. | (10) | |
| G-16583-000, F, June 8, 1984 | Phillips Petroleum Co. (successor in interest to Phillips Oil Co.), 336 HS&L Bldg., Bartlesville, OK 74004. | Northern Natural Gas Co., McKinney Field, Clark County, KS. | (11) | |
| G-11948-000, D, May 25, 1984 | Mobil Producing Texas & New Mexico, Inc., Nine Greenway Plaza, Suite 2700, Houston, TX 77046. | Panhandle Eastern Pipe Line Co., Panhandle Field, Moore County, TX. | (12) | |
| CI84-442-000, E, June 11, 1984 | Diamond Shamrock Exploration Co. (successor in interest to Natomas Offshore Exploration, Inc.), P.O. Box 631, Amarillo, TX 79173. | Tennessee Gas Pipeline Co., E/2 NE/4 and NE/4 SE/4 of Block 225 and W/2 NW/4 NE/4; NE/4 NW/4; W/2 NW/4; W/2 SE/4 NW/4; NW/4 SW/4; W/2 NE/4 SW/4 of Block 226, Vermilion Area, Offshore (Federal) Louisiana. | (13) | |
| CI84-443-000, E, June 11, 1984 | ....do | Transcontinental Gas Pipe Line Corp., High Island Block A-446, OCS Lease G-2359, High Island Block A-447, OCS Lease G-2360, and High Island Block A-448, OCS-G Lease G-2361, High Island Area, South Addition Offshore (Federal) Texas. | (14) | |
| CI84-444-000, E, June 11, 1984 | ....do | Transcontinental Gas Pipe Line Corp., Block 131, OCS Lease G-2342 Galveston Area, South Addition, Offshore (Federal) Texas. | (15) | |
| CI84-445-000, A, June 11, 1984 | Mesa Petroleum Co., One Mesa Square, P.O. Box 2009, Amarillo, TX 79189-2009. | Transcontinental Gas Pipe Line Corp., High Island Block A-567, Offshore Texas. | (16) | |
| CI84-447-000, (CI77-204), B, June 11, 1984 | Sun Exploration & Production Co., P.O. Box 2880, Dallas, TX 75221-2880. | Transcontinental Gas Pipe Line Corp., Bear Field, Beauregard Parish, LA. | (17) | |

[1] To release gas for irrigation fuel.
[2] By general assignment and conveyance effective Feb. 1, 1984, Alice Pratt Brown, individually and as independent executrix of the estate of George R. Brown, deceased, conveyed all right, title and interest in the lease dedicated under the contract to Brown Partnership.
[3] On May 1, 1984, Petro-Lewis Funds, Inc., et al. assigned its leadehold rights in High Island Block A-563 Field (Blocks A-563, A-564, and A-582), High Island Area, South Addition, Offshore Texas, Outer Continental Shelf to Proven Properties Inc.
[4] Applicant is filing under gas purchase contract dated Mar. 1, 1984.
[5] On Feb. 1, 1984, Mitchell succeeded to the small producer interest of Walter Exploration in the E.L. Birdwell Gas Unit No. 1 well located in Wise County, TX.
[6] Effective as of May 1, 1984, Partnership Properties Co. conveyed its 11.8297 percent interest in the Prentice plant, Yoakum County, TX, to Shell.
[7] Effective Dec. 1, 1983, Phillips Petroleum Co. assigned to Phillips Oil Co., its interest in certain leases in the Lake Chicot Field, St. Martin Parish, LA.
[8] The last well has been plugged and abandoned and all Gulf's leases covered by this rate schedule have expired.
[9] Effective as of May 1, 1984, Petro-Lewis Funds, Inc., conveyed to Shell Offshore, Inc., an undivided 3.05 pct interest in three leases in the Mississippi Canyon Block 194 Field, Offshore Louisiana.
[10] Sun Gas Co. (predecessor in interest to Sun Exploration & Production Co., as Seller) has acquired acreage heretofore dedicated under the contract under a Farmout Agreement dated Feb. 25, 1981, between Maurice L. Brown and Sun Gas Co.
[11] Effective Dec. 1, 1983, Phillips Oil Co. assigned to applicant its working interest in the Gross Unit No. 1 located in the McKinney Field, Clark County, KS.
[12] By assignment and bill of sale dated Mar. 1, 1984, to be effective Jan. 9, 1984, Mobile Producing Texas & New Mexico, Inc., assigned to Gordon Taylor Oil Co., small producer No. 031097, a certain lease and said assignment.
[13] By assignments of operating rights made effective june 1, 1984, Natomas Offshore Exploration, Inc., assigned all of its right, title and interest in the operating rights in and to U.S.A. Oil and Gas Lease Serial Nos. OCS-G-1143 and OCS-G-1144 to applicant.
[14] By assignment made effective June 1, 1984, Natomas Offshore Exploration, Inc., assigned all of its right, title and interest in and to U.S.A. Oil and Gas Lease Serial Nos. OCS-G-2359, OCS-G-2360, and OCS-G-2361 to applicant.
[15] By assignment made effective June 1, 1984, Natomas Offshore Exploration, Inc., assigned all of its right, title and interest in and to U.S.A. Oil and Gas Lease Serial No. OCS-G-2342 to applicant.
[16] Applicant is filing under gas purchase agreement dated Mar. 7, 1984.
[17] Due to depletion of gas reserves, the unit well was plugged and abandoned, the leases expired and the contract terminated.

Filing code: A—Initial Service. B—Abandonment. C—Amendment to add acreage. D—Amendment to delete acreage. E—Total Succession. F—Partial Succession.

[FR Doc. 84-16711 Filed 6-21-84; 8:45 am]
BILLING CODE 6717-01-M

## ENVIRONMENTAL PROTECTION AGENCY

**[ER-FRL-2612-4]**

## Availability of Environmental Impact Statements Filed June 11, Through June 15, 1984

Responsible agency: Office of Federal Activities, General Information (202) 382-5073 or (202) 382-5075.

EIS No. 840260, Final, SCS, IA, MO, West Fork of Big Creek Watershed Multipurpose Flood Control Plan, Ringgold and Decatur Cos., Iowa and Daviess and Harrison Cos., Missouri, Due: July 23, 1984, Contact: Paul Larson (314) 875-5214

EIS No. 840261, Draft, FHW, CA, I-80 At-Grade Access Closure, between Pedrick Road and Putah Creek, Solano County, Due: August 6, 1984, Contact: Jim Jelinek (209) 948-7987

EIS No. 840262, Draft, FHW, NC, LaSalle Street Extension, Statesville Avenue to Graham Street, Mecklenburg County, Due: August 6, 1984, Contact: Kenneth Bellamy (919) 755-4346

EIS No. 840263, Draft, SCS, PA, Jacobs Creek Watershed Flood Protection Plan, Fayette and Westmoreland Counties, Due: August 6, 1984, Contact: James Olsen (717) 782-4453

EIS No. 840264, Draft, IBR, CA, Day Creek Water Project, Grant, San

Bernardino Co., Due: August 6, 1984, Contact: Ron Riley (714) 383–2187
EIS No. 840265, Final, EPA, MT, Greene County Wastewater Treatment Facilities Plan, Approval, Grant, Due: July 23, 1984, Contact: Thomas Lorenz (816) 374–5593
EIS No. 840266, Final, FHW, MT, Helena-West/US 12 Improvement, MacDonald Bypass to Helena, Lewis and Clark County, Due: July 23, 1984, Contact: William Dunbar (406) 449–5310
EIS No. 840267, Final, AFS, SEV, Southern Regional Land/Resource Management, Standards and Guidelines, Due: July 23, 1984, Contact: Robert Williams (404) 881–2242
EIS No. 840268, Final, AFS, SEV, Pacific Norhwest Regional Land/Resource Management, Standards and Guidelines, Due: July 23, 1984, Contact: Harold Nygren (503) 221–2387
EIS No. 840269, Draft, UMT, MO, IL, St. Louis Central/Airport Corridor Improvement, St. Louis Co., Missouri and St. Clair Co., Illinois, Due: August 6, 1984, Contact: Charles Donald (816) 926–5053
EIS No. 840270, Final, DRBC, NJ, Merrill Creek Reservoir Project, Approval, Delaware River, Warren County, Due: July 23, 1984, Contact: J. W. Thursby (609) 883–5900.
EIS No. 840271, Final, EPA, REG, Petroleum Refining Industry, Emissions, performance Standards, Due: July 23, 1984, Contact: Gilbert Wood (919) 541–5578
EIS No. 840272, Draft, BLM, OR, John Day Planning Area, Resource Management Plan, Harney and Grant Counties, Due: September 13, 1984, Contact: Larry Morgan (503) 573–5241

Amended Notices:

EIS No. 840197, Draft, MMS, AK, 1985 St. George Basin OCS Oil and Gas Sale No. 89, Leasing, Due: July 30, 1984, Contact: Bruce Blanchard (202) 343–3891. Published FR 05/18/84—Review extended
EIS No. 760467, Draft, AFS, AZ, Copper Basin Phelps Dodge Land Exchange, Presecott National Forest, Yavapal County, published FR 04/06/76—Officially withdrawn
Correction: The Notice of Availability (NOA) published in the 6/12/84 **Federal Register** contained the wrong weekly receipt dates. The correct dates for the June 12, 1984 NOA are June 4, 1984 through June 8, 1984.

Dated: June 19, 1984.

Allan Hirsch,

*Director, Office of Federal Activities.*

[FR Doc. 84-16671 Filed 6-21-84; 8:45 am]

BILLING CODE 6560-50-M

[OPP-30074A; PH-FRL 2612-3]

## Ethylene Oxide; Certain Pesticide Products Registered for the Sterilization of Equipment and Supplies in Hospitals and Health Care Facilities; Withdrawal of Revised Labeling Notice

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Withdrawal of Notice.

**SUMMARY:** EPA issued a notice requesting registrants of pesticide products containing ethylene exide (EtO) registered for certain uses in hospitals and health care facilities to submit applications to amend approved labeling. Elsewhere in this issue of the **Federal Register**, the Occupational Safety and Health Administration (OSHA) has promulgated comprehensive exposure standards for all occupational uses of EtO. Therefore, EPA has decided to withdraw the original notice in recognition of concerns regarding the potential preemption of the OSHA standards.

**FOR FURTHER INFORMATION CONTACT:** By Mail: Walter I. Waldrop, Registration Division (TS–767C), Office of Pesticide Programs, Environmental Protection Agency, 401 M Street SW., Washington, D.C. 20460.

Office location and telephone number: Rm. 711C, CM#2, 1921 Jefferson Davis Highway, Arlington, VA 22202, (703–557–7400.)

**SUPPLEMENTARY INFORMATION:** The Environmental Protection Agency issued a notice published in the **Federal Register** of April 18, 1984 (49 FR 15268) announcing it was requesting that registrants of pesticide products containing ethylene oxide (EtO) which are registered for certain uses in hospitals and health care facilities submit applications to amend the approved labeling for such products to include specific directions for workplace design and workplace practices intended to limit worker exposure to EtO.

The **Federal Register** notice noted that the Occupational Safety and Health Administration was in the final stages of a rulemaking proceeding directed toward setting a comprehensive exposure standard for all occupational uses of EtO, including use in hospital and health care facilities, and that the requested label changes were intended to be consistent with and complement OSHA's regulatory efforts.

Since the issuance of the notice, substantial concern has been raised over the possibility that adoption of the requested labeling changes, which are intended to affect workplace design and practice in hospitals and health care facilities, might have a preemptive effect on OSHA's ability to set a comprehensive EtO standard. The Occupational Safety and Health Act includes a provision which forecloses OSHA's right to regulate those working conditions concerning which another Federal agency has exercised statutory authority to prescribe or enforce standards or regulations affecting occupational safety and health.

Although the Federal courts have held that label language for registered EtO products previously approved by EPA does not foreclose OSHA regulation, a concern has been raised that adoption of the additional label changes described in the recent EPA notice could be construed as preempting OSHA regulation of EtO exposure in hospitals and health care facilities.

EPA stated in the April 18, 1984 **Federal Register** notice, that the agency has no intention of preempting OSHA with respect to regulation of EtO exposure in an occupational setting. EPA adheres to its belief that OSHA and EPA should work together toward setting standards that most effectively protect the exposed worker. In recognition of concerns regarding potential preemption of OSHA's standard, EPA has determined that it would be prudent to withdraw its April 18, 1984 notice and the associated requests that registrants submit revised labeling for registered pesticide products containing EtO.

EPA continues to believe that the label revisions described in the notice provide useful guidance concerning workplace design and practice changes which would assist affected facilities in complying with the OSHA standard. After OSHA issues its final standard, EPA may request that registrants adopt label changes intended to insure that users of pesticide products containing EtO conform to the OSHA standard.

Dated: June 14, 1984.

**Edwin L. Johnson,**

*Director, Office of Pesticide Programs.*

[FR Doc. 84-16455 Filed 6-18-84; 12:04 pm]

BILLING CODE 6560-50-M

[OPTS-59161, BH-FRL 2612-7]

## Certain Chemicals; Test Marketing Exemption Applications

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Notice.

**SUMMARY:** EPA may upon application exempt any person from the premanufacturing notification requirements of section 5 (a) or (b) of the Toxic Substances Control Act (TSCA) to permit the person to manufacture or process a chemical for test marketing purposes under section 5(h)(1) of TSCA. Requirements for test marketing exemption (TME) applications, which must either be approved or denied within 45 days of receipt, are discussed in EPA's final rule published in the **Federal Register** of May 13, 1983 (48 FR 21722). This notice, issued under section 5(h)(6) of TSCA, announces receipt of two applications for exemptions, provides a summary, and requests comments on the appropriateness of granting each of the exemptions.

**DATE:** Written comments by: July 9, 1984.

**ADDRESS:** Written comments, identified by the document control number "[OPTS-59161]" and the specific TME under should be sent to: Document Control Officer (TS-793), Information Management Division, Office of Toxic Substances, Environmental Protection Agency, Rm. E-409, 401 M Street, SW, Washington, DC 20460.

**FOR FURTHER INFORMATION CONTACT:** Wendy Cleland-Hamnett, Chemical Control Division (TS-794), Office of Toxic Substances, Environmental Protection Agency, Rm. E-216, 401 M Street, SW, Washington, DC 20460.

**SUPPLEMENTARY INFORMATION:** The following notice contains information extracted from the non-confidential version of the submission provided by the manufacturer on the TMEs received by EPA. The complete non-confidential document is available in the Public Reading Room E-107 at the above address.

**TME 84-61**

*Close of Review Period.* July 27, 1984.
*Manufacturer.* Confidential.
*Chemical.* (G) Polymer of adipic acid, polyalklene glycol and alkanepolyol.
*Use/Production.* (G) Precursor in the manufacture of polyurethanes. Prod. range: Confidential.
*Toxicity Data.* No data submitted.
*Exposure.* Manufacture: dermal, a total of 12 workers, up to 8 hrs/da, up to 4 da/yr.
*Environmental Release/Disposal.* No release. Disposal by publicly owned treatment works (POTW).

**TME 84-62**

*Close of Review Period.* July 28, 1984.
*Manufacturer.* Hercules Incorporated.
*Chemical.* (G) Phenolic modified rosin ester.
*Use/Production.* (S) Industrial and commercial use in formulating ink vehicles. Prod. range: 40,000, kg/6 months.
*Toxicity Data.* No data submitted.
*Exposure.* Manufacture: dermal and inhalation, a total of 2-10 workers.
*Environmental Release/Disposal.* Disposal by municipal waste disposal facilities.

Dated: June 18, 1984.

**Linda A. Travers,**

*Acting Director, Information Management Division.*

[FR Doc. 84-16536 Filed 6-21-84; 8:45 am]

**BILLING CODE 6560-50-M**

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**[OPTS-51524; BH-FRL 2612-6]**

## Certain Chemicals; Premanufacture Notices

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Notice.

**SUMMARY:** Section 5(a)(1) of the Toxic Substances Control Act (TSCA) requires any person who intends to manufacture or import a new chemical substance to submit a premanufacture notice (PMN) to EPA at least 90 days before manufacture or import commences. Statutory requirements for section 5(a)(1) premanufacture notices are discussed in EPA statements of the final rule published in the **Federal Register** of May 13, 1983 (48 FR 21722). This notice announces receipt of twenty-seven PMNs and provides a summary of each.

**DATES:** Close of Review Period:

PMN 84-824, 84-825, 84-826, 84-827 and 84-828—September 5, 1984.
PMN 84-829, 84-830, 84-831, 84-832, 84-833, 84-834, 84-835, 84-836, 84-837, 84-838, 84-839, 84-840 and 84-841—September 8, 1984.
PMN 84-842 and 84-843—September 9, 1984.
PMN 84-844, 84-845, 84-846 and 84-847—September 10, 1984.
PMN 84-848, 84-849, and 84-850—September 11, 1984.

Written comments by:

PMN 84-824, 84-825, 84-826, 84-827 and 84-828—August 6, 1984.
PMN 84-829, 84-830, 84-831, 84-832, 84-833, 84-834, 84-835, 84-836, 84-837, 84-838, 84-839, 84-840 and 84-841—August 9, 1984.
PMN 84-842 and 84-843—August 10, 1984.
PMN 84-844, 84-845, 84-846 and 84-847—August 11, 1984.
PMN 84-848, 84-849, and 84-850—August 12, 1984.

**ADDRESS:** Written comments, identified by the document control number "[OPTS-51524]" and the specific PMN number should be sent to: Document Control Officer (TS-793), Chemical Information Branch, Information Management Division, Office of Toxic Substances, Environmental Protection Agency, Rm. E-409, 401 M St., SW., Washington, DC 20460, (202-382-3532).

**FOR FURTHER INFORMATION CONTACT:** Wendy Cleland-Hamnett, Chemical Control Division (TS-794), Office of Toxic Substancs, Environmental Protection Agency, Rm. E-216, 401 M St., SW., Washington, DC 20460, (202-382-3792).

**SUPPLEMENTARY INFORMATION:** The following notice contains information extracted from the non-confidential version of the submission provided by the manufacturer on the PMNs received by EPA. The complete non-confidential document is available in the Public Reading Room E-107 at the above address.

**PMN 84-824**

*Manufacturer.* Confidential.
*Chemical.* (G) Brominated aromatic.
*Use/Production.* (S) Flame retardant for plastics for industrial, commercial and consumer use. Prod. range: Confidential.
*Toxicity Data.* Acute oral: >5 g/kg; Acute dermal: >2 g/kg; Irritation: Skin—Non-irritant, Eye—Minimal; Inhalation: >7.3 mg/1; Ames Test: Negative; Skin sensitization: Non-sensitizer.
*Exposure.* Confidential.
*Environmental Release/Disposal.* Confidential.

**PMN 84-825**

*Importer.* Confidential.
*Chemical.* (G) Polymer of substituted polyalkylene polyamine and substituted alkane, alkyl carboxylate.
*Use/Import.* (S) Industrial auxiliary for paper. Import range: Confidential.
*Toxicity Data.* Acute oral: 6.930 g/kg; Irritation: Skin—No observable effects, Eye—No observable effects, LC 20-22 hr (Leuciscus idus): 20 mg/l; LC 48 hr (Leuciscus idus): 10 mg/l.
*Exposure.* No data submitted.
*Environmental Release/Disposal.* No release to air, water and land.

**PMN 84-826**

*Importer.* Confidential.
*Chemical.* (G) Polymer of aliphatic polyamines, dihaloalkane, aliphatic diacid.
*Use/Import.* (S) Industrial auxiliary for paper. Import range: Confidential.

*Toxicity Data.* Acute oral:<5.0 ml/kg; Irritation: Skin—Non-irritant, Eye—Non-irritant, LC 7–8 hrs (Leuciscus idus): 10 mg/l; LC 23–48 hrs (Leuciscus idus): 5 mg/l.

*Exposure.* No data submitted.

*Environmental Release/Disposal.* No release to air, water and land.

**PMN 84–827**

*Importer.* Confidential.

*Chemical.* (G) Polymer of aliphatic polyamines, dihaloalkane, organic diamine.

*Use/Import.* (S) Industrial auxiliary for paper. Import range: Confidential.

*Toxicity Data.* Acute oral: <5.0 ml/kg. Irritation: Skin—Slight, Eye—Non-irritant; LC 14 hrs (Leuciscus idus): 10 mg/l; LC 14–48 hrs (Leuciscus idus): 5 mg/l; LC 48 hrs (Leuciscus idus):/l; 2 mg/l: LC 48 hrs (Leuciscus idus): 1 mg/l.

*Exposure.* No data submitted.

*Environmental Release/Disposal.* No release to air, water and land.

**PMN 84–828**

*Importer.* Confidential.

*Chemical.* (G) Polymer of substituted polyalkylene polyamine and substituted alkane.

*Use/Import.* (S) Industrial auxiliary for paper. Import range: Confidential.

*Toxicity Data.* Acute oral: 6,508 g/kg; Irritation: Skin—No observable effects, Eye—Moderate; LC 2 days (Leuciscus idus): 10 mg/l; LC 48 hrs (Leuciscus idus): 5 mg/l.

*Exposure. No data submitted.*

*Environmental Release/Disposal.* No release to air, water and land.

**PMN 84–829**

*Manufacturer.* Confidential.

*Chemical.* (G) Polymer of adipic acid, polyalkylene glycol and alkanepolyol.

*Use/Production.* (G) Precursor in the manufacture of polyurethanes. Prod. range: Confidential.

*Toxicity Data.* No data submitted.

*Exposure.* Manufacture: dermal, a total of 12 workers, up to 8 hrs/da, up to 250 da/yr.

*Enivronmental Release/Disposal.* No release. Disposal by publicly owned treatment works (POTW).

**PMN 84–830**

*Importer.* E. I. du Pont Nemours and Company, Inc.

*Chemical.* (G) Styrene, nitrile, acrylic copolymer.

*Use/Import.* (G) Open, non-dispersive use. Import range: Confidential.

*Toxicity Data.* No data submitted.

*Exposure.* Processing: dermal, total of 1 worker.

*Environmental Release/Disposal.* Confidential. Disposal by incineration.

**PMN 84–831**

*Importer.* E. I. du Pont de Nemours and Company, Inc.

*Chemical.* (G) Styrene acrylic copolymer.

*Use/Import.* (G) Open, non-dispersive use. Import range: Confidential.

*Toxicity Data.* No data submitted.

*Exposure.* Processing: dermal, a total of 1 worker.

*Environmental Release/Disposal.* Confidential. Disposal by incineration.

**PMN 84–832**

*Importer.* E..I. du Pont de Nemours and Company, Inc.

*Chemical.* (G) Acrylic polymer.

*Use/Import.* (G) Open, non-dispersive use. Import range: Confidential.

*Toxicity Data.* No data submitted.

*Exposure.* Processing: dermal, a total of 1 worker.

*Environmental Release/Disposal.* Release to air and land Disposal by incineration.

**PMN 84–833**

*Manufacturer.* Confidential.

*Chemical.* (G) Substituted anthraquinone.

*Use/Production.* (G) Additive for display devices. Prod. range: Confidential.

*Toxicity Data.* No data submitted.

*Exposure.* Confidential.

*Environmental Release/Disposal.* Release of dross. Disposal by incineration.

**PMN 84–834**

*Manufacturer.* Confidential.

*Chemical.* (G) Trisazo dye.

*Use/Production.* (G) Additive for display devices. Prod. range: Confidential.

*Toxicity Data.* No data submitted.

*Exposure.* Confidential.

*Environmental Release/Disposal.* No data submitted. Disposal by incineration.

**PMN 84–835**

*Manufacturer.* Confidential.

*Chemical.* (G) Trisazo dye.

*Use/Production.* (G) Additive for display devices. Prod. range: Confidential.

*Toxicity Data.* No data submitted.

*Exposure.* Confidential.

*Environmental Release/Disposal.* Release of dross. Disposal by incineration.

**PMN 84–836**

*Manufacturer.* Confidential.

*Chemical.* (G) Trisazo dye.

*Use/Production.* (G) Additive for display devices. Prod. range: Confidential.

*Toxicity Data.* No data submitted.

*Exposure.* Confidential.

*Environmental Release/Disposal.* Release of dross. Disposal by incineration.

**PMN 84–837**

*Manufacturer.* Globe Manufacturing Company.

*Chemical.* (G) Polyurea urethane.

*Use/Production.* (S) Industrial and consumer elastic fiber in wearing apparel. Prod. range: Confidential.

*Toxicity Data.* No data submitted.

*Exposure.* Manufacture: dermal.

*Environmental Release/Disposal.* Release to land. Disposal by city-operated landfill.

**PMN 84–838**

*Manufacturer.* Confidential.

*Chemical.* (G) Tetrasubstituted naphthalenecarboxamide.

*Use/Production.* (G) Chemical intermediate. Prod. range: 700—800 kg/yr.

*Toxicity Data.* Acute oral: Males and females— 3,200 mg/kg; Acute dermal:< 1g/kg; Irritation: Skin—Slight, Eye—Slight; Skin sensitization: Normal.

*Exposure.* Manufacture and use: dermal and inhalation, a total of 7 workers, up to 0.8 hr/da, up to 6 da/yr.

*Environmental Release/Disposal.* No release. Less than 2 kg/batch of incineration.

**PMN 84–839**

*Manufacturer.* Confidential.

*Chemical.* (G) Polyfunctional aziridine.

*Use/Production.* (S) Industrial and commercial crosslinker for coatings and adhesion promoter. Prod. range: 10,000–40,000 kg/yr.

*Toxicity Data.* Acute oral: 2,250 mg/kg; Irritation: Skin—Mild, Eye—Primary irritant; Ames Test: Mutagenic, Skin Sensitization: Negative.

*Exposure.* manufacture: dermal, a total of 2 workers, up to 4 hrs/da, up to 4 da/yr.

*Environmental Release/Disposal.* No release.

**PMN 84–840**

*Manufacturer.* Owens-Corning Fiberglas Corporation.

*Chemical.* (G) Modified epoxy resin.

*Use/Production.* (G) Size ingredient. Prod. range; Confidential.

*Toxicity Data.* No data submitted.

*Exposure.* Manufacture, processing and use: a total of 40 workers, up to 24 hrs/da, up to 350 da/yr.

*Environmental Release/Disposal.* Release to air and water. Disposal by

POTW, incineration and on-site treatment plant.

**PMN 84-841**

*Manufacturer.* Owens-Corning Fiberglas Corporation.

*Chemical.* (G) Modified epoxy resin.

*Use/Production.* (G) Size ingredient. Prod. range; Confidential.

*Toxicity Data.* No data submitted.

*Exposure.* Manufacture, processing and use: a total of 40 workers, up to 24 hrs/da, up to 350 da/yr.

*Environmental Release/Disposal.* Release to air and water. Disposal by POTW, incineration and on-site treatment plant.

**PMN 84-842**

*Manufacturer.* Confidential.

*Chemical.* (G) Disubstituted benzothiazolium salt.

*Use/Production.* (G) Contained use in article. Prod. range: 1-2 kg/yr.

*Toxicity Data.* No data submitted.

*Exposure.* Manufacture and processing: dermal and inhalation, a total of 16-25 workers, up to 0.4 hr/da, up to 4 da/yr.

*Environmental Release/Disposal.* Negligible release. Less than 0.008 kg/batch disposed of by biological treatment system with less than 0.1 kg/batch incinerated.

**PMN 84-843**

*Manufacturer.* Confidential.

*Chemical.* (G) Modified epoxy prepolymer.

*Use/Production.* (G) Industrial adhesive basestock. Prod. range: Confidential.

*Toxicity Data.* Acute oral: Males and females—5,000 mg/kg; Acute dermal: 2,000 mg/kg; Irritation: Skin—Non-irritant, Eye—Moderate.

*Exposure.* Manufacture: dermal, a total of 21 workers.

*Environmental Release/Disposal.* No release. 1 qt disposed of as laboratory waste.

**PMN 84-844**

*Manufacturer.* Confidential.

*Chemical.* (G) Amine salt of a styrene—divinyl benzene ion exchange resin.

*Use/Production.* (G) Chemical intemediate used in a closed process. Prod. range: Confidential.

*Toxicity Data.* No data on the PMN substance submitted.

*Exposure.* Manufacture and use: dermal, a total of 33 workers.

*Environmental Release/Disposal.* Release to air and land. Disposal by incineration, approved landfill and navigable waterway after treatment.

**PMN 84-845**

*Manufacturer.* Kay-Fries, Inc.

*Chemical.* (G) Vinyl trialkoxy silane.

*Use/Production.* (G) Industrial surface treatment agent for inorganic material prior to incorporation into plastic material. Prod. range: Confidential.

*Toxicity Data.* No data submitted.

*Exposure.* Manufacture: dermal, a total of 22 workers, up to 0.1 hr/da, up to 16 da/yr.

*Environmental Release/Disposal.* 0.00005 to 0.0001 kg/day released to air.

**PMN 84-846**

*Importer.* King Industries, Inc.,

*Chemical.* (G) Fatty acids, compound with diamines.

*Use/Import.* (G) Additives for paints, caulks and sealants. Import range: Confidential.

*Toxicity Data.* Acute oral: >5.0 g/kg; Acute dermal; >2.0 g/kg; Irritation: Skin—Non-irritant, Eye—Minimal; Inhalation: $LC_{50}$—>19.7 mg/1/hr, nominal.

*Exposure.* Import and processing: inhalation, a total of 21 workers, up to 8 hrs/da, up to 60 da/yr.

*Environmental Release/Disposal.* Less than 100 kg/yr release to air and water.

**PMN 84-847**

*Importer:* Distritex, Inc.

*Chemical.* (G) Acrylic copolymer, sodium salt.

*Use/Import.* (S) Commercial thinner for drilling muds. Import range: Confidential.

*Toxicity Data.* Acute oral: 5,006 mg/kg; Acute dermal: <10,000, Irritation: Skin—Non-irritant, Eye—Slight; $LC_{50}$ 6 hr (Green algae): 1,900 parts per million (ppm); $LC_{50}$ 96 hr (Brown shrimp): 9,400 mg/1.

*Exposure.* No data submitted.

*Environmental Release/Disposal.* No data submitted.

**PMN 84-848**

*Manufacturer.* Confidential.

*Chemical.* (G) Alkyl thiophosphate amine salt.

*Use/Production.* (G) Product stabilizer. Prod. range: Confidential.

*Toxicity Data.* Acute oral: 2,600 mg/kg; Acute dermal: >5,000 mg/kg; Irritation: Skin—Slight, Eye—Corrosive; $LC_{50}$—96 hrs (Bluegill sunfish): 64 mg/l; $LC_{50}$—96 hrs (Rainbow trout): 45 mg/l; $LC_{50}$—48 hrs (Daphnia magna): 51 mg/l.

*Exposure.* Manufacture: dermal, a total of 51 workers, up to 3 hrs/da, up to 18 da/yr.

*Environmental Release/Disposal.* Confidential.

**PMN 84-849**

*Manufacturer.* Confidential.

*Chemical.* (G) Fatty polyacrylate.

*Use/Production.* (G) Oil additive. Prod. range: Confidential.

*Toxicity Data.* No data submitted.

*Exposure.* Confidential.

*Environmental Release/Disposal.* Confidential.

**PMN 84-850**

*Manufacturer.* Confidential.

*Chemical.* (G) Fatty acrylate polymers.

*Use/Production.* (G) Oil additive. Prod. range: Confidential.

*Toxicity Data.* No data submitted.

*Exposure.* Confidential.

*Environmental Release/Disposal.* Confidential.

Dated: June 18, 1984.

**Linda A. Travers,**

*Acting Director, Information Management Division.*

[FR Doc. 84-16537 Filed 6-21-84; 8:45 am]

BILLING CODE 6560-50-M

## FEDERAL COMMUNICATIONS COMMISSION

### Meeting of Interested Parties to CC Docket No. 81-343, Policy for Overseas Common Carrier Facilities, Pacific Region, 1981-1995

June 15, 1984.

Members of the Common Carrier Bureau staff will convene the third of a series of public meetings of all interested parties to the Pacific Planning Process (CC Docket No. 81-343) in the Commission Meeting Room, Room 856, 1919 M Street NW., Washington, D.C., at 2 p.m. on Tuesday, June 26, 1984.

The agenda of the meeting will include: (1) Further discussion of alternative facilities plans proposed for construction during the 1987-1995 period; (2) further discussion of U.S. carriers' forecasted circuit demands and circuit requests for the 1987-1995 time frame; (3) further discussion of the proposed introduction and configuration of a fiber optic TPC-3 cable in 1988; (4) the scheduling of public meetings; and (5) any other matters related to this proceeding.

This meeting will be open to the public and anyone who wishes to attend and express views is invited. For

additional information, contact Laura Stein (202) 632–4047.

William J. Tricarico,

*Secretary, Federal Communications Commission.*

[FR Doc. 84–16649 Filed 6–21–84; 8:45 am]

BILLING CODE 6712–01–M

### Telecommunications Industry Advisory Group; Separations and Costing Subcommittee; Change in Location of Meeting

The location of Separations and Costing Subcommittee meeting scheduled for Tuesday, June 26, Wednesday, June 27, and Thursday, June 28, 1984, has been changed to USTA, 1801 K Street NW., Washington, D.C., Suite 1201 (Entrance on L Street).

William J. Tricarico,

*Secretary, Federal Communications Commission.*

[FR Doc. 84–16650 Filed 6–21–84; 8:45 am]

BILLING CODE 6712–01–M

## FEDERAL DEPOSIT INSURANCE CORPORATION

### Proposed Revisions of Savings Bank Call Reports

**AGENCY:** Federal Deposit Insurance Corporation.

**ACTION:** Notice of Proposed Revisions to Savings Bank Reports of Income and Condition.

**SUMMARY:** The Federal Deposit Insurance Corporation has proposed revisions to the Reports of Income and Condition that are filed by savings banks with the FDIC. The revised reporting requirements will assist the FDIC in its efforts to more effectively and efficiently monitor the financial condition and performance of savings banks.

**DATE:** Comments on the proposal must be received by August 6, 1984. In this regard, the implementation of any final revisions to the Reports of Income and Condition would be scheduled to become effective on January 1, 1985, and would be first reflected in the Reports of Income and Condition filed by savings banks for the quarter ending March 31, 1985.

**ADDRESS:** Comments regarding the proposed revisions to the Reports of Income and Condition should be submitted to Hoyle L. Robinson, Executive Secretary, Federal Deposit Insurance Corporation, 550 17th Street, NW., 20429 or delivered to Room 6108 at the same address between the hours of 9:00 a.m. and 5:00 p.m. on business days. Comments may also be inspected in Room 6108 between 9:00 a.m. and 4:15 p.m. on business days.

**FOR FURTHER INFORMATION CONTACT:** Stephen G. Pfeifer, Examination Specialist, or Robert F. Storch, Examination Specialist, Federal Deposit Insurance Corporation, 550 17th Street, NW., 20429, telephone 202/389–4761.

**SUPPLEMENTARY INFORMATION:** Recent and probable reductions in Federal banking controls, including the expansion of asset powers and the deregulation of interest rates, increase the FDIC's need for additional information from savings banks regarding their financial condition and operating performance. Furthermore, the FDIC intends to increase its emphasis on offsite surveillance as a useful complement to onsite examinations. In view of the above, the FDIC is proposing a number of revisions to the savings bank Reports of Income and Condition in order to further assist the agency in fulfilling its supervisory responsibilities. Requests for copies of the proposed revisions should be directed to the FDIC Information Office at the above mentioned address.

By order of the Board of Directors, June 18, 1984.

Federal Deposit Insurance Corporation.

**Hoyle L. Robinson,**

*Executive Secretary.*

[FR Doc. 84–16681 Filed 6–21–84; 8:45 am]

BILLING CODE 6714–01–M

## FEDERAL MARITIME COMMISSION

### Definition of "Package" Under the Carriage of Goods by Sea Act; Filing of Petition of Rulemaking

Notice is given that a petition has been filed by Dow Chemical Company (Dow) for institution of a rulemaking proceeding to prescribe that, for purposes of section 4(5) of the Carriage of Goods by Sea Act, 46 U.S.C. 1304(5), bills of lading filed by carriers subject to the Commission's jurisdiction define a package as each individually wrapped bag, carton, box or drum whether or not palletized and/or placed or assembled in containers.

Interested persons may inspect and obtain a copy of the petition at the Washington Office of the Federal Maritime Commission, 1100 L Street, NW., Room 11101.

Interested persons may submit replies to the petition to the Secretary, Federal Maritime Commission, Washington, D.C. 20573, on or before July 31, 1984. An original and fifteen copies of such replies shall be submitted. A copy of such replies shall also be served on filing counsel: Robert R. Tiernan, Esq., Shack & Kinball, P.C., 1129 20th Street, NW., Suite 500, Washington, D.C. 20036.

**Francis C. Hurney,**

*Secretary.*

[FR Doc. 84–16734 Filed 6–21–84; 8:45 am]

BILLING CODE 6730–01–M

## FEDERAL RESERVE SYSTEM

### Oneida Valley Bancshares, Inc., et al; Formations of; Acquisitions by; and Mergers of Bank Holding Companies

The companies listed in this notice have applied for the Board's approval under section 3 of the Bank Holding Company Act (12 U.S.C. 1842) and § 225.14 of the Board's Regulation Y (49 FR 794) to become a bank holding company or to acquire a bank or bank holding company. The factors that are considered in acting on the applications are set forth in section 3(c) of the Act (12 U.S.C. 1842(c)).

Each application is available for immediate inspection at the Federal Reserve Bank indicated. Once the application has been accepted for processing, it will also be available for inspection at the offices of the Board of Governors. Interested persons may express their views in writing to the Reserve Bank or to the offices of the Board of Governors. Any comment on an application that requests a hearing must include a statement of why a written presentation would not suffice in lieu of a hearing, identifying specifically any questions of fact that are in dispute and summarizing the evidence that would be presented at a hearing.

Unless otherwise noted, comments regarding each of these applications must be received not later than July 13, 1984.

A. **Federal Reserve Bank of New York** (A. Marshall Puckett, Vice President) 33 Liberty Street, New York, New York 10045:

1. *Oneida Valley Bancshares, Inc.*, Oneida, New York: to become a bank holding company by acquiring 100 percent of the voting shares of The Oneida Valley National Bank of Oneida, Oneida, New York.

B. **Federal Reserve Bank of Richmond** (Lloyd W. Bostian, Jr., Vice President) 701 East Byrd Street, Richmond, Virginia 23261:

1. *Marion National Corporation*, Marion, South Carolina; to become a bank holding company by acquiring 80 percent of the voting shares of Marion National Bank, Marion, South Carolina.

C. **Federal Reserve Bank of Chicago** (Franklin D. Dreyer, Vice President) 230 South LaSalle Street, Chicago, Illinois 60690:

1. *Lizton Financial Corporation*, Lizton, Indiana: to become a bank holding company by acquiring 100 percent of the voting shares of State Bank of Lizton, Lizton, Indiana.

D. **Federal Reserve Bank of Kansas City**, (Thomas M. Hoenig, Vice President) 925 Grand Avenue, Kansas City, Missouri 64198:

1. *Evergreen Bancorporation*, Evergreen, Colorado; to become a bank holding company by acquiring 100 percent of the voting shares of Evergreen Interim National Bank, which will be merged into Evergreen National Bank, Evergreen, Colorado.

Board of Governors of the Federal Reserve System, June 18, 1984.

**James McAfee,**

*Associate Secretary of the Board.*

[FR Doc. 84-16652 Filed 6-21-84; 8:45 am]

BILLING CODE 6210-01-M

## FEDERAL TRADE COMMISSION

### Hart-Scott-Rodino Antitrust Improvement Act; Notification and Report Form Information Collection Requirements

**AGENCY:** Federal Trade Commission.

**ACTION:** Notice of application to OMB under the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*) for review and approval of an extension of an information collection requirement and form.

**SUMMARY:** The Commission is seeking OMB clearance for an extension for one year of the information collection requests made pursuant to provisions of the Hart-Scott-Rodino Antiturst Improvements Act, Title II (15 U.S.C. 18a), the approval for which is scheduled to expire July 31, 1984.

Section 7A of the Clayton Act provides that certain persons proposing to make acquisitions or engage in mergers shall file with the Federal Trade Commission and the Assistant Attorney General in charge of the Antitrust Divison a premerger notification report in a form prescribed by the Federal Trade Commission, with the concurrence of the Assistant Attorney General. The Commission has made and is continuing to make substantial progress in its efforts to reduce the reporting burden connected with the filing of such reports. During the one year extension the Commission will continue its review of the burden imposed by the report form. Minor clarifying changes have been made in the instructions to the Form as it was approved last year.

**DATE:** Comments on this clearance application must be submitted on or before July 23, 1984.

**ADDRESS:** Send comments to Mr. Donald R. Arbuckle, Office of Information and Regulatory Affairs, Office of Management and Budget, New Executive Building, Room 3228, Washington, D.C. 20503. Copies of the application may be obtained from Public Reference Branch, Room 103, Federal Trade Commission, Washington, D.C. 20580.

**FOR FURTHER INFORMATION CONTACT:** John M. Sipple, Jr., Senior Attorney, Premerger Notification Office, Bureau of Competition, Federal Trade Commission, Washington, D.C. 20580, (202) 523-3404.

**Emily H. Rock,**

*Secretary.*

[FR Doc. 84-16675 Filed 6-21-84; 8:45 am]

BILLING CODE 6750-01-M

### Granting of Request for Early Termination of the Waiting Period Under the Premerger Notification Rules

Section 7A of the Clayton Act, 15 U.S.C. 18a, as added by Title II of the Hart-Scott-Rodino Antitrust Improvements Act of 1976, requires persons contemplating certain mergers or acquisitions to give the Federal Trade Commission and the Assistant Attorney General advance notice and to wait designated periods before consummation of such plans. Section 7A(b)(2) of the Act permits the agencies, in individual cases, to terminate this waiting period prior to its expiration and requires that notice of this action be published in the **Federal Register**.

The following transactions were granted early termination of the waiting period provided by law and the premerger notification rules. The grants were made by the Federal Trade Commission and the Assistant Attorney General for the Antitrust Division of the Department of Justice. Neither agency intends to take any action with respect to these proposed acquisitions during the applicable waiting period.

| Transaction | Waiting period terminated effective |
|---|---|
| (1) 84-0477—Berwind Corporation's proposed acquisition of voting securities of Sentrol Incorporated, (Thomas J. Holace and Joyce M. Holace, UPE's). | June 4, 1984. |
| (2) 84-0505—Petrie Stores Corporation's, (Milton Petrie, UPE) proposed acquisition of voting securities of The Miller-Wohl Company, Incorporated. | June 5, 1984. |
| (3) 84-0506—Petrie Stores Corporation's, (Milton Petrie, UPE) proposed acquisition of voting securities of The Miller-Wohl Company, Incorporated. | Do. |
| (4) 84-0461—Hasbro Industries Incorporated's proposed acquisition of voting securities of Milton Bradley, Company. | Do. |
| (5) 84-0462—Hasbro Industries Incorporated's proposed acquisition of voting securities of Playskool, Incorporated, (Milton Bradley, Incorporated, UPE). | Do. |
| (6) 84-0463—Hasbro Industries Incorporated's proposed acquisition of voting securities of Milton Bradley, Company. | Do. |
| (7) 84-0517—Minnesota Power & Light Company's proposed acquisition of voting securities of Universal Telephone Incorporated, (Ray H. Dittmore, UPE). | June 6, 1984. |
| (8) 84-0518—Minnesota Power & Light Company's proposed acquisition of voting securities of Universal Telephone Incorporated, (Ray H. Dittmore, UPE). | Do. |
| (9) 84-0520—Minnesota Power & Light Company's proposed acquisition of voting securities of Universal Telephone Incorporated, (Ray H. Dittmore, UPE). | Do. |
| (10) 84-0417—Twin City Federal Savings & Loan Association's proposed acquisition of voting securities of Commonwealth Leasing Corporation. | June 7, 1984. |
| (11) 84-0473—American Broadcasting Companies, Incorporated's proposed acquisition of voting securities of Texaco Incorporated, (Entertainment and Sports Programming Network, Incorporated, UPE). | June 8, 1984. |
| (12) 84-0498—Berwind Corporation's proposed acquisition of voting securities of Watson Bowman Associates, Incorporated, (Stewart C. Watson, UPE). | June 7, 1984. |
| (13) 84-0499—Berwind Corporation's proposed acquisition of voting securities of Watson Bowman Associates, Incorporated, (Thomas C. Bowman, UPE). | Do. |
| (14) 84-0502—General Electric Company's proposed acquisition of voting securities of Employers Reinsurance Corporation, (Texaco, Incorporated, UPE). | Do. |
| (15) 84-0507—Edgcomb Steel of New England Incorporated's proposed acquisition of assets of The Williams Companies. | Do. |
| (16) 84-0516—AEA Investors Incorporated's proposed acquisition of voting securities of Birmingham Bolt Company, Incorporated, (United Coal Company, UPE). | Do. |
| (17) 84-0540—The Penn Central Corporation's proposed acquisition of voting securities of Mesa Offshore Company, (Mesa Petroleum Company, UPE). | June 8, 1984. |

**FOR FURTHER INFORMATION CONTACT:** Patricia A. Foster, Compliance Specialist, Premerger Notification Office, Bureau of Competition, Room 301, Federal Trade Commission, Washington, D.C. 20580, (202) 523-3894.

By direction of the Commission.

**Emily H. Rock,**

*Secretary.*

[FR Doc. 84-16676 Filed 6-21-84; 8:45 am]

BILLING CODE 6750-01-M

## DEPARTMENT OF HEALTH AND HUMAN SERVICES

### Office of the Secretary

### Agency Forms Submitted to the Office of Management and Budget for Clearance

Each Friday the Department of Health and Human Services (HHS) publishes a list of information collection packages it has submitted to the Office of Management and Budget (OMB) for clearance in compliance with the Paperwork Reduction Act (44 U.S.C. Chapter 35). The following are those packages submitted to OMB since the last list was published on June 15.

**Public Health Service**

*Centers for Disease Control*

Subject: Chronic Stress in Office Work—NEW.

Respondents: Secretaries, clerical workers, and clerical information processors in two locations; one private sector employer and one public sector employer.

Subject: Gonorrhea Culture Test Results of Females (0920–0019)—REVISION.

Respondents: State and local health departments.

*Health Resources and Services Administration*

Subject: Dental Graduates Employment Pattern Survey—NEW.

Respondents: Dentists.

*National Institutes of Health.*

Subject: Relationship of Dietary Intake to Caries Incidence (0925–0186)—EXTENSION/NO CHANGE.

Respondents: School children aged 11–13 residing in a nonfluoridated water area.

Subject: Questionnaire for Former Trainees of the Minority Access to Research Careers Program—NEW.

Respondents: Individuals.

*Office of the Assistant Secretary for Health*

Subject: Annual Marriage and Divorce Statistical Report Forms (0937–0001)—EXTENSION/NO CHANGE.

Respondents: State and local vital statistics officials.

OMB Desk Officer: Fay S. Iudicello.

*Food and Drug Administration*

Subject: Blood Establishment Registration and Product Listing (0910–0052)—REINSTATEMENT.

Respondents: Manufacturers of blood and blood products

OMB Desk Officer: Bruce Artim.

Copies of the above information collection clearance packages can be obtained by calling the HHS Reports Clearance Officer on 202–245–6511.

Written comments and recommendations for the proposed information collections should be sent directly to the appropriate OMB Desk Officer designated above at the following address: OMB Reports Management Branch, New Executive Office Building, Room 3208, Washington, D.C. 20503, Attn: (name of OMB Desk Officer).

Dated: June 15, 1984.

**Robert F. Sermier,**

*Deputy Assistant Secretary for Management Analysis and Systems.*

[FR Doc. 84–16525 Filed 6–21–84; 8:45 am]

BILLING CODE 4150–04–M

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### Food and Drug Administration

**[Docket No. 84P–0172]**

### Food for Human Consumption; Enriched Bread Deviating From Identity Standard; Temporary Permit for Market Testing

*Correction*

In FR Doc. 84–15908 appearing on page 24600 in the issue of Thursday, June 14, 1984, make the following correction.

In the third column, second complete paragraph, last line, "September 18, 1984." Should read "September 12, 1984."

BILLING CODE 1505–01–M

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### Consumer Participation; Open Meetings

**AGENCY:** Food and Drug Administration.

**ACTION:** Notice.

**SUMMARY:** The Food and Drug Administration (FDA) is announcing the following consumer exchange meetings: New Orleans District Office, chaired by Robert O. Bartz, District Director. Topics to be discussed are food irradiation and sulfiting agents in foods.

**DATE:** Monday, July 9, 1984, 1:30 p.m.

**ADDRESS:** Auditorium, Main Library, 7711 Goodwood Blvd., Baton Rouge, LA 70806.

**FOR FURTHER INFORMATION CONTACT:** Frances Brysson, Consumer Affairs Officer, Food and Drug Administration, 4298 Elysian Fields Avenue, New Orleans, LA 70122, 504–589–2420.

Atlanta District Office, chaired by John H. Turner, District Director. Topics to be discussed are ethylene dibromide (EDB), food irradiation, and update on aspartame.

**DATE:** Tuesday, July 17, 1984, 9 a.m. to 11 a.m.

**ADDRESS:** County Farm Bureau Auditorium, 4576 South Court St., Montgomery, AL 36196.

**FOR FURTHER INFORMATION CONTACT:** Carolyn Hommel, Consumer Affairs Officer, Food and Drug Administration, 1182 West Peachtree Street NW., Atlanta, GA 30309, 404–881–7355.

**SUPPLEMENTARY INFORMATION:** The purpose of these meetings is to encourage dialogue between consumers and FDA officials, to identify and set priorities for current and future health concerns, to enhance relationships between local consumers and FDA's District Offices, and to contribute to the agency's policymaking decisions on vital issues.

Dated: June 18, 1984.

**William F. Randolph,**

*Acting Associate Commissioner for Regulatory Affairs.*

[FR Doc. 84–16657 Filed 6–21–84; 8:45 am]

BILLING CODE 4160–01–M

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**[Docket No. 75N–0184; DESI 3265]**

### Drugs for Human Use; Drug Efficacy Study Implementation; Revocation of Exemption for Single Entity Dicyclomine Hydrochloride ("Paragraph XIV/Category 18"); Followup and Opportunity for Hearing

**AGENCY:** Food and Drug Administration.

**ACTION:** Notice.

**SUMMARY:** The Food and Drug administration (FDA) is revoking the temporary exemption for single entity dicyclomine hydrochloride which is used for the treatment of irritable bowel syndrome. The exemption has permitted the drug to remain on the market beyond the time limit scheduled for implementation of the Drug Efficacy Study. In this notice, FDA is announcing the conditions for marketing dicyclomine hydrochloride for the indication for which it is now regarded as effective and is offering an oportunity for a hearing concerning indications reclassified to lacking substantial evidence of effectiveness.

**DATES:** Revocation of exemption effective June 22, 1984. Hearing requests due on or before July 23, 1984. Material to justify a hearing due on or before August 21, 1984. Supplements to approved new drug applications due on or before August 21, 1984 or, for bioavailability data December 19, 1984.

**ADDRESSES:** Communications in response to this notice should be identified with Docket No. 75N-0184, directed to the attention of the appropriate office named below, and addressed to the Food and Drug Administration, 5600 Fishers Lane Rockville MD 20857, except requests for opinion of applicability are to be sent to the address listed below.

Supplements to full new drug applications (identify with NDA number): Division of Cardio-Renal Drug Products (HFN-110), Center for Drugs and Biologics (formerly National Center for Drugs and Biologics).

Original abbreviated new drug application and supplements thereto (identify as such): Division of Generic Drugs (HFN-230), Center for Drugs and Biologics.

Requests for guidance in conducting bioavailability studies: Division of Biopharmaceutics (HFN-220), Center for Drugs and Biologics.

Requests for hearing (identify with Docket No. 75N-0184): Dockets Management Branch (HFA-305), Rm. 4-62.

Requests for opinion of the applicability of this notice to a specific product: Division of Drug Labeling Compliance (HFN-310), Rm. 216, Center for Drugs and Biologics, 5640 Nicholson Lane Rockville, MD 20852.

Requests for the reports of the National Academy of Sciences-National Research Council: Public Records and Document Center (HFW-35), Rm. 12A-12.

**FOR FURTHER INFORMATION CONTACT:** Herbert Gerstenzang, Center for Drugs and Biologics (HFN-366), Food and Drug Administration, 5600 Fishers Lane, Rockville, MD 20857, 301-443-3650.

**SUPPLEMENTARY INFORMATION:**

## Background

In a notice published in the **Federal Register** on June 18, 1971 (36 FR 11754), FDA classified a number of drugs, including dicyclomine hydrochloride, as effective for use as adjunctive therapy in the treatment of peptic ulcer; probably effective for use as adjunctive therapy in the irritable bowel syndrome and for use as adjunctive therapy in neurogenic bowel disturbances; and possibly effective and lacking substantial evidence of effectiveness for other labeled indications.

Subsequently, FDA published two notices pertaining to dicyclomine hydrochloride in the **Federal Register** of November 11, 1975. In one notice (40 FR 52649), the agency stated that it inappropriately classified dicyclomine hydrochloride as an anticholinergic instead of as an antispasmodic. The notice further stated that this drug, over the dose ranges studied, had not been shown to be effective as an antisecretory agent and in fact possessed little or no anticholinergic activity. In the other notice (40 FR 52644), FDA granted a temporary exemption from the time limits established for completing certain phases of the drug efficacy study (DESI) program for dicyclomine hydrochloride. Under the exemption, marketing of single entity products containing the drug could be continued provided studies were undertaken to show whether the drug was effective for the indications then classified as probably effective: i.e., irritable bowel syndrome, acute enterocolitis, and, for pediatric products, infant colic. All other indications for dicyclomine hydrochloride, including adjunctive thereapy in the treatment of peptic ulcer, were classified in the notice appearing at p. 52649 as lacking substantial evidence of effectiveness. That notice also offered affected firms an opportunity for hearing concerning the removal of those indications from labeling. No hearing requests were received.

On June 20, 1978 (43 FR 26490), the testing and marketing conditions set forth in the 1975 exemption for dicyclomine hydrochloride were amended to: (1) Require that each marketed drug be the subject of an approved new drug application or a conditionally approved abbreviated new drug application; (2) allow a drug product to remain on or enter the market even though its manufacturer was not conducting clinical studies of its effectiveness, provided that some manufacturer of that drug was conducting such studies; and (3) grant an additional year for the completion of clinical studies.

In response to the 1978 notice, Merrell Dow Pharmaceuticals, Inc., submitted two large multicenter studies using Bentyl (dicyclomine hydrochloride) in the treatment of irritable bowel syndrome (033-028 and 033-045-1). Two smaller studies were also submitted: one is a series of individual studies evaluated together (033-026, 033-041, and 033-050); the other study (033-045) was discontinued when the sponsor found that the protocol was not being properly followed. All the studies except 033-045 used a higher dose of Bentyl (40 milligrams (mg), four times a day) than is recommended in the current labeling. No studies were submitted for acute enterocolitis and infant colic.

Studies 033-028 and 033-045-1 show statistically significant improvement favoring Bentyl over placebo in the categories evaluated: physician's overall global assessment, abdominal pain, abdominal tenderness, and bowel habits. Findings in studies 033-026, 033-041, 033-050, and 033-045 fall short of providing substantial evidence of effectiveness of Bentyl but are consistent with the findings in the two multicenter studies; i.e., that Bentyl is effective for the treatment of irritable bowel syndrome. In studies 033-028 and 033-045-1, 82 percent of the patients treated with initial doses of 160 mg daily demonstrated a favorable response. Although 61 percent of the Bentyl patients experienced anticholinergic side effects in these studies, these side effects were neither severe nor intolerable, and generally did not interfere with successful treatment of the patient.

## Effectiveness Decision

On the basis of the data and information submitted and reviewed, the Director of the Center for Drugs and Biologics has determined that dicyclomine hydrochloride is effective when administered orally or intramuscularly for the treatment of irritable bowel syndrome. Because the Director is not aware of any ongoing study that complies with the June 20, 1978 notice that would be applicable to dicyclomine hydrochloride in the treatment of acute enterocolitis and infant colic, he has further determined that the drug is no longer entitled to the temporary exemption and that these indications lack substantial evidence of effectiveness.

## Revocation of Exemption

For the reasons stated above, the temporary exemption announced in the notices of November 11, 1975 and June 20, 1978, as it pertains to dicyclomine hydrochloride, is hereby revoked.

## List of NDA's and ANDA's

The following approved new drug applications (NDA's) and conditionally approved or approved abbreviated new drug applications (ANDA's) provide for products that contain dicyclomine hydrochloride as the only active ingredient:

1. NDA 7-409; Bentyl Capsules, 10 mg; Merrell Dow Pharmaceuticals, Inc., 110 East Amity Rd., Cincinnati, OH 45215.

2. NDA 7-409; Bentyl Tablets, 20 mg; Merrell Dow Pharmaceuticals, Inc.

3. NDA 7-961; Bentyl Syrup, 10 mg/5 milliliter (mL); Merrell Dow Pharmaceuticals, Inc.

4. NDA 8-370; Bentyl Injection, 10 mg/mL; Merrell Dow Pharmaceuticals, Inc.

5. ANDA 80-614; Dicyclomine Hydrochloride Injection, 10 mg/mL; Carter-Glogau Laboratories, 5160 West Bethany Home Rd., Glendale, AZ 85301.
6. ANDA 80-971; Dicyclomine Hydrochloride Capsules, 10 mg; Private Formulations, Inc., 460 Plainfield Ave., Edison, NJ 08817.
7. ANDA 83-179; Dicyclomine Hydrochloride Capsules, 10 mg; Bolar Pharmaceutical Co., Inc., 130 Lincoln St., Copiague, NY 11726.
8. ANDA 83-860; Dicyclomine Hydrochloride Capsules, 10 mg; Boots Pharmaceutical Corp. (formerly Generic Pharmaceutical Corp.), 433 Commercial Ave., Palisades Park, NJ 07650.
9. ANDA 83-924; Dicyclomine Hydrochloride Tablets, 20 mg; Boots Pharmaceutical Corp.
10. ANDA 84-097; Dicyclomine Hydrochloride Tablets, 20 mg; Tablicaps, Inc., P.O. Box 5555, Franklinville, NJ 08322.
11. ANDA 84-285; Dicyclomine Hydrochloride Capsules, 10 mg; The Lannett Co., Inc., 9000 State Rd., Philadelphia, PA 19136.
12. ANDA 84-347; Dicyclomine Hydrochloride Capsules, 10 mg; Danbury Pharmacal, Inc., 131 West St., Danbury, Ct 06810.
13. ANDA 84-361; Dicyclomine Hydrochloride Tablets, 20 mg; Bolar Pharmaceutical Co., Inc.
14. ANDA 84-479; Dicyclomine Hydrochloride Syrup, 10 mg/5 mL; National Pharmaceutical Manufacuring Co., Inc., 4128 Hayward Ave., Baltimore, MD 21215.
15. ANDA 84-505; Dicyclomine Hydrochloride Capsules, 10 mg; Barr Laboratories, Inc., Northvale, NJ 07647.
16. ANDA 84-600; Dicyclomine Hydrochloride Tablets, 20 mg; Barr Laboratories, Inc.
17. ANDA 84-602; Dicyclomine Hydrochloride Tablets, 20 mg; Danbury Pharmacal, Inc.
18. ANDA 85-082; Dicyclomine Hydrochloride Capsules, 10 mg; Chelsea Laboratories, Inc., Inwood, NY 11696.
19. ANDA 85-223; Dicyclomine Hydrochloride Tablets, 20 mg; Chelsea Laboratories, Inc.
20. ANDA 86-527; Dicyclomine Hydrochloride Tablets, 20 mg; Lemmon Co., 850 Cathill Rd., Sellersville, PA 18960.
21. ANDA 86-528; Dicyclomine Hydrochloride Capsules, 10 mg; Lemmon Co.
22. ANDA 86-877; Dicyclomine Hydrochloride Capsules, 10 mg; Lederle Laboratories, North Middletown Rd., Pearl River, NY 10965.
23. ANDA 86-878; Dicyclomine Hydrochloride Tablets, 20 mg; Lederle Laboratories.
24. ANDA 87-993; Baycyclomine Syrup, 10 mg/5 mL; Bay Laboratories, 3654 West Jarvis, Skokie, IL 60076.

**New Drug Status**

Dicyclomine Hydrochloride-containing products are regarded as new drugs (21 U.S.C. 321(p)) and an approved new drug application is required for marketing them. The new drug applications listed above represent: (1) NDA's approved on the basis of safety before October 10, 1962; (2) ANDA's submitted and approved on the basis of the June 18, 1971 notice and for which approval of the peptic ulcer indication was later withdrawn (40 FR 52649, Nov. 11, 1975); and (3) ANDA's conditionally approved under the temporary exemption that allowed products containing dicyclomine hydrochloride to be marketed while effectiveness studies were conducted. None of these new drug applications is approved on the basis of effectiveness of the drug product. Therefore, supplemental new drug applications are now required to revise the labeling and to provide additional information necessary for full approval of the NDA's and ANDA's for safety and effectiveness.

In addition to the holders of the new drug applications specifically named above, this notice applies to any person who manufactures or distributes a drug product that is not the subject of an approved new drug application and that is identical to a drug product named above. It may also be applicable, under 21 CFR 310.6, to a related or similar drug product that is not the subject of an approved new drug application. It is the responsibility of every drug manufacturer or distributor to review this notice to determine whether it covers any drug product that the person manufactures or distributes. Any person may request an opinion of the applicability of this notice to a specific drug product by writing to the Division of Drug Labeling Compliance (address given above).

**Conditions for Approval and Marketing**

FDA has reviewed all available evidence and concludes that dicyclomine hydrochloride is effective for the indication listed in the labeling conditions below. The agency is prepared to approved abbreviated new drug applications and supplements to previously approved and conditionally approved new drug applications under conditions described herein.

1. *Form of drug.* The drug is in tablet, capsule, or syrup form suitable for oral administration, or injectable solution from suitable for intramuscular administration.

2. *Labeling Conditions.* a. The label bears the statement, "Caution: Federal law prohibits dispensing without prescription."

b. The drug is labeled to comply with all requirements of the Federal Food, Drug, and Cosmetic Act and regulations, and the labeling bears adequate information for safe and effective use of the drug. The indication is as follows:

For the treatment of Functional Bowel/Irritable Bowel Syndrome (irritable colon, spastic colon, and mucous colitis).

c. The "Clinical Pharmacology" section of the labeling is to include the following paragraph:

In two controlled clinical trials, 82 percent of the patients treated with initial doses of 160 mg daily demonstrated a favorable clinical response. In these trials, however, 61 percent of the patients on the drug experienced one or more of the following typical anticholinergic side effects: (See "Adverse Reactions" for full information)

| Side effect | Dicyclomine hydrochloride (percent) | Placebo |
|---|---|---|
| Dry Mouth | 33 | 5 |
| Dizziness | 29 | 2 |
| Blurred Vision | 27 | 2 |
| Nausea | 14 | 6 |
| Lightheadedness | 11 | 3 |
| Drowsiness | 9 | 1 |
| Weakness | 7 | 1 |
| Nervousness | 6 | 2 |

In these trials, approximately 9 percent of the dicyclomine (and 2 percent of the placebo) patients discontinued therapy because of one or more of these side effects. For the most part, however, these side effects were neither severe not intolerable, and generally did nor interfere with successful treatment of the patient. In 25 percent of the patients who had these side effects, the side effects disappeared or were tolerated with no dose reduction. A total of 28 percent of the patients in these trials had their dose reduced (to an average dose of 90 mg daily) because of side effects. These patients generally continued to experience a favorable clinical response and their side effects either disappeared or were tolerated.

d. The "Dosage and Administration" section is to read as follows:

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**Dosage and Administration**

*Dosage Must Be Adjusted to Individual Patient Needs—See Clinical Pharmacology*

The only oral dose clearly shown to be effective is 160 mg per day (in four equally divided doses). Since this dose is associated with a significant incidence of side effects, it is prudent to begin with 80 mg per day (in four equally divided doses). Depending upon the patient's response, during the first week of therapy the dose should be increased to 160 mg per day unless side effects limit dosage escalation.

If efficacy is not achieved within two weeks or side effects require doses below 80 mg per day, the drug should be discontinued. Documented safety data are not available for doses of 80 to 160 mg daily for periods longer than two weeks.

The intramuscular dosage form is to be used temporarily when the patient cannot take oral medication. Intramuscular injection is about twice as bioavailable as oral dosage forms; consequently the recommended intramuscular dose is 80 mg daily (in four divided doses). Oral dicyclomine should be started as soon as possible and the intramuscular form should not be used for periods longer than one or two days. Not for intravenous use.

3. *Marketing status.* a. Marketing of such drug products that are now the subject of an approved, conditionally approved, or effective new drug application or abbreviated new drug application may be continued provided that, on or before August 21, 1984, the holder of the application has submitted (i) a supplement for revised labeling as needed to be in accord with the labeling conditions described in this notice, and complete container labeling if current container labeling has not been submitted and (ii) a supplement to provide updated information with respect to items 6 (components), 7 (composition), and 8 (methods, facilities, and ——— controls) of new drug application form FD–356H (21 CFR 314.1(c)); and, further, provided that, on or before December 19, 1984, the application holder has submitted a supplement that presents bioavailability data in accord with item 4, below.

b. Drug products that are now the subject of an approved, conditionally approved, or effective NDA or ANDA will be given full approval based on effectiveness, as well as safety, if the supplements identified in item a above are submitted and determined to be satisfactory.

c. Approval of an abbreviated new drug application (21 CFR 314.2) must be obtained before marketing such products. The bioavailability regulations (21 CFR 320.21) require any person submitting a full or abbreviated new drug application after July 7, 1977, to include either evidence demonstrating in vivo bioavailability of the drug or information to permit waiver of the requirement. The bioavailability requirements for dicyclomine hydrochloride are described in item 4, below. Marketing drug products before approval of a new drug application will subject those products, and those persons who caused the products to be marketed, to regulatory action.

4. *Bioavailability requirements.* a. Because this is the first notice announcing the agency's determination that dicyclomine hydrochloride is effective, the drug has also been reviewed for actual or potential bioavailability/bioequivalence problems. (See 21 CFR 320.22(c)(3).) It has been determined that dicyclomine hydrochloride tablets and capsules should be added to the list of drugs for which bioavailability data are not waived (21 CFR 320.22(c)).

b. The bioavailability requirements for new applications and for previously approved or conditionally approved applications are as follows: (i) For solid oral dosage forms, in vivo bioavailability/bioequivalence data are required. (ii) For the syrup dosage form, bioavailability data are waived. (iii) For the intramuscular injection, in vivo bioavailability/bioequivalence data are required unless the applicant can provide adequate information to justify a waiver. Guidance for conducting suitable bioavailability studies may be obtained from the Division of Biopharmaceutics (address above).

**Opportunity for Hearing**

On the basis of all the data and information available to him, the Director of the Center for Drugs and Biologics is unaware of any adequate and well-controlled clinical investigation, conducted by experts qualified by scientific training and experience, that meets the requirements of section 505 of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 355) and 21 CFR 314.111(a)(5), and that demonstrates the effectiveness of dicyclomine hydrochloride for use in the treatment of acute enterocolitis or infant colic.

Notice is given to the holders of the new drug applications and conditionally approved abbreviated new drug applications listed above and to all other interested persons that the Director of the Center for Drugs and Biologics proposes to issue an order under section 505(e) of the act, withdrawing approval and conditional approval of the new drug applications and all amendments and supplements thereto providing for the indications lacking substantial evidence of effectiveness on the ground that new information before him with respect to the drug products, evaluated together with the evidence available to him when the applications were approved, shows there is a lack of substantial evidence that the drug products will have all the effects they purport or are represented to have under the conditions of use prescribed, recommended, or suggested in the labeling. If no hearing is requested, and the applications are further supplemented in accord with this notice to delete the claims lacking substantial evidence of effectiveness, approval of the indications that lack evidence of effectiveness will be considered withdrawn, and no further order will issue.

This notice of opportunity for hearing encompasses all issues relating to th legal status of the drug products subject to it, e.g., any contention that any such product is not a new drug because it is exempt from part or all of the new drug provisions of the act under the exemption for products marketed before June 25, 1938, in section 201(p) of the act, or under section 107(c) of the Drug Amendments of 1962, or for any other reason.

In accordance with section 505 of the act and the regulations promulgated under it (21 CFR Parts 310 and 314), the applicant and all other persons who manufacture or distribute a drug product that is identical, related, or similar to a drug product named above (21 CFR 310.6) and not the subject of a new drug application, are hereby given an opportunity for a hearing to show why approval of the new drug applications should not be withdrawn, and an opportunity to raise, for administrative determination, all issues relating to the legal status of the drug products named above and of all identical, related, or similar drug products not the subject of a new drug application.

The applicant or any other person subject to this notice under 21 CFR 310.6 who decides to seek a hearing, shall file (1) on or before July 23, 1984 a written notice of appearance and request for hearing, and (2) on or before August 21, 1984 the data, information, and analyses relied on to justify a hearing, as specified in 21 CFR 314.200. Any other interested person may also submit comments on this proposal to withdraw approval. The procedures and requirements governing this notice of

opportunity for hearing, a notice of appearance and request for hearing, a submission of data, information, and analyses to justify a hearing, other comments, and a granting or denial of a hearing, are contained in 21 CFR 314.200.

The failure of the applicant or any other person subject to this notice to file a timely written notice of appearance and request for hearing as required by 21 CFR 314.200 constitutes an election by the person not to make use of the opportunity for a hearing concerning the action proposed and a waiver of any contentions concerning the legal status of the relevant drug product. Any such drug product labeled for the indications referred to in this notice as lacking substantial evidence of effectiveness may not thereafter lawfully be marketed, and the Food and Drug Administration will initiate appropriate regulatory action to remove such a drug product from the market. Any new drug product marketed without an approved new drug application is subject to regulatory action at any time.

A request for a hearing may not rest upon mere allegations or denials, but must present specific facts showing that there is a genuine and substantial issue of fact that requires a hearing. If it conclusively appears from the face of the data, information, and factual analyses in their request for hearing that there is no genuine and substantial issue of fact which precludes the withdrawal of approval of the application, or when a request for hearing is not made in the required format or with the required analyses, the Commissioner of Food and Drugs will enter summary judgment against the person(s) who requests the hearing, making findings and conclusions, and denying a hearing.

All submissions pursuant to this notice are to be filed in four copies. Except for data and information prohibited from public disclosure under 21 U.S.C. 331(j) or 18 U.S.C. 1905, the submissions may be seen in the Dockets Management Branch between 9 a.m. and 4 p.m., Monday through Friday.

This notice is issued under the Federal Food, Drug, and Cosmetic Act (secs. 502, 505, 52 Stat; 1050–1053 as amended (21 U.S.C. 352, 355)) and under the authority delegated to the Director of the Center for Drugs and Biologics (21 CFR 5.70 and 5.82).

Dated: June 13, 1984.

**Paul Parkman,**

*Acting Director, Center for Drugs and Biologics.*

[FR Doc. 84-16662 Filed 6-21-84; 8:45 am]

BILLING CODE 4160-01-M

[Docket No. 84P-0209]

## Food for Human Consumption; Enriched Bread Deviating From Identity Standard; Temporary Permit for Market Testing

**AGENCY:** Food and Drug Administration.

**ACTION:** Notice.

**SUMMARY:** The Food and Drug Administration (FDA) is announcing that a temporary permit has been issued to Pepin de Puerto Rico, Inc., to market test a bread enriched to the nutrient levels recommended by the National Academy of Sciences. Food and Nutrition Board, in 1974 (with the exception that iron will remain at the level required by the standard of identity for enriched bread). The purpose of the temporary permit is to allow the applicant to measure consumer acceptance of the food.

**DATES:** This permit is effective for 15 months, beginning on the date the food is introduced or caused to be introduced into commerce, but no later than September 20, 1984.

**FOR FURTHER INFORMATION CONTACT:** F. Leo Kauffman, Center for Food Safety and Applied Nutrition (formerly Bureau of Foods) (HFF–214), Food and Drug Administration, 200 C St. SW., Washington, DC 20204, 202–485–0107.

**SUPPLEMENTARY INFORMATION:** In accordance with 21 CFR 130.17 concerning temporary permits to facilitate market testing of foods deviating from the requirements of a standard of identity promulgated under section 401 of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 341), FDA is giving notice that a temporary permit has been issued to Pepin de Puerto Rico, Inc., Bayamon, PR 00620.

The permit covers limited interstate marketing tests of enriched special formula bread. The test product deviates from the standard of identity for enriched bread, 21 CFR 136.115, in that it will contain in each 2-slice (approximately 2 ounces) serving: (1) 6 percent of the U.S. Recommended Daily Allowance (RDA) of vitamin A, (2) 8 percent of the U.S. RDA of vitamin B–6, (3) 8 percent of the U.S. RDA of folic acid, (4) 6 percent of the U.S. RDA of magnesium, and (5) 6 percent of the U.S. RDA of zinc. The test product meets all requirements of § 136.115 with the exception of these deviations.

The permit provides for the temporary marketing of 5,000 pounds per day of the product. The test product will be distributed in the Commonwealth of Puerto Rico.

The principal display panel of the label states the product name as "enriched special formula bread", and each of ingredients used is states on the label as required by the applicable sections of 21 CFR Part 101. A side-by-side comparison of the percentage of U.S. RDA's for nutrients in the test products and in regular enriched bread is shown on the label for the applicable nutrients. This permit is effective for 15 months, beginning on the date the test product is introduced or caused to be introducted into commerce, but no later September 20, 1984.

Dated: June 14, 1984.

**Taylor M. Quinn,**

*Acting Director, Center for Food Safety and Applied Nutrition.*

[FR Doc. 84-16661 Filed 6-21-84; 8:45 am]

BILLING CODE 4160-01-M

## Social Security Administration

## Statement of Organization, Functions and Delegation of Authority; Division of Project Management Support and Security

Part S of the Statment of Organization, Functions and Delegations of Authority for the Department of Health and Human Services (HHS) covers the Social Security Administration (SSA).

Notice is given that Part S, as published in the **Federal Register** on March 21, 1979 (44 FR 17218–17219) and amended by 44 FR 46350 of August 7, 1979, 46 FR 41215 of August 14, 1981 and 48 FR 337–343 of January 4, 1983 and Chapter ST as published in the **Federal Register** on January 4, 1983 (48 FR 337–343) and amended by 48 FR 36901–36904 of August 15, 1983 are amended to delete the Systems Security Staff and the Project Management Support Staff, delete the functions assigned to those Staffs and add the Division of Project Management Support and Security and the new Division functions.

The new material and changes are as follow:

Section ST. 10 *The Office of System Requirements*—(Organization): Subsection G. The Office of Planning, Control and Validation (STE) delete:

1. The System Security Staff (STE1);

2. The Project Management Support Staff (STE2) and

ADD:

1. The Division of Project Management Support and Security (STE5).

Renumber remaining Subsections G3 to G2 and G4 to G3.

Section ST. 20 *The Office of System Requirements*—(Functions):

Subsection G. The Office of Planning, Control and Validation (STE) delete:

1. The System Security Staff (STE1);

2. The Project Management Support Staff (STE2) and

ADD:

1. The Division of Project Management Support and Security (STE5).

a. Directs development, operation and maintenance of Management Support Systems which provide automated support to the Office of System Requirements (OSR) planning, monitoring, project and resource management functions. Analyzes management requirements and needs of other OSR components and develops appropriate systems support capability. Acquires necessary automated data processing (ADP) capability to meet user needs through equipment acquisition or timesharing agreements. Works with the Office of System Management (OSM), contractors and other invovled components to develop, maintain and implement Systems' management support and control processes to integrate OSR's management support systems and processes Systems-wide.

B. Provides standards, procedures, systems support and technical assistance to OSR project managers to facilitate preparation of work plans. Directs review of project work plans to ensure completeness, compatibility with standards and managerial directives and requirements and conformity to the ADP Systems Plan, Systems Control Board decisions and other management decisions. Coordinates Systems-wide approval of new and modified plans and endures that differences and conflicts among components are resolved. Provides for monitoring progress of work projects against work plans and reporting status to Systems management.

c. Monitors and directs analysis of pending legislation potentially affecting systems. Provides status of pending legislation and projections of anticipated impacts to OSR management. Coordinates analysis of enacted legislation, develops impact statements, resource projections, project plans and other documentation to facilitate OSR management planning for legislative implementation. Tracks progress of implementation and reports periodically to the Associate Commissioner, OSR.

d. Works with Systems management to develop, maintain and implement configuration control and systems change control processes. Directs review and control of requests for modification of SSA systems. Ensures that all requests are in accordance with ADP Plan and Systems Control Board decisions and correspond to approved project work plans. Monitors change requests through the systems life cycle and ensures that all necessary concurrences and approvals are obtained and that implementation is scheduled for appropriate systems versions.

e. Develops control, auditability and security standards for the organizational information requirements for all SSA systems, and ensures the implementation of the standards within all areas of OSR's functional responsibilities. Also, develops methods to improve control and security features based on established standards and cost/benefit considerations.

f. Reviews functional requirements documents, requests for system modifications, procedural issuance and related material developed by OSR components to determine adherence to SSA, HHS and the Office of Management and Budget standards relating to the security and integrity of SSA data processing and information systems.

g. Leads and/or coordinates reviews of programmatic processes and systems to identify weaknesses in control, auditability and security features, makes recommendations for improvement and coordinates activities with other SSA components to ensure that approved recommendations are implemented.

h. Provides the capability for and performs dynamic testing and static testing of all programmatic systems in support of SSA and oversight agency requirements, as well as in support of OSR control and audit process reviews.

i. Develops requirements for and authorizes systems software changes to various Control and Audit Test Facility software modules and programmatic modules used in the performance of static and dynamic testing and validates those changes. Authorizes changes to the SSA Data Acquisition and Response System's security system.

j. Coordinates with users and all Systems components on Privacy Act and Freedom of Information Act issues to ensure that functional requirements and procedures are in conformance with that legislation.

Renumber remaining Subsections G3 to G2 and G4 to G3.

Dated: May 31, 1984.

**Nelson J. Sabatini,**

*Acting Deputy Commissioner for Management and Assessment.*

[FR Doc. 84-16703 Filed 6-21-84; 8:45 am]

BILLING CODE 4110-07-M

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## Statement of Organization, Functions and Delegations of Authority; Office of Family Assistance

Part S of the Statement of Organization, Functions and Delegations of Authority for the Department of Health and Human Services (HHS) covers the Social Security Administration (SSA). Sections SF.10 and SF.20 of the SSA statement, most recently published in the **Federal Register** on November 9, 1981 (46 FR 55422–55423) and amended on June 1, 1983 (48 FR 24460–24463), describe the mission, organization and functions of SSA's Office of Family Assistance (OFA).

Notice is given that standard administrative codes (SAC) for Sections SF.10 and SF.20 are being corrected to reflect proper designation. In the organization statement, the SAC code for Section SF.10 Subsection E.1. was designated as (FSA1). The correct designation is (SFA1). In the function statement SAC code for Section SF.20 Subsection E.1. was designated as SFA3). The correct designation is (SFA1).

In the organization statement, the SAC code for Section SF.10 Subsection H. was designated as (SFM). The correct designation is (SFK). Section SF.10 Subsection H.1. was designated (SFM1). The correct designation is (SFK1). Section SF.10 Subsection H.2. was designated (SFM2). The correct designation is (SFK2). Section SF.10 Subsection H.3. was designated (SFM3). The correct designation is (SFK3).

In the functional statement, the SAC code for Section SF.20 Subsection H. was designated (SFM). The correct designation is (SFK). Section SF.20 Subsection H.1. was designated (SFM1). The correct designation is (SFK1). Section SF.20 Subsection H.2. was designated (SFM2). The correct designation is (SFK2). Section SF.20 Subsection H.3. was designated (SFM3). The correct designation is (SFK3).

Dated: June 15, 1984.

**Bert Fowler,**

*Acting Director, Division of Classification and Organization Management, OHR, OMBP.*

[FR Doc. 84-16704 Filed 6-21-84; 8:45 am]

BILLING CODE 4190-11-M

## DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

### Office of Environment and Energy

[Docket No. NI-122]

### Intended Environmental Impact Statements

The Department of Housing and Urban Development gives notice that an Environmental Impact Statement (EIS) is intended to be prepared for the following project under HUD programs as described in the appendix to this Notice, Columbia Point Redevelopment, City of Boston, Massachusetts. This Notice is required by the Council on Environmental Quality under its rules (40 CFR Part 1500).

Interested individuals, governmental agencies, and private organizations are invited to submit information and comments concerning the project to the specific person or address indicated in the appropriate part of the appendix.

Particularly solicited is information on reports or other environmental studies planned or completed in the project area, issues and data which the EIS should consider, recommended mitigating measures and alternatives, and major issues associated with the proposed project. Federal agencies having jurisdiction by law, special expertise or other special interests should report their interests and indicate their readiness to aid the EIS effort as a "cooperating agency."

Each Notice shall be effective for one year. If one year after the publication of a Notice in the **Federal Register**, a Draft EIS has not been filed on a project, then the Notice for that project shall be cancelled. If a Draft EIS is expected more than one year after the publication of the Notice in the **Federal Register**, then a new and updated Notice of Intent will be published.

Issued at Washington, D.C., June 15, 1984.

**Francis G. Haas,**

*Deputy Director, Office of Environment and Energy.*

### Appendix

*EIS On Columbia Point Redevelopment, City of Boston, Massachusetts*

The Department of Housing and Urban Development (HUD) Boston, Regional Office intends to prepare an Environmental Impact Statement (EIS), jointly with the City of Boston, for the project described below and solicit information and comments for consideration in the EIS.

*Description:* The proposed project for the construction and rehabilitation of a total of 1,400 residential apartment units on the site of the existing Columbia Point Public Housing Project. The apartments will include from one to six bedroom units totalling 2,804 bedrooms. Approximately half of the existing buildings will be demolished with the remainder being rehabilitated. New construction will provide townhouses and mid-rise (up to twelve stories) buildings. Community related amenities such as a community building, swimming pools, tennis courts, softball diamonds, tot lots and playgrounds will be provided. The 200 vehicle capacity garages will be constructed to supplement on-site parking. The project is being reviewed for acceptance under section 221(d)(3) and (4) of the National Housing Act of 1934, as amended under HUD's Urban Development Action Grant Program of the CDBG Program.

*Need:* An EIS is proposed because the proposed action, while not exceeding the threshold of 2,500 units, will have a significant impact on the human environment and require consideration of several potential adverse impacts such as airport, noise, traffic, flood hazards and reduction of public parklands.

*Alternatives:* At this time, the HUD alternatives are: accept the proposed development as submitted, accept the proposed development with modifications or reject the proposed development.

*Scoping:* HUD will not hold a scoping meeting because most of the significant issues were identified in a Certificate issued by the Massachusetts Secretary of Environmental Affairs on March 7 and additional issues were identified by HUD in a letter dated May 21, 1984.

*Comments:* Comments and questions regarding this proposal should be sent within twenty-one (21) days of the publication of this Notice in the **Federal Register** to: John Mongan, Regional Administrator-Regional Housing Commissioner, Attn: Sheldon Gilbert, Regional Environmental Officer, Department of Housing and Urban Development, 15 New Chardon Street, Boston, Massachusetts 02114.

[FR Doc. 84-16769 Filed 6-21-84; 8:45 am]

BILLING CODE 4210-29-M

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[Docket No. NI-123]

### Intended Environmental Impact Statements

The Department of Housing and Urban Development gives notice that an Environmental Impact Statement (EIS) is intended to be prepared for the following project under HUD programs as described in the appendix: City of Warren, Michigan. This Notice is required by the Council of Environmental Quality under its rules (40 CFR Part 1500).

Interested individuals, governmental agencies, and private organizations are invited to submit information and comments concerning the project to the specific person or address indicated in the appropriate part of the appendix.

Particularly solicited is information on reports or other environmental studies planned or completed in the project area, issues and data which the EIS should consider, recommended mitigating measures and alternatives, and major issues associated with the proposed project. Federal agencies having jurisdiction by law, special expertise or other special interests should report their interests and indicate their readiness to aid the EIS effort as a "cooperating agency."

Each Notice shall be effective for one year. If one year after the publication of a Notice in the **Federal Register**, a Draft EIS has not been filed on a project, then the Notice for that project shall be cancelled. If a Draft EIS is expected more than one year after the publication of the Notice in the **Federal Register**, then a new and updated Notice of Intent will be published.

Issued at Washington, D.C., June 15, 1984.

**Francis G. Haas,**

*Deputy Director, Office of Environment and Energy.*

### Appendix

*EIS for the Chrysler Corporation Warren Assembly Plant, City of Warren, Macomb County, Michigan*

The City of Warren intends to prepare an Environmental Impact Statement (EIS) on the project described below and solicit information and comments for consideration int he EIS.

*Description:* The proposed Chrysler Corporation Warren Assembly Plant will consist of the rehabilitation of the existing Warren Truck Assembly and the addition of a new 700,000 square foot paint shop. Construction of the new paint shop will require the demolition of an existing vacant foundry. The proposed project consists of approximately 130 acres and is located on the northeast corner of the Mound Road and 8 Mile Road. The approximate cost of the project is in excess of $500 million.

Federal funding for the project is expected to be from the United States Department of Housing and Urban Development (HUD), UDAG and Community Development Block Grant. Other funding sources may include the

Federal Highway Administration, Economic Development Administration or other Federal agencies.

*Need:* A decision to prepare an EIS has been based upon effects on air quality, noise quality, traffic and hazardous and toxic waste.

*Alternatives:* Alternatives being considered at this time include: (1) Demolition of existing Jones Laughlin Industrial Plant and development of the site for a new paint shop; (2) rehabilitation of the existing Jones & Laughlin building for its past purpose of a foundry; and (3) no project. A "no project alternative" would mean that the project would not be developed in the City of Warren and the possible relocation to another community.

*Scoping:* This notice is part of the process of scoping the EIS. Reponses will be used to: (1) Make a determination of the need to prepare a full EIS; (2) help determine significant environmental issues; (3) identify data that will be used in the EIS; and (4) identify agencies, groups and individuals that will participate in the EIS process.

A public scoping meeting will be held as follows: Fifteen (15) days after publication in the **Federal Register** at 1:00 p.m.–3:00 p.m. and 7:00 p.m.–9:00 p.m. at the Warren City Hall, 29500 Van Dyke, Warren, Michigan. Contact Gerald G. Noichel at (313) 574–4687 for correct date of the public scoping meeting.

*Comment:* Submission of comments and information prior to the Public meeting either in writing or by telephone should be directed to: Gerald G. Noichel, Economic Development Coordinator, City of Warren, 29500 Van Dyke, Warren, Michigan 48093, telephone number (313) 574–4687.

[FR Doc. 84–16770 Filed 6–21–84; 8:45 am]

BILLING CODE 4210–29–M

## DEPARTMENT OF THE INTERIOR

### Bureau of Indian Affairs

### Membership Roll of the Confederated Tribes of the Grand Ronde Community of Oregon

**AGENCY:** Bureau of Indian Affairs, Interior.

**ACTION:** Notice.

**SUMMARY:** The Bureau of Indian Affairs is publishing the membership roll of the Confederated Tribes of the Grand Ronde Community of Oregon. The membership roll was prepared in accordance with the Act of November 22, 1983, which provided for the restoration of Federal recognition to the Confederated Tribes of the Grand Ronde Community. Publication of the membership roll in the **Federal Register** is required by section 7 of the Act of November 22, 1983.

**FOR FURTHER INFORMATION CONTACT:** William J. Smith, Portland Area Office, Bureau of Indian Affairs, P.O. Box 3785, Portland, Oregon 97208, telephone number: (503) 231–6723 (FTS 429–6723).

**SUPPLEMENTARY INFORMATION:** The Act of November 22, 1983 (97 Stat. 1064), provided for the restoration of Federal recognition to the Confederated Tribes of the Grand Ronde Community of Oregon. Section 7 of the Act specified criteria governing eligibility for membership until the Tribes adopted a constitution and bylaws. A membership roll was to be prepared of persons who met the requirements specified in the Act. Not less than sixty (60) days before a Secretarial election of the membership is held to approve or disapprove the adoption of a constitution and bylaws, section 7(c)(4) requires the publication of the certified membership roll in the **Federal Register.**

Accordingly, the membership roll of the Confederated Tribes of the Grand Ronde Community of Oregon, which follows, was prepared as of June 1, 1984, of persons who met the requirements specified in section 7 of the Act of November 22, 1983. The membership roll was certified to be true and accurate by the Chairwoman of the Interim Council on June 6, 1984, and the Portland Area Director of the Bureau of Indian Affairs approved the roll on June 7, 1984.

This notice is published in exercise of authority delegated by the Secretary of the Interior to the Assistant Secretary for Indian Affairs by 209 DM 8.

**Kenneth Smith,**

*Assistant Secretary, Indian Affairs.*

**Department of the Interior**

Bureau of Indian Affairs,

*Portland Area Office, Approval—Membership Roll of the Confederated Tribes of the Grand Ronde Community of Oregon.*

I hereby certify that the attached Membership Roll of the Confederated Tribes of the Grand Ronde Community of Oregon constitutes the tribal membership as of June 1, 1984, and was prepared in accordance with Section 7 of the Act of November 22, 1983 (97 Stat. 1064). Consequently, under the authority delegated to me to act for the Secretary of the Interior in approving tribal membership rolls, I am approving the attached roll and recommend that the Secretary of the Interior or his authorized representative prepare the roll for publication in the **Federal Register** pursuant to Section 7(c)(4) of the Act.

Dated: June 7, 1984.

Stanley Speaks,

*Area Director.*

**Certification of the Grand Ronde Community Interim Council**

I certify that to the best of my belief and knowledge the attached roll containing a total of 1101 names constitutes the Membership Roll of the Confederated Tribes of the Grand Ronde Community of Oregon prepared in accordance with Section 7 of the Act of November 22, 1983 (97 Stat. 1064), and is a true and accurate listing of enrolled tribal members as of June 1, 1984.

Dated: June 6, 1984.

Kathryn Harrison,

*Chairman, Interim Council, Confederated Tribes of the Grand Ronde Community.*

BILLING CODE 4310–02–M

MEMBERSHIP ROLL OF THE CONFEDERATED TRIBES OF THE GRAND RONDE COMMUNITY OF OREGON PREPARED UNDER THE ACT OF NOVEMBER 22,1983 97 STAT. 1064 PAGE 1

| I.D. | NAME | DOB | I.D. | NAME | DOB |
|---|---|---|---|---|---|
| 0863 | ALBERTSON,PATRI | 11/13/1955 | 0033 | BLOOM,AGATHA | 08/16/1904 |
| 0003 | ALLEN,DEBORAH | 07/01/1951 | 0034 | BLOOM,BERNICE | 06/02/1923 |
| 0864 | ALLEN,DESIREE | 07/09/1972 | 0865 | BOBB,BILLY | 12/06/1971 |
| 0004 | ALLEN,JOHN | 09/19/1944 | 0866 | BOBB,CORY | 12/17/1973 |
| 0005 | ALLEN,LEROY | 06/30/1949 | 0035 | BOBB,DELLA | 02/26/1934 |
| 0006 | ALLEN,PATRICIA | 01/30/1947 | 0037 | BOBB,LENA | 10/23/1892 |
| 0007 | ALLEN,PAULINE | 08/26/1943 | 0038 | BOBB,STEVEN | 04/07/1949 |
| 0042 | ANDREWS,LINDA | 11/17/1949 | 0867 | BOBB,STEVEN | 11/12/1969 |
| 0008 | ASH,MATILDA | 12/31/1908 | 0039 | BOWMAN,PATRICIA | 12/04/1944 |
| 0994 | ASHMAN,EDWIN | 12/15/1953 | 0040 | BRANDON,JERRY | 03/14/1954 |
| 0761 | BAHR,JESSE | 01/27/1923 | 0041 | BRANDON,JOHNNY | 02/26/1953 |
| 1016 | BAILEY,JULIE | 02/18/1962 | 0044 | BRANDON,MYRNA | 06/06/1932 |
| 0009 | BAKER,DOLLIE | 05/21/1893 | 1087 | BRISBOIS,BRADY | 12/22/1956 |
| 0010 | BANKE,ETHEL | 01/25/1900 | 0868 | BRISBOIS,DALE | 04/04/1947 |
| 0011 | BANKE,HAZEL | 10/24/1924 | 0869 | BRISBOIS,FREDER | 03/08/1951 |
| 0110 | BASS,APRIL | 04/22/1952 | 0870 | BRISBOIS,JOANN | 11/15/1932 |
| 1045 | BAUER,HELEN | 04/28/1934 | 0871 | BRISSOIS,PALMER | 02/21/1961 |
| 0013 | BEAN,ELLEN | 09/09/1943 | 0872 | BROOKS,CHERYL | 01/12/1963 |
| 0014 | BEAN,FRANCIS | 04/02/1940 | 0045 | BROOKS,DWIGHT | 06/04/1950 |
| 0015 | BEAN,FREMOND | 12/14/1914 | 0046 | BROOKS,GREGORY | 11/26/1945 |
| 0629 | BEAN,JOLENE | 11/22/1936 | 0047 | BROOKS,JEFFREY | 11/05/1948 |
| 0017 | BEAN,LINDA | 07/23/1947 | 0050 | BROWN,JOHN | 10/22/1919 |
| 0018 | BEAN,MARGARET | 01/28/1891 | 0051 | BROWN,JOHN | 10/20/1947 |
| 0019 | BEAN,THOMAS | 09/14/1945 | 0873 | BROWN,PHYLLIS | 12/05/1960 |
| 0371 | BEARD,SHARON | 03/12/1941 | 0052 | BROWN,ROBERT | 11/11/1950 |
| 0020 | BECKER,TERRY | 11/17/1946 | 0053 | BROWN,THOMAS | 08/01/1917 |
| 1017 | BEDORTHA,TIMOTH | 08/10/1959 | 0054 | BUENO,LAVINA | 10/01/1917 |
| 0021 | BEEBE,ABRAHAM | 06/16/1923 | 0055 | BUENO,RUDOLPH | 06/29/1941 |
| 0022 | BEEBE,DOUGLAS | 01/10/1951 | 0874 | BULTER,CYNTHIA | 06/10/1962 |
| 0023 | BEEBE,ROBERT | 12/07/1950 | 0056 | BURR,MAY | 05/24/1918 |
| 0024 | BEEBE,SHARON | 01/23/1952 | 0057 | BURR,PATRICIA | 08/17/1940 |
| 0025 | BELLINGER,MAUDE | 11/20/1896 | 0607 | BUTLER,CHERIE | 07/11/1941 |
| 1018 | BENNET,ALONZO | 01/04/1975 | 0058 | BUTLER,LOIS | 04/18/1934 |
| 1019 | BENNET,ROCKY | 02/26/1978 | 0704 | BUTLER,WILMADEN | 02/20/1934 |
| 0026 | BENNETT,DONALD | 05/03/1947 | 0085 | BUXMAN,RITA | 02/22/1948 |
| 0027 | BENNETT,EVERETT | 07/13/1951 | 0675 | CABAL,ELOISA | 10/21/1910 |
| 1086 | BENNETT,LAVERN | 06/02/1976 | 0099 | CAIN,MADELINE | 09/27/1952 |
| 0599 | BENNETT,MERLENE | 12/22/1952 | 1088 | CAISSE,BONNIE | 05/30/1955 |
| 0029 | BENNETT,RAMONA | 04/01/1938 | 0531 | CARL,CHERYL | 02/22/1953 |
| 0030 | BENNETT,ROSE | 05/30/1922 | 0059 | CARLTON,GENE | 03/13/1916 |
| 1020 | BICE,GORDON | 07/02/1954 | 0060 | CARLTON,NELLIE | 06/14/1897 |
| 0467 | BILLINGS,NORMA | 07/03/1944 | 0061 | CARLTON,RAYMOND | 01/01/1900 |
| 0031 | BLAIR,HAROLD | 06/20/1920 | 0062 | CATAFFA,JOSEPHI | 07/11/1911 |
| 0032 | BLAIR,JESSIE | 04/06/1923 | 0627 | CATHERN,YVONNE | 01/17/1944 |
| 0300 | BLOMQUIST,ALTA | 05/07/1930 | 0065 | CHANDLER,GRACE | 02/26/1939 |

MEMBERSHIP ROLL OF THE CONFEDERATED TRIBES OF THE GRAND RONDE COMMUNITY OF OREGON PREPARED UNDER THE ACT OF NOVEMBER 22,1983 97 STAT. 1064 (CONTINUED) PAGE 2

| I.D. | NAME | DOB | I.D. | NAME | DOB |
|---|---|---|---|---|---|
| 0066 | CHANDLER,JOYCE | 01/19/1943 | 0306 | CUNNINGHAM,EDIT | 01/04/1923 |
| 0067 | CHANDLER,LEROY | 10/25/1940 | 0100 | CUNNINGHAM,KATE | 03/01/1883 |
| 0063 | CHANDLER,DENNIS | 07/23/1942 | 0103 | CURETON,PHYLLIS | 06/25/1930 |
| 0068 | CHAVEZ,LIZZIE | 01/01/1895 | 0104 | CURETON,VICTOR | 11/02/1951 |
| 1089 | CHILDERS,ANGELA | 06/11/1967 | 0106 | CURL,IRENE | 01/21/1904 |
| 1090 | CHILDERS,DEBRA | 04/06/1968 | 0459 | CUTHBERT,DEBORA | 09/15/1950 |
| 1091 | CHILDERS,MICHAE | 02/11/1970 | 0108 | DARLING,GWENDOL | 07/14/1930 |
| 0246 | CLARK,ARTHELIA | 07/27/1927 | 0109 | DARLING,LARRY | 01/01/1949 |
| 0875 | CLARK,CHRISTOPH | 04/09/1976 | 0111 | DAVIDSON,GENE | 12/05/1947 |
| 0249 | CLARK,DAVID | 12/24/1952 | 0112 | DAVIDSON,HARRY | 11/29/1948 |
| 0876 | CLARK,JENNIFER | 09/04/1979 | 0879 | DAVIDSON,LORAN | 09/09/1956 |
| 0877 | CLARK,MICHELLE | 06/15/1963 | 0341 | DAVIDSON,MARIAN | 04/27/1922 |
| 0878 | COLEY,KATHRYN | 08/01/1955 | 0113 | DAVIDSON,OPAL | 04/19/1915 |
| 0545 | COLTON,JACQULYN | 03/10/1951 | 0116 | DAVIS,HOWARD | 04/24/1947 |
| 0505 | CONNEY,BEVERLY | 08/27/1934 | 0166 | DAVIS,MARIE | 11/04/1939 |
| 0069 | CONRAD,ESTHER | 06/28/1902 | 0117 | DAVIS,MARVIN | 02/05/1946 |
| 0070 | COOK,ELISE | 09/30/1895 | 0118 | DAY,ALEXANDER | 07/22/1908 |
| 0071 | COOK,IVANETTA | 12/04/1920 | 0119 | DAY,CLIFFORD | 07/22/1918 |
| 0072 | COOK,LYNN | 12/04/1946 | 0120 | DAY,FLOYD | 08/24/1921 |
| 0073 | COOK,MARCUS | 12/27/1949 | 0838 | DEHART,JOYCE | 08/28/1941 |
| 0074 | COOK,MICHAEL | 12/27/1949 | 1092 | DENHEM,EDWARD | 05/25/1973 |
| 0075 | COOK,PAMELA | 09/25/1952 | 1093 | DENHEM,SCOTT | 06/08/1965 |
| 0076 | COOK,PATRICK | 04/06/1948 | 1094 | DENHEM,SHANON | 03/12/1967 |
| 0846 | COOTE,JOANN | 06/15/1946 | 1095 | DENHEM,SHAWNA | 07/15/1971 |
| 0077 | COPELAND,ALVINA | 03/10/1902 | 0410 | DIXON,SHARON | 07/13/1941 |
| 0078 | COPELAND,JOSEPH | 03/01/1923 | 0105 | DOMPIER,VONNIE | 05/28/1954 |
| 0079 | COPELAND,TERESA | 01/12/1927 | 0121 | DOWD,BARBARA | 10/23/1949 |
| 0080 | COPELAND,VERONI | 04/27/1921 | 0122 | DOWD,DANIEL | 05/15/1915 |
| 0081 | COUNTRYMAN,HERM | 10/09/1908 | 0123 | DOWD,DOROTHY | 04/28/1908 |
| 0082 | COUNTRYMAN,IVA | 02/23/1913 | 0124 | DOWD,DREW | 05/25/1944 |
| 0083 | COUNTRYMAN,JOHN | 11/29/1909 | 0125 | DOWD,ELIZABETH | 07/13/1943 |
| 0084 | COUNTRYMAN,MARY | 08/09/1876 | 0126 | DOWD,GEORGE | 09/11/1886 |
| 0086 | COUNTRYMAN,SAMU | 02/21/1904 | 0127 | DOWD,GEORGE | 10/27/1953 |
| 0087 | CRAIG,JOYCE | 02/06/1936 | 0128 | DOWD,ILA | 11/25/1908 |
| 0088 | CRAIG,ROBERT | 08/22/1937 | 0129 | DOWD,JO ANN | 12/30/1914 |
| 0089 | CRAIG,THEODORE | 01/29/1910 | 0130 | DOWD,JOSEPH | 06/10/1903 |
| 0090 | CRAIG,THOMAS | 12/11/1908 | 0131 | DOWD,JUDY | 07/06/1945 |
| 0091 | CRAIG,WILL | 01/13/1887 | 0132 | DOWD,KATHLEEN | 01/03/1947 |
| 0016 | CRIPPEN,JOYCE | 11/01/1949 | 0133 | DOWD,MARY | 09/21/1941 |
| 1021 | CROUCH,RAYMOND | 09/15/1957 | 0134 | DOWD,MARY | 06/19/1940 |
| 0094 | CROWLEY,JAMES | 03/07/1948 | 0136 | DOWD,MICHAEL | 01/09/1942 |
| 0095 | CROWLEY,JEAN | 07/02/1949 | 0135 | DOWD,MICHAEL | 12/25/1950 |
| 0096 | CROWLEY,LORRAIN | 07/21/1929 | 0137 | DOWD,PATRICK | 12/09/1942 |
| 0097 | CROY,DELLMORE | 08/04/1927 | 0138 | DOWD,SUSAN | 04/30/1953 |
| 0098 | CROY,DELMER | 10/29/1953 | 0140 | DOWD,THOMAS | 12/22/1952 |

MEMBERSHIP ROLL OF THE CONFEDERATED TRIBES OF THE GRAND RONDE COMMUNITY OF OREGON PREPARED UNDER THE ACT OF NOVEMBER 22,1983
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| I.D. | NAME | DOB | I.D. | NAME | DOB |
|---|---|---|---|---|---|
| 0141 | DOWD,VILAS | 10/28/1913 | 0884 | GEORGE,CYNTHIA | 10/19/1963 |
| 0142 | DOWD,VINCENT | 10/28/1913 | 0176 | GEORGE,LLOYD | 01/21/1939 |
| 0143 | DOWNS,BERTHA | 01/20/1908 | 0885 | GEORGE,MARGO | 06/28/1955 |
| 0144 | DRAKE,OLEDA | 05/16/1911 | 0886 | GEORGE,MARLO | 03/20/1975 |
| 0600 | DRUM,LEENNE | 06/27/1949 | 0887 | GEORGE,MARTIN | 01/13/1969 |
| 0146 | DUCHARME,HARVEY | 12/31/1938 | 0177 | GEORGE,MONTE | 07/21/1952 |
| 0148 | DUCHARME,YVONNE | 07/31/1941 | 0888 | GEORGE,RODNEY | 07/30/1966 |
| 0149 | DUGAN,CLARK | 01/13/1952 | 0178 | GEORGE,RONALD | 11/13/1940 |
| 0150 | DUGGAN,FRANCIS | 12/31/1935 | 0889 | GEORGE,SAMPSON | 10/10/1981 |
| 0847 | DUNCAN,JULIE | 03/14/1949 | 1026 | GEORGE,SOLOMON | 03/17/1980 |
| 0151 | DURSCHMIDT,BILL | 09/02/1926 | 0890 | GEORGE,TONIA | 07/24/1971 |
| 0152 | DURSCHMIDT,CATH | 01/01/1930 | 0891 | GEORGE,TRACY | 12/24/1967 |
| 0153 | DURSCHMIDT,FLOR | 09/19/1905 | 0651 | GIBBONS,EVELYN | 04/15/1945 |
| 0880 | EDWARDS,CAROL | 12/27/1959 | 1027 | GIBBONS,GUY | 06/26/1968 |
| 0092 | ELLISON,CLARICE | 11/11/1927 | 1028 | GIBBONS,MARCUS | 06/20/1960 |
| 0810 | EMERSON,MARY | 03/11/1938 | 0179 | GIFFIN,ARLENE | 12/15/1928 |
| 0159 | EMERY,SHARON | 02/21/1942 | 0180 | GIFFIN,DIANNE | 04/30/1932 |
| 0154 | EMERY,ZELDA | 03/24/1922 | 0182 | GIFFIN,JACK | 09/23/1951 |
| 0780 | EMPEY,JOANN | 03/25/1950 | 0183 | GIFFIN,MICHAEL | 04/02/1950 |
| 0155 | ENGELHARDT,GRAC | 08/18/1912 | 1029 | GILLESPIE,DOREN | 07/08/1966 |
| 0157 | ERICKSON,FLOREN | 02/15/1921 | 1030 | GILLESPIE,JACQU | 08/21/1965 |
| 0158 | ERICKSON,RICHAR | 02/06/1943 | 0418 | GILLIAM,SUSAN | 10/28/1951 |
| 0504 | FEEHAN,BARBARA | 05/04/1939 | 0184 | GILLMAN,ARCHIE | 03/31/1900 |
| 0474 | FELIX,BETTY | 03/05/1947 | 0185 | GILMAN,CHARLES | 04/02/1899 |
| 0101 | FINNEY,COREAN | 04/05/1953 | 0186 | GILMAN,GLENDA | 06/07/1937 |
| 1022 | FLANSBERG,JUNE | 03/19/1960 | 0187 | GILMAN,LIZZIE | 02/10/1876 |
| 0834 | FLANSBERG,SHIRL | 07/01/1937 | 0413 | GLASS,CAROL | 02/11/1947 |
| 0164 | FORSTER,DOROTHY | 03/14/1916 | 0214 | GLEASON,CAROL | 03/14/1947 |
| 0167 | FORSTER,MARION | 12/05/1917 | 0189 | GLEASON,CLEO | 01/02/1916 |
| 0160 | FOSTER,DARRALIN | 12/23/1949 | 0190 | GLEASON,HAROLD | 04/05/1943 |
| 0161 | FOSTER,DEBORAH | 09/09/1952 | 0191 | GLEASON,JAMES | 05/19/1944 |
| 0162 | FOSTER,ESTHER | 11/27/1951 | 0102 | GLEASON,LAURA | 07/09/1950 |
| 0163 | FOSTER,LAURETTA | 05/12/1931 | 1031 | GOOD,DELORES | 05/01/1921 |
| 0546 | FRANCIS,JOANNE | 10/01/1951 | 0892 | GOOD,LEROY | 11/03/1943 |
| 0194 | FREEMAN,CHARLEN | 09/29/1947 | 0192 | GRAHAM,ANDREW | 12/16/1943 |
| 1023 | FUGATE,CORINNE | 07/25/1964 | 0193 | GRAHAM,CAROLYN | 07/27/1914 |
| 1024 | FUGATE,KELLY | 06/05/1970 | 0195 | GRAHAM,GALE | 07/29/1937 |
| 1025 | FUGATE,MICHAEL | 07/04/1965 | 0196 | GRAHAM,LESLIE | 04/02/1936 |
| 0882 | FULLER,CURTIS | 12/28/1963 | 0197 | GRAHAM,ROBERT | 07/09/1939 |
| 0693 | FULLER,IVA | 08/20/1936 | 0650 | GRAMMER,EILEEN | 11/15/1952 |
| 0172 | GASTON,ALBERTA | 08/20/1918 | 0893 | GRAMMER,FRANK | 09/26/1976 |
| 0170 | GASTON,MABEL | 05/20/1911 | 0894 | GRAMMER,JOSEPH | 07/19/1974 |
| 0171 | GASTON,RICHARD | 09/06/1936 | 0895 | GRANT,JACQUELIN | 04/12/1953 |
| 0423 | GATCHELL,SANDRA | 01/15/1949 | 0093 | GREENBERG,JOYCE | 12/14/1953 |
| 0173 | GEORGE,ANTHONY | 01/31/1943 | 0198 | GREENE,DOROTHY | 09/26/1918 |

MEMBERSHIP ROLL OF THE CONFEDERATED TRIBES OF THE GRAND RONDE COMMUNITY OF OREGON PREPARED UNDER THE ACT OF NOVEMBER 22,1983
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| I.D. | NAME | DOB | I.D. | NAME | DOB |
|---|---|---|---|---|---|
| 0199 | GREGG,BOBBY | 01/11/1948 | 0233 | HAM,DANIEL | 02/06/1953 |
| 0200 | GREGG,CARL | 11/13/1926 | 1034 | HAM,FRANCINE | 08/20/1963 |
| 0201 | GREGG,CLARENCE | 04/09/1918 | 0234 | HAM,JOYCE | 04/25/1931 |
| 0202 | GREGG,CLIFFORD | 09/17/1947 | 0228 | HAMILTON,FRANK | 10/27/1896 |
| 0203 | GREGG,EARL | 02/15/1925 | 0229 | HAMILTON,GEORGE | 10/12/1902 |
| 0204 | GREGG,ELAINE | 09/18/1944 | 0230 | HAMILTON,JOSEPH | 12/29/1875 |
| 0205 | GREGG,EVA | 08/08/1897 | 0231 | HAMILTON,THOMAS | 02/20/1870 |
| 0206 | GREGG,EVA | 01/06/1949 | 0605 | HAMM,ANNABELLE | 07/12/1939 |
| 0207 | GREGG,GRACE | 04/03/1896 | 0064 | HANDSAKER,GENEV | 12/20/1921 |
| 0208 | GREGG,JOHN | 06/13/1946 | 0168 | HANSON,SHARON | 08/26/1939 |
| 0210 | GREGG,KAREL | 03/23/1940 | 1096 | HARRISON,DAVID | 11/11/1960 |
| 0209 | GREGG,KARON | 12/09/1938 | 0908 | HARRISON,DIANE | 11/26/1959 |
| 0211 | GREGG,NANCY | 10/24/1947 | 0235 | HARRISON,FRANK | 01/15/1948 |
| 0212 | GREGG,RUTH | 06/12/1943 | 0236 | HARRISON,JEANNE | 05/16/1946 |
| 0470 | GRIFFIN,CHRISTI | 03/19/1952 | 0909 | HARRISON,KAREN | 04/06/1967 |
| 0575 | GROSHONG,MARLEN | 06/22/1950 | 0237 | HARRISON,KATHRY | 03/28/1924 |
| 0268 | GROUT,VALARENE | 05/16/1931 | 0910 | HARRISON,RAYMON | 04/28/1951 |
| 0213 | HALLER,ADELINE | 10/04/1905 | 0239 | HARRISON,THOMAS | 01/15/1949 |
| 0215 | HALLER,CHARLES | 09/28/1945 | 0240 | HARSON,SUSAN | 04/02/1902 |
| 0896 | HALLER,CHARLES | 02/22/1965 | 0529 | HAUG R,CARMEN | 08/07/1951 |
| 1032 | HALLER,CHARLES | 07/31/1972 | 0550 | HENRY,MARION | 07/06/1954 |
| 0217 | HALLER,DANIEL | 01/29/1952 | 0576 | HERRON,SHARON | 10/11/1951 |
| 0216 | HALLER,DANIEL | 02/29/1936 | 0687 | HESLET,KOANN | 08/02/1953 |
| 0218 | HALLER,DAVID | 01/19/1953 | 0241 | HIBBS,THELMA | 10/19/1913 |
| 0897 | HALLER,DAVID | 03/16/1964 | 0626 | HOBBS,VIVIAN | 07/11/1944 |
| 0219 | HALLER,DONALD | 08/04/1942 | 1035 | HOFENBREDL,KEVI | 08/24/1965 |
| 0220 | HALLER,EDWARD | 06/07/1953 | 1036 | HOFENBREDL,LARR | 07/20/1964 |
| 0221 | HALLER,EDWARD | 07/01/1934 | 1037 | HOFENBREDL,LELA | 06/09/1972 |
| 0222 | HALLER,HARVEY | 05/29/1944 | 0260 | HOFENBREDL,PRIS | 07/03/1941 |
| 0898 | HALLER,JAMES | 03/11/1963 | 0242 | HOFFER,ERNEST | 01/06/1917 |
| 0899 | HALLER,JEREMIAH | 10/10/1979 | 0243 | HOFFER,HENRY | 10/07/1900 |
| 0900 | HALLER,JOHN | 08/11/1919 | 0244 | HOLMES,ABRAHAM | 12/06/1886 |
| 0901 | HALLER,JOHN | 06/18/1958 | 0245 | HOLMES,ARNOLD | 11/27/1919 |
| 0902 | HALLER,JOSHUA | 10/20/1980 | 0247 | HOLMES,CATHERIN | 07/12/1892 |
| 0224 | HALLER,KENNETH | 03/11/1949 | 0911 | HOLMES,CONNIE | 11/06/1963 |
| 0732 | HALLER,LEVETA | 10/20/1945 | 0248 | HOLMES,DAVID | 04/03/1894 |
| 0903 | HALLER,MICHAEL | 06/29/1963 | 1038 | HOLMES,DAVID | 08/23/1970 |
| 0905 | HALLER,REX | 11/09/1965 | 0250 | HOLMES,EARL | 01/18/1936 |
| 0904 | HALLER,RICHARD | 07/18/1972 | 0251 | HOLMES,ELMER | 01/12/1940 |
| 0226 | HALLER,ROBERT | 03/28/1939 | 0252 | HOLMES,HAZEL | 05/17/1932 |
| 0906 | HALLER,ROBYN | 12/13/1967 | 1039 | HOLMES,JAMES | 10/14/1965 |
| 1033 | HALLER,TALEASE | 06/06/1971 | 0253 | HOLMES,LESTER | 05/30/1922 |
| 0907 | HALLER,THERESA | 07/03/1954 | 0254 | HOLMES,LOREN | 12/15/1937 |
| 0227 | HALLER,WILBUR | 08/18/1925 | 0255 | HOLMES,MARVIN | 04/05/1923 |
| 0232 | HAM,ALLEN | 12/27/1951 | 0256 | HOLMES,MELVIN | 03/22/1946 |

| I.D. | NAME | DOB |
|---|---|---|
| 0257 | HOLMES,MERLE | 12/09/1933 |
| 0258 | HOLMES,MILDRED | 06/10/1902 |
| 0259 | HOLMES,PAUL | 03/03/1931 |
| 0912 | HOLMES,TIMOTHY | 09/15/1962 |
| 0261 | HOLMES,VIDA | 02/16/1904 |
| 0913 | HOPTOWIT,ELAINE | 03/16/1948 |
| 0263 | HOUCK,ARNOLD | 05/16/1931 |
| 0264 | HOUCK,ARVELLA | 05/19/1909 |
| 0265 | HOUCK,DEWALT | 10/23/1910 |
| 0266 | HOUCK,LESLIE | 12/05/1945 |
| 1040 | HOUCK,TERRY | 01/09/1956 |
| 0267 | HOUCK,THEODORE | 06/08/1909 |
| 1041 | HOUSTON,ANNA | 09/25/1960 |
| 0673 | HOWELL,BERDELL | 10/25/1912 |
| 0676 | HOWELL,FLOYD | 08/08/1908 |
| 0269 | HUDSON,ABRAHAM | 06/01/1879 |
| 0420 | HUDSON,BETTY | 12/12/1949 |
| 0270 | HUDSON,CAROL | 10/04/1941 |
| 0271 | HUDSON,CATHERIN | 10/26/1951 |
| 0272 | HUDSON,EMANUEL | 12/08/1901 |
| 0273 | HUDSON,EUGENE | 03/28/1921 |
| 0274 | HUDSON,HERMAN | 07/09/1903 |
| 0275 | HUDSON,HERMAN | 01/04/1925 |
| 0276 | HUDSON,JOHN | 03/28/1917 |
| 0277 | HUDSON,JOHN | 08/01/1868 |
| 0278 | HUDSON,KENNETH | 05/16/1927 |
| 0279 | HUDSON,MAGDELIN | 12/27/1870 |
| 0280 | HUDSON,MAUDE | 12/13/1876 |
| 0281 | HUDSON,MICHAEL | 01/22/1953 |
| 0282 | HUDSON,STANFORD | 06/15/1928 |
| 0914 | HUDSON,TIMOTHY | 01/20/1953 |
| 0283 | HUGHES,ETHEL | 07/17/1917 |
| 0284 | HUGHES,LARRY | 12/18/1944 |
| 0285 | HUGHES,STEPHEN | 04/14/1935 |
| 0915 | HUGHEY,BARBARA | 03/06/1940 |
| 1042 | HUGHEY,NANCY | 12/29/1938 |
| 0491 | HUTCHINS,DIANA | 06/30/1942 |
| 0286 | HYDE,ANNA | 12/13/1925 |
| 0287 | ISAAC,HELEN | 01/05/1910 |
| 0288 | ISAAC,JOSEPH | 10/29/1899 |
| 0289 | JACKSON,BERTHA | 10/23/1913 |
| 0290 | JACKSON,CHARLES | 10/12/1942 |
| 0291 | JACKSON,CHARLOT | 08/02/1935 |
| 0292 | JACKSON,CLARA | 07/06/1945 |
| 0293 | JACKSON,DAVID | 08/08/1933 |
| 0294 | JACKSON,FLORENC | 05/02/1937 |
| 0295 | JACKSON,JESSIE | 10/05/1940 |
| 0916 | JACKSON,NATALIE | 04/10/1963 |
| 0296 | JACKSON,ROBERT | 02/20/1944 |
| 0883 | JAMESON,ROSEMAR | 03/27/1945 |
| 0297 | JAMISON,IVY | 08/16/1919 |
| 0298 | JAMISON,JEANNE | 04/28/1943 |
| 0299 | JAMISON,MAZIE | 07/03/1942 |
| 0917 | JEFFERIES,LEONA | 10/23/1953 |
| 0301 | JEFFRIES,BENJAM | 05/29/1885 |
| 0303 | JEFFRIES,CLAREN | 03/27/1926 |
| 0304 | JEFFRIES,DONALD | 04/07/1934 |
| 0307 | JEFFRIES,EDWARD | 09/29/1917 |
| 0308 | JEFFRIES,EVELYN | 12/20/1940 |
| 0309 | JEFFRIES,FRED | 09/29/1910 |
| 0310 | JEFFRIES,HARRY | 03/04/1893 |
| 0311 | JEFFRIES,IRA | 03/04/1893 |
| 0312 | JEFFRIES,JAMES | 03/03/1937 |
| 0313 | JEFFRIES,LENORA | 10/18/1936 |
| 0314 | JEFFRIES,LEO | 07/30/1919 |
| 0315 | JEFFRIES,MARY | 04/05/1935 |
| 0317 | JEFFRIES,RUSSEL | 10/16/1907 |
| 0318 | JEFFRIES,SHIRLE | 01/05/1939 |
| 0359 | JENNEFF,ELINORE | 07/08/1938 |
| 0107 | JOHN,JUANITA | 01/12/1916 |
| 0319 | JOHNSON,DONNA | 11/06/1949 |
| 1043 | JOHNSON,GENENE | 05/04/1972 |
| 0320 | JOHNSON,LOUISE | 07/24/1946 |
| 0321 | JOHNSON,MARY | 01/27/1925 |
| 0322 | JOHNSON,PAULINE | 04/26/1905 |
| 0323 | JOHNSON,REGINA | 04/09/1951 |
| 0324 | JOHNSON,ROY | 01/06/1948 |
| 0325 | JONES,DOROTHY | 03/11/1950 |
| 0327 | JONES,HAROLD | 08/27/1948 |
| 0326 | JONES,HAROLD | 12/23/1917 |
| 0328 | JONES,NAOMI | 12/05/1945 |
| 0329 | JONES,NORMA | 02/09/1933 |
| 0330 | JONES,ROBERT | 09/27/1929 |
| 0331 | JONES,VERA | 08/28/1952 |
| 0918 | JORDAN,ERIC | 08/14/1971 |
| 0188 | KAUTZ,ARLENE | 09/07/1941 |
| 0001 | KENNEDY,CHERYLE | 04/03/1948 |
| 0332 | KENWORTHY,MARY | 01/19/1898 |
| 0333 | KESSLER,ZELDA | 12/12/1917 |
| 0334 | KIMSEY,MARVIN | 02/27/1935 |



| I.D. | NAME | DOB |
|---|---|---|
| 0335 | KIMSEY,NORA | 12/02/1908 |
| 0336 | KIPP,ETHEL | 10/01/1926 |
| 0337 | KIPP,GAIL | 10/18/1948 |
| 0338 | KIPP,KEVIN | 09/15/1950 |
| 0422 | KLEINSCHMIT,LIN | 05/13/1947 |
| 0002 | KNEELAND,CORDEL | 07/09/1925 |
| 0919 | KNEELAND,STANDF | 12/04/1958 |
| 0920 | KNEELAND,TIMOTH | 02/11/1964 |
| 0339 | KNIGHT,BRENDA | 09/07/1953 |
| 0340 | KNIGHT,DELORES | 10/31/1931 |
| 1044 | KNIGHT,DENNIS | 06/19/1957 |
| 0921 | KNIGHT,JESSE | 08/05/1966 |
| 0341 | KNIGHT,LORETTA | 06/23/1952 |
| 0922 | KNIGHT,WILLIAMS | 10/15/1954 |
| 0342 | KNIGHTON,CLIFFO | 01/01/1901 |
| 0343 | KNIGHTON,CLISSI | 01/01/1905 |
| 0344 | KNIGHTON,MARY | 01/01/1899 |
| 0923 | KREHBIEL,ARLETT | 07/17/1956 |
| 1046 | KRIEHBLE,BRIAN | 12/11/1979 |
| 0345 | LABONTE,CAROL | 03/09/1944 |
| 0346 | LABONTE,ESTHER | 10/19/1907 |
| 0348 | LABONTE,EUGENE | 07/07/1941 |
| 0347 | LABONTE,FLOYD | 12/10/1942 |
| 0349 | LABONTE,GUS | 06/26/1896 |
| 0924 | LABONTE,JOHN | 07/31/1979 |
| 0350 | LABONTE,JOSEPH | 06/09/1916 |
| 0351 | LACHANCE,ALFRED | 08/01/1940 |
| 0353 | LACHANCE,ALVIN | 03/22/1952 |
| 0352 | LACHANCE,ALVIN | 02/08/1931 |
| 0354 | LACHANCE,BENJAM | 05/15/1899 |
| 0355 | LACHANCE,BENJAM | 10/11/1928 |
| 0356 | LACHANCE,CARMIN | 02/18/1943 |
| 0357 | LACHANCE,DAVID | 02/01/1892 |
| 0358 | LACHANCE,DORA | 10/12/1900 |
| 0360 | LACHANCE,EDWIN | 08/21/1889 |
| 0361 | LACHANCE,GARY | 08/12/1947 |
| 0362 | LACHANCE,HARVEY | 05/06/1915 |
| 0363 | LACHANCE,JOSEPH | 04/18/1895 |
| 0364 | LACHANCE,MARIE | 09/07/1913 |
| 0366 | LACHANCE,NARCIS | 08/05/1875 |
| 0367 | LACHANCE,NORA | 07/17/1909 |
| 0368 | LACHANCE,PROSPE | 10/11/1865 |
| 0369 | LACHANCE,RALAPH | 04/09/1914 |
| 0370 | LACHANCE,STELLA | 04/06/1915 |
| 0372 | LACHANCE,THOMAS | 05/23/1939 |
| 0373 | LAFFERTY,ELIZAB | 03/10/1949 |
| 0374 | LAFFERTY,GERALD | 02/09/1931 |
| 0375 | LAFFERTY,JAMES | 01/25/1920 |
| 0376 | LAFFERTY,KENNET | 11/20/1938 |
| 0377 | LAFFERTY,NORMA | 03/01/1926 |
| 0733 | LANCOUR,MARLENE | 08/17/1951 |
| 0378 | LANDAN,CARL | 03/24/1944 |
| 0379 | LANDAN,CHARLES | 04/24/1947 |
| 0380 | LANDAN,DARLENE | 08/02/1945 |
| 0381 | LANDAN,DELORES | 09/17/1922 |
| 0382 | LANDAN,MARY | 11/03/1949 |
| 0383 | LANDAN,ROBERT | 08/03/1948 |
| 1047 | LANE,ANTHONY | 02/05/1959 |
| 0115 | LANE,DOROTHY | 01/15/1925 |
| 0925 | LANE,E'LISHA | 12/14/1980 |
| 0427 | LANE,RENEE | 02/22/1939 |
| 0926 | LANGLEY,ALLEN | 07/16/1925 |
| 0384 | LANGLEY,BERYLE | 08/19/1936 |
| 0386 | LANGLEY,CLINTON | 05/05/1905 |
| 0387 | LANGLEY,DALE | 11/25/1931 |
| 0388 | LANGLEY,ELLIS | 06/03/1941 |
| 0389 | LANGLEY,ERWIN | 10/14/1934 |
| 0390 | LANGLEY,FRANCIS | 12/15/1912 |
| 0391 | LANGLEY,FRANKLI | 01/01/1928 |
| 0393 | LANGLEY,IVAN | 10/27/1929 |
| 0392 | LANGLEY,IVAN | 01/21/1903 |
| 0394 | LANGLEY,JODY | 09/30/1951 |
| 0395 | LANGLEY,JONI | 09/25/1953 |
| 0396 | LANGLEY,JOSEPH | 07/06/1899 |
| 0397 | LANGLEY,KRTINS | 07/12/1953 |
| 0398 | LANGLEY,LEONARD | 07/10/1937 |
| 0399 | LANGLEY,MARVIN | 02/20/1941 |
| 0400 | LANGLEY,MICHAEL | 03/04/1950 |
| 0401 | LANGLEY,MYRNA | 01/27/1939 |
| 0402 | LANGLEY,NORITA | 03/18/1937 |
| 0403 | LANGLEY,ORAL | 07/06/1911 |
| 0404 | LANGLEY,ROSCOE | 08/04/1909 |
| 0405 | LANGLEY,ROSCOE | 12/30/1932 |
| 0406 | LANGLEY,ROSELLA | 04/15/1914 |
| 0407 | LANGLEY,ROY | 11/01/1907 |
| 0408 | LANGLEY,SADIE | 01/01/1900 |
| 0409 | LANGLEY,SANDRA | 04/08/1947 |
| 0411 | LANGLEY,SHELLA | 03/04/1951 |
| 0412 | LANGLEY,WILLIAM | 06/03/1926 |
| 0415 | LARSEN,EDWARD | 03/24/1910 |

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| I.D. | NAME | DOB |
|---|---|---|
| 0414 | LARSEN,EDWARD | 12/04/1942 |
| 0416 | LARSEN,JEANNE | 03/30/1945 |
| 0927 | LARSEN,KENNETH | 11/03/1955 |
| 0417 | LARSEN,MICHAEL | 08/06/1948 |
| 0419 | LARSEN,VERNA | 07/08/1916 |
| 0421 | LASH,JACK | 04/13/1953 |
| 1048 | LASH,MICHAEL | 08/26/1959 |
| 0928 | LASH,RORY | 07/04/1957 |
| 0424 | LASH,VERA | 02/22/1924 |
| 0425 | LAWE,DIANNE | 11/16/1940 |
| 0426 | LAWE,DOROTHY | 03/11/1920 |
| 0428 | LAWNEY,ABE | 04/05/1891 |
| 0429 | LAWNEY,ELMER | 04/13/1908 |
| 0929 | LAZORE,KELLY | 09/04/1960 |
| 0674 | LEATON,BERNICE | 01/01/1907 |
| 0930 | LENABURG,SCOTT | 02/23/1954 |
| 0430 | LENO,ADELINE | 04/14/1888 |
| 0431 | LENO,ARNOLD | 03/14/1924 |
| 1049 | LENO,BARBARA | 07/15/1959 |
| 0931 | LENO,BRANDY | 03/29/1982 |
| 0932 | LENO,BRIANNA | 10/16/1980 |
| 0432 | LENO,CHARLES | 04/18/1951 |
| 1050 | LENO,DANA | 04/06/1976 |
| 0434 | LENO,DARLENE | 11/25/1948 |
| 0436 | LENO,DAVID | 12/08/1892 |
| 0435 | LENO,DAVID | 10/27/1942 |
| 0437 | LENO,DEBORAH | 05/02/1953 |
| 0438 | LENO,DOROTHY | 05/19/1954 |
| 1051 | LENO,DUSTIN | 09/21/1977 |
| 0440 | LENO,EDWIN | 07/07/1937 |
| 0439 | LENO,EDWIN | 05/20/1910 |
| 0933 | LENO,EDWIN | 07/06/1960 |
| 0441 | LENO,EMMA | 09/15/1893 |
| 0442 | LENO,GEORGE | 05/24/1885 |
| 0443 | LENO,GUS | 04/02/1900 |
| 0444 | LENO,HATTIE | 05/04/1881 |
| 1052 | LENO,LISA | 11/19/1968 |
| 0934 | LENO,LONITA | 12/14/1965 |
| 0935 | LENO,LONNIE | 03/27/1957 |
| 0936 | LENO,MARTIN | 04/27/1965 |
| 0937 | LENO,MARYKAY | 06/01/1967 |
| 0445 | LENO,MAXINE | 01/24/1922 |
| 0446 | LENO,MERLE | 05/09/1932 |
| 0447 | LENO,MICHAEL | 05/05/1946 |
| 0448 | LENO,MILDRED | 06/17/1902 |
| 0449 | LENO,NATHAN | 03/11/1909 |
| 0450 | LENO,ORVILLE | 01/09/1919 |
| 0451 | LENO,PATRICIA | 05/14/1939 |
| 0452 | LENO,RAMONA | 09/25/1929 |
| 1053 | LENO,RANDALL | 05/17/1967 |
| 0453 | LENO,REYNOLD | 10/06/1950 |
| 1097 | LENO,RHONDA | 09/26/1962 |
| 0454 | LENO,ROBERT | 06/05/1951 |
| 1054 | LENO,RONALD | 12/12/1954 |
| 1055 | LENO,RUSSEL | 01/06/1960 |
| 0455 | LENO,RUSSELL | 06/11/1927 |
| 0938 | LENO,TARA | 12/13/1981 |
| 0456 | LENO,THOMAS | 03/25/1949 |
| 0457 | LENO,TILLMAN | 01/01/1900 |
| 0458 | LENO,WILMER | 09/06/1921 |
| 0460 | LEWIS,GARY | 03/02/1943 |
| 0462 | LEWIS,LARRY | 01/22/1952 |
| 0463 | LEWIS,NORMA | 11/22/1924 |
| 0464 | LEWIS,THOMAS | 03/23/1954 |
| 0465 | LILLARD,BLANCHE | 04/08/1918 |
| 0466 | LILLARD,JOHN | 02/20/1949 |
| 0468 | LILLARD,YVONNE | 09/12/1953 |
| 0939 | LINDAHL,MARY | 07/13/1928 |
| 0469 | LINTON,CAROLINE | 10/16/1936 |
| 0472 | LINTON,GORDON | 11/03/1933 |
| 0473 | LINTON,THOMAS | 01/11/1939 |
| 0940 | LINTON,WILLIAM | 06/09/1953 |
| 0475 | LOCKWOOD,ROSE | 10/17/1890 |
| 0476 | LOGSDEN,MAXINE | 01/04/1926 |
| 0477 | LOGSDEN,RACHEL | 06/03/1896 |
| 0478 | LONG,CEDRIC | 03/02/1909 |
| 0532 | LOPEZ,CONSTANCE | 06/01/1950 |
| 1056 | LUX,DONNA | 01/05/1957 |
| 1057 | LUX,MATTHEW | 10/04/1982 |
| 0305 | LYNCH,DORIS | 03/29/1924 |
| 0316 | LYNCH,MILDRED | 03/20/1921 |
| 0941 | MANANGAN,ALFRED | 05/24/1947 |
| 0942 | MANANGAN,JERRY | 01/27/1959 |
| 0943 | MANANGAN,PHILAM | 07/06/1949 |
| 0944 | MANANGAN,ROSETT | 06/13/1927 |
| 0945 | MANANGAN,STEVE | 08/16/1960 |
| 0534 | MARTIN,BONNIE | 11/27/1946 |
| 0946 | MARTIN,CINDY | 07/07/1968 |
| 0471 | MARTIN,GERALDIN | 08/02/1913 |
| 0947 | MARTIN,KENNETH | 02/07/1966 |

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| I.D. | NAME | DOB |
|---|---|---|
| 0948 | MARTIN,SUSAN | 06/12/1964 |
| 0949 | MARTIN,TIMOTHY | 12/02/1962 |
| 0483 | MARTIN,VIVIAN | 12/24/1925 |
| 0480 | MCCARTHY,GERALD | 12/31/1921 |
| 0481 | MCCARTHY,LILLIA | 03/02/1906 |
| 0482 | MCCARTHY,TERRAN | 04/21/1926 |
| 0950 | MCCOOL,ROBIN | 04/26/1962 |
| 0461 | MCCUTCHEON,KARE | 08/13/1941 |
| 0433 | MCDANIEL,COLLEE | 11/14/1949 |
| 0484 | MCEACHRAN,BARBA | 08/08/1947 |
| 0485 | MCEACHRAN,GEORG | 07/06/1948 |
| 0486 | MCEACHRAN,PRISC | 04/20/1922 |
| 0487 | MCEACHRAN,RICHA | 08/13/1949 |
| 0488 | MCGEE,ARTHUR | 01/17/1950 |
| 0489 | MCGEE,DAVID | 05/16/1953 |
| 0490 | MCGEE,DENNIS | 10/17/1944 |
| 0492 | MCGEE,EDNA | 06/12/1922 |
| 0493 | MCGEE,FREDERICK | 11/03/1929 |
| 0494 | MCGEE,JOSEPH | 04/26/1952 |
| 0495 | MCGEE,LAURA | 04/30/1945 |
| 0496 | MCGEE,RICHARD | 05/06/1941 |
| 0497 | MCGEE,RICHARD | 06/05/1916 |
| 0498 | MCGEE,RONALD | 07/23/1948 |
| 0499 | MCGEE,WILFRED | 06/24/1914 |
| 0500 | MCGEE,WILLIAM | 04/10/1951 |
| 0502 | MCKAY,JOSEPH | 03/25/1938 |
| 0501 | MCKAY,JOSEPH | 09/15/1836 |
| 0503 | MCKINNEY,JOSEPH | 04/17/1901 |
| 0506 | MCKNIGHT,CLEO | 05/15/1922 |
| 0511 | MCKNIGHT,CORRY | 11/23/1952 |
| 0507 | MCKNIGHT,ELVIRA | 03/21/1901 |
| 0509 | MCKNIGHT,JUNE | 06/09/1930 |
| 0510 | MCKNIGHT,LESLIE | 12/02/1948 |
| 0951 | MCKNIGHT,LINDA | 01/03/1951 |
| 0512 | MCKNIGHT,MELVIN | 12/05/1936 |
| 0513 | MCKNIGHT,MYRTLE | 06/28/1896 |
| 0514 | MCKNIGHT,RAE AN | 10/01/1952 |
| 0515 | MCKNIGHT,RAY | 12/29/1924 |
| 0516 | MCKNIGHT,RICHAR | 01/01/1947 |
| 0517 | MCKNIGHT,ROBERT | 06/19/1932 |
| 0518 | MCKNIGHT,STEVEN | 09/08/1951 |
| 0519 | MCKNIGHT,WAYNE | 06/24/1933 |
| 0049 | MCNUTT,NADINE | 05/15/1920 |
| 0165 | MEDERIOS,FRANCE | 12/21/1937 |
| 0520 | MENARD,LINDSEY | 09/02/1893 |
| 0521 | MERCIER,AGNES | 02/27/1889 |
| 0522 | MERCIER,ARTHUR | 06/10/1884 |
| 0952 | MERCIER,BARBARA | 03/29/1965 |
| 0523 | MERCIER,BEVERLY | 09/03/1931 |
| 0524 | MERCIER,BLANCHE | 09/30/1918 |
| 0525 | MERCIER,BLANDIN | 02/15/1924 |
| 1058 | MERCIER,BOBBY | 08/11/1976 |
| 0526 | MERCIER,BRICE | 09/01/1953 |
| 0527 | MERCIER,BRUCE | 05/12/1953 |
| 0528 | MERCIER,CARMEL | 02/10/1947 |
| 0535 | MERCIER,DARREL | 09/23/1929 |
| 0536 | MERCIER,DAVID | 06/13/1949 |
| 1059 | MERCIER,DAVID | 06/14/1977 |
| 0537 | MERCIER,DENNIS | 10/27/1948 |
| 1060 | MERCIER,ERIC | 08/13/1958 |
| 0538 | MERCIER,FRANCIS | 05/12/1944 |
| 0539 | MERCIER,GERTRUD | 09/12/1896 |
| 0542 | MERCIER,HAROLD | 01/10/1950 |
| 0540 | MERCIER,HAROLD | 02/12/1909 |
| 0541 | MERCIER,HAROLD | 04/18/1930 |
| 0543 | MERCIER,HARRY | 01/06/1890 |
| 0544 | MERCIER,HUBERT | 09/22/1910 |
| 0953 | MERCIER,JOHN | 08/29/1961 |
| 0547 | MERCIER,JOSEPH | 12/10/1922 |
| 0548 | MERCIER,LENNIS | 10/27/1948 |
| 0549 | MERCIER,LONNELL | 07/20/1949 |
| 0954 | MERCIER,LOWELL | 11/19/1956 |
| 0551 | MERCIER,MARK | 10/27/1952 |
| 0552 | MERCIER,MARTHA | 04/11/1910 |
| 0553 | MERCIER,MICHAEL | 02/07/1951 |
| 1098 | MERCIER,MICHAEL | 06/29/1956 |
| 0554 | MERCIER,PEARL | 09/07/1895 |
| 0555 | MERCIER,ROBERT | 07/14/1943 |
| 0955 | MERCIER,RONALD | 12/31/1962 |
| 0956 | MERCIER,STEPHAN | 07/26/1974 |
| 1061 | MERCIER,TERI | 03/28/1965 |
| 0957 | MERCIER,TONI | 05/21/1973 |
| 0959 | MERCIER,TRESA | 12/18/1964 |
| 0958 | MERCIER,TYSON | 12/18/1974 |
| 0556 | MERCIER,VELMA | 01/05/1907 |
| 0557 | MERCIER,VERNON | 07/27/1913 |
| 0558 | MERCIER,VINCENT | 11/25/1916 |
| 0559 | MERCIER,WINSTON | 03/19/1931 |
| 0560 | METCALF,EDWARD | 04/16/1873 |
| 0561 | MICHELLE,CLAREN | 05/01/1897 |

| I.D. | NAME | DOB |
|---|---|---|
| 0562 | MICHELLE,DOLORE | 07/16/1944 |
| 0563 | MICHELLE,FRANCI | 12/27/1923 |
| 0564 | MICHELLE,JACQUE | 08/02/1951 |
| 0565 | MICHELLE,JOSEPH | 06/16/1868 |
| 0566 | MICHELLE,MABEL | 01/01/1907 |
| 0567 | MICHELLE,MARY | 01/06/1871 |
| 0568 | MICHELLE,NORA | 04/09/1922 |
| 0569 | MICHELLE,NORMA | 04/19/1922 |
| 0570 | MICHELLE,ORVILL | 12/25/1936 |
| 0571 | MILLER,TENIE | 03/20/1919 |
| 0960 | MINJAREZ,CHARLE | 06/24/1964 |
| 0792 | MINJAREZ,CHARLO | 02/26/1937 |
| 0961 | MINJAREZ,REINA | 08/27/1965 |
| 0962 | MINJAREZ,RENALD | 08/27/1965 |
| 0572 | MISFELDT,THOMAS | 07/04/1940 |
| 0043 | MOONEY,LORRIANE | 08/30/1951 |
| 1062 | MORGAN,BEVERLY | 12/19/1952 |
| 0740 | MORTON,JUANITA | 02/12/1934 |
| 0225 | MURPHY,LINDA | 03/02/1951 |
| 0573 | MUTTAL,BETTY | 07/20/1922 |
| 0574 | NEAULT,MARGIE | 05/15/1927 |
| 0782 | NELSON,JUDY | 05/26/1951 |
| 0963 | NELSON,KELLY | 07/19/1957 |
| 0577 | NELSON,MARY | 03/30/1876 |
| 0578 | NICHOLS,DONALD | 04/14/1947 |
| 0579 | NICHOLS,GEORGIA | 12/27/1923 |
| 0580 | NICHOLS,KENNETH | 05/09/1946 |
| 0581 | NICHOLS,LINDA | 04/30/1952 |
| 0582 | NICHOLS,RICHARD | 01/06/1949 |
| 0583 | NORWEST,ALEX | 01/06/1876 |
| 0584 | NORWEST,ALPHEUS | 07/19/1899 |
| 0585 | NORWEST,LEO | 09/25/1894 |
| 0181 | O'LEARY,DEBORAH | 01/23/1953 |
| 0586 | OLNEY,JOHN | 07/13/1905 |
| 0530 | OLSON,CAROL | 02/21/1947 |
| 0508 | OLSON,JUDITH | 10/02/1943 |
| 0840 | OLSON,JUNE | 01/01/1948 |
| 0385 | OLSON,KATHERINE | 05/24/1951 |
| 1063 | OLSON,SHELBY | 08/13/1973 |
| 0964 | OLSON,WENDELL | 07/30/1966 |
| 0781 | PAGEL,JOYCE | 03/25/1950 |
| 0587 | PALMER,MABEL | 02/09/1904 |
| 0588 | PEARSALL,BETTY | 05/14/1929 |
| 0589 | PEARSALL,EDWARD | 01/10/1948 |
| 0590 | PEARSALL,RONNIE | 02/01/1950 |
| 0591 | PELLUM,MARIE | 06/08/1908 |
| 0169 | PEOPLES,ELAINE | 04/05/1940 |
| 0593 | PETERS,ALBERT | 03/08/1921 |
| 0592 | PETERS,AUDREY | 02/18/1926 |
| 0595 | PETERS,HENRY | 06/20/1924 |
| 0965 | PETERS,JAY | 08/11/1975 |
| 0596 | PETERS,LAVERN | 05/18/1951 |
| 0597 | PETERS,MARGARET | 05/07/1925 |
| 0598 | PETERS,MARY | 03/13/1900 |
| 0601 | PETERS,NONA | 04/04/1943 |
| 0966 | PETERS,TWYLA | 11/20/1956 |
| 0602 | PETERS,WAYNE | 08/06/1946 |
| 0603 | PETITE,ALICE | 05/29/1950 |
| 0604 | PETITE,AMELIA | 03/15/1912 |
| 0606 | PETITE,BEN | 03/28/1932 |
| 0608 | PETITE,DELORES | 06/17/1926 |
| 0609 | PETITE,DORMALEE | 12/27/1953 |
| 0610 | PETITE,EDWARD | 07/02/1876 |
| 0611 | PETITE,EDWIN | 01/18/1906 |
| 0612 | PETITE,ERNEST | 09/16/1952 |
| 0613 | PETITE,ETHEL | 05/17/1888 |
| 0614 | PETITE,EULA | 11/27/1911 |
| 0615 | PETITE,HENRY | 09/29/1948 |
| 0616 | PETITE,JAMES | 05/22/1896 |
| 0617 | PETITE,JAMES | 05/24/1923 |
| 0619 | PETITE,LORIE | 04/19/1937 |
| 0620 | PETITE,MELVIN | 10/19/1927 |
| 0621 | PETITE,PATRICIA | 03/17/1940 |
| 0622 | PETITE,PETE | 05/07/1910 |
| 0624 | PETITE,RAYMOND | 10/13/1947 |
| 0623 | PETITE,RAYMOND | 05/31/1925 |
| 0625 | PETITE,VIOLET | 12/09/1942 |
| 0628 | PHELPS,CAROLEEN | 11/08/1942 |
| 0630 | PHELPS,JAXCINE | 02/12/1947 |
| 0631 | PHELPS,NETTIE | 12/25/1908 |
| 1064 | PHILLIPS,DEBRA | 07/07/1959 |
| 0632 | PICHETTE,BARBAR | 04/20/1934 |
| 0633 | PICHETTE,CAROL | 01/31/1944 |
| 0634 | PICHETTE,DAVID | 03/28/1908 |
| 0635 | PICHETTE,EARL | 07/20/1919 |
| 0636 | PICHETTE,JIMMY | 08/24/1942 |
| 0637 | PICHETTE,JOHN | 04/27/1921 |
| 0638 | PICHETTE,JUDY | 08/24/1942 |
| 0640 | PICHETTE,OREN | 04/07/1913 |
| 0639 | PICHETTE,OREN | 04/07/1913 |



| I.D. | NAME | DOB |
|---|---|---|
| 0641 | PICHETTE,OREN | 09/17/1941 |
| 0262 | POOLE,ANNABELL | 08/30/1934 |
| 0642 | PORTER,FRANCES | 11/28/1891 |
| 0223 | PORTER,HALEL | 03/13/1941 |
| 0643 | PROVOST,JACQUEL | 10/25/1951 |
| 0644 | PROVOST,KATHLEE | 04/14/1950 |
| 0645 | PROVOST,MARGARE | 06/11/1930 |
| 0967 | PULLIN,DENVER | 03/28/1962 |
| 1065 | PULLIN,KELLY | 05/19/1968 |
| 0238 | PULLIN,PATRICIA | 06/08/1943 |
| 0968 | PULLIN,TOMMY | 03/11/1963 |
| 0969 | PULLIN,TRACY | 08/10/1965 |
| 0646 | PURCHASE,MICHAE | 05/03/1942 |
| 0970 | QUEEN,PATTY | 07/29/1974 |
| 0647 | QUENELLE,CAROL | 04/10/1939 |
| 0649 | QUENELLE,DONALD | 12/11/1942 |
| 0652 | QUENELLE,FABIAN | 03/25/1880 |
| 0653 | QUENELLE,LARRY | 08/11/1947 |
| 0655 | QUENELLE,LEONAR | 07/04/1935 |
| 0654 | QUENELLE,LEONAR | 01/04/1905 |
| 0656 | QUENELLE,LIZETT | 12/14/1911 |
| 0657 | RAMOZ,BETTY | 12/29/1925 |
| 0658 | RAMOZ,IOLA | 06/19/1951 |
| 0659 | RAMOZ,RODNEY | 08/23/1952 |
| 0660 | RAMOZ,VICTORIA | 01/05/1947 |
| 0661 | RAY,FLOREINE | 02/10/1917 |
| 0739 | RAY,GENEVIEVE | 06/14/1928 |
| 0971 | REAM,DEBBIE | 06/20/1967 |
| 0648 | REAM,DELORES | 12/15/1940 |
| 0972 | REAM,JESSE | 10/18/1972 |
| 0973 | REAM,MARGARET | 10/19/1975 |
| 0974 | REAM,TINA | 01/21/1966 |
| 0302 | REED,BETTY | 03/01/1928 |
| 0663 | REED,CLEMENTINE | 08/29/1925 |
| 0664 | REED,DEANNA | 01/31/1944 |
| 0665 | REED,JANET | 06/12/1945 |
| 0688 | REEVES,DARLENE | 10/24/1939 |
| 0975 | REEVES,KEITH | 12/17/1962 |
| 0666 | REIBACH,GARY | 02/18/1944 |
| 0667 | REIBACH,HARRIS | 04/06/1911 |
| 0668 | REIBACH,JAN | 11/25/1944 |
| 0669 | REIBACH,MICHAEL | 03/30/1949 |
| 0671 | REIBACH,VICKI | 02/27/1943 |
| 0672 | REIBACH,WESLEY | 03/29/1915 |
| 0976 | RENFROW,DUPRE | 01/23/1972 |
| 0677 | RENFROW,GEORGIA | 09/10/1887 |
| 0678 | RENFROW,LUELLA | 09/03/1911 |
| 0977 | RENFROW,LUNITA | 12/05/1970 |
| 0978 | RENFROW,NANCY | 03/25/1952 |
| 0772 | RICKARD,THELMA | 11/14/1929 |
| 0679 | RIDDLE,DELORES | 06/20/1927 |
| 0680 | RIGGS,ALFREDA | 10/21/1927 |
| 0681 | RIGGS,ALLIE | 01/01/1877 |
| 1066 | RIGGS,AMANDA | 03/24/1979 |
| 0682 | RIGGS,AMANDA | 09/03/1889 |
| 0683 | RIGGS,ANDREW | 12/08/1880 |
| 0684 | RIGGS,BOYD | 06/02/1910 |
| 0685 | RIGGS,CHERYL | 01/28/1953 |
| 0686 | RIGGS,CLARA | 02/21/1892 |
| 0689 | RIGGS,FLOYD | 04/01/1928 |
| 0690 | RIGGS,FRANCES | 05/25/1941 |
| 0691 | RIGGS,GEORGENE | 10/24/1947 |
| 0692 | RIGGS,GLORIA | 01/01/1946 |
| 0694 | RIGGS,JACQUE | 08/21/1950 |
| 0695 | RIGGS,JOHN | 07/08/1907 |
| 0696 | RIGGS,LAURA | 08/24/1908 |
| 0698 | RIGGS,LEWIS | 01/22/1943 |
| 0697 | RIGGS,LEWIS | 05/24/1920 |
| 0700 | RIGGS,LLOYD | 07/28/1928 |
| 0701 | RIGGS,ROGER | 02/17/1917 |
| 0702 | RIGGS,SAMUEL | 01/29/1888 |
| 0705 | RITCHIE,DELIGHT | 06/20/1947 |
| 0706 | RITCHIE,TYRON | 10/02/1948 |
| 0979 | RIVERA,KATERI | 04/11/1982 |
| 0980 | RIVERA,LORENA | 02/25/1981 |
| 1099 | ROBERTSON,BRAND | 10/30/1980 |
| 0174 | ROBERTSON,CARME | 10/18/1946 |
| 1100 | ROBERTSON,DIANA | 01/26/1982 |
| 1067 | ROGERS,ARNELL | 09/15/1954 |
| 0707 | ROGERS,ISABELLE | 07/05/1915 |
| 1068 | ROGERS,MICHELE | 07/01/1977 |
| 1069 | ROGERS,PATRICK | 03/04/1974 |
| 1070 | ROGERS,WILLIAM | 08/16/1979 |
| 0981 | ROLSTON,SANDRA | 06/08/1956 |
| 0036 | ROOK,DONICA | 06/09/1936 |
| 0708 | ROWLAND,KIMM | 04/20/1949 |
| 0709 | ROWLAND,MARK | 03/07/1951 |
| 0711 | ROWLAND,VIRGINI | 11/12/1928 |
| 0712 | RUSSIE,ARCHIE | 01/19/1920 |
| 0713 | RUSSIE,EUGENE | 03/31/1929 |

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| I.D. | NAME | DOB |
|---|---|---|
| 0714 | RUSSIE,GENE | 02/23/1953 |
| 0716 | RUSSIE,HAROLD | 10/20/1927 |
| 0715 | RUSSIE,HAROLD | 10/17/1950 |
| 1101 | RUSSIE,JERRY | 04/22/1946 |
| 0717 | RUSSIE,JUDY | 11/18/1942 |
| 0718 | RUSSIE,RICHARD | 12/13/1921 |
| 0719 | RUSSIE,ROBERT | 02/23/1953 |
| 0720 | RUTHERFORD,FRAN | 09/01/1920 |
| 0721 | SCHEESE,ALLAN | 01/10/1940 |
| 0722 | SCHEESE,ANNA | 01/27/1941 |
| 0723 | SCHEESE,JERRY | 11/16/1945 |
| 0724 | SCHEESE,LARRY | 11/16/1945 |
| 0725 | SCHEESE,MARJORI | 11/13/1920 |
| 0727 | SCHMID,KENNETH | 10/29/1939 |
| 0728 | SCHMID,RICHARD | 05/17/1941 |
| 0729 | SCHMID,ROBERT | 05/28/1938 |
| 0983 | SCHMIDT,RAYMOND | 09/10/1951 |
| 0730 | SCHMIDT,VIVIAN | 09/24/1926 |
| 0982 | SCHNIDT,LINDA | 12/02/1952 |
| 0984 | SCHROEDER,SUSAN | 12/10/1957 |
| 0726 | SCLAPPI,JOSEPHI | 06/11/1921 |
| 0731 | SELL,EMMA | 12/17/1917 |
| 0734 | SELL,NANCY | 07/06/1942 |
| 1071 | SELL,THOMAS | 05/10/1956 |
| 0736 | SELL,WAYNE | 09/19/1943 |
| 0737 | SEVERIN,LEONA | 05/18/1915 |
| 0738 | SEWARD,MARY | 02/18/1908 |
| 0699 | SHANDY,LOUISE | 11/11/1939 |
| 1072 | SHANDY,MARDELL | 06/02/1971 |
| 0986 | SHAW,JIMMY | 03/11/1953 |
| 0985 | SHAW,KENNETH | 05/25/1955 |
| 0741 | SHAW,LEROY | 06/08/1951 |
| 0742 | SHAW,PAUL | 09/05/1949 |
| 0987 | SHAW,TERRY | 11/20/1957 |
| 0988 | SHAW,WESLEY | 10/08/1953 |
| 0735 | SHERER,NELLIE | 06/03/1948 |
| 0989 | SHERWOOD,KENNET | 03/20/1967 |
| 0990 | SHERWOOD,MILTON | 05/14/1965 |
| 0992 | SHERWOOD,PATRIC | 05/20/1964 |
| 0991 | SHERWOOD,RICHAR | 12/05/1969 |
| 0783 | SHORTT,DOROTHY | 09/26/1947 |
| 0744 | SIMMONNS,DONALD | 09/16/1942 |
| 0743 | SIMMONS,DEBORAH | 10/25/1952 |
| 0745 | SIMMONS,EDGAR | 11/04/1907 |
| 0746 | SIMMONS,LEROY | 03/25/1947 |
| 0809 | SIMMONS,LINDA | 02/28/1948 |
| 0747 | SIMMONS,MURIEL | 11/29/1943 |
| 0748 | SIMMONS,SAMPSON | 10/02/1908 |
| 0749 | SIMMONS,SAMPSON | 11/07/1939 |
| 0750 | SIMMONS,SYLVEST | 10/24/1906 |
| 0751 | SIMMONS,WALTER | 09/02/1941 |
| 0752 | SIMMONS,WILLIAM | 06/15/1867 |
| 0753 | SIMMONS,WILLIAM | 10/29/1938 |
| 0754 | SMITH,CELLA | 06/14/1901 |
| 0993 | SMITH,CHRISTOPH | 03/12/1982 |
| 0755 | SMITH,FAYE | 10/04/1952 |
| 0756 | SMITH,GERALD | 09/11/1953 |
| 0757 | SMITH,IRENE | 07/17/1895 |
| 0758 | SMITH,JAMES | 01/20/1920 |
| 0759 | SMITH,JANE | 01/01/1863 |
| 0760 | SMITH,JENNIFER | 09/13/1950 |
| 0995 | SMITH,JONI | 04/07/1952 |
| 0762 | SMITH,LAWRENCE | 09/02/1896 |
| 0763 | SMITH,LAWRNENCE | 03/01/1919 |
| 0764 | SMITH,LILLIAN | 09/16/1938 |
| 0765 | SMITH,LORENE | 03/19/1925 |
| 0766 | SMITH,LORETTA | 02/18/1947 |
| 0767 | SMITH,MICHAEL | 08/29/1951 |
| 0768 | SMITH,RALPH | 08/22/1905 |
| 0769 | SMITH,RONALD | 12/26/1934 |
| 0770 | SMITH,RODNEY | 03/07/1949 |
| 0771 | SMITH,ROSE | 04/27/1921 |
| 0773 | SMITH,VERNON | 04/13/1920 |
| 0996 | SMITH,WANDA | 08/18/1943 |
| 0618 | SNYDER,JEANNE | 02/13/1947 |
| 0774 | SNYDER,MAMIE | 05/07/1907 |
| 0776 | SODERBERG,CLARI | 12/23/1907 |
| 0775 | SODERBURG,ARTHU | 02/01/1933 |
| 0777 | SODERBURG,WILLI | 12/29/1933 |
| 0778 | SORENSON,CLYDE | 03/03/1926 |
| 1073 | SPOHN,JAMES | 08/13/1922 |
| 0779 | SPOHN,MARY | 01/07/1903 |
| 1074 | STEPHENS,PATRIC | 08/19/1956 |
| 0175 | STOGSDILL,DIANA | 09/21/1944 |
| 0145 | STROM,HATTIE | 06/16/1914 |
| 0012 | STRONACH,DONNNA | 09/14/1938 |
| 0997 | STRYKER,CLYDE | 01/03/1947 |
| 0998 | STRYKER,JOANNE | 01/28/1951 |
| 0783 | SULKEY,PETER | 01/11/1921 |
| 0784 | SUMMERLIN,DWIGH | 10/20/1944 |
| 0785 | SUMMERLIN,EMMA | 06/28/1918 |
| 0999 | SUPPAH,CECIL | 07/14/1961 |
| 0786 | SURBER,ARLENE | 07/18/1924 |
| 0787 | SURBER,BETTY | 02/14/1946 |
| 0789 | SURBER,GERALD | 04/05/1944 |
| 0790 | SURBER,MARIE | 03/11/1943 |
| 0791 | SURBER,NANCY | 11/22/1948 |
| 1000 | TAMBURINO,ANDRE | 04/13/1960 |
| 0796 | TANNER,BEATRICE | 07/01/1929 |
| 0793 | TANNER,FREDERIC | 10/04/1952 |

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| I.D. | NAME | DOB |
|---|---|---|
| 1002 | TANNER,FREDERIC | 08/22/1975 |
| 1001 | TANNER,FREDRICK | 12/10/1925 |
| 1075 | TANNER,MARILYNN | 08/05/1956 |
| 0794 | TANNER,MARY | 02/03/1900 |
| 0795 | TANNER,WILLIAM | 07/11/1921 |
| 1003 | TASA,PATRICIA | 09/20/1949 |
| 0797 | TAYLOR,THOMAS | 01/01/1900 |
| 0156 | TEITZEL,DELORES | 12/30/1940 |
| 0798 | THOMAS,BARBARA | 05/27/1927 |
| 1005 | THOMAS,BRIAN | 05/11/1962 |
| 0799 | THOMAS,BRUCE | 01/29/1953 |
| 0800 | THOMAS,CANDACE | 01/24/1947 |
| 0533 | THOMAS,CRYSTAL | 11/05/1941 |
| 0801 | THOMAS,DAVID | 09/08/1950 |
| 0803 | THOMAS,DONALD | 02/07/1944 |
| 0804 | THOMAS,FRANKIE | 03/12/1938 |
| 0805 | THOMAS,ILENE | 02/08/1936 |
| 0806 | THOMAS,KENT | 05/07/1954 |
| 0807 | THOMAS,LANA | 02/24/1944 |
| 0808 | THOMAS,LANNY | 08/03/1943 |
| 0811 | THOMAS,MARY | 09/25/1921 |
| 0812 | THOMAS,MATHILDS | 05/17/1918 |
| 1006 | THOMAS,MATTHEW | 08/19/1975 |
| 0813 | THOMAS,RODNEY | 06/11/1949 |
| 1076 | THOMPSON,DAVID | 01/14/1965 |
| 1077 | THOMPSON,KYLER | 01/03/1969 |
| 1078 | THOMPSON,TONYA | 02/20/1966 |
| 0881 | THORNBROUGH,JAN | 04/03/1974 |
| 0703 | THORNBROUGH,UNA | 08/23/1949 |
| 1004 | TILLIS,DOROTHY | 05/19/1952 |
| 0814 | TIPTON,GERALD | 07/30/1906 |
| 0815 | TIPTON,LILLI | 01/07/1877 |
| 0816 | TITO,HENRY | 12/27/1912 |
| 0479 | TOM,CORA | 09/09/1904 |
| 0817 | TOM,KATHLEEN | 01/13/1953 |
| 0818 | TOM,LEON | 07/15/1928 |
| 0819 | TOM,MICHAEL | 10/16/1952 |
| 0820 | TOM,PATRICIA | 07/06/1950 |
| 0821 | TOM,VICTORIA | 05/28/1949 |
| 0802 | TOTTEN,DELCIE | 03/01/1941 |
| 0822 | TRACK,ROY | 12/14/1941 |
| 0670 | TRINSVH,VERNON | 05/01/1913 |
| 0823 | TRONSON,ETHEL | 11/27/1909 |
| 0837 | TURMAN,GLORIA | 01/20/1944 |
| 0662 | VALERA,JUDITH | 07/25/1945 |
| 0824 | VOUTRIN,BART | 03/28/1898 |
| 0825 | VOUTRIN,CAROLIN | 03/06/1874 |
| 0826 | VOUTRIN,DONALD | 09/12/1916 |
| 0827 | VOUTRIN,EVERETT | 10/23/1911 |
| 0828 | VOUTRIN,NANCY | 04/05/1939 |
| 1079 | WARREN,BEVERLY | 12/17/1967 |
| 0829 | WARREN,DONNA | 06/10/1940 |
| 0830 | WARREN,JOHN | 06/05/1915 |
| 1080 | WARREN,LINDA | 07/08/1963 |
| 1081 | WARREN,PAMALA | 02/05/1967 |
| 0831 | WARREN,PHILLIP | 02/04/1942 |
| 0832 | WARREN,PHYLLIS | 04/15/1928 |
| 0833 | WARREN,RAYMOND | 02/17/1924 |
| 1082 | WARREN,ROBERT | 01/08/1962 |
| 0836 | WARREN,WILLIAM | 01/18/1944 |
| 0835 | WARREN,WILLIAM | 02/12/1917 |
| 1007 | WATSON,PATRICIA | 11/27/1953 |
| 0839 | WEST,JUDITH | 04/12/1953 |
| 0842 | WEST,WESLEY | 10/01/1942 |
| 1008 | WESTLEY,CHARLEN | 08/27/1952 |
| 1009 | WESTLEY,KLARICE | 07/04/1958 |
| 1010 | WESTLEY,MARLA | 05/07/1956 |
| 0594 | WHEATTLEY,AUDRE | 01/31/1951 |
| 1083 | WHEELER,CARLA | 11/23/1969 |
| 1084 | WHEELER,DEANNE | 03/20/1976 |
| 0843 | WHEELER,EDWIN | 01/01/1876 |
| 0844 | WHEELER,ELVINA | 11/16/1901 |
| 1085 | WHEELER,SHELLY | 06/06/1953 |
| 0857 | WHILLIAMS,GOLDI | 03/19/1912 |
| 1011 | WHITE,CHRISTOPH | 08/01/1975 |
| 0845 | WHITE,EVELYN | 06/25/1924 |
| 1012 | WHITE,MATTHEW | 07/09/1969 |
| 1013 | WHITE,MELINDA | 09/18/1960 |
| 1014 | WHITE,MICHAEL | 03/12/1965 |
| 0848 | WHITE,MURCH | 05/03/1936 |
| 0850 | WHITE,ORRIN | 05/24/1938 |
| 0849 | WHITE,ORRIN | 08/20/1913 |
| 0851 | WHITE,PASQUELIA | 03/24/1943 |
| 0852 | WHITE,SANDRA | 05/30/1949 |
| 0853 | WHITE,SHARON | 05/26/1946 |
| 0854 | WHITE,SUE ANN | 08/06/1947 |
| 0855 | WHITE,THOMAS | 07/09/1950 |
| 0856 | WHITEAKER,MAY | 01/01/1891 |
| 1015 | WIBLE,DEBRA | 06/29/1961 |
| 0048 | WILLIAMS,MARY | 06/07/1953 |
| 0858 | WILLING,CHARLES | 03/21/1919 |
| 0365 | WINKLEE,NAN | 09/26/1950 |
| 0859 | WINSLOW,EDWINA | 01/14/1917 |
| 0860 | WINSLOW,JEROME | 12/27/1914 |
| 0861 | WINSLOW,JERRY | 08/29/1935 |
| 0114 | WOOD,TERI | 12/05/1946 |
| 0710 | WRIGHT,SUSAN | 02/04/1952 |
| 0862 | ZAVODSKI,THERES | 11/01/1891 |
| 0147 | ZIMBRICK,VIOLET | 03/03/1936 |

[FR Doc. 84-16699 Filed 6-21-84; 8:45 am]
BILLING CODE 4310-02-C

## National Petroleum Reserve in Alaska; Oil and Gas Lease Sale No. 841

*Correction*

In FR Doc. 84–15756 beginning on page 24451 in the issue of Wednesday, June 13, 1984, make the following corrections.

1. On page 24451, second column, in the heading of the land descriptions below "Township/range", insert "Umiat Meridian, Alaska, (Unsurveyed) (except where otherwise designated)".

2. In item 841–033, line 4, under the heading "Township/range", should read "T 9 N., R. 36 W., Secs. 1 to 18,".

3. In Column three, item "841–0052" should read "841–052".

4. In item 841–085, line 5 should read "T. 5 S., R. 25 W., Secs. 1 to 5,".

5. On page 24452, column one, item 841–100, line eight should read "T. 7 S., R. 26 W., Secs. 1 to 18,".

6. In column two, first paragraph under the heading "When and Where To Submit Bids," line 4, "7901 C Street" should read "701 C Street".

7. On page 24454, the fouth complete paragraph, line 3, the word "or" should be inserted between "habitats" and "to".

8. In the second column, the third complete paragraph, line 6, "the" should be inserted between "by" and "AO".

9. In the third column the signature "Robert W. Arnodorfer" should read "Robert W. Arndorfer".

BILLING CODE 1505-01-M

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## Bureau of Land Management

**[N–38898; N–38935; N–38995]**

## Order Providing for Opening of Lands; Nevada

June 12, 1984.

1. The following described lands were acquired by the United States pursuant to the Act of December 23, 1980 (94 Stat. 3381). Titles were accepted on January 27, 1983 (section 25) and March 2, 1983 (section 24.)

Mount Diablo Meridian, Nevada

T. 13 N., R. 18 E.,
Sec. 24, NW¼SW¼SE¼;
Sec. 25, NE¼.

The area described comprises approximately 160 acres.

2. The following described land was reconveyed to the United States in an exchange and title was accepted on October 12, 1983.

Mount Diablo Meridian, Nevada

T. 13 N., R. 20 E.,
That portion of the NW¼SE¼ of Section 8, beginning at the point on the northerly right-of-way line of Airport Road, said point bears South 7°35÷52" West, 14,708.02 feet from the NE corner of Section 32, Township 14 North, Range 20 East, MDB&M; thence from the initial point South 89°43÷16" West along the northerly right-of-way line of said Airport Road 215.00 feet; thence North 0°16÷44" West, 145.88 feet; thence North 89°43÷16" east 215.00 feet; thence South 0°16÷44" East 145.88 feet to the point of beginning.
Together with the warehouse located thereon.

The area described comprises approximately 0.72 acre.

The lands are located in Douglas County, within the boundaries of the Toiyabe National Forest, near Genoa, Nevada.

All minerals in the NE¼ of sec. 25, T. 13 N., R. 18 E., are in private ownership.

All minerals in the NW¼SW¼SE¼ of sec. 24, T. 13 N., R. 18 E., and the described portion of the NW¼SE¼ of sec. 8, T. 13 N., R. 20 E., were reconveyed to the United States.

At 9:00 a.m. on (July 23, 1984) the land described above shall be open to such forms of disposition as may by law be made of national forest land.

Inquiries concerning the forest land should be addressed to Forest Supervisor, Toiyabe National Forest, 1200 Franklin Way, Sparks, Nevada 89431.

**Wm. J. Malencik,**

*Deputy State Director, Operations.*

[FR Doc. 84–16829 Filed 6–21–84; 8:45 am]

BILLING CODE 4310-HC-M

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## INTERSTATE COMMERCE COMMISSION

## 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 name corporations intend to provide or use compensated intercorporate hauling operations as authorized in 49 U.S.C. 10524(b).

1. Parent corporation and address of principal office: LTV Energy Products Company, P.O. Box 359, Dallas, Texas 75221.

2. Wholly owned subsidiaries which will participate in the operations, and State(s) of incorporation: (i) Fibercast Company, a Delaware Corporation.

1. Parent corporation and address of principal office: Mountain Fuel Supply Company, 180 East First South, P.O. Box 11368, Salt Lake City, UT 84139.

2. Wholly-owned subsidiaries which will participate in the operations, and State(s) of incorporation:

(i) Mountain Fuel Resources, Inc.; Utah.

(ii) Wexpro Company; Utah.

(iii) Celsius Energy Company; Nevada.

**James H. Bayne,**

*Secretary.*

[FR Doc. 84–16766 Filed 6–21–84; 8:45 am]

BILLING CODE 7035-01-M

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**[Finance Docket No. 30500]**

## Norfolk Southern Corp., Control of North American Van Lines, Inc.; Intent To File No. 1

On May 24, 1984, pursuant to 49 CFR 1180.4(b), Norfolk Southern Corporation (NS) and North American Van Lines, Inc. (NAVL), jointly filed an advance notice of intent to file with the Interstate Commerce Commission, on or about August 1, 1984, a joint application under 49 U.S.C. 11343 *et seq.* seeking approval of the acquisition by NS of control of NAVL through stock ownership.

NS, a noncarrier holding company, controls the Norfolk and Western Railway Company and the Southern Railway Company, class I rail carriers. NAVL is a motor carrier of household goods and general freight operating nationwide and throughout Canada. NAVL has a number of subsidiaries, including motor carriers, a freight forwarder, and a broker licensed by the Commission. It is a wholly-owned subsidiary of PepsiCo, Inc., a diversified noncarrier holding company.

NS and NAVL state that calendar year 1982 data, on an industry-wide basis, will be used for any impact analysis or other studies that may be submitted. Data for 1983 for NS and NAVL will be submitted where appropriate.

This Commission's regulations do not specifically apply to rail/motor consolidation applications. However, our railroad consolidation regulations provide suitable procedures for the consideration of the forthcoming application. Those regulations, subject to appropriate modifications, shall apply to this proceeding.

We find that the proposed acquisition is of regional and national significance and represents a major market extension by NS. Therefore, the application will be filed under the requirements of 49 CFR Part 1180 relating to significant transactions, subject to such modifications as may be ordered by the Commission in response to appropriate requests or on our motion. An order asking for additional information on specific issues may be issued subsequent to the publication of this notice. A procedural schedule will be issued after the application is filed.

By the Commission, Chairman Taylor, Vice Chairman Andre, Commissioners Sterrett and Gradison.

Dated: June 20, 1984

**James H. Bayne,**

*Secretary.*

[FR Doc. 84-16916 Filed 6-21-84; 11:25 am]

BILLING CODE 7035-01-M

## DEPARTMENT OF LABOR

### Employment and Training Administration

### Determinations Regarding Eligibility to Apply for Worker Adjustment Assistance

In accordance with section 223 of the Trade Act of 1974 (19 U.S.C. 2273) the Department of Labor herein presents summaries of determinations regarding eligibility to apply for adjustment assistance issued during the period June 11, 1984–June 15, 1984.

In order for an affirmative determination to be made and a certification of eligibility to apply for adjustment assistance to be issued, each of the group eligibility requirements of section 222 of the Act must be met.

(1) That a significant number or proportion of the workers in the workers' firm, or an appropriate subdivision thereof, have become totally or partially separated,

(2) That sales or production, or both, of the firm or subdivision have decreased absolutely, and

(3) That increases of imports of articles like or directly competitive with articles produced by the firm or appropriate subdivision have contributed importantly to the separations, or threat thereof, and to the absolute decline in sales or production.

**Negative Determinations**

In each of the following cases the investigation revealed that criterion (3) has not been met. A survey of customers indicated that increased imports did not contribute importantly to worker separations at the firm.

*TA–W–15,090; Stromberg-Carlson Corp., Lake Mary, FL*

*TA–W–15,237; Lovingston Manufacturing Co., Lovingston, VA*

In the following case the investigation revealed that criterion (3) has not been met. Increased imports did not contribute importantly to workers separations at the firm.

*TA–W–15,264; Diamond Power Specialty Co., Lancaster, OH*

In the following cases the investigation revealed that criterion (3) has not been met for the reasons specified.

*TA–W–15,225; Anaconda Minerals Co., Butte Operations, Butte, MT*

Aggregate U.S. imports of copper concentrate did not increase as required for certification.

*TA–W–15,218; Griffith-Hope Co., West Allis, WI*

Aggregate U.S. imports of steel dispensers are negligible.

*TA–W–15,282; Reilly Plating Co., Inc., Nanticoke, PA*

The workers' firm does not produce an article as required for certification under section 222 of the Trade Act of 1974.

*Affirmative Determination*

*TA–W–15,201; Felmont Oil Corp., Olean, NY*

A certification was issued covering all workers separated on or after January 24, 1983 and before June 30, 1983.

I hereby certify that the aforementioned determinations were issued during the period June 11, 1984–June 15, 1984. Copies of these determinations are available for inspection in Room 9120, U.S. Department of Labor, 601 D Street, NW., Washington, D.C. 20210 during normal business hours or will be mailed to persons who write to the above address.

Dated: June 19, 1984.

**Marvin M. Fooks,**

*Director, Office of Trade Adjustment Assistance.*

[FR Doc. 84-16733 Filed 6-21-84; 8:45 am]

BILLING CODE 4510-30-M

### Office of Federal Contract Compliance Programs, Reinstatement of Harry Myhre, Inc.

**AGENCY:** Office of Federal Contract Compliance Programs, Labor.

**ACTION:** Notice of reinstatement, Harry Myhre, Inc.

**SUMMARY:** This notice advises that Harry Myhre, Inc. has been reinstated as an eligible bidder on Federal and federally assisted contracts and subcontracts.

**FOR FURTHER INFORMATION CONTACT:** H. Jack Bluestein, Director, Division of Program Operations, U.S. Department of Labor, 200 Constitution Avenue NW., Room N–3416, Washington, D.C. 20210 (202–523–9463).

**SUPPLEMENTARY INFORMATION:** Harry Myhre, Inc., Harrisburg, Pennsylvania, is, as of this date, reinstated as an eligible bidder on Federal contracts and federally assisted subcontracts. A copy of the consent decree, approved by Administrative Law Judge Thomas, which commits the company to specific affirmative action steps and reporting requirements follows.

Signed June 12, 1984, Washington, D.C.

**Susan R. Meisinger,**

*Acting Director.*

**United States Department of Labor, Office of Administrative Law Judges**

**[No. 84-OFC-19]**

*Consent Decree*

In the matter of Harry Myhre, Inc., respondent.

On March 27, 1974, Harry Myhre, Inc., its principal officers, directors, direct or beneficial owners and its purchasers, successors, assignees and/or transferees ("Respondent"), was debarred from Federal contracts, subcontracts or extensions or other modifications of existing contracts funded in whole or in part by any agency or instrumentality of the United States. This debarment was based upon an October 12, 1973, ruling by the Reviewing Authority for Civil Rights, U.S. Department of Health, Education, and Welfare ("HEW"). The HEW Reviewing Authority found that Respondent failed to comply with Executive Order 11246, as amended (30 FR 12319; 32 FR 14303), and the implementing regulations at 41 CFR Chapter 60, especially with regard to Respondent's failure to make good faith efforts to meet its minority goals, and it ordered Respondent's debarment. Since the October 12, 1973, ruling by HEW, Executive Order 11246 has been amended by Executive Order 12086 (43 FR 49240), which consolidated all the functions, previously assigned to various compliance agencies for enforcement of Executive Order 11246, into the Office of Federal Contract Compliance Programs ("OFCCP"), U.S. Department of Labor ("DOL"). This Consent Decree between OFCCP and Respondent resolves all outstanding issues between the parties.

The parties to this Decree hereby waive any further procedural steps provided in 41 CFR Part 60–30 for a Final Administrative Order, and provided in 5 U.S.C. 701 *et seq.*, for judicial review. Furthermore, the parties to this Decree hereby waive any right to challenge or contest the validity of this Consent Decree.

**I. Jurisdiction**

The Administrative Law Judge (hereinafter this "Court") has jurisdiction pursuant to sections 208, 209, 301 and 302 of Executive Order

11246; 41 CFR Part 60–1.26 and 41 CFR Part 60–30.

**II. Applicability of Decree**

This Consent Decree is applicable to and binding upon Harry Myhre, Inc., and all affiliates, purchasres, successors, transferees, and/or assignees of Respondent during the period the Consent Decree is in effect.

This Consent Decree shall be applicable to the Respondent's covered Federal and federally assisted construction projects as well as covered non-Federal and non-federally assisted construction projects.

**III. Pledge of Compliance With Executive Order 11246**

Nothing in this Consent Decree shall be construed to limit or reduce Respondent's obligation to comply fully with Executive Order 11246, as amended, and the implementing regulations.

**IV. Goals for Minority Employment**

Respondent agrees to make a good faith effort to achieve a minority utilization goal of 6.2 percent in its aggregate workforce in the Harrisburg, Pennsylvania, area. The goal represents the percentage of the total hours of employment to be worked by minorities in each trade or craft in the workforce. For construction work outside of the Harrisburg, Pennsylvania, area, Respondent agrees to make a good faith effort to achieve the applicable goal(s) for minorities established pursuant to 41 CFR 60–4.6.

**V. Affirmative Action**

Respondent agrees to implement the affirmative action standards required by the specifications set forth in 41 CFR 60–4.3(a)(7)(a)–(p), and agrees in particular to undertake the following:

A. Within thirty (30) days of the entry of this Consent Decree, Respondent shall write to the labor organizations with which it maintains a collective bargaining agreement and inform them of:

1. The Respondent's commitments under the Executive Order, as required by section 203(a) of the Order;

2. The existence of this Consent Decree;

(3) The Respondent's intent to hire minority workers and to make a good faith effort to achieve the applicable minority utilization goals; and

4. The Respondent's obligation to recruit minority workers from other sources if the union is unable to refer minority employees in sufficient numbers to allow the Respondent to meet its goals.

B. Immediately upon learning of the occurrence of any job vacancy due to expansion of the work force, the voluntary or involuntary separation of any of its incumbent emloyees, etc., Respondent shall first seek new or replacement employees through the duly authorized labor organizations with which it maintains a collective bargaining agreement so providing. Respondent will provide advance notice to these organizations to maximize each Union's opportunity to supply minority employees.

C. Within thirty (30) days of the entry of this Consent Decree, Respondent shall compile a list of minority recruitment sources, including local minority community organizations, local chapters of regional or national minority organizations, and local personnel agencies or employment referral agencies specializing in job placement of minority members.

D. Within thirty (30) days of the entry of this Consent Decree, Respondent shall write to each recruitment source on the list compiled pursuant to Paragraph C, above, and inform the organization of:

1. The existence of this Consent Decree;

2. The Respondent's intent to hire minority workers;

3. The Respondent's desire to receive the names, addresses, and telephone numbers of minority members interested in employment with it, for the purpose of hiring such individual or referring their names to appropriate unions.

E. Respondent shall notify the minority recruitment sources on the list compiled pursuant to Paragraph C, above, when it or its union(s) have employment opportunities available, and Respondent shall maintain records documenting these contracts and each organization's response.

F.1. The Respondent shall maintain a file of the names, addresses and telephone numbers of each minority off-the-street applicant and each minority referral from a union, recruitment source and community organization and shall record the action taken with respect to each such applicant or referred individual. If such applicant or individual is sent to the union hiring hall for referral and is not referred back by the union or, if referred, is not employed by Respondent, this shall be documented in the file with the reasons therefor, along with whatever actions Respondent undertakes.

2. If Respondent cannot immediately hire the applicant or referral, it shall inform the person of its hiring procedures, that it will keep the person's name for six (6) months for consideration for future openings and shall inform the person whether it anticipates a need for employees within that time.

G. The Respondent shall provide immediate written notification to the Office of Federal Contract Compliance Programs when the union(s) with which Respondent has a collective bargaining agreement has (have) not referred back to Respondent a minority person sent by Respondent, or when Respondent has other information that the union referral process has impeded Respondent's efforts to meet its affirmative action obligations.

H. Respondent will encourage present minority employees to recruit other minority persons, and where reasonable, provide after-school, summer and vacation employment to minority youth both on job sites and in other areas of Respondent's work force.

I. As part of its efforts to locate qualified minority employees from sources other than labor unions, Respondent shall advertise its need for employees in newspapers or in publications with minority circulation.

J. If Respondent has sufficient opportunities, it shall develop on-the-job training for minority workers and/or participate in training programs for the area in which Respondent's work is being performed which expressly include minorities. This shall include upgrading programs, and apprenticeship trainee programs relevant to Respondent's employment needs, especially those programs funded by the Department of Labor.

**VI. Records**

Respondent shall maintain all records required by the specifications set forth in 41 CFR 60–4.3(a)(7)(a)–(p); all records necessary to document its compliance with those specifications and all records identified in Paragraphs V. C, E and F, above. The Company shall also maintain records containing:

1. The name, address, telephone number, race, trade, experience or other qualifications in such trade, date of referral or application and referring entity for each of the following:

a. Each person applying for employment with Respondent;

b. Each person referred to Respondent by any entity mentioned in Paragraph V. C or by any other organization or individual;

c. Each person referred by Respondent to any union;

d. Each person referred by any union to Respondent for employment; and

e. Each employee of Respondent.

2. The reasons any applicant or referral was not hired;

3. The date of each hiring or termination of employment by Respondent of any employee, the name, race, address and telephone number of such employee, and the circumstances surrounding such action;

4. A description, and all available documentation, including, but not necessarily limited to, copies of letters, notes of telephone conversations and minutes of meetings, of affirmative action measures taken by Respondent, whether or not such measures are specifically required by this Consent Decree;

5. Copies of all correspondence sent by Respondent to, or received by Respondent from, any entity mentioned in Paragraphs V. C and D;

6. Copies of all correspondence sent by Respondent to, or received by Respondent from, any union, which is relevant to this Consent Decree.

**VII. Compliance Reports**

A. Respondent shall prepare and submit monthly a copy of form cc–257 (or any successor form) on all its construction work to the appropriate OFCCP office with jurisdiction for the particular geographic area in which the work is being performed.

B. Respondent shall submit compliance reports to the Director of OFCCP once every six months following the date of entry of this Consent Decree to demonstrate its compliance with this Consent Decree. Each compliance report shall, at a minimum, contain the following information:

1. A list of: (a) All current Federal construction contracts or subcontracts; (b) all current Federally assisted construction contracts or subcontracts; (c) all other current construction contracts or subcontracts; (d) construction contracts awarded or which Respondent anticipates receiving within the next reporting period.

2. By trade and minority group participation any change in its workforce during the reporting period (i.e., hirings, terminations, layoffs) and any anticipated changes in its workforce within the next reporting period;

3. All records described in paragraph VI. relevant to the preceding reporting period.

**VIII. Implementation and Enforcement**

A. This Court hereby retains jurisdiction of this case for the purpose of issuing any additional orders or decrees needed to effectuate Executive Order 11246, as amended, or to clarify the implementation of this Consent Decree. If an application or motion for an order indicates, by signature of counsel, that it is unopposed by Respondent and the United States Department of Labor, the application or motion may be presented to the Court without hearing, and the proposed order may be implemented immediately.

B. This Consent Decree shall remain in effect for a period of two years from the date of its entry.

At any time after the expiration of two years from the entry of this Consent Decree, the Respondent may move for its modification or dissolution, upon 60 days prior notice to counsel for OFCCP, and upon a showing of compliance with the terms and conditions of this Consent Decree.

C. If at any time during the operation of this Consent Decree, OFCCP believes that Respondent has violated any portion of this Consent Decree, Respondent shall be promptly notified of the fact in writing. This notification shall include a statement of the facts and circumstances relied upon in forming that belief. In addition, the notification shall provide Respondent with 15 days to respond in writing except where delay would result in irreparable injury. It is understood that a hearing on whether this Consent Decree has been violated can be initiated any time after the 15-day period has elapsed (or sooner if irreparable injury is shown) upon filing with the Court the written notification sent to Respondent, accompanied by a Motion for Sanctions.

D. A motion by OFCCP claiming a default under this Consent Decree: (1) Shall state briefly and concisely the facts providing the basis for the claim of violation; and (2) shall request the entry or an order for appropriate relief and/or sanctions. The procedures applicable to the resolution of such a motion are set forth at 41 CFR Part 60–30. However, the issues in a hearing on the motion shall be solely issues of the factual claims made by the motion and Respondent's good faith efforts to comply with this Consent Decree.

**IX. Non-Limitation of Decree**

Nothing provided in this Decree shall be construed as a limitation upon the application of state or local affirmative action or equal employment opportunity requirements.

**X. Reinstatement as an Eligible Contractor**

Wherefore, based on the foregoing agreements and representations, Harry Myhre, Inc., may be and hereby is reinstated as an eligible bidder on Federal and Federally assisted construction contracts and subcontracts effective on the date of entry of this Consent Decree. Thus, Harry Myhre, Inc., can receive any such contracts bid upon, on or after this date. The Director of OFCCP shall communicate this fact to contracting agencies and to the Comptroller General of the United States.

Signed and entered this 2nd day of May, 1984.

E. E. Thomas,

*Administrative Law Judge, U.S. Department of Labor.*

Approved as to form and substance: On behalf of the Office of Federal Contract Compliance Programs, U.S. Department of Labor:

Heidi D. Miller,

*U.S. Department of Labor, 200 Constitution Avenue NW., Washington, D.C. 20210, Attorney for OFCCP.*

On behalf of Harry Myhre, Inc.

H. Kenneth Myhre,

*President.*

**Service Sheet**

Case Name: Harry Myhre, Inc.,
Case No.: 84–OFC–19
Title of Document: Consent Decree

I certify that a copy of the foregoing document was sent to the following on May 2, 1984.

Vincent T. Hanlon,

*Legal Clerk.*

James D. Henry
Associate Solicitor
Civil Rights Division
Office of the Solicitor
Room N–2464
200 Constitution Avenue., NW
Washington, D.C. 20210

Marshall H. Harris
Regional Solicitor
Office of the Solicitor
3535 Market Street
Philadelphia, Pa. 19104

Bruce F. Brantton, Esq.,
Connelly, Martsolf and Reid
108–112 Walnut Street
P.O. Box 963
Harrisburg, Pa. 17108

[FR Doc. 84–16644 Filed 6–21–84; 8:45 am]

BILLING CODE 4510–27–M

## Occupational Safety and Health Administration

**[V–84–2]**

## Grant of Temporary Variance; ASARCO, Inc.

**AGENCY:** Occupational Safety and Health Administration, Labor.

**ACTION:** Grant of temporary variance.

**SUMMARY:** This notice announces the grant of temporary variance to ASARCO, Incorporated from the

standards prescribed in 29 CFR 1910.1025(k)(1)(i)(D), Medical Removal Protection, of the Standard for Occupational Exposure to Lead. The variance temporarily relieves ASARCO, Inc. of the requirement to comply with the removal trigger for medical removal protection. However, as conditions of the granted relief, ASARCO, Inc. must comply with the 60/40 removal and return triggers and all other provisions of the lead standard and must satisfy the conditions and requirements of the variance order. The grant of this relief applies to all employees in the lead-exposed workforce.

**DATES:** The effective date of the grant of temporary variance is June 15, 1984. The expiration date of the grant of temporary variance is February 1, 1985.

**FOR FURTHER INFORMATION CONTACT:** Mr. James J. Concannon, Director, Office of Variance Determination, U.S. Department of Labor—OSHA, 200 Constitution Avenue NW., Room N3656, Washington, D.C. 20210, Telephone: (202) 523–7193.

All pertinent information, including the original application and relevant data, may be reviewed at the Office of Variance Determination in Washington, D.C. or the following Regional and Area Offices:

U.S. Department of Labor—OSHA, 555 Griffin Square Building, Room 602, Dallas, Texas 75202
U.S. Department of Labor—OSHA, Federal Building, Room 421, 1205 Texas Avenue, Lubbock, Texas 79401
U.S. Department of Labor—OSHA, 911 Walnut Street, Room 406, Kansas City, Missouri 64106
U.S. Department of Labor—OSHA, Overland—Wolf Building, Room 100, 6910 Pacific Street, Omaha, Nebraska 68106
U.S. Department of Labor—OSHA, 4300 Goodfellow Boulevard, Building 105E, St. Louis, Missouri 63120
U.S. Department of Labor—OSHA, Federal Building, Room 1554, 1961 Stout Street, Denver, Colorado 80294
U.S. Department of Labor—OSHA, Petroleum Building, Suite 210, 2812 1st Avenue North, Billings, Montana 59101.

## I. Background

In February of 1983, ASARCO, Incorporated, 120 Broadway, New York, New York 10271, made application pursuant to section 6(b)(6)(A) of the Occupational Safety and Health Act of 1970 (84 Stat. 1596; 29 U.S.C. 655) and 29 CFR 1905.10 for a temporary variance from 29 CFR 1910.1025 (k)(1)(i)(C), (k)(1)(i)(D), and (k)(1)(iii)(A)(3) of the medical removal protection (MRP) provisions of the lead standard. The applicant also requested an interim order pending a decision on the variance application. An interim order was initially granted by letter, effective May 17, 1983. The notice of application for temporary variance and grant of interim order was published on July 15, 1983 (48 FR 32413–15; July 15, 1983). Although comments were solicited, none were received.

The provisions from which relief is requested state respectively:

The employer shall remove an employee from work having an exposure to lead at or above the action level on each occasion that a periodic and a follow-up blood sampling test indicate that the employee's blood-lead level is at or above 60 μg/100g of whole blood;

The employer shall remove an employee from work having an exposure to lead at or above the action level on each occasion that the average of the last three blood sampling tests (or the average of all blood sampling tests conducted over the previous six (6) months, whichever is longer) indicates that the employee's blood-lead level is at or above 50 μg/100g of whole blood; provided, however, that an employee need not be removed if the last blood sampling test indicates a blood lead level at or below 40 μg/100g of whole blood;

The employer shall return an employee to his or her former job status when two consecutive blood sampling tests indicate that the employee's blood-lead level is at or below 40 μg/100g of whole blood.

The purpose of these provisions is to provide protection from excessive lead exposure for employees with substantially elevated blood-lead levels. The addresses of the places of employment affected by the application are as follows:

ASARCO, Incorporated, Post Office Box 7, Glover, Missouri 63646
ASARCO, Incorporated, Post Office Box G, East Helena, Montana 59635
ASARCO, Incorporated, Fifth and Doyle Streets, Omaha, Nebraska 68102
ASARCO, Incorporated, Post Office Box 1111, El Paso, Texas 79940.

By letter of March 21, 1983, the applicant requested that the original application be amended. In addition, with the concurrence of the United Steelworkers of America, representing bargaining unit employees in the plants under agreement, ASARCO suggested that the concerned parties (ASARCO, the Steelworkers, and OSHA) participate in a tripartite cooperative assessment of each facility for the purpose of developing engineering compliance plans for these four facilities.

The terms of the relief proposed by ASARCO, include: (1) That employees be removed and returned at 60 μg/100g and 50 μg/100g, respectively, in lieu of the requirements contained in §§ 1910.1025 (k)(1)(i)(D) and (k)(1)(iii)(A)(3) of the lead standard; (2) that the relief be extended to all employees in the lead-exposed workforce; (3) that employees on medical removal protection be removed initially to areas where lead exposure is below 50 μg/m³ of air, rather than below the action level; and (4) that any employees removed to areas with air leads less than 50 μg/m³ be allowed to work for six months, whereupon, if the employee's blood lead level had not declined to 50 μg/100g, that employee would then be removed to an area where lead exposure is below 30 μg/m³. ASARCO further proposed that this six-month limit on the placement of a removed employee in a 30–50 μg/m³ exposure area would be jointly evaluated by ASARCO and the Steelworkers on or about November 1, 1983 on the basis of the observed rate of blood lead decline of removed employees. The six-month limit would continue in effect if it was determined that the blood lead levels of a substantial majority of the removed employees had declined to 50 μg/100g within six months of removal. If, however, they had not, ASARCO and the Steelworkers would reevaluate this provision and submit an application to modify the variance accordingly.

In support of plant-wide relief, the applicant stated that the percent of lead-exposed employees subject to removal under a 50 μg/100g trigger for the four plants in question would range between 10.4 percent and 18.6 percent. Almost all jobs in ASARCO's primary lead facilities, the applicant claimed, involve a degree of skill, training, and experience, and therefore the widespread removals and transfers necessary under the 50 μg/100g trigger would severely impair the safety and efficiency of the plant. Limitation of the relief from the 50 μg/100g removal trigger to supervisory, skilled or maintenance employees would, therefore, pose difficult administrative burdens and increase risks to other employees.

The applicant, in requesting that employees on removal be allowed to work in areas with air leads less than 50 μg/m³ for a six-month period stated that there are virtually no work areas where the ambient air leads are consistently under the 30 μg/m³ "action level." The

use of removal areas between 30 μg/m³ and 50 μg/m³ will substantially increase the number of productive positions at which removed workers could be employed. Employees working in such positions would have the additional benefit of full-shift respirator protection, thus reducing their effective exposure still further. As a further safeguard, the agreement between the Steelworkers and ASARCO contemplates that there would be a six-month time limit on a removed employee's placement in this exposure range, said time limit being subject to subsequent review based on the blood lead decline actually observed.

Upon review of the data submitted by ASARCO, OSHA decided to grant interim orders temporarily relieving the applicant from complying with the 50 μg/100g removal trigger. Employees would still be required to be removed at 60 μg/100g in compliance with the medical removal protection provision of 29 CFR 1910.1025(k)(1)(i)(C), except that employees would be permitted to be removed to areas where lead exposure was less than 50 μg/m³ of air. The interim order was also made applicable to all employees in the lead-exposed workforce. The order required compliance with all other provisions of the lead standard as well as with all conditions of the order. OSHA believed that the inclusion in the order of additional requirements for medical surveillance, in conjunction with the agreed upon tripartite process, demonstrated all parties' concern that the health of ASARCO's employees be well protected.

Regarding the request for relief from the 40 μg/100g return trigger, recent data submitted by ASARCO was insufficient to justify relief from the trigger at that time. In denying such relief, the Agency believes it is unlikely that an unreasonable burden is being imposed on the applicant.

However, the need for relief from the 40 μg/100g trigger was not considered a closed issue. OSHA recognized that it was dealing with an area of scientific uncertainty in which experience is limited and predictive models are inexact. It was determined, therefore, that if data showing the need for relief was developed during the time the interim order was in effect, the Agency would take whatever action was necessary.

The terms of the intrim order were as follows:

(1) The terms of the order apply to all employees in the lead-exposed workforce.

(2) As presently required by 29 CFR 1910.1025(j)(2) of the lead standard, employers shall perform blood-lead and zinc protoporphyrin (ZPP) tests every two months on each employee whose last blood test indicated a blood-lead level at or above 40 μg/100g and who is exposed to lead above the action level of 30 μg/m³.

(3) Employers shall remove and return all employees with blood-lead levels at or above 60 μg/100g in accordance with the provisions of §§ 1910.1025(k)(1)(i)(C) and 1910.1025(k)(1)(iii)(A)(3) of the lead standard, except that removal may be to areas where lead exposure is below 50 μg/m³. For those employees who are removed to areas where lead exposure is less than 50 μg/m³ but at or above 30μg/m³ of air, ASARCO shall also:

(a) Require effective respiratory protection to be worn at all times that employees are in these areas and do an immediate inspection and evaluation of the employee's respirator usage;

(b) Transfer to an area where lead concentration is below 30 μg/m³ of air any employee whose blood-lead level has not declined to or below 50 μg/100g of whole blood within 6 months from the date of removal; and

(c) Assure that any employee whose blood-lead level has risen 5 μg/100g or more above the previous test, and any employee whose last test result is 70 μg/100g or greater, upon confirmation of the result, be removed to an area where the lead concentration is less that 30 μg/m³ of air.

(4) Any employee removed with a confirmed blood-lead test result of 70 μg/100g or higher shall be removed to an area where the concentration of lead is less than 30 μg/m³ of air.

(5) For employees with blood-lead levels between 50–60 μg/100g, who need not be removed under the terms of this order, and who work in jobs having lead exposure at or above 30 μg/m³, the employer shall:

(a) Require that effective respiratory protection be worn at all times they are in the job area;

(b) Do an immediate inspection and evaluation of the employee's respirator usage;

(c) Do an immediate inspection and evaluation of the lead-related work practices affecting the employee;

(d) Do an immediate inspection and evaluation of the use and availability of hygiene facilities, and the employee's relevant personal hygiene habits;

(e) Provide a personal consultation with a licensed physician every two months; and

(f) Provide the comprehensive medical examination required under paragraph (j) of the lead standard by a licensed physician every three months.

(6) For all employees required to wear respiratory protection under ther terms of this order, ASARCO shall provide:

(a) Quantitative face fit tests at the time of initial fitting and at least semi-annually thereafter;

(b) An evaluation by a licensed physician prior to the time of initial fitting and at least annually thereafter of:

(i) A pulmonary function test which includes $FEV_1$ and FVC; and

(i) A physical examination.

(c) A posterior-anterior chest x-ray on a 14x17 inch film, on a five-year time interval.

(7) Based upon the inspections and evaluations required in paragraphs 5 (b), (c), and (d), the employer shall take all reasonable and appropriate corrective steps in these regards to reduce the employee's absorption of lead.

(8) After the various consultations, evaluations, examinations and tests required in paragraphs 5(e), 5(f), 6(b) and 6(c), the physician shall make a written determination as to whether the employee has a detected medical condition that places the employee at increased risk of material impairment to health from exposure to lead, or is unable to wear a respirator. If the employee is determined to have such a medical condition or to be unable to wear a respirator, he or she shall be removed from work areas where the exposure to airborne lead is at or greater than 30μg/m³.

(9) The employer shall agree to allow OSHA to inspect its premises in connection with this variance application and this interim order.

## II. Conclusions

OSHA's analysis of the evidence available after the interim order had been in effect for more than six months (several one-month extensions were necessary because of certain extenuating circumstances), and after the operations in all four facilities had been investigated (leading to the development of engineering compliance plans to determine the lowest air lead levels that could be achieved by engineering controls), resulted in the following conclusions:

1. Temporary relief from the present medical removal protection requirements is warranted in all four facilities.

2. Relief for the entire lead-exposed workforce is necessary.

3. Without additional substantiating evidence, relief from the 40 μg/100g return trigger level does not appear necessary.

III. Order.

It appears from the application for temporary variance and the supporting data that ASARCO, Incorporated qualifies for a variance under section 6(b)(6)(A) of the Act.

Therefore, pursuant to the authority in section 6(b)(6)(A) of the Occupational Safety and Health Act of 1970, in the Secretary of Labor's Order No. 9–83 [48 FR 35736], and in 29 CFR Part 1905, it is ordered that the four plants listed below are authorized to comply with the requirements of the order set forth below, in lieu of complying with the requirements of 29 CFR 1910.1025(k)(1)(i)(D). All other provisions of the lead standard are unaffected by this order and therefore must be complied with in conjunction with the terms of this order.

Temporary variances are being issued to the following ASARCO, Incorporated primary lead smelting and refining plants:

ASARCO, Incorporated, Post Office Box 7, Glover, Missouri 63646
ASARCO, Incorporated, Fifth and Doyle Streets, Omaha, Nebraska 68102
ASARCO, Incorporated, Post Office Box G, East Helena, Montana 59635
ASARCO, Incorporated, Post Office 1111, El Paso, Texas 79940.

The terms of the order are as follows:

(1) The terms of the order apply to all employees in the lead-exposed workforce.

(2) As presently required by 29 CFR 1910.1025(j)(2) of the lead standard, employers shall perform blood-lead and zinc protoporphyrin (ZPP) tests every two months on each employee whose last blood test indicated a blood-lead level at or above 40 $\mu g/100g$ and who is exposed to lead above the action level of 30 $\mu g/m^3$.

(3) Employers shall remove and return all employees with blood-lead levels at or above 60 $\mu g/100g$ in accordance with the provisions of §§ 1910.1025(k)(9)(i)(C) and 1910.1025(k)(1)(iii)(A)(3) of the lead standard, except that removal may be to areas where lead exposure is below 50 $\mu g/m^3$. For those employees who are removed to areas where lead exposure is less than 50 $\mu g/m^3$ but at or above 30 $\mu g/m^3$ of air, ASARCO shall also:

(a) Require effective respiratory protection to be worn at all times that employees are in these areas and do an immediate inspection and evaluation of the employee's respirator usage;

(b) Transfer to an area where lead concentration is below 30 $\mu g/m^3$ of air any employee whose blood-lead level has not declined to or below 50 $\mu g/100g$ of whole blood within six months from the date of removal; and

(c) Assure that any employee whose blood-lead level has risen 5 $\mu g/100g$ or more above the previous test, and any employee whose last test result is 70 $\mu g/100g$ or greater, upon confirmation of the result, be removed to an area where the lead concentration is less that 30 $\mu g/m^3$ of air.

(4) An employee removed with a confirmed blood-lead test result of 70 $\mu g/100g$ or higher shall be removed to an area where the concentration of lead is less than 30 $\mu g/m^3$ of air.

(5) For employees with blood-lead levels between 50–60 $\mu g/100g$, who need not be removed under the terms of this order, and who work in jobs having lead exposure at or above 30 $\mu g/m^3$, the employer shall:

(a) Require that effective respiratory protection be worn at all times they are in the job area;

(b) Do an immediate inspection and evaluation of the employee's respirator usage;

(c) Do an immediate inspection and evaluation of the lead-related work practices affecting the employee;

(d) Do an immediate inspection and evaluation of the use and availability of hygiene facilities, and the employee's relevant personal hygiene habits;

(e) Do an immediate inspection and evaluation of the existing engineering controls to determine whether they are maintained properly, to insure that such controls do not have an adverse effect upon the employee;

(f) Provide a personal consultation with a licensed physician every two months; and

(g) Provide the comprehensive medical examination required under paragraph (j) of the lead standard by a licensed physician every three months.

(6) For all employees required to wear respiratory protection under the terms of this order, ASARCO shall provide:

(a) Quantitative face fit tests at the time of initial fitting and at least semi-annually thereafter;

(b) An evaluation by a licensed physician prior to the time of initial fitting and at least annually thereafter of:

(i) A pulmonary function test which includes $FEV_1$ and FVC; and

(ii) A physical examination.

(c) A posterior-anterior chest x-ray on a 14 x 17 inch film, on a five-year time interval.

(7) Based upon the inspections and evaluations required in paragraphs 5 (b), (c), (d), and (e), the employer shall take all reasonable and appropriate corrective steps in these regards to reduce the employee's absorption of lead. The employer shall submit to the Office of Variance Determination a written report documenting when and where the evaluation took place, any corrective actions that were necessary, and the name and job classification of the affected employee. This submission shall be made within 45 days after the effective date of this order.

(8) After the various consultations, evaluations, examinations and tests required in paragraphs 5(f), 5(g), 6(b) and 6(c), the physician shall make a written determination as to whether the employee has a detected medical condition that places the employee at increased risk of material impairment to health from exposure to lead, or is unable to wear a respirator. If the employee is determined to have such a medical condition or to be unable to wear a respirator, he or she shall be removed from work areas where the exposure to airborne lead is at or greater than 30 $\mu g/m^3$.

(9) For the duration of the variance, the employer shall submit every two months to the Office of Variance Determination, blood lead, ZPP, and air lead data as accumulated.

(10) The employer shall agree to allow OSHA to inspect its premises in connection with this variance order.

(11) The employer shall comply with all other provisions of the lead standard which are unaffected by this order.

As soon as possible ASARCO, Incorporated shall give notice to affected employees of the terms of this order by the same means required to be used to inform them of the application for temporary variance and interim order.

Effective date: This order shall become effective on June 15, 1984, and shall remain in effect until February 1, 1985, unless modified or revoked in accordance with section 6(b)(6)(A) of the Occupational Safety and Health Act of 1970.

Signed at Washington, D.C. this 15th day of June 1984.

**Patrick R. Tyson,**

*Deputy Assistant Secretary of Labor.*

[FR Doc. 84–16643 Filed 6–21–84; 8:45 am]

BILLING CODE 4510–26–M

## INTERNATIONAL BOUNDARY AND WATER COMMISSION, UNITED STATES AND MEXICO

### National Environmental Policy Act Finding of No Significant Impact

**AGENCY:** United States Section, International Boundary and Water Commission, United States and Mexico.

**ACTION:** Notice of finding of no significant impact.

**SUMMARY:** The United States Section, International Boundary and Water Commission has completed a Final Environmental Assessment (FEA), which describes and assesses past and future construction of the U.S. part of the Rio Grande Boundary Preservation Project where the manner of construction of the basic features was not or will not be entirely consistent with the proposal designated as the preferred alternative in the December 1978 Final EIS (FEIS). The purpose of the FEA was to determine whether to prepare a supplemental EIS or a Finding of No Significant Impact (FONSI), on proposed modifications in construction and on proposed mitigation measures.

Based on the attached FEA, the U.S. Section has determined that the proposed actions are not major Federal actions that would significantly affect the quality of the human environment within the meaning of section 102(2)(C) of the National Environmental Policy Act of 1969, and that, therefore, preparation of a supplemental environmental impact statement is not required. The proposed actions and support for a Finding of No Significant Impact follows:

**Proposed Actions**

1. To plant 9 acres of cottonwoods and willows around the mitigation pond sites to mitigate for the estimated 3,800 white-wing doves lost due to working in the breeding season to carry out the Treaty purpose of the Project.

2. To plant 1.8 acres of honey mesquite on the fringe and 1.8 acres of cottonwoods and willows at the mitigation pond sites or other suitable areas to mitigate for the loss of approximately 5 acres of fringe vegetation, largely salt cedar, overcleared by contractor operations.

3. To provide wildlife snags, escape cover and nesting devices, and prey-base improvements to mitigate for depositing excavation spoil on 38 acres of high quality wildlife habitat instead of on available selected areas of low quality habitat within one-eighth mile of the excavation site, and to mitigate for the effects of delay in seeding.

4. No action on orientation of spoil mounds is proposed. The alignment of spoil mounds generally parallel to the river rather than oblique as contemplated in the preferred alternative of the FEIS does not adversely affect use of the mounds by wildlife and secondary impacts are highly speculative.

5. No action in respect of use of draglines for channel excavation is proposed. Draglines were used to perform the channel work to fulfill the Treaty purpose of the Project to restore the river channel, because the channel was too wet to use bulldozers and scrapers as contemplated in the FEIS. Resultant impacts on wildlife due to use of draglines are judged insignificant.

6. Proposed actions for future construction include:

a. Spoil mound orientation will be generally parallel to the river;

b. Channel excavation will be performed by bulldozers and scrapers to the extent practical, but if timely restoration of the channel is needed to comply with the 1970 Boundary Treaty, and the channel has water in it, the work will have to be performed by draglines or other equipment; and

c. Future excavation spoils will be deposited in areas of lower value wildlife habitat where such habitat is available within one-eighth mile of the excavation site, or where such habitat is available but not used mitigation measures will be provided.

**Environmental Effects of Completed Segments of the Project**

In addition to fulfilling the Treaty purpose of restoring the Rio Grande as the international boundary, the completed segments of the Project have improved wildlife conditions over those that would have existed without the Project. The prior existing deteriorated channel in those segments was completely plugged in reaches, causing floodwaters to spread out over much of the flood plain creating wide-spread ponding. With no channel for the water to drain to, there was no outlet except by evaporation and the waters become increasingly saline and laden with plant toxins. There is evidence that even the better soils that support thorny shrub, the best remaining wildlife habitat, were becoming saturated with salts as the saline water moves upward through the soils by capillary action. The result was a die-off of thorny shrubs and an encroachment of salt cedar. The extremely high salt levels combined with other plant toxins would in time kill all vegetation, including salt cedar.

With the restoration of the river channel in the completed segments restoring the natural drainage, those adverse environmental effects have been checked and the adverse trends reversed toward improvement of the environment in the area for wildlife and man.

The completed segments of the Project are also providing improved wildlife benefits over those contemplated in the FEIS, based on a reevaluation using the same model and procedure used in the FEIS. The model was developed by biologists of the U.S. Fish and Wildlife Service, Texas Parks and Wildlife Department, and Arizona State University, and endorsed by private conservation associations. No additional mitigation measures over those proposed are needed to assure beneficial ecological impacts in the completed segments of the Project.

**Environmental Effects of Future Construction**

In addition to the proposed actions relating to the completed segments of the Project, outlined hereinabove, for future construction the U.S. Section will orient spoil mounds generally parallel to the river, will carry out construction using draglines or other equipment if necessary, will improve its practices regarding site selection for spoil placement, and will improve certain other practices and procedures in the performing of the construction work remaining for completion of the Project, as described in the FEA.

The proposed future actions in respect to the future construction required for completion of the U.S. part of the Project will have no significant adverse environmental effects.

On the basis of the foregoing, the U.S. Section finds that the proposed actions will have no significant impact and therefore will not prepare a supplemental environmental impact statement. This finding will be considered final July 13, 1984.

**For Further Information**

Contact Douglas Echlin, Biologist, United States Section, International Boundary and Water Commission, United States and Mexico; 4110 Rio Bravo; El Paso, Texas 79902. Telephone: (915) 541–7313, FTS 572–7313.

Dated: June 13, 1984.

**R.D. Echlin,**

*Biologist, Special Studies Branch.*

**G.R. Baumli,**

*Principal Engineer, Investigations & Planning Division.*

**J.F. Friedkin,**

*Commissioner.*

[FR Doc. 84-16731 Filed 6-21-84; 8:45 am]

BILLING CODE 4710-03-M

## NATIONAL SCIENCE FOUNDATION

### Forms Submitted for OMB Review

In accordance with the Paperwork Reduction Act of 1980 and OMB Guidelines, the National Science

Foundation is posting this notice of information collection that will affect the public.

*Agency Clearance Officer:* Herman G. Fleming, (202) 357–9421
*OMB Desk Officer:* Carlos Tellez, (202) 395–7340
*Title:* Fellowship Application and Grant Forms
*Affected Public:* Individuals
*Number of Responses:* 7,000 respondents; total of 84,000 hours.

*Abstract:* The National Science Foundation Act, section 10, states that, "The Foundation is authorized to award scholarships for scientific study." These applications provide information used to identify some of the Nation's most talented science personnel for award of support for further study.

Dated: June 20, 1984.

**Herman G. Fleming,**

*Agency Clearance Officer.*

[FR Doc. 84-16772 Filed 6-21-84; 8:45 am]

BILLING CODE 7555-01-M

## Ad Hoc Advisory Group on Continental Drilling; Meeting

In accordance with the Federal Advisory Committee Act, as amended, Pub. L. 92–463, the National Science Foundation announces the following meeting:

Name: Ad Hoc Advisory Group on Continental Drilling.

Date and Time: July 10 and 11, 1984; 9:00 a.m. to 5:00 p.m. each day.

Place: The National Science Foundation, Room 540, 1800 G Street NW., Washington, D.C. 20550.

Type of Meeting: Open.

Contact Person: Dr. James Fred Hays, Division Director, Earth Sciences, Room 602, National Science Foundation, Washington, D.C. 20550, Telephone: (202) 357–7958.

Summary Minutes: May be obtained from the contact person listed above.

Purpose of Advisory Group: To advise the Director, NSF, on the roles and relative priorities of continental scientific drilling and other proposed studies of the continental lithosphere.

Agenda:

(1) Review and evaluate the NSF response to recent NAS/NRC recommendations on earth sciences. (2) Assess the appropriate role and relative priority for continental scientific drilling within the context of other research needs in the earth sciences. (3) In the context of realistic budget alternatives, define the terms under which NSF might proceed with a program of continental drilling.

Dated: June 19, 1984.

**M. Rebecca Winkler,**

*Committee Management Coordinator.*

[FR Doc. 84-16677 Filed 6-21-84; 8:45 am]

BILLING CODE 7555-01-M

## NUCLEAR REGULATORY COMMISSION

[Docket No. 50-313]

## Arkansas Power & Light Co. (Arkansas Nuclear One, Unit 1); Order Confirming Licensee Commitments on Emergency Response Capability

I

Arkansas Power and Light Company (AP&L or the licensee) is the holder of Facility Operating License No. DPR–51 which authorizes the operation of the Arkansas Nuclear One, Unit 1 (the facility) at steady-state power levels not in excess of 2568 megawatts thermal. The facility is a pressurized water reactor (PWR) located at the licensee's site in Pope County, Arkansas.

II

Following the accident at Three Mile Island Unit No. 2 (TMI–2) on March 28, 1979, the Nuclear Regulatory Commission (NRC) staff developed a number of proposed requirements to be implemented on operating reactors and on plants under construction. These requirements include Operational Safety, Siting and Design, and Emergency Preparedness and are intended to provide substantial additional protection in the operation of nuclear facilities and significant upgrading of emergency response capability based on the experience from the accident at TMI–2 and the official studies and investigations of the accident. The requirements are set forth in NUREG–0737, "Clarification of TMI Action Plan Requirements," and in Supplement 1 to NUREG–0737, "Requirements for Emergency Response Capability." Among these requirements are a number of items consisting of emergency response facility operability, emergency procedure implementation, addition of instrumentation, possible control room design modifications, and specific information to be submitted.

On December 17, 1982, a letter (Generic Letter 82–33) was sent to all licensees of operating reactors, applicants for operating licenses, and holders of construction permits enclosing Supplement 1 to NUREG–0737. In this letter, operating reactor licensees and holders of construction permits were requested to furnish the following information, pursuant to 10 CFR 50.54(f), no later than April 15, 1983:

(1) A proposed schedule for completing each of the basic requirements for the items identified in Supplement 1 to NUREG–0737, and

(2) A description of plans for phased implementation and integration of emergency response activities including training.

III

AP&L responded to Generic Letter 82–33 by letter dated April 15, 1983. In this submittal, AP&L made commitments to complete the basic requirements. The following Table summarizing AP&L's schedular commitments or status was developed by the NRC staff from the Generic Letter and the information provided by AP&L.

AP&L's commitments include (1) dates for providing required submittals to the NRC, (2) dates for providing schedules for providing required submittals to the NRC, (3) dates for implementing certain requirements, and (4) a schedule for providing implementation dates for other requirements. These latter implementation dates will be reviewed, negotiated and confirmed by a subsequent order.

The NRC staff reviewed AP&L's April 15, 1983 letter and entered into discussions with the licensee regarding schedules for meeting the requirements of Supplement 1 to NUREG–0737. As a result of these discussions, the NRC staff finds that the dates are reasonable, achievable dates for meeting the NRC requirements. The NRC staff concludes that the schedule proposed by the licensee will provide timely upgrading of the licensee's emergency response capability.

In view of the foregoing, I have determined that the implementation of AP&L's commitments is required in the interest of the public health and safety and should, therefore, be confirmed by an immediately effective Order.

IV

Accordingly, pursuant to Sections 103, 161i, 161o and 182 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2 and 50, it is hereby ordered, effective immediately, that the licensee shall:

Implement the specific items described in this Order in the manner described in AP&L's submittal noted in Section III herein no later than the dates in the Table.

Extensions of time for completing these items may be granted by the Director, Division of Licensing, for good cause shown.

V

The licensee may request a hearing on this Order within 20 days of the date of publication of this Order in the **Federal Register.** Any request for a hearing should be addressed to the Director,

Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. A copy should also be sent to the Executive Legal Director at the same address. A request for hearing shall not stay the immediate effectiveness of this Order.

If a hearing is to be held, the Commission will issue an Order designating the time and place of any such hearing.

If a hearing is held concerning this Order, the issue to be considered at the hearing shall be whether the licensee should comply with the requirements set forth in Section IV of this Order.

This Order is effective upon issuance.

Dated at Bethesda, Maryland, this 14th day of June 1984.

For the Nuclear Regulatory Commission.

**Darrell G. Eisenhut,**

*Director, Division of Licensing, Office of Nuclear Reactor Regulation.*

LICENSEE'S COMMITMENTS ON SUPPLEMENT 1 TO NUREG-0737

| Title | Requirement | Licensee's completion schedule (or status) |
|---|---|---|
| 1. Safety Parameter Display System (SPDS) | 1a. Submit a safety analysis and an implementation plan to the NRC. | June 29, 1984.[1] |
| | 1b. SPDS fully operational and operators trained | Complete.[2] |
| 2. Detailed Control Room Design Review (DCRDR) | 2a Submit a program plan to the NRC | Complete. |
| | 2b. Submit a summary report to the NRC including a proposed schedule for implementation. | August 14, 1985. |
| 3. Regulatory Guide 1.97—Application to Emergency Response Facilities. | 3a. Submit a report to the NRC describing how the requirements of Supplement 1 to NUREG-0737 have been or will be met. | June 29, 1984. |
| | 3b. Implement (installation or upgrade) requirements | The implementation schedule will be provided in the report which will be submitted by June 29, 1984. |
| 4. Upgrade Emergency Operating Procedures (EOPs) | 4a. Submit a Procedures Generation Package to the NRC | Complete. |
| | 4b. Implement the upgraded EOPs | Do. |
| 5. Emergency Response Facilities | 5a. Technical Support Center fully functional | June 30, 1984.[3] |
| | 5b. Operational Support Center fully functional | Complete. |
| | 5c. Emergency Operations Facility fully functional | June 30, 1984.[4] |

[1] Will incorporate results of other Supplement 1 initiatives to determine needs for SPDS upgrade.
[2] Operational with existing parameters.
[3] SPDS within the TSC will be operational with existing parameters.
[4] The licensee has requested exemption from locating the backup EOF 10 to 20 miles from ANO in favor of using the Russellville Local Office which is 7 miles from ANO. The acceptability of this request will be the subject of a separate licensing action.

[FR Doc. 84-16738 Filed 6-21-84; 8:45 am]
BILLING CODE 7590-01-M

**[Docket No. 50-368]**

## Arkansas Power & Light Co. (Arkansas Nuclear One, Unit 2); Order Confirming Licensee Commitments on Emergency Response Capability

I

Arkansas Power & Light Company (the licensee) is the holder of Facility Operating License No NPR-6 which authorizes the operation of Arkansas Nuclear One, Unit 2 (the facility) at steady-state power levels not in excess of 2815 megawatts thermal. The facility is a pressurized water reactor (PWR) located at the licensee's site in Pope County, Arkansas.

II

Following the accident at Three Mile Island Unit No. 2 (TMI-2) on March 28, 1979, the Nuclear Regulatory Commission (NRC) staff developed a number of proposed requirements to be implemented on operating reactors and on plants under construction. These requirements include Operational Safety, Siting and Design, and Emergency Preparedness and are intended to provide substantial additional protection in the operation of nuclear facilities and significant upgrading of emergency response capability based on the experience from the accident at TMI-2 and the official studies and investigations of the accident. The requirements are set forth in NUREG-0737, "Clarification of TMI Action Plan Requirements," and in Supplement 1 to NUREG-0737, "Requirements for Emergency Response Capability." Among these requriements are a number of items consisting of emergency response facility operability, emergency procedure implementation, addition of instrumentation, possible control room design modifications, and specific information to be submitted.

On December 17, 1982, a letter (Generic Letter 82-33) was sent to all licensees of operating reactors, applicants for operating licenses, and holders of construction permits enclosing Supplement 1 to NUREG-0737. In this letter operating reactor licensees and holders of construction permits were requested to furnish the following information, pursuant to 10 CFR 50.54(f), no later than April 15, 1983:

(1) A proposed schedule for completing each of the basic requirements for the items identified in Supplement 1 to NUREG-0737, and

(2) A description of plans for phased implementation and integration of emergency response activities including training.

III

Arkansas Power & Light Company (AP&L) responded to Generic Letter 82-33 by letter dated April 15, 1983. In this submittal, AP&L made commitments to complete the basic requirements. The following Table summarizing AP&L's schedular commitments or status was developed by the NRC staff from the Generic Letter and the information provided by AP&L.

AP&L's commitments include (1) dates for providing required submittals to the NRC, (2) dates for implementing certain requirements, and (3) a schedule for providing implementation dates for other requirements. These latter implementation dates will be reviewed, negotiated and confirmed by a subsequent order.

The NRC staff reviewed AP&L's April 15, 1983 letter and entered into discussions with the licensee regarding schedules for meeting the requirements of Supplement 1 to NUREG-0737. As a result of these discussions, the NRC staff finds that the proposed dates are reasonable, achievable dates for meeting the Commission requirements. The NRC staff concludes that the schedule proposed by the licensee will provide timely upgrading of the licensee's emergency response capability.

In view of the foregoing, I have determined that the implementation of AP&L's commitments is required in the interest of the public health and safety and should, therefore, be confirmed by an immediately effective Order.

IV

Accordingly, pursuant to sections 103, 161i, 161o and 182 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2 and 50, it is hereby ordered, effective immediately, that the licensees shall:

Implement the specific items described in this ORDER in the manner described in AP&L's submittals noted in Section III herein no later than the dates in the Table.

Extensions of time for completing these items may be granted by the Director, Division of Licensing, for good cause shown.

V

The licensee may request a hearing on this Order within 20 days of the date of publication of this Order in the **Federal Register.** Any request for a hearing should be addressed to the Directror, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. A copy should also be sent to the Executive Legal Director at the same address. A request for hearing shall not stay the immediate effectiveness of this order.

If a hearing is to be held, the Commission will issue an Order designating the time and place of any such hearing.

If a hearing is held concerning this Order, the issue to be considered at the hearing shall be whether the licensee should comply with the requirements set forth in Section IV of this Order.

This Order is effective upon issuance.

Dated at Bethesda, Maryland, this 14th day of June, 1984.

For the Nuclear Regulatory Commission.

**Darrell G. Eisenhut,**

*Director, Division of Licensing, Office of Nuclear Reactor Regulation.*

LICENSEE'S COMMITMENTS ON SUPPLEMENT 1 TO NUREG-0737

| Title | Requirement | Licensee's completion schedule (or status) |
|---|---|---|
| 1. Safety Parameter Display System (SPDS) | 1a. Submit a safety analysis and an implementation plan to the NRC. | April 15, 1984. |
| | 1b. SPDS fully operational and operators trained | December 15, 1985. |
| 2. Detailed Control Room Design Review (DCRDR) | 2a. Submit a program plan to the NRC | Complete. |
| | 2b. Submit a summary report to the NRC including a proposed schedule for implementation. | May 5, 1986. |
| 3. Regulatory Guide 1.97—Application to Emergency Response Facilities. | 3a. Submit a report to the NRC describing how the requirements of Supplement 1 to NUREG-0737 have been or will be met. | April 15, 1984. |
| | 3b. Implement (installation or upgrade) requirements | To be provided with the April 15, 1984, report. |
| 4. Upgrade Emergency Operating Procedures (EOPs) | 4a. Submit a Procedures Generation Package to the NRC | Three months prior to the fourth refueling outage (estimated to commence on Sept. 15, 1985). |
| | 4b. Implement the upgraded EOPs | During the fourth refueling outage (estimated to commence on Sept. 15, 1985). |
| 5. Emergency Response Facilities | 5a. Technical Support Center fully functional | June 30, 1984.[1] |
| | 5b. Operational Support Center fully functional | Complete. |
| | 5c. Emergency Operations Facility fully functional | June 30, 1984.[2] |

[1] SPDS within the TSC will be operational with existing parameters.
[2] The licensee has requested exemption from locating the backup EOF 10 to 20 miles from ANO in favor of using the Russellville Local Office which is 7 miles from ANO. The acceptability of this request will be the subject of a separate licensing action.

[FR Doc. 84-16739 Filed 6-21-84; 8:45 am]
BILLING CODE 7590-01-M

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**[Docket Nos. 50-317 and 50-318]**

## Baltimore Gas and Electric Co. et al. (Calvert Cliffs Nuclear Power Plant Unit Nos. 1 and 2); Order Confirming Licensee Commitments on Emergency Response Capability

I

The Baltimore Gas and Electric Company (BG&E) is the holder of Facility Operating License Nos. DPR-53 and DPR-69 which authorizes the operation of the Calvert Cliffs Nuclear Power Plant, Unit No. 1 and 2, at steady-state power levels not in excess of 2700 megawatts thermal. The facility comprises two pressurized water reactors located in Calvert County, Maryland.

II

Following the accident at Three Mile Island Unit No. 2 (TMI-2) on March 28, 1979, the Nuclear Regulatory Commission (NRC) staff developed a number of proposed requirements to be implemented on operating reactors and on plants under construction. These requirements include Operational Safety, Siting and Design, and Emergency Preparedness and are intended to provide substantial additional protection in the operation of nuclear facilities and significant upgrading of emergency response capability based on the experience from the accident at TMI-2 and the official studies and investigations of the accident. The requirements are set forth in NUREG-0737, "Clarification of TMI Action Plan Requirements," and in Supplement 1 to NUREG-0737, "Requirements for Emergency Response Capability." Among these requirements are a number of items consisting of emergency response facility operability, emergency procedure implementation, addition of instrumentation, possible control room design modifications, and specific information to be submitted.

On December 17, 1982, a letter (Generic Letter 82-33) was sent to all licensees of operating reactors, applicants for operating licenses, and holders of construction permits enclosing Supplement 1 to NUREG-0737. In this letter operating reactor licensees and holders of construction permits were requested to furnish the following information, pursuant to 10 CFR 50.54(f), no later than April 15, 1983:

(1) A proposed schedule for completing each of the basic requirements for the items identified in Supplement 1 to NUREG-0737, and

(2) A description of plans for phased implementation and integration of emergeny response activities including training.

III

BG&E responded to Generic Letter 82-33 by letter dated April 15, 1983. By letter dated July 22, 1983, BG&E modified several dates as a result of negotiations with the NRC staff. In these submittals,

BG&E made commitments to complete the basic requirements. The following Table summarizing BG&E's schedular commitments or status was developed by the NRC staff from the Generic Letter and the information provided by BG&E.

BG&E's commitments include (1) dates for providing required submittals to the NRC, (2) dates for implementing certain requirements, and (3) a schedule for providing implementation dates for other requirements. These latter implementation dates will be reviewed, negotiated and confirmed by a subsequent order.

The NRC staff reviewed BG&E's April 15, 1983 letter and entered into negotiations with the licensee regarding schedules for meeting the requirements of Supplement 1 to NUREG–0737. As a result of these negotiations, the licensee modified certain dates by letters dated July 22 and November 18, 1983. The NRC staff finds that the modified dates are reasonable, achievable dates for meeting the Commission requirements. The NRC staff concludes that the schedule proposed by the licensee will provide timely upgrading of the licensee's emergency response capability.

In view of the foregoing, I have determined that the implementation of BG&E's commitments are required in the interest of the public health and safety and should, therefore, be confirmed by an immediately effective Order.

IV

Accordingly, pursuant to sections 103, 161i, 161o and 182 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2 and 50, it is hereby ordered, effective immediately, that the licensees shall:

Implement the specific items described in this order in the manner described in BG&E's submittals noted in Section III herein no later than the dates in the table.

Extensions of time for completing these items may be granted by the Director, Division of Licensing, for good cause shown.

V

BG&E may request a hearing on this Order within 20 days of the date of publication of this Order in the Federal Register. Any request for a hearing should be addressed to the Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. A copy should also be sent to the Executive Legal Director at the same address. A request for hearing shall not stay the immediate effectiveness of this order.

If a hearing is to be held, the Commission will issue an Order designating the time and place of any such hearing.

If a hearing is held concerning this Order, the issue to be considered at the hearing shall be whether the licensee should comply with the requirements set forth in Section IV of this Order.

This Order is effective upon issuance.

Dated at Bethesda, Maryland, this 14th day of June 1984.

For the Nuclear Regulatory Commission.

**Darrell G. Eisenhut,**

*Director, Division of Licensing, Office of Nuclear Reactor Regulation.*

LICENSEE'S COMMITMENTS ON SUPPLEMENT 1 TO NUREG–0737

| Title | Requirement | Licensee's completion schedule (or status) [1] |
|---|---|---|
| 1. Safety Parameter Display System (SPDS) | 1a. Submit a safety analysis and an implementation plan to the NRC. | June 1, 1984. |
| | 1b. SPDS fully operational and operators trained | October 1, 1986 for Unit 2.<br>October 1, 1987 for Unit 1. |
| 2. Detailed Control Room Design Review (DCRDR) | 2a. Submit a program plan to the NRC | Complete. |
| | 2b. Submit a summary report to the NRC including a proposed schedule for implementation. | January 1, 1985. |
| 3. Regulatory Guide 1.97—Application to Emergency Response Facilities. | 3a. Submit a report to the NRC describing how the requirements of Supplement 1 to NUREG–0737 have been or will be met. | December 1, 1984. |
| | 3b. Implement (installation or upgrade) requirements | Provide schedule by December 1, 1984. |
| 4. Upgrade Emergency Operating Procedures (EOPs) | 4a. Submit a Procedures Generation Package to the NRC | Complete. |
| | 4b. Implement the ugraded EOPs. (Provide Schedule) | Do. |
| 5. Emergency Response Facilities | 5a. Technical Support Center fully functional | Do. |
| | 5b. Operational Support Center fully functional | Do. |
| | 5c. Emergency Operations Facility fully functional | Do. |

[1] The dates specified are for Units 1 and 2 unless otherwise stated.

[FR Doc. 84–16740 Filed 6–21–84; 8:45 am]

BILLING CODE 7590–01–M

**[Docket Nos. STN 50–454 OL; STN 50–455 OL; ASLBP 79–411–04 OL]**

## Commonwealth Edison Co. et al. (Byron Nuclear Power Station, Units 1 and 2); Hearing

June 18, 1984.

The Commonwealth Edison Company has applied for a license to operate the Byron Nuclear Power Station in Ogle County, Illinois. On January 13, 1984 the Atomic Safety and Licensing Board presiding over the hearing on the application issued an Initial Decision denying the application. On May 7, 1984 the Atomic Safety and Licensing Appeal Board, having considered the matter on appeal, directed the Licensing Board to conduct further hearings in the proceeding. On May 30 and 31, 1984 the Licensing Board presided over a prehearing conference among the parties to discuss the issues to be considered and the schedule for the reopened hearing. On June 8, 1984 the Licensing Board issued a Memorandum and Order specifying the issues to be considered and directing that a public hearing on the issues commence on July 16, 1984 at 2:00 p.m. at the Magistrate's Courtroom, Federal Building, 211 South Court Street, Rockford, Illinois 61101.

For the Atomic Safety and Licensing Board.

Dated at Bethesda, Maryland, June 18, 1984.

**Ivan W. Smith,**

*Chairman, Administrative Law Judge.*

[FR Doc. 84–16743 Filed 6–21–84; 8:45 am]

BILLING CODE 7590–01–M

**[Docket No. 50–247]**

## Consolidated Edison Company of New York (Indian Point Nuclear Generating Unit No. 2); Order Confirming Licensee Commitments on Emergency Response Capability

I

Consolidated Edison Company of New York ( the licensee) is the holder of Facility Operating License No. DPR–64

which authorizes the operation of the Indian Point Nuclear Generating Unit No. 2 (the facility) at steady-state power levels not in excess of 2758 megawatts thermal. The facility is a pressurized water reactor (PWR) located in Westchester County, New York.

II

Following the accident at Three Mile Island Unit No. 2 (TMI-2) on March 28, 1979, the Nuclear Regulatory Commission (NRC) staff developed a number of proposed requirements to be implemented on operating reactors and on plants under construction. These requirements include Operational Safety, Siting and Design, and Emergency Preparedness and are intended to provide substantial additional protection in the operation of nuclear facilities and significant upgrading of emergency response capability based on the experience from the accident at TMI-2 and the official studies and investigations of the accident. The requirements are set forth in NUREG-0737, "Clarification of TMI Action Plan Requirements," and in Supplement 1 to NUREG-0737, "Requirements for Emergency Response Capability." Among these requirements are a number of items consisting of emergency response facility operability, emergency procedure implementation, addition of instrumentation, possible control room design modifications, and specific information to be submitted.

On December 17, 1982, a letter (Generic Letter 82-33) was sent to all licensees of operating reactors, applicants for operating licenses, and holders of construction permits enclosing Supplement 1 to NUREG-0737. In this letter operating reactor licensees and holders of construction permits were requested to furnish the following information, pursuant to 10 CFR 50.54(f), no later than April 15, 1983:

(1) A proposed schedule for completing each of the basic requirements for the items identified in Supplement 1 to NUREG-0737, and

(2) A description of plans for phased implementation and integration of emergency response activities including training.

III

The licensee responded to Generic Letter 82-33 by letter dated April 15, 1983, as supplemented August 31, 1983 and November 18, 1983. In these submittals, the licensee made commitments to complete the basic requirements. The following Table, summarizing the licensee's schedular commitments or status, was developed by the NRC staff from the Generic Letter and the information provided by the licensee.

The licensee's commitments include (1) dates for providing required submittals to the NRCM, (2) dates for implementing certain requirements, and (3) a schedule for providing implemention dates for other requirements. These latter implementation dates will be reviewed, negotiated and confirmed by a subsequent order.

The NRC staff reviewed the licensee's April 15, 1983 letter as supplemented by letters dated August 31, 1983, November 18, 1983, February 14, 1984 and March 12, 1984 and entered into negotiations regarding schedules for meeting the requirements of Supplement 1 to NUREG-0737. The NRC staff finds that the dates are reasonble, acheivable dates for meeting the Commission requirements. The NRC staff concludes that the schedule proposed by the licensee will provide timely upgrading of the licensee's emergency response capability.

In view of the foregoing, I have determined that the implementation of the licensee's commitments is required in the interest of the public health and safety and should, therefore, be confirmed by an immediately effective Order.

IV

Accordingly, pursuant to sections 103, 161i, 161o and 182 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2 and 50, it is hereby ordered, effective immediately, that the licensee shall:

Implement the specific items described in this order in the manner described in the licensee's submittals noted in Section III herein no later than the dates in the Table.

Extensions of time for completing these items may be granted by the Director, Division of Licensing, for good cause shown.

V

The licensee may request a hearing on this Order within 20 days of the date of publication of this Order in the **Federal Register**. Any request for a hearing should be addressed to the Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC. 20555. A copy should also be sent to the Executive Legal Director at the same address. A request for hearing shall not stay the immediate effectiveness of this order.

If a hearing is to be held, the Commission will issue an Order designating the time and place of any such hearing.

If a hearing is held concerning this Order, the issue to be considered at the hearing shall be whether the licensee should comply with the requirements set forth in Section IV of this Order.

This Order is effective upon issuance.

Dated at Bethesda, Maryland, this 12th day of June 1984.

For the Nuclear Regulatory Commission.

**Darrell G. Eisenhut,**

*Director, Division of Licensing, Office of Nuclear Reactor Regulation.*

LICENSEE'S COMMITMENTS ON SUPPLEMENT 1 TO NUREG-0737

| Title | Requirement | Licensee's completion schedule (or status) |
|---|---|---|
| 1. Safety Parameter Display System (SPDS) | 1a. Submit a safety analysis and an implementation plan to the NRC. | 1. Safety Analysis: 9/84. 2. Implementation plan: Complete. |
| | 1b. SPDS fully operational and initial operator training complete. | December 1986. |
| 2. Detailed Control Room Design Review (DCRDR) | 2a. Submit a program plan to the NRC | Draft Report: Complete. |
| | 2b. Submit a summary report to the NRC including a proposed schedule for implementation. | Licensee will submit schedule July 1984. |
| 3. Regulatory Guide 1.97—Application to Emergency Response Facilities. | 3a Submit a report to the NRC describing how the requirements of Supplement 1 to NUREG-0737 have been or will be met. | September 1985. |
| | 3b. Implement (installation or upgrade) requirements | December 1985. |
| 4. Upgrade Emergency Operating Procedures (EOPs) | 4a. Submit a Procedures Generation Package to the NRC | May 1984. |
| | 4b. Implement the upgraded EOPs | October 1985. |
| 5. Emergency Response Facilities | 5a. Technical Support Center fully functional | Operational[1]. |
| | 5b. Operational Support Center fully functional. | Do.[1] |
| | 5c. Emergency Operations Facility fully functional | Do.[1] |

[1] ERF's will be revised based on RG 1.97 (December 1985) and DCRDR schedules.

[FR Doc. 84-16741 Filed 6-21-84; 8:45 am]

BILLING CODE 7590-01-M

[Docket Nos. 50-369; 50-370]

## Duke Power Co. et al. (McGuire Nuclear Station Unit Nos. 1 and 2); Order Confirming Licensee Commitments on Emergency Response Capability

I

Duke Power Company (Duke) is the holder of Facility Operating License Nos. NPF-9 and NPF-17 which authorize the operation of the McGuire Nuclear Station, Unit Nos. 1 and 2 (the facilities) at steady-state power levels not in excess of 3411 megawatts thermal. The facilities are pressurized water reactors (PWRs) located in Mecklenburg County, North Carolina.

II

Following the accident at Three Mile Island Unit No. 2 (TMI-2) on March 28, 1979, the Nuclear Regulatory Commission (NRC) staff developed a number of proposed requirements to be implemented on operating reactors and on plants under construction. These requirements include Operational Safety, Siting and Design, and Emergency Preparedness and are intended to provide substantial additional protection in the operation of nuclear facilities and significant upgrading of emergency response capability based on the experience from the accident at TMI-2 and the official studies and investigations of the accident. The requirements are set forth in NUREG-0737, "Clarification of TMI Action Plan Requirements," and in Suppelement 1 to NUREG-0737, "Requirements for Emergency Response Capability." Among these requirements are a number of items consisting of emergency response facility operability, emergency procedure implementation, addition of instrumentation, possible control room design modifications, and specific information to be submitted.

On December 17, 1982, a letter (Generic Letter 82-33) was sent to all licensees of operating reactors, applicants for operating licenses, and holders of construction permits enclosing Supplement 1 to NUREG-0737. In this letter operating reactor licensees and holders of construction permits were requested to furnish the following information, pursuant to 10 CFR 50.54(f), no later that April 15, 1983:

(1) A proposed schedule for completing each of the basis requirements for the items identified in Supplement 1 to NUREG-0737, and

(2) A description of plans for phased implementation and integration of emergency response activities including training.

III

Duke responded to Generic Letter 82-33 by letter dated April 14, 1983, including commitments to complete the basic requirements. The following Table summarizes Duke's schedular commitments or current status.

Duke's commitments include (1) dates for providing required submittals to the NRC, and (2) dates for implementing certain requirements.

The NRC staff reviewed Duke's April 14, 1983, letter and finds that the dates are reasonable, achievable dates for meeting the Commission requirements. The NRC staff concludes that the schedule proposed by the licensee will provide timely upgrading on the licensee's emergency response capability.

In view of the foregoing, I have determined that the implementation of Duke's commitments are required in the interest of the public health and safety and should, therefore, be confirmed by an immediately effective Order.

IV

Accordingly, pursuant to sections 103, 161i, 161o and 182 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2 and 50, it is hereby ordered, effective immediately, that the licensees shall:

Implement the specific items described in this Order in the manner described in Duke's submittals noted in Section III herein no later than the dates in the Table.

Extensions of time for completing these items may be granted by the Director, Division of Licensing, for good cause shown.

V

The licensee may request a hearing on this order within 20 days of the date of publication of this Order in the **Federal Register**. Any request for a hearing should be addressed to the Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. A copy should be sent to the Executive Legal Director at the same address. A request for hearing shall not stay the immediate effectiveness of this order.

If a hearing is to be held, the Commission will issue an Order designating the time and place of any such hearing.

If a hearing is held concerning this Order, the issue to be considered at the hearing shall be whether the licensee should comply with the requirements set forth in Section IV of this order. This Order is effective upon issuance.

For the Nuclear Regulatory Commission.

Dated at Bethesda, Maryland, this 15 day of June 1984.

**Darrell G. Eisenhut,**

*Director, Division of Licensing, Office of Nuclear Reactor Regulation.*

LICENSEE'S COMMITMENTS ON SUPPLEMENT 1 TO NUREG-0737

| Title | Requirement | Licensee's completion scheudle (or status) |
|---|---|---|
| 1. Safety Parameter Display System (SPDS) | 1a. Submit a safety analysis and an implementation plan to the NRC. | Complete. |
| | 1b. SPDS fully operational and operators trained | November 1984. |
| 2. Detailed Control Room Design Review (DCRDR) | 2a. Submit a program plan to the NRC | Complete. |
| | 2b. Submit a summary report to the NRC including a proposed schedule for implementation. | Do. |
| 3. Regulatory Guide 1.97—Application to Emergency Response Facilities. | 3a. Submit a report to the NRC describing how the requirements of Supplement 1 to NUREG-0737 have been or will be met. | Do. |
| | 3b. Implement (installation or upgrade) requirements | Do. |
| 4. Upgrade Emergency Operating Procedures (EOPs) | 4a. Submit a Procedures Generation Package to the NRC | Do. |
| | 4b. Implement the upgraded EOPs | November 1984. |
| 5. Emergency Response Facilities | 5a. Technical Support Center fully functional | Complete. |
| | 5b. Operational Support Center fully functional | Do. |
| | 5c. Emergency Operations Facility fully functional | Do. |

[FR Doc. 84-16742 Filed 6-21-84; 8:45 am]

BILLING CODE 7590-01-M

[Docket No. 50-334]

## Duquesne Light Co. et al. (Beaver Valley Power Station, Unit No. 1); Order Confirming Licensee Commitments on Emergency Response Capability

I

Duquesne Light Company (the licensee) is the holder of Facility Operating License No. DPR-66 which authorizes operation of the Beaver Valley Power Station (the facility) at steady-state power levels not in excess of 2652 megawatts thermal. The facility is a pressurized water reactor (PWR) located in Beaver County, Pennsylvania.

II

Following the accident at Three Mile Island Unit No. 2 TMI-2) on March 28, 1979, the Nuclear Regulatory Commission (NRC) staff developed a number of proposed requirements to be implemented on operating reactors and on plants under construction. These requirements include Operational Safety, Siting and Design, and Emergency Preparedness and are intended to provide substantial additional protection in the operation of nuclear facilities and significant upgrading of emergency response capability based on the experience from the accident at TMI-2 and the official studies and investigations of the accident. The requirements are set forth in NUREG-0737, "Clarification of TMI Action Plan Requirements," and in Supplement 1 to NUREG-0737, "Requirements for Emergency Response Capability." Among these requirements are a number of items consisting of emergency response facility operability, emergency procedure implementation, addition of instrumentation, possible control room design modifications, and specific information to be submitted.

On December 17, 1982, a letter (Generic Letter 82-33) was sent to all licensees of operating reactors, applicants for operating licenses, and holders of construction permits enclosing Supplement 1 to NUREG-0737. In this letter operating reactor licensees and holders of construction permits were requested to furnish the following information, pursuant to 10 CFR 50.54(f), no later than April 15, 1983:

(1) A proposed schedule for completing each of the basic requirements for the items identified in Supplement 1 to NUREG-0737, and

(2) A description of plans for phased implementation and integration of emergency response activities including training.

III

Duquesne Light Company (DLC) responded to Generic Letter 82-33 by letter dated April 15,1983. In a subsequent meeting held with the NRC staff on May 2, 1983, the licensee provided clarification to the response, and provided additional information in letters dated July 25, 1983 and May 30, 1984. The following Table summarizing DLC's schedular commitments or status was developed by the NRC staff from the Generic Letter and the information provided by DLC.

DLC's commitments include (1) dates for providing required submittals to the NRC, (2) dates for implementing certain requirements, and (3) a schedule for providing implementation dates for other requirements. These latter implementation dates will be revised, negotiated and confirmed by a subsequent order.

The NRC staff finds that the modified dates are reasonable, achievable dates for meeting the Commission requirements. The NRC staff concludes that the schedule proposed by the licensee will provide timely upgrading of the licensee's emergency response capability.

In view of the foregoing, I have determined that the implementation of the licensee's commitments is required in the interest of the public health and safety and should, therefore, be confirmed by an immediately effective Order.

IV

Accordingly, pursuant to sections 103, 161i, 161o and 182 of the Atomic Energy Act of 1954, as amended, and the Commission regulations in 10 CFR Parts 2 and 50, it is hereby ordered, effective immediately, that the licensee shall:

Implement the specific items described in this Order in the manner described in the licensee's submittals noted in Section III herein no later than the dates in the Table.

Extensions of time for completing these items may be granted by the Director, Division of Licensing, for good cause shown.

V

The licensee may request a hearing on this Order within 20 days of the date of publication of this Order in the **Federal Register**. Any request for a hearing should be addressed to the Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. A copy should also be sent to the Executive Legal Director at the same address. A request for hearing shall not stay the immediate effectiveness of this order.

If a hearing is to be held, the Commission will issue an Order designating the time and place of any such hearing.

If a hearing is held concerning this Order, the issue to be considered at the hearing shall be whether the licensee should comply with the requirements set forth in Section IV of this Order.

This Order is effective upon issuance.

For the Nuclear Regulatory Commission.

Dated at Bethesda, Maryland, this 12th day of June 1984.

**Darrell G. Eisenhut,**

*Director, Division of Licensing, Office of Nuclear Reactor Regulation.*

BEAVER VALLEY UNIT 1.—LICENSEE'S COMMITMENTS ON SUPPLEMENT 1 TO NUREG-0737

| Title | Requirement | Licensee's completion schedule (or status) |
|---|---|---|
| 1. Safety Parameter Display System (SPDS) | 1a. Submit a safety analysis and an implementation plan to the NRC. | (Uses the *W* design basis and functional analysis requirements; no plant specific submittal planned.) |
| | 1b. SPDS fully operational and operators trained | July 1986.[1] |
| 2. Detailed Control Room Design Review (DCRDR) | 2a. Submit a program plan to the NRC | Completed. |
| | 2b. Submit a summary report to the NRC including a proposed schedule for implementation. | November 130, 1985. |
| 3. Regulatory Guide 1.97—Application to Emergency Response facilities. | 3a. Submit a report to the NRC describing how the requirements of Supplement 1 to NUREG-0737 have been or will be met. | Do. |
| | 3b. Implement (installation or upgrade) requirements | Date to be provided in above report (3a). |

BEAVER VALLEY UNIT 1.—LICENSEE'S COMMITMENTS ON SUPPLEMENT 1 TO NUREG-0737—Continued

| Title | Requirement | Licensee's completion schedule (or status) |
|---|---|---|
| 4. Upgrade Emergency Operating Procedures (EOPs) | 4a. Submit a Procedures Generation Package to the NRC | July 1, 1984. |
| | 4b. Implement the upgraded EOPs | July 1986.[1] |
| 5. Emergency Response Facilities | 5a. Technical Support Center fully functional | February 1985.[2] |
| | 5b. Operational Support Center fully functional | Already functional. |
| | 5c. Emergency Operations Facility fully functional | February 1985.[2] |

[1] Prior to restart after the 5th refueling outage; date is only approximate.
[2] Prior to restart after the 4th refueling outage; date is only approximate.

[FR Doc. 84-16744 Filed 6-21-84; 8:45 am]
BILLING CODE 7590-01-M

[Docket No. 50-335]

## Florida Power and Light Co. et al. (St. Lucie Plant, Unit No. 1); Order Confirming Licensee Committees on Emergency Response Capability

I

Florida Power and Light Company (FP&L) (the licensee) is the holder of Facility Operating License No. DPR-67 which authorizes the operation of the St. Lucie Plant, Unit No. 1 (the facility) at steady-state power levels not in excess of 2700 megawatts thermal. The facility is a pressurized water reactor (PWR) located in St. Lucie County, Florida.

II

Following the accident at Three Mile Island Unit No. 2 (TMI-2) on March 28, 1979, the Nuclear Regulatory Commission (NRC) staff developed a number of proposed requirements to be implemented on operating reactors and on plants under construction. These requirements include Operational Safety, Siting and Design, and Emergency Preparedness and are intended to provide substantial additional protection in the operation of nuclear facilities and significant upgrading of emergency response capability based on the experience from the accident at TMI-2 and the official studies and investigations of the accident. The requirements are set forth in NUREG-0737, "Clarification of TMI Action Plan Requirements," and in Supplement 1 to NUREG-0737, "Requirements for Emergency Response Capability." Among these requirements are a number of items consisting of emergency response facility operability, emergency procedure implementation, addition of instrumentation, possible control room design modifications, and specific information to be submitted.

On December 17, 1982, a letter (Generic Letter 82-33) was sent to all licensees of operating reactors, applicants for operating licenses, and holders of construction permits enclosing Supplement 1 to NUREG-0737. In this letter operating reactor licensees and holders of construction permits were requested to furnish the following information, pursuant to 10 CFR 50.54(f), no later than April 15, 1983:

(1) A proposed schedule for completing each of the basic requirements for the items identified in Supplement 1 to NUREG-0737, and

(2) A description of plans for phased implementation and integration of emergency response activities including training.

III

FP&L responded to Generic Letter 82-33 by letter dated April 15, 1983. In this submittal, FP&L made commitments to complete the basic requirements. The following Table, summarizing FP&L's schedular commitments or status, was developed by the NRC staff from the Generic Letter and the information provided by FP&L.

FP&L's commitments include (1) dates for providing required submittals to the NRC, (2) dates for implementing certain requirements, and (3) a schedule for providing implementation dates for other requirements. These latter implementation dates will be reviewed, negotiated and confirmed by a subsequent order.

The NRC staff has reviewed FP&L's April 15, 1983 letter. As a result of this review, the NRC staff finds that the dates are reasonable and achievable for meeting the Commission requirements. The NRC staff concludes that the schedule proposed by the licensee will provide timely upgrading of the licensee's emergency response capability.

In view of the foregoing, I have determined that the implementation of FP&L's commitments are required in the interest of the public health and safety and should, therefore, be confirmed by an immediately effective Order.

IV

Accordingly, pursuant to section 103, 161i, 161o and 182 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2 and 50, it is hereby ordered, effective immediately, that the licensee shall:

Implement the specific items described in this Order in the manner described in FP&L's submittal noted in Section III herein no later than the dates in the Table.

Extensions of time for completing these items may be granted by the Director, Division of Licensing, for good cause shown.

V

The licensee may request a hearing on this Order within 20 days of the date of publication of this Order in the **Federal Register**. Any request for a hearing should be addressed to the Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. A copy should also be sent to the Executive Legal Director at the same address. A request for hearing shall not stay the immediate effectiveness of this order.

If a hearing is to be held, the Commission will issue an Order designating the time and place of any such hearing.

If a hearing is held concerning this Order, the issue to be considered at the hearing shall be whether the licensee should comply with the requirements set forth in Section IV of this Order.

This Order is effective upon issuance.

For the Nuclear Regulatory Commission.

Dated at Bethesda, Maryland, this 14th day of June 1984.

**Darrell G. Eisenhut,**

*Director, Division of Licensing, Office of Nuclear Reactor Regulation.*

LICENSEE'S COMMITMENTS ON SUPPLEMENT 1 TO NUREG-0737

| Title | Requirement | Licensee's completion schedule (or status) |
|---|---|---|
| 1. Safety Parameter Display System (SPDS) | 1a. Submit a safety analysis and an implementation plan to the NRC. | March 1, 1984 (Complete). |
| | 1b. SPDS fully operational and operators trained | Fall 1985-Cycle 7 Outage (to be scheduled at time of Cycle 6 restart). Hardware is installed. |
| 2. Detailed Control Room Design Review (DCRDR) | 2a. Submit a program plan to the NRC | May 14, 1983 (Complete). |
| | 2b. Submit a summary report to the NRC including a proposed schedule for implementation. | November 1, 1983 (Complete). |
| 3. Regulatory Guide 1.97—Application to Emergency Response Facilities. | 3a. Submit a report to the NRC describing how the requirements of Supplement 1 to NUREG-0737 have been or will be met. | January 1, 1984 (Complete). |
| | 3b. Implement (installation or upgrade) requirements | End of Cycle 7 outage approximately December 1985. |
| 4. Upgrade Emergency Operating Procedures (EOPs) | 4a. Submit a Procedures Generation Package to the NRC | November 1, 1983 (Complete). |
| | 4b. Implement the upgraded EOPs | July 1, 1985. |
| 5. Emergency Response Facilities | 5a. Technical Support Center fully functional | Complete. SPDS installation complete. SPDS training and fully operational by end of cycle 7 outage (approximately 11/85). |
| | 5b. Operational Support Center fully functional | Completed. |
| | 5c. Emergency Operations Facility fully functional | Complete. SPDS installation complete SPDS training and fully operational by end of cycle 7 outage (approximately 11/85). |

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**[Docket No. 50-389]**

## Florida Power and Light Company, Orlando Utilities Commission of the City of Orlando, Florida and Florida Municipal Power Agency (St. Lucie Plant, Unit 2); Order Confirming Licensee Commitments on Emergency Response Capability

I

Florida Power and Light Company (FP&L), Orlando Utilities Commission of the City of Orlando, Florida and Florida Municipal Power Agency (the licensees) are the holders of Facility Operating License No. NPF-16 which authorizes the operation of the St. Lucie Plant, Unit 2 (the facility) at steady-state power levels not in excess of 2560 megawatts thermal. The facility is a pressurized water reactor (PWR) located in St. Lucie County, Florida.

II

Following the accident at Three Mile Island Unit No. 2 (TMI-2) on March 28, 1979, the Nuclear Regulatory Commission (NRC) staff developed a number of proposed requirements to be implemented on operating reactors and on plants under construction. These requirements include Operational Safety, Siting and Design, and Emergency Preparedness and are intended to provide substantial additional protection in the operation of nuclear facilities and significant upgrading of emergency response capability based on the experience from the accident at TMI-2 and the official studies and investigations of the accident. The requirements are set forth in NUREG-0737, "Clarification of TMI Action Plan Requirements," and in Supplement 1 to NUREG-0737, "Requirements for Emergency Response Capability." Among these requirements are a number of items consisting of emergency response facility operability, emergency procedure implementation, addition of instrumentation, possible control room design modifications, and specific information to be submitted.

On December 17, 1982, a letter (Generic Letter 82-33) was sent to all licensees of operating reactors, applicants for operating licenses, and holders of construction permits enclosing Supplement 1 to NUREG-0737. In this letter operating reactor licensees and holders of construction permits were requested to furnish the following information, pursuant to 10 CFR 50.54(f), no later than April 15, 1983:

(1) A proposed schedule for completing each of the basic requirements for the items identified in Supplement 1 to NUREG-0737, and

(2) A description of plans for phased implementation and integration of emergency response activities including trainig.

III

FP&L responded to Generic Letter 82-33 by letter dated April 15, 1983. In this submittal, FP&L made commitments to complete the basic requirements. The following Table summarizing FP&L's schedular commitments or status was developed by the NRC staff from the Generic Letter and the information provided by FP&L.

FP&L's commitments include (1) dates for providing required submittals to the NRC, (2) dates for implementing certain requirements, and (3) a schedule for providing implementation dates for other requirements. These latter implementation dates will be reviewed, negotiated and confirmed by a subsequent order.

The NRC staff finds that the modified dates are reasonable, achievable dates for meeting the Commission requirements. The NRC staff concludes that the schedule proposed by the licensee will provide timely upgrading of the licensee's emergency response capability.

In view of the foregoing, I have determined that the implementation of FP&L's commitments are required in the interest of the public health and safety and should, therefore, be confirmed by an immediately effective Order.

IV

Accordingly, pursuant to sections 103, 161i, 161o and 182 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2 and 50, it is hereby ordered, effective immediately, that the licensees shall:

Implement the specific items described in this order in the manner described in FP&L's submittal noted in Section III herein no later than the dates in the Table.

Extensions of time for completing these items may be granted by the Director, Division of Licensing, for good cause shown.

V

The licensees may request a hearing on this Order within 20 days of the date of publication of this Order in the **Federal Register.** Any request for a hearing should be addressed to the Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. A copy should also be sent to the Executive Legal Director at the same address. A request for hearing shall not stay the immediate effectiveness of this order.

If a hearing is to be held, the Commission will issue an Order designating the time and place of any such hearing.

If a hearing is held concerning this Order, the issue to be considered at the hearing shall be whether the licensees should comply with the requirements set forth in Section IV of this Order.

This Order is effective upon issuance.

For the Nuclear Regulatory Commission.

Dated at Bethesda, Maryland, this 14th day of June 1984.

**Darrell G. Eisenhut,**

*Director, Division of Licensing, Office of Nuclear Reactor Regulation.*

LICENSEE'S COMMITMENTS ON SUPPLEMENT 1 TO NUREG-0737

| Title | Requirement | Licensee's completion schedule (or status) |
|---|---|---|
| 1. Safety Parameter Display System (SPDS) | 1a. Submit a safety analysis and an implementation plan to the NRC. | March 1, 1984 (Complete). |
| | 1b. SPDS fully operational and operators trained | End of 1st Refueling (~January 1985). |
| 2. Detailed Control Room Design Review (DCRDR) | 2a. Submit a program plan to the NRC | June 9, 1983 (Complete). |
| | 2b. Submit s summary report to the NRC including a proposed schedule for implementation. | September 30, 1983 (Complete). |
| 3. Regulatory Guide 1.97—Application to Emergency Response Facilities. | 3a. Submit a report to the NRC describing how the requirements of Supplement 1 to NUREG-0737 have been or will be met. | November 30, 1983 (Complete). |
| | 3b. Implement (installation or upgrade) requirements | End of 1st refueling outage approximately January 1985. |
| 4. Upgrade Emergency Operating Procedures (EOPs) | 4a. Submit a Procedures Generation Package to the NRC | November 1, 1983 (Complete). |
| | 4b. Implement the upgraded EOPs | July 1, 1985). |
| 5. Emergency Response Facilities | 5a. Technical Support Center fully functional | Complete except for installing the SPDS which is scheduled for end of 1st refueling (approximately January 1985. Complete. |
| | 5b. Operational Support Center fully functional | |
| | 5c. Emergency Operations Facility fully functional | Complete except for installing the SPDS which is scheduled for end of 1st refueling (approximately January 1985. |

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**[Docket No. 50-289]**

## General Public Utilities Nuclear Corp.; Three Mile Island Nuclear Station, Unit No. 1; Order Confirming Licensee Commitments on Emergency Response Capability

I

The General Public Utilities Nuclear Corporation (the licensee) and three co-owners hold Facility Operating License No. DPR-50, which authorizes the licensee to operate the Three Mile Island Nuclear Station, Unit No. 1 (the facility) at power levels not in excess of 2535 megawatts thermal. The facility is a pressurized water reactor (PWR) located at the licensee's site in Dauphin County, Pennsylvania.

II

Following the accident at Three Mile Island Unit No. 2 (TMI-2) on March 28, 1979, the Nuclear Regulatory Commission (NRC) staff developed a number of proposed requirements to be implemented on operating reactors and on plants under construction. These requirements include Operational Safety, Siting and Design, and Emergency Preparedness and are intended to provide substantial additional protection in the operation of nuclear facilities and significant upgrading of emergency response capability based on the experience from the accident at TMI-2 and the official studies and investigations of the accident. The requirements are set forth in NUREG-0737, "Clarification of TMI Action Plan Requirements," and in Supplement 1 to NUREG-0737, "Requirements for Emergency Response Capability." Among these requirements are a number of items consisting of emergency response facility operability, emergency procedure implementation, addition of instrumentation, possible control room design modifications, and specific information to be submitted.

On December 17, 1982, a letter (Generic Letter 82-33) was sent to all licensees of operating reactors, applicants for operating licenses, and holders of construction permits enclosing Supplement 1 to NUREG-0737. In this letter, operating reactor licensees and holders of construction permits were requested to furnish the following information, pursuant to 10 CFR 50.54(f), no later than April 15, 1983:

(1) A proposed schedule for completing each of the basic requirements for the items identified in Supplement 1 to NUREG-0737, and

(2) A description of plans for phased implementation and integration of emergency response activities including training.

III

The licensee responded to Generic Letter 82-33 by letter dated April 15, 1983. By letters dated July 12, and September 1, 1983, the licensee modified several dates as a result of negotiations with the NRC staff. In these submittals, the licensee made commitments to complete the basic requirements. The following Table summarizing the licensee's schedular commitments or status was developed by the NRC staff from the Generic Letter and the information provided by the licensee.

The licensee's commitments include (1) dates for providing required submittals to the NRC, (2) dates for implementing certain requirements, and (3) a schedule for providing implementation dates for other requirements. These latter implementation dates will be reviewed, negotiated and confirmed by a subsequent order.

The NRC staff reviewed the licensee's April 15, 1983 letter and entered into negotiations with the licensee regarding schedules for meeting the requirements of Supplement 1 to NUREG-0737. As a result of these negotiations, the licensee modified certain dates by letters dated July 12, and September 1, 1983. The NRC staff finds that the modified dates are reasonable, achievable dates for meeting the NRC requirements. The

NRC staff concludes that the schedule proposed by the licensee will provide timely upgrading of the licensee's emergency response capability.

In view of the foregoing, I have determined that the implementation of the licensee's commitments is required in the interest of the public health and safety and should, therefore, be confirmed by an immediately effective Order.

IV

Accordingly, pursuant to sections 103, 161i, 161o and 182 of Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2 and 50, it is hereby ordered, effective immediately, that the licensee shall:

Implement the specific items described in this ORDER in the manner described in the licensee's submittals noted in Section III herein no later than the dates in the Table.

Extensions of time for completing these items may be granted by the Director, Division of Licensing, for good cause shown.

V

The licensee may request a hearing on this Order within 20 days of the date of publication of this Order in the **Federal Register**. Any request for a hearing should be addressed to the Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. A copy should also be sent to the Executive Legal Director at the same address. A request for hearing shall not stay the immediate effectiveness of this order.

If a hearing is to be held, the Commission will issue an Order designating the time and place of any such hearing.

If a hearing is held concerning this Order, the issue to be considered at the hearing shall be whether the licensee should comply with the requirements set forth in Section IV of this Order.

This Order is effective upon issuance.

Dated at Bethesda, Maryland, this 14th day of June 1984.

For the Nuclear Regulatory Commission.

**Darrell G. Eisenhut,**

*Director, Division of Licensing, Office of Nuclear Reactor Regulation.*

LICENSEE'S COMMITMENTS ON SUPPLEMENT 1 TO NUREG-0737

| Title | Requirement | Licensee's completion schedule (or status) |
|---|---|---|
| 1. Safety Parameter Display System (SPDS) | 1a. Submit a safety analysis and an implementation plan to the NRC. | June 1984. |
| | 1b. SPDS fully operational and operators trained | Prior to startup for Cycle 6 (est. August 1985 |
| 2. Detailed Control Room Design Review (DCRDR) | 2a. Submit a program plan to the NRC | June 1984 |
| | 2b. Submit a summary report to the NRC including a proposed schedule for implementation. | Do. |
| 3. Regulatory Guide 1.97—Application to Emergency Response Facilities. | 3a. Submit a report to the NRC describing how the requirements of Supplement 1 to NUREG-0737 have been or will be met. | Prior to end of Cycle 5, but no later than September 1984. |
| | 3b. Implement (Installation or upgrade) requirements | Implementation schedule to be submitted prior to end of Cycle 5, but no later than September 1984. |
| 4. Upgrade Emergency Operating Procedures (EOPs) | 4a. Submit a Procedures Generation Package to the NRC | Complete |
| | 4b. Implement the upgraded EOPs | Do. |
| 5. Emergency Response Facilities | 5a. Technical Support Center fully functional | Do.[1] |
| | 5b. Operational Support Center fully functional | Do. |
| | 5c. Emergency Operations Facility fully functional | Do.[1] |

[1] Indicates operability. Facilities to be upgraded to fully functional status on a schedule consistent with SPDS and Regulatory Guide 1.97 implementation.

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BILLING CODE 7590-01-M

[Docket No. 50-309]

## Maine Yankee Atomic Power Co. (Maine Yankee Atomic Power Station); Order Confirming Licensee Commitments on Emergency Response Capability

I

Maine Yankee Atomic Power Company (the licensee) is the holder of Facility Operating License No. DPR-36 which authorizes the operation of the Maine Yankee Atomic Power Station (the facility) at steady-state power levels not in excess of 2630 megawatts thermal. The facility is a pressurized water reactor located at the licensee's site in Lincoln County, Maine.

II

Following the accident at Three Mile Island Unit No. 2 (TMI-2) on March 28, 1979, the Nuclear Regulatory Commission (NRC) staff developed a number of proposed requirements to be implemented on operating reactors and on plants under construction. These requirements include Operational Safety, Siting and Design, and Emergency Preparedness and are intended to provide substantial additional protection in the operation of nuclear facilities and significant upgrading of emergency response capability based on the experience from the accident at TMI-2 and the official studies and investigations of the accident. The requirements are set forth in NUREG-0737, "Clarification of TMI Action Plan Requirements," and in Supplement 1 to NUREG-0737, "Requirements for Emergency Response Capability." Among these requirements are a number of items consisting of emergency response facility operability, emergency procedure implementation, addition of instrumentation, possible control room design modifications, and specific information to be submitted.

On December 17, 1982, a letter (Generic Letter 82-33) was sent to all licensees of operating reactors, applicants for operating licenses, and holders of construction permits enclosing Supplement 1 to NUREG-0737. In this letter operating reactor licensees and holders of construction permits were requested to furnish the following information, pursuant to 10 CFR 50.54(f), no later than April 15, 1983:

(1) A proposed schedule for completing each of the basic requirements for the items identified in Supplement 1 to NUREG-0737, and

(2) A description of plans for phased implementation and integration of emergency response activities including training.

III

The licensee responded to Generic Letter 82-33 by letters dated April 19, 1983, December 2, 1983, January 6 and February 23, 1984. In these submittals, the licensee made commitments to complete the basic requirements. The following Table summarizing the licensee's schedular commitments or status was developed by the NRC staff

from the Generic Letter and the information provided by the licensee.

The licensee's commitments include (1) dates for providing required submittals to the NRC, and (2) dates for implementing certain requirements.

The NRC staff reviewed the licensee's April 19, 1983, December 2, 1983, January 6 and February 23, 1984 letters, and finds that the dates are reasonable, achievable dates for meeting the Commission requirements. The NRC staff concludes that the schedule proposed by the licensee will provide timely upgrading of the licensee's emergency response capability.

In view of the foregoing, I have determined that the implementation of the licensee's commitments is required in the interest of the public health and safety and should, therefore, be confirmed by an immediately effective Order.

IV

Accordingly, pursuant to sections 103, 161i, 161o and 182 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2 and 50, it is hereby ordered, effective immediately, that the licensees shall:

Implement the specific items described in this order in the manner described in licensee's submittals noted in Section III herein no later than the dates in the table.

Extensions of time for completing these items may be granted by the Director, Division of Licensing, for good cause shown.

V

The licensee may request a hearing on this Order within 20 days of the date of publication of this Order in the **Federal Register**. Any request for a hearing should be addressed to the Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. A copy should also be sent to the Executive Legal Director at the same address. A request for hearing shall not stay the immediate effectiveness of this order.

If a hearing is to be held, the Commission will issue an Order designating the time and place of any such hearing.

If a hearing is held concerning this Order, the issue to be considered at the hearing shall be whether the licensee should comply with the requirements set forth in Section IV of this Order.

This Order is effective upon issuance.

Dated at Bethesda, Maryland, this 14th day of June 1984.

For the Nuclear Regulatory Commission.

**Darrell G. Eisenhut,**

*Director, Division of Licensing, Office of Nuclear Reactor Regulation.*

LICENSEE'S COMMITMENTS ON SUPPLEMENT 1 TO NUREG-0737

| Title | Requirement | Licensee's Completion schedule (or status) |
|---|---|---|
| 1. Safety Parameter Display System (SPDS) | 1a. Submit a safety analysis and an implementation plan to the NRC. | Mar. 1, 1985. |
| | 1b. SPDS fully operational and operators trained | Oct. 1, 1985. |
| 2. Detailed Control Room Design Review (DCRDR) | 2a. Submit a program plan to the NRC | Complete. |
| | 2b. Submit a summary report to the NRC including a proposed schedule for implementation. | Mar. 15, 1985. |
| 3. Regulatory Guide 1.97—Application to Emergency Response Facilities. | 3a. Submit a report to the NRC describing how the requirements of Supplement 1 to NUREG-0737 have been or will be met. | Do. |
| | 3b. Implement (installation or upgrade) requirements | Oct. 1, 1985. |
| 4. Upgrade Emergency Operating Procedures (EOPs) | 4a. Submit a procedures generation package to the NRC | Complete. |
| | 4b. Implement the upgrded EOPs | Oct. 1, 1985. |
| 5. Emergency Response Facilities | 5a. Technical support center fully functional | Functional—Dec. 31, 1983.[1] |
| | 5b. Operational support center fully functional | Complete. |
| | 5c. Emergency operations facility fully functional | Functional.[1] |

[1] Subject to completion dates for item 3b above.

[FR Doc. 84-16748 Filed 6-21-84; 8:45 am]
BILLING CODE 7590-01-M

**[Docket No. 50-336]**

## Northeast Nuclear Energy Co.; Western Massachusetts Electric Co.; Connecticut Light and Power Co. et al. (Millstone Nuclear Power Station, Unit No. 2); Order Confirming Licensee Commitments on Emergency Response Capability

I

Northeast Nuclear Energy Company (NNECo), Western Massachusetts Electric Company, and the Connecticut Light and Power Company (the licensees) are the holders of Facility Operating License No. DPR-65 which authorizes the operation of Millstone Nuclear Power Station, Unit No. 2 (the facility) at steady-state power levels not in excess of 2700 megawatts thermal. The facility is a pressurized water reactor (PWR) located in New London County, Connecticut.

II

Following the accident at Three Mile Island Unit No. 2 (TMI-2) on March 28, 1979, the Nuclear Regulatory Commission (NRC) staff developed a number of proposed requirements to be implemented on operating reactors and on plants under construction. These requirements include Operational Safety, Siting and Design, and Emergency Preparedness and are intended to provide substantial additional protection in the operation of nuclear facilities and significant upgrading of emergency response capability based on the experience from the accident at TMI-2 and the official studies and investigations of the accident. The requirements are set forth in NUREG-0737, "Clarification of TMI Action Plan Requirements," and in Supplement 1 to NUREG-0737, "Requirements for Emergency Response Capability." Among these requirements are a number of items consisting of emergency response facility operability, emergency procedure implementation, addition of instrumentation, possible control room design modifications, and specific information to be submitted.

On December 17, 1982, a letter (Generic Letter 82-33) was sent to all licensees of operating reactors, applicants for operating licenses, and holders of construction permits enclosing Supplement 1 to NUREG-0737. In this letter operating reactor licensees and holders of construction permits were requested to furnish the following information, pursuant to 10 CFR 50.54(f), no later than April 15, 1983:

(1) A proposed schedule for completing each of the basic

requirements for the items identified in Supplement 1 to NUREG–0737, and

(2) A description of plans for phased implementation and integration of emergency response activities including training.

III

NNECo responsed to Generic Letter 82–33 by letter dated April 15, 1983. By letters dated August 11, 1983, November 28, 1983, and December 20, 1983, January 31, 1984 and April 9, 1984, NNECo modified several dates as a result of negotiations with the NRC staff. In these submittals, NNECo made commitments for completion of the basic requirements. The following Table summarizing NNECo's schedular commitments or status was developed by the NRC staff from the Generic Letter and the information provided by NNECo.

NNECo's commitments include (1) dates for providing required submittals to the NRC, (2) dates for implementing certain requirements, and (3) a schedule for providing implementation dates for other requirements. These latter implementation dates will be reviewed, negotiated and confirmed by a subsequent order.

The NRC staff reviewed NNECo's April 15, 1983 letter and entered into negotiations with the licensee regarding schedules for meeting the requirements of Supplement 1 to NUREG–0737. As a result of the negotiations, the licensee modified certain dates by letters dated August 11, 1983, November 28, 1983, December 20, 1983, January 31, 1984, and April 9, 1984. The NRC staff finds that the modified dates are reasonable, achievable dates for meeting the Commission requirements. The NRC staff concludes that the schedule proposed by the licensee will provide timely upgrading of the licensee's emergency response capability.

In view of the foregoing, I have determined that the implementation of NNECo's commitments is required in the interest of the public health and safety and should, therefore, be confirmed by an immediately effective Order.

IV

Accordingly, pursuant to sections 103, 161i, 161o and 182 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2 and 50, it is hereby ordered, effective immediately, that the licensees shall:

Implement the specific items described in this order in the manner described in NNECo's submittals noted in Section III herein no later than the dates in the Table.

Extensions of time for completing these items may be granted by the Director, Division of Licensing, for good cause shown.

V

The licensees may request a hearing on this Order within 20 days of the date of publication of this Order in the **Federal Register**. Any request for a hearing should be addressed to the Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. A copy should also be sent to the Executive Legal Director at the same address. A request for hearing shall not stay the immediate effectiveness of this order.

If a hearing is to be held, the Commission will issue an Order designating the time and place of any such hearing.

If a hearing is held concerning this Order, the issue to be considered at the hearing shall be whether the licensees should comply with the requirements set forth in Section IV of this Order.

This Order is effective upon issuance.

Dated at Bethesda, Maryland, this 14th day of June 1984.

For the Nuclear Regulatory Commission.

**Darrell G. Eisenhut,**

*Director, Division of Licensing, Office of Nuclear Reactor Regulation.*

MILLSTONE STATION UNIT 2.—NNECO'S COMMITMENT ON SUPPLEMENT 1 TO NUREG–0737

| Title | Requirement | Licensee's completion schedule (or status) |
|---|---|---|
| 1. Safety Parameter Display System (SPDS) | 1a. Submit a safety analysis and an implementation plan to the NRC. | Mar. 25, 1985. |
| | 1b. SPDS fully operational and operators trained | Submit schedule by Mar. 25, 1985. |
| 2. Detailed Control Room Design Review (DCRDR) | 2a. Submit a program plan to the NRC | Feb. 26, 1985. |
| | 2b. Submit a summary report to the NRC including a proposed schedule for implementation. | Submit schedule by Feb. 6, 1985. |
| 3. Regulatory Guide 1.97—Application to Emergency Response Facilities. | 3a. Submit a report to the NRC describing how the requirements of Supplement 1 to NUREG–0737 have been or will be met. | Completed Feb. 29, 1984. |
| | 3b. Implement (installation or upgrade) requirements | Submit schedule July 17, 1984. |
| 4. Upgrade Emergency Procedures (EOPs) | 4b. Submit a procedures generation package to the NRC | Complete Oct. 1, 1983. |
| | 4b. Implement the upgraded EOP's | Complete Jan. 7, 1984. |
| 5. Emergency response facilities | 5a. Technical support center fully functional | Interim TSC Operational.[1, 3] |
| | 5b. Operational support center fully functional | Complete.[1] |
| | 5c. Emergency operations facility fully functional | Complete[1] (EOF backup siting relief requested by NNECo letter dated August 3, 1983).[2] |

[1] Except for any additional changes that may be required as a result of other reviews in the Order.
[2] This will be subject to future licensing action.
[3] Operational TSC temporarily relocated to EOF pending completion of Millstone site TSC (tentatively mid-1985).

[FR Doc. 84–16749 Filed 6–21–84; 8:45 am]
BILLING CODE 7590–01–M

**[Docket Nos. 50–282 and 50–306]**

## Northern States Power Co. (Prairie Island Nuclear Generating Plan, Unit Nos. 1 and 2); Order Confirming Licensee Commitments on Emergency Response Capability

I

Northern State Power Company (NSP) is the holder of Facility Operating License Nos. DPR–42 and DPR–60 which authorize the operation of the Prairie Island Nuclear Generating Plant, Unit Nos. 1 and 2 (the facility) at steady-state power levels not in excess of 1650 megawatts thermal. The facility consists of two pressureized water reactors (PWR) located at the licensee's site in Goodhue County, Minnesota.

II

Following the accident at Three Mile Island Unit No. 2 (TMI–2) on March 28, 1979, the Nuclear Regulatory Commission (NRC) staff developed a number of proposed requirements to be implemented on operating reactors and on plants under construction. These requirements include Operational Safety, Siting and Design, and Emergency Preparedness and are intended to provide substantial additional protection in the operation of nuclear facilities and significant upgrading of emergency response

capability based on the experience from the accident at TMI–2 and the official studies and investigations of the accident. The requirements are set forth in NUREG–03737, "Clarification of TMI Action Plan Requirements," and in Supplement 1 to NUREG–0737, "Requirements for Emergency Response Capability." Among these requirements are a number of items consisting of emergency response facility operability, emergency procedure implementation, addition of instrumentation, possible control room design modifications, and specific information to be submitted.

On December 17, 1982, a letter (Generic Letter 82–33) was sent to all licensees of operating reactors, applicants for operating licenses, and holders of construction permits enclosing Supplement 1 to NUREG–0737. In this letter operating reactor licensees and holders of construction permits were requested to furnish the following information, pursuant to 10 CFR 50.54(f), no later than April 15, 1983:

(1) A proposed schedule for completing each of the basic requirements for the items identified in Supplement 1 to NUREG–0737, and

(2) A description of plans for phased implementation and integration of emergency response activities including training.

III

NSP responded to Generic Letter 82–33 by letter dated April 15, 1983. By the negotiating meeting held at the plant site on June 24, 1983, NSP modified several dates as a result of negotiation with the NRC staff. NSP made commitments to complete the basic requirements. The following Table summarizing NSP's schedular commitments or status was developed by the NRC staff from the Generic Letter and the information provided by NSP.

NSP's commitments include (1) dates for providing required submittals to the NRC and (2) dates for implementing certain requirements.

The NRC staff reviewed NSP's April 15, 1983 letter and entered into negotiation with the licensee regarding schedules for meeting the requirements of Supplement 1 to NUREG–0737. As a result of these negotiations, the licensee modified certain dates that are reflected in the attached table. The NRC staff finds that the modified dates are reasonable, achievable dates for meeting the Commission requirements. The NRC staff concludes that the schedule proposed by the licensee will provide timely upgrading of the licensee's emergency response capability.

In view of the foregoing, I have determined that the implementation of NSP's commitments is required in the interest of the public health and safety and should, therefore, be confirmed by an immediately effective Order.

IV

Accordingly, pursuant to sections 103, 161i, 161o and 182 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2 and 50, it is hereby ordered, effective immediately, that the licensee shall:

Implement the specific items described in this order in the manner described in NSP's submittals noted in Section III herein no later than the dates in the Table.

Extensions of time for completing these items may be granted by the Director, Division of Licensing, for good cause shown.

V

The licensee may request a hearing on this order within 20 days of the date of publication of this Order in the **Federal Register.** Any request for a hearing should be addressed to the Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. A copy should also be sent to the Executive Legal Director at the same address. A request for hearing shall not stay the immediate effectiveness of this order.

If a hearing is to be held, the Commission will issue an Order designating the time and place of any such hearing.

If a hearing is held concerning this Order, the issue to be considered at the hearing shall be whether the licensee should comply with the requirements set forth in Section IV of this Order.

This Order is effective upon issuance.

Dated at Bethesda, Maryland, this 14th day of June, 1984.

For the Nuclear Regulatory Commission.

**Darrell G. Eisenhut,**

*Director, Division of Licensing, Office of Nuclear Reactor Regulation.*

LICENSEE'S COMMITMENTS ON SUPPLEMENT 1 TO NUREG–0737

| Title | Requirement | Licensee's completion schedule (or status) |
|---|---|---|
| 1. Safety Parameter Display System (SPDS) | 1a. Submit a safety analysis and an implementation plan to the NRC. | Apr. 15, 1984. |
| | 1b. SPDS fully operational and operators trained | Unit 1: 3 mo. after return to power following 1986 refueling (Cycle 11). Unit 2: 4 mo. after return to power following 1985 refueling (Cycle 10) |
| 2. Detailed Control Room Design Review (DCRDR) | 2a. Submit a program plan to the NRC | Complete. |
| | 2b. Submit a summary report to the NRC including a proposed schedule for implementation. | Jan. 1, 1985.[2] |
| 3. Regulatory Guide 1.97—Application to Emergency Response Facilities | 3a. Submit a report to the NRC describing how the requirements of Supplement 1 to NUREG–0737 have been or will be met. | Complete. |
| | 3b. Implement (installation or upgrade) requirements | Same as 1b. above.[2] |
| 4. Upgrade Emergency Operating Procedures (EOPs) | 4a. Submit a procedures generation package to the NRC | Complete. |
| | 4b. Implement the upgraded EOP's | Do. |
| 5. Emergency Response Facilities | 5a. Technical support center fully functional | Complete.[1] |
| | 5b. Operational support center fully functional | Do.[1] |
| | 5c. Emergency operations facility fully functional | Do.[1] |

[1] Enhancement to be completed with implementation of Reg. Guide 1.97 (3b above) and SPDS operational (1b above).
[2] Subject to change if additional NRC staff requirements issued.

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BILLING CODE 7590–01–M

[Dockets Nos. 50-277 and 50-278]

## Philadelphia Electric Co. (Peach Bottom Atomic Power Station, Units 2 and 3); Order Confirming Licensee Commitments on Emergency Response Capability

I

Philadelphia Electric Company (PECO or the licensee) and three other co-owners are the holders of Facility Operating Licenses Nos. DPR-44 and DPR-56 which authorize the operation of the Peach Bottom Atomic Station Units Nos. 2 and 3 (the facilities) at steady-state power levels not in excess of 3293 megawatts thermal for each unit. The facilities are boiling water reactors (BWRs) located at the licensee's site in York County, Pennsylvania.

II

Following the accident at Three Mile Island Unit No. 2 (TMI-2) on March 28, 1979, the Nuclear Regulatory Commission (NRC) staff developed a number of proposed requirements to be implemented on operating reactors and on plants under construction. These requirements include Operational Safety, Siting and Design, and Emergency Preparedness and are intended to provide substantial additional protection in the operation of nuclear facilities and significant upgrading of emergency response capability based on the experience from the accident at TMI-2 and the official studies and investigations of the accident. The requirements are set forth in NUREG-0737, "Clarification of TMI Action Plan Requirements," and in Supplement 1 to NUREG-0737, "Requirements for Emergency Response Capability." Among these requirements are a number of items consisting of emergency response facility operability, emergency procedure implementation, addition of instrumentation, possible control room design modifications, and specific information to be submitted.

On December 17, 1982, a letter (Generic Letter 82-33) was sent to all licensees of operating reactors, applicants for operating licenses, and holders of construction permits enclosing Supplement 1 to NUREG-0737. In this letter, operating reactor licensees and holders of construction permits were requested to furnish the following information, pursuant to 10 CFR 50.54(f), no later than April 15, 1983:

(1) A proposed schedule for completing each of the basic requirements for the items identified in Supplement 1 to NUREG-0737, and

(2) A description of plans for phased implementation and integration of emergency response activities including training.

III

PECO responded to Generic Letter 82-83 by letters dated April 15, 1983, and September 14, 1983. In these submittals, PECO made commitments to complete the basic requirements. The following Table summarizing PECO's schedular commitments or status was developed by the NRC staff from the Generic Letter and the information provided by PECO.

PECO's commitments include (1) dates for providing required submittals to the NRC, (2) dates for implementing certain requirements, and (3) a schedule for providing implementation dates for other requirements. These later implementation dates will be reviewed, negotiated and confirmed by a subsequent order.

The NRC staff reviewed PECO's submittals and finds that the dates are reasonable, achievable dates for meeting the NRC requirements. The NRC staff concludes that the schedule proposed by the licensee will provide timely upgrading of the licensee's emergency response capability.

In view of the foregoing, I have determined that the implementation of PECO's commitments is required in the interest of the public health and safety and should, therefore, be confirmed by an immediately effective Order.

IV

Accordingly, pursuant to sections 103, 161i, 161o, and 182 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2 and 50, it is hereby ordered, effective immediately, that the licensee shall:

Implement the specific items described in this order in the manner described in PECO's submittals noted in section III herein no later than the dates in the Table.

Extensions of time for completing these items may be granted by the Director, Division of Licensing, for good cause shown.

V

The licensee may request a hearing on this Order within 20 days of the date of publication of this Order in the **Federal Register**. Any request for a hearing should be addressed to the Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. A copy should also be sent to the Executive Legal Director at the same address. A request for hearing shall not stay the immediate effectiveness of this Order.

If a hearing is to be held, the Commission will issue an Order designating the time and place of any such hearing.

If a hearing is held concerning this Order, the issue to be considered at the hearing shall be whether the licensee should comply with the requirements set forth in Section IV of this Order.

This Order is effective upon issuance.

Dated at Bethesda, Maryland, this 14th day of June 1984.

For the Nuclear Regulatory Commission.

**Darrell G. Eisenhut,**

*Director, Division of Licensing, Office of Nuclear Reactor Regulation.*

LICENSEE'S COMMITMENTS ON SUPPLEMENT 1 TO NUREG-0737

| Title | Requirement | Licensee's completion schedule (or status) |
|---|---|---|
| 1. Safety Parameter Display System (SPDS) | 1a. Submit a safety analysis and an implementation plan to the NRC. | Complete (Units 2 and 3). |
| | 1b. SPDS fully operational and operators trained | Unit 2: By the end of the 7th refueling outage (est. Fall 1985); Unit 3: By the end of the 6th refueling outage (est. Spring 1985). |
| 2. Detailed Control Room Design Review (DCRDR) | 2.a Submit a program plan to the NRC | Complete (Units 2 and 3). |
| | 2b. Submit a summary report to the NRC including a proposed schedule for implementation. | March 15, 1985 (Units 2 and 3). |
| 3. Regulatory Guide 1.97—Application to Emergency Response Facilities. | 3a. Submit a report to the NRC describing how the requirements of Supplement 1 to NUREG-0737 have been or will be met. | July 1, 1984 (Units 2 and 3). |
| | 3b. Implement (installation or upgrade) requirements | Unit 2: By the end of the 8th refueling outage (est. Spring 1987); Unit 3: By the end of the 7th refueling outage (est. Fall 1985). |
| 4. Upgrade Emergency Operating Procedures (EOPs) | 4a. Submit a Procedures Generation Package to the NRC | Complete (Units 2 and 3). |

LICENSEE'S COMMITMENTS ON SUPPLEMENT 1 TO NUREG-0737—Continued

| Title | Requirement | Licensee's completion schedule (or status) |
|---|---|---|
| 5. Emergency Response Facilities | 4b. Implement the upgraded EOPs | Do. |
| | 5a. Technical Support Center fully functional | Do.[1] |
| | 5b. Operational Support Center fully functional | Do.[1] |
| | 5c. Emergency Operations Facility Fully functional | Do.[1] |

[1] In all respects except for SPDS and Reg. Guide 1.97 Instrumentation (See Items 1 and 3 above).

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BILLING CODE 7590-01-

[Docket No. 50-344]

## Portland General Electric Co.; Pacific Power & Light Co., the City of Eugene, Oreg. (Trojan Nuclear Plant); Order Confirming Licensee Commitments on Emergency Response Capability

I.

Portland Electric Company, *et al.*, (the licensee or PGE) is the holder of Facility Operating License No. NPF-1 which authorizes the operation of the Trojan Nuclear Plant (the facility) at steady-state power levels not in excess of 3411 megawatts thermal. The facility is a pressurized water reactor (PWR) located at the licensee's site in Columbia County, Oregon.

II

Following the accident at Three Mile Island Unit No. 2 (TMI-2) on March 28, 1979, the Nuclear Regulatory Commission (NRC) staff developed a number of proposed requirements to be implemented on operating reactors and on plants under construction. These requirements include Operational Safety, Siting and Design, and Emergency Preparedness and are intended to provide substantial additional protection in the operation of nuclear facilities and significant upgrading of emergency response capability based on the experience from the accident at TMI-2 and the official studies and investigations of the accident. The requirements are set forth in NUREG-0737, "Clarification of TMI Action Plan Requirements," and in supplement 1 to NUREG-0737, "Requirements for Emergency Response Capability." Among these requirements are a number of items consisting of emergency response facility operability, emergency procedure implementation, addition of instrumentation, possible control room design modifications, and specific information to be submitted.

On December 17, 1982, a letter (Generic Letter 82-33) was sent to all licensees of operating reactors, applicants for operating licenses, and holders of construction permits enclosing Supplement 1 to NUREG-0737. In this letter operating reactor licensees and holders of construction permits were restricted to furnish the following information, pursuant to 10 CFR 50.54(f), no later than April 15, 1983:

(1) A proposed schedule for completing each of the basic requirements for the items identified in Supplement 1 to NUREG-0737, and

(2) A description of plans for phased implementation and integration of emergency response activities including training.

III.

The licensee responded to Generic Letter 82-33 by letter dated April 15, 1983. In this submittal, the licensee made commitments to complete the basic requirements. The following Table summarizing the licensee's schedular commitments or status was developed by the NRC staff from the Generic Letter and the information provided by the licensee. The licensee supplied additional information on the status of the implementation of some related items by letters dated August 2, November 23, 1983, January 27 and May 23, 1984.

The licensee's commitments include (1) dates for providing required submittals to the NRC, (2) dates for implementing certain requirements, and (3) a schedule for providing implementation dates for other requirements. These latter implementation dates will be reviewed, negotiated and confirmed by a subsequent order.

The NRC staff has reviewed the licensee's April 15, 1983 letter and supplemental information provided on August 2, November 23, 1983, January 27 and May 23, 1984. The NRC staff finds that the licensee's proposed dates for meeting the requirements of Supplement 1 to NUREG-0737 are reasonable, achievable dates and that the schedule proposed by the licensee will provide timely upgrading of the licensee's emergency response capability.

In view of the foregoing, I have determined that the implementation of PGE's commitments is required in the interest of the public health and safety and should therefore be confirmed by an immediately effective Order.

IV

Accordingly, pursuant to sections 103, 161i, 161o and 182 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2 and 50, it is hereby ordered, effective immediately, that the licensee shall:

Implement the specific items described in this order in the manner described in PGE's submittals noted in Section III herein no later than the dates in the table.

Extensions of time for completing these items may be granted by the Director, Division of Licensing, for good cause shown.

V

The licensee may request a hearing on this Order within 20 days of the date of publication of this Order in the **Federal Register**. A request for a hearing should be addressed to the Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. A copy should also be sent to the Executive Legal Director at the same address. A request for hearing shall not stay the immediate effectiveness of this order.

If a hearing is to be held, the Commission will issue an Order designating the time and place of any such hearing.

If a hearing is held concerning this Order, the issue to be considered at the hearing shall be whether the licensee should comply with the requirements set forth in Section IV of this Order.

This Order is effective upon issuance.

Dated at Bethesda, Maryland, this 14th day of June, 1984.

For the Nuclear Regulatory Commission.

**Darrell G. Eisenhut,**

*Director, Division of Licensing, Office of Nuclear Reactor Regulation.*

LICENSEE'S COMMITMENTS ON SUPPLEMENT 1 TO NUREG-0737 PORTLAND GENERAL ELECTRIC COMPANY

| Title | Requirement | Licensee's completion schedule (or status) |
|---|---|---|
| 1. Safety Parameter Display System (SPDS) | 1a. Submit a safety analysis and an implementation plan to the NRC. | Complete. |
| | 1b. SPDS fully operational and operators trained | Startup following 1985 refueling (approx. July 1985). |
| 2. Detailed Control Room Design Review (DCRDR) | 2a. Submit a program plan to the NRC | Complete. |
| | 2b. Submit a summary report to the NRC including a proposed schedule for implementation. | Fourth quarter, 1984. |
| 3. Regulatory Guide 1.97—Application to Emergency Response Facilities. | 3a. Submit a report to the NRC describing how the requirements of Supplement 1 to NUREG-0737 have been or will be met. | Fourth quarter, 1984. |
| | 3b. Implement (installation or grade) requirements | Implementation schedule to be provided with item 3a above. |
| 4. Upgrade Emergency Operating Procedures (EOPs) | 4a. Submit a Procedures Generation Package to the NRC | Complete. |
| | 4b. Implement the upgraded EOPs | Third quarter, 1985. |
| 5. Emergency Response Facilities | 5a. Technical Support Center fully functional | Same as item 1b. |
| | 5b. Operational Support Center fully functional | Complete. |
| | 5c. Emergency Operations Facility (EOF) fully functional | December 31, 1986. |

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BILLING CODE 7590-01-M

[Docket Nos. 50-272 and 50-311]

## Public Service Electric & Gas Co. et al., Salem Nuclear Generating Station, Unit Nos. 1 and 2; Order Confirming Licensee Commitments on Emergency Response Capability

I

Public Service Electric and Gas Company (PSE&G or the licensee) is the holder of Operating License Nos. DPR-70 and DPR-75 which authorizes the operation of the Salem Nuclear Generating Station, Unit No. 1 and No. 2 (the facilities) at steady-state power levels not in excess of 3338 megawatts thermal and 3411 megawatts thermal, respectively. The facilities are located in Salem County, New Jersey.

II

Following the accident at Three Mile Island Unit No. 2 (TMI-2) on March 28, 1979, the Nuclear Regulatory Commission (NRC) staff developed a number of proposed requirements to be implemented on operating reactors and on plants under construction. These requirements include Operational Safety, Siting and Design, and Emergency Preparedness and are intended to provide substantial additional protection in the operation of nuclear facilities and significant upgrading of emergency response capability based on the experience from the accident at TMI-2 and the official studies and investigations of the accident. The requirements are set forth in NUREG-0737, "Clarification of TMI Action Plan Requirements," and in Supplement 1 to NUREG-0737, "Requirements for Emergency Response Capability." Among these requirements are a number of items consisting of emergency response facility operability, emergency procedure implementation, addition of instrumentation, possible control room design modifications, and specific information to be submitted.

On December 17, 1982, a letter (Generic Letter 82-33) was sent to all licensees of operating reactors, applicants for operating licenses, and holders of construction permits enclosing Supplement 1 to NUREG-0737. In this letter operating reactor licensees and holders of construction permits were requested to furnish the following information, pursuant to 10 CFR 50.54(f), no later than April 15, 1983:

(1) A proposed schedule for completing each of the basic requirements for the items identified in Supplement 1 to NUREG-0737, and

(2) A description of plans for phased implementation and integration of emergency response activities including training.

III

PSE&G responded to Generic Letter 82-33 by letter dated April 15, 1983. By letters dated June 1, 1983, August 18, 1983, and December 19, 1983, and April 5, April 6, and May 16, 1984, PSE&G modified several dates as a result of negotiations with the NRC staff. In these submittals, PSE&G made commitments to complete the basic requirements. The following Table summarizing PSE&G's schedular commitments or status was developed by the NRC staff from the generic letter and the information provided by PSE&G.

PSE&G's commitments include (1) dates for providing required submittals to the NRC, (2) dates for implementing certain requirements, and (3) a schedule for providing implementation dates for other requirements. These latter implementation dates will be reviewed, negotiated and confirmed by a subsequent order.

The NRC staff reviewed PS&EG's April 15, 1983 letter and entered into negotiations with the licensee regarding schedules for meeting the requirements of Supplement 1 to NUREG-0737. As a result of these negotiations, the licensee modified certain dates by letters dated June 1, 1983, August 18, and December 19, 1983, and April 5, April 6, and May 16, 1984. The NRC staff finds that the modified dates are reasonable, achievable dates for meeting the Commission requirements. The NRC staff concludes that the schedule proposed by the licensee will provide timely upgrading of the licensee's emergency response capability.

In view of the foregoing, I have determined that the implementation of PSE&G's commitments are required in the interest of the public health and safety and should, therefore, be confirmed by an immediately effective Order.

IV

Accordingly, pursuant of sections 103, 161i, 161o and 182 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2 and 50, it is hereby ordered, effective immediately, that the licensees shall:

Implement the specific items described in this Order in the manner described in PSE&G's submittals noted in Section III herein no later than the dates in the Table.

Extensions of time for completing these items may be granted by the Director, Division of Licensing, for good cause shown.

V

The licensees may request a hearing on this Order withing 20 days of the date of publication of this Order in the **Federal Register**. Any request for a hearing should be addressed to the Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. A

copy should also be sent to the Executive Legal Director at the same address. A request for hearing shall not stay the immediate effectiveness of this order.

If a hearing is to be held, the Commission will issue an Order designating the time and place of any such hearing.

If a hearing is held concerning this Order, the issue to be considered at the hearing shall be whether the licensees should comply with the requirements set forth in Section IV of this Order.

This Order is effective upon issuance.

Dated at Bethesda, Maryland, this 12th day of June 1984.

For the Nuclear Regulatory Commission.

**Darrel G. Eisenhut,**

*Director, Division of Licensing, Office of Nuclear Reactor Regulation.*

LICENSEE'S COMMITMENTS ON SUPPLEMENT 1 TO NUREG-0737

| Title | Requirement | Licensee's Completion schedule (or status) |
|---|---|---|
| 1. Safety Parameter Display System (SPDS) | 1a. Submit a safety analysis and an implementation plan to the NRC. | Complete. |
| | 1b. SPDS fully operational and operators trained | December 1986. |
| 2. Detailed Control Room Design Review (DCRDR) | 2a. Submit a program plan to the NRC | Complete. |
| | 2b. Submit a summary report to the NRC including a proposed schedule for implementation. | Do. |
| 3. Regulatory Guide 1.97—Application to Emergency Response Facilities. | 3a. Submit a report to the NRC describing how the requirements of Supplement 1 to NUREG-0737 have been or will be met. | Do. |
| | 3b. Implement (installation or upgrade) requirements | (1) August 1984 for Unit 1; (2) April 1984 for Unit 2. |
| 4. Upgrade Emergency Operating Procedures (EOPs) | 4a. Submit a Procedures Generation Package to the NRC | Complete. |
| | 4b. Implement the upgrded EOPs | (1) Without SPDS 3/85; (2) With SPDS 12/86. |
| 5. Emergency Response Facilities | 5a. Technical Support Center fully functional | Complete. |
| | 5b. Operational Support Center fully functional | Do. |
| | 5c. Emergency Operations Facility fully functional | December 1986. |

[FR Doc. 84-16753 Filed 6-21-84; 8:45 am]

BILLING CODE 7590-01-M

**[Docket No. 50-395]**

## South Carolina Electric & Gas Co.; South Carolina Public Service Authority (Virgil C. Summer Nuclear Station); Order Confirming Licensee Commitments on Emergency Response Capability

I

South Carolina Electric and Gas Company (SCE&G) and South Carolina Public Service Authority (the licensees) are the holders of Facility Operating License NPF-12 which authorizes the operation of the Virgil C. Summer Nuclear Station, (the facility) at steady-state power levels not in excess of 2775 megawatts thermal. The facility is a pressurized water reactor (PWR) located in Fairfield County, South Carolina.

II

Following the accident at Three Mile Island Unit No. 2 (TMI-2) on March 28, 1979, the Nuclear Regulatory Commission (NRC) staff developed a number of proposed requirements to be implemented on operating reactors and on plants under construction. These requirements include Operational Safety, Siting and Design, and Emergency Preparedness and are intended to provide subtantial additional protection in the operation of nulcear facilities and significant upgrading of emergency response capabaility based on the experience from the accident at TMI-2 and the official studies and investigations of the accident. The requirements are set forth in NUREG-0737, "Clarification of TMI Action Plan Requirements," and in Supplement 1 to NUREG-0737, "Requirements for Emergency Response Capability." Among these requirements are a number of items consisting of emergency response facility operability, emergency procedure implementation, addition of instrumentation, possible control room design modifications, and specific information to be submitted.

On December 17, 1982, a letter (Generic Letter 82-33) was sent to all licensees of operating reactors, applicants for operating licenses, and holders of construction permits enclosing Supplement 1 to NUREG-0737. In this letter operating reactor licensees and holders of construction permits were requested to furnish the following information, pursuant to 10 CFR 50.54(f), no later than April 15, 1983:

(1) A proposed schedule for completing each of the basic requirements for the items identified in Supplement 1 to NUREG-0737, and

(2) A description of plans for phased implementation and integration of emergency response activities including training.

III

SCE&G responded to Generic Letter 82-33 by letter dated April 15, 1983. By letters dated May 16, July 21, and December 28, 1983, and April 4, 1984, SCE&G updated their original response. In these submittals, SCE&G made commitments to complete the basic requirements. The following Table summarizing SCE&G's schedular commitments or status was developed by NRC staff from the Generic Letter and the information provided by SCE&G.

SCR&G's commitments include (1) dates for providing required submittals to the NRC, (2) dates for implementing certain requirements, and (3) a schedule for providing implementation dates for other requirements. These latter implementation dates will be reviewed, negotiated, and confirmed by a subsequent order.

The NRC staff finds that the licensee's dates are reasonable, achievable dates for meeting the Commission requirements. The NRC staff concludes that the schedule proposed by the licensee will provide timely upgrading of the licensee's emergency response capability.

In view of the foregoing, I have determined that the implementation of SCE&G's commitments are required in the interest of the public health and safety and should, therefore, be confirmed by an immediately effective Order.

IV

Accordingly, pursuant to sections 103, 161i, 161o and 182 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2 and 50, it is hereby ordered, effective immediately, that the licensees shall:

Implement the specific items described in this order in the manner

described in SCE&G's submittals noted in Section III herein no later than the dates in the Table.

Extensions of time for completing these items may be granted by the Director, Division of Licensing, for good cause shown.

V

The licensees may request a hearing on this Order within 20 days of the date of publication of this Order in the Federal Register. Any request for a hearing should be addressed to the Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. A copy should also be sent to the Executive Legal Director at the same address. A request for hearing shall not stay the immediate effectiveness of this order.

If a hearing is to be held, the Commission will issue on Order designating the time and place of any such hearing.

If a hearing is held concerning this Order, the issue to be considered at the hearing shall be whether the licensees should comply with the requirements set forth in Section IV of this Order. This Order is effective upon issuance.

Dated at Bethesda, Maryland, this 15th day of June 1984.

For the Nuclear Regulatory Commission.

**Darrell G. Eisenhut,**

*Director, Division of Licensing, Office of Nuclear Reactor Regulation.*

LICENSEE'S COMMITMENTS ON SUPPLEMENT 1 TO NUREG-0737

| Title | Requirement | Licensee's completion schedule (or status) |
|---|---|---|
| 1. Safety Parameter Display System (SPDS) | 1a. Submit a safety analysis and an implementation plan to the NRC. | Complete. |
| | 1b. SPDS fully operational and operators trained | December 31, 1985. |
| 2. Detailed Control Room Design Review (DCRDR) | 2a. Submit a program plan to the NRC | Complete. |
| | 2b. Submit a summary report to the NRC including a proposed schedule for implementation. | April 15, 1985. |
| 3. Regulatory Guide 1.97—Application to Emergency Response Facilities. | 3a. Submit a report to the NRC describing how the requirements of Supplement 1 to NUREG-0737 have been or will be met. | Do. |
| | 3b. Implement (installation or upgrade) requirements | Complete. |
| 4. Upgrade Emergency Operating Procedures (EOPs) | 4a. Submit a Procedures Generation Package to the NRC | December 30, 1984. |
| | 4b. Implement the upgraded EOPs | October 1984.[1] |
| 5. Emergency Response Facilities | 5a. Technical Support Center fully functional | Complete. |
| | 5b. Operational Support Center fully functional | Do. |
| | 5c. Emergency Operations Facility fully functional | Primary EOF—Complete; Backup EOF—25 mile location under staff review. |

[1]Where completion date refers to a refueling outage (the estimated date when the outage begins), the item will be completed prior to the restart of the facility.

[FR Doc. 84-16754 Filed 6-21-84; 8:45 am]

BILLING CODE 7590-01-M

[Docket No. 50-327]

## Tennessee Valley Authority (Sequoyah Nuclear Station Unit No.1); Order Confirming Licensee Commitments on Emergency Response Capability

I

Tennessee Valley Authority (TVA) (the licensee) is the holder of Facility Operating License No. DPR-77 which authorizes the operation of the Sequoyah Nuclear Plant, Unit No. 1 (the facility) at steady-state power levels not in excess of 3411 megawatts thermal. The facility is a pressurized water reactor (PWR) located in Hamilton County, Tennessee.

II

Following the accident at Three Mile Island Unit No. 2 (TMI-2) on March 28, 1979, the Nuclear Regulatory Commission (NRC) staff developed a number of proposed requirements to be implemented on operating reactors and on plants under construction. These requirements include Operational Safety, Siting and Design, and Emergency Preparedness and are intended to provide substantial additional protection in the operation of nuclear facilities and significant upgrading of emergency response capability based on the experience from the accident at TMI-2 and the official studies and investigations of the accident. The requirements are set forth in NUREG-0737, "Clarification of TMI Action Plan Requirements," and in Supplement 1 to NUREG-0737, "Requirements for Emergency Response Capability." Among these requirements are a number of items consisting of emergency response facility operability, emergency procedure implementation, addition of instrumentation, possible control room design modifications, and specific information to be submitted.

On December 17, 1982, a letter (Generic Letter 82-33) was sent to all licensees of operating reactors, applicants for operating licenses, and holders of construction permits enclosing Supplement 1 to NUREG-0737. In this letter operating reactor licensees and holders of construction permits were requested to furnish the following information, pursuant to 10 CFR 50.54(f), no later than April 15, 1983:

(1) A proposed schedule for completing each of the basic requirements for the items identified in Supplement 1 to NUREG-0737, and

(2) A description of plans for phased implementation and integration of emergency response activities including training.

III

TVA responded to Generic Letter 82-33 by letter dated April 15, 1983. By letters dated August 1, August 22, and December 16, 1983, TVA modified several dates as a result of negotiations with the NRC staff. In these submittals, TVA made commitments to complete the basic requirements. The following Table summarizing TVA's schedular commitments or status was developed by the NRC staff from the Generic Letter and the information provided by TVA.

TVA's commitments include (1) dates for providing required submittals to the NRC, (2) dates for implementing certain requirements, and (3) a schedule for providing implementation dates for other requirements. These latter implementation dates will be reviewed, negotiated and confirmed by a subsequent order.

The NRC staff reviewed TVA's April 15, 1983, letter and entered into negotiations with the licensee regarding schedules for meeting the requirements of Supplement 1 to NUREG-0737. As a result of the negotiations, the licensee modified certain dates by letters dated August 1, August 22, and December 16, 1983. The NRC staff finds that the

modified dates are reasonable, achievable dates for meeting the Commission requirements. The NRC staff concludes that the schedule proposed by the licensee will provide timely upgrading of the licensee's emergency response capability.

In view of the foregoing, I have determined that the implementation of TVA's commitments is required in the interest of the public health and safety and should, therefore, be confirmed by an immediately effective Order.

IV

Accordingly, pursuant to sections 103, 161i, 161o and 182 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2 and 50, it is hereby ordered, effective immediately, that the licensee shall:

Implement the specific items described in this Order in the manner described in TVA's submittals noted in Section III herein no later than the dates in the Table.

Extensions of time for completing these items may be granted by the Director, Division of Licensing, for good cause shown.

V

The licensee may request a hearing on this Order within 20 days of the date of publication of this Order in the **Federal Register**. Any request for a hearing should be addressed to the Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. A copy should also be sent to the Executive Legal Director at the same address. A request for hearing shall not stay the immediate effectiveness of this Order.

If a hearing is to be held, the Commission will issue an Order designating the time and place of any such hearing.

If a hearing is held concerning this Order, the issue to be considered at the hearing shall be whether the licensee should comply with the requirements set forth in Section IV of this Order.

This Order is effective upon issuance.

Dated at Bethesda, Maryland, this 15th day of June 1984.

For the Nuclear Regulatory Commission.

**Darrell G. Eisenhut,**

*Director, Division of Licensing, Office of Nuclear Reactor Regulation.*

LICENSEE'S COMMITMENTS ON SUPPLEMENT 1 TO NUREG-0737

| Title | Requirement | Licensee's Completion Schedule (or status) |
|---|---|---|
| 1. Safety Parameter Display System (SPDS) | 1a. Submit a safety analysis and an implementation plan to the NRC. | Completed. |
| | 1b. SPDS fully operational and operators trained | September 1985. |
| 2. Detailed Control Room Design Review (DCRDR) | 2a. Submit a program plan to the NRC | Completed. |
| | 2b. Submit a summary report to the NRC including a proposed schedule for implementation. | November 1986. |
| 3. Regulatory Guide 1.97—Application to Emergency Response Facilities. | 3a. Submit a report to the NRC describing how the requirements of Supplement 1 to NUREG-0737 have been or will be met. | Completed. |
| | 3b. Implement (installation or upgrade) requirements | September 1987. |
| 4. Upgrade Emergency Operating Procedures (EOPs) | 4a. Submit a Procedures Generation Package to the NRC | Completed. |
| | 4b. Implement the upgraded EOPs | August 1985. |
| 5. Emergency Response Facilities | 5a. Technical Support Center fully functional | September 1985. |
| | 5b. Operational Support Center fully functional | Completed |
| | 5c. Emergency Operations Facility fully functional | Do. |

[FR Doc. 84-16755 Filed 6-21-84; 8:45 am]

BILLING CODE 7590-01-M

**[Docket No. 50-328]**

## Tennessee Valley Authority (Sequoyah Nuclear Station Unit No. 2); Order Confirming Licensee Commitments on Emergency Response Capability

I

Tennessee Valley Authority (TVA) (the licensee) is the holder of Facility Operating License No. DPR-79 which authorizes the operation of the Sequoyah Nuclear Plant, Unit No. 2 (the facility) at steady-state power levels not in excess of 3411 megawatts thermal. The facility is a pressurized water reactor (PWR) located in Hamilton County, Tennessee.

II

Following the accident at Three Mile Island Unit No. 2 (TMI-2) on March 28, 1979, the Nuclear Regulatory Commission (NRC) staff developed a number of proposed requirements to be implemented on operating reactors and on plants under construction. These requirements include Operational Safety, Siting and Design, and Emergency Preparedness and are intended to provide substantial additional protection in the operation of nuclear facilities and significant upgrading of emergency response capability based on the experience from the accident at TMI-2 and the official studies and investigations of the accident. The requirements are set forth in NUREG-0737, "Clarification of TMI Action Plan Requirements," and in Supplement 1 to NUREG-0737, "Requirements for Emergency Response Capability."

Among these requirements are a number of items consisting of emergency response facility operability, emergency procedure implementation, addition of instrumentation, possible control room design modifications, and specific information to be submitted.

On December 17, 1982, a letter (Generic Letter 82-33) was sent to all licensees of operating reactors, applicants for operating licenses, and holders of construction permits enclosing Supplement 1 to NUREG-0737. In this letter operating reactor licensees and holders of construction permits were requested to furnish the following information, pursuant to 10 CFR 50.54(f), no later than April 15, 1983:

(1) A proposed schedule for completing each of the basic requirements for the items identified in Supplement 1 to NUREG-0737, and

(2) A description of plans for phased implementation and integration of emergency response activities including training.

III

TVA responded to Generic Letter 82-33 by letter dated April 15, 1983. By letters dated August 1, August 22, and December 16, 1983, TVA modified several dates as a result of negotiations with the NRC staff. In these submittals, TVA made commitments to complete the basic requirements. The following Table summarizing TVA's schedular commitments or status was developed

by the NRC staff from the Generic Letter and the information provided by TVA. Item 3b. to the Table, concerning the licensee's commitment to implement Regulatory Guide 1.97 as it applies to Emergency Response Facilities, will be required by a separate license amendment.

TVA's commitments include (1) dates for providing required submittals to the NRC, (2) dates for implementing certain requirements, and (3) a schedule for providing implementation dates for other requirements. These latter implementation dates will be reviewed, negotiated and confirmed by a subsequent order.

The NRC staff reviewed TVA's April 15, 1983 letter and entered into negotiations with the licensee regarding schedules for meeting the requirements of Supplement 1 to NUREG–0737. As a result of the negotiations, the licensee modified certain dates by letters dated August 1, August 22, and December 16, 1983. The NRC staff finds that the modified dates are reasonable, achievable dates for meeting the Commission requirements. The NRC staff concludes that the schedule proposed by the licensee will provide timely upgrading of the licensee's emergency response capability.

In view of the foregoing, I have determined that the implementation of TVA's commitments is required in the interest of the public health and safety and should, therefore, be confirmed by an immediately effective order.

IV

Accordingly, pursuant to sections 103, 161i, 161o and 182 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2 and 50, it is hereby ordered, effective immediately, that the licensee shall:

Implement the specific items described in this order in the manner described in TVA's submittals noted in Section III herein no later than the dates in the Table.

Extensions of time for completing these items may be granted by the Director, Division of Licensing, for good cause shown.

V

The licensee may request a hearing on this Order within 20 days of the date of publication of this Order in the **Federal Register**. Any request for a hearing should be addressed to the Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. A copy should also be sent to the Executive Legal Director at the same address. A request for hearing shall not stay the immediate effectiveness fo this order.

If a hearing is to be held, the Commission will issue an Order designating the time and place of any such hearing.

If a hearing is held concerning this Order, the issue to be considered at the hearing shall be whether the licensee should comply with the requirements set forth in Section IV of this Order.

This Order is effective upon issuance.

For the Nuclear Regulatory Commission.

Dated at Bethesda, Maryland, this 15th day of June 1984.

**Darrell G. Eisenhut,**

*Director, Division of Licensing, Office of Nuclear Reactor Regulation.*

LICENSEE'S COMMITMENTS ON SUPPLEMENT 1 TO NUREG–0737

| Title | Requirement | Licensee's completion schedule (or status) |
|---|---|---|
| 1. Safety Parameter Display System (SPDS) | 1a. Submit a safety analysis and an implementation plan to the NRC. | Completed. |
| | 1b. SPDS fully operational and operators trained | October 1985. |
| 2. Detailed Control Room Design Review (DCRDR) | 2a. Submit a program plan to the NRC | Completed. |
| | 2b. Submit a summary report to the NRC including a proposed schedule for implementation. | November 1986. |
| 3. Regulatory Guide 1.97—Application to Emergency Response Facilities. | 3a Submit a report to the NRC describing how the requirements of Supplement 1 to NUREG–0737 have been or will be met. | Completed. |
| | 3b. Implement (installation or upgrade) requirements | Licensee commitment to be confirmed by separate license amendment. |
| 4. Upgrade Emergency Operating Procedures (EOPs) | 4a. Submit a Procedures Generation Package to the NRC | Completed. |
| | 4b. Implement the upgraded EOPs | August 1985. |
| 5. Emergency Response Facilities | 5a. Technical Support Center fully functional | October 1985. |
| | 5b. Operational Support Center fully functional | Completed. |
| | 5c. Emergency Operations Facility fully functional | Do. |

[FR Doc. 84–16756 Filed 6–21–84; 8:45 am]
BILLING CODE 7590–01–M

**[Docket Nos. 50–338 and 50–339]**

## Virginia Electric & Power Co., and Old Dominion Electric Cooperative (North Anna Power Station Units No. 1 and No. 2); Order Confirming Licensee Commitments on Emergency Response Capability

I

Virginia Electric and Power Company (VEPCO) and the Old Dominion Electric Cooperative (ODEC) are the holders of Facility Operating License Nos. NPF–4 and NPF–7 which authorize VEPCO to operate the North Anna Power Station, Unit No. 1 and No. 2 (the facility) at steady-state power levels not in excess of 2775 megawatts thermal. The facility consists of two pressurized water reactors (PWRs) located in Louisa County, Virginia.

II

Following the accident at Three Mile Island Unit No. 2 (TMI–2) on March 28, 1979, the Nuclear Regulatory Commission (NRC) staff developed a number of proposed requirements to be implemented on operating reactors and on plants under construction. These requirements include Operational Safety, Siting and Design, and Emergency Preparedness and are intended to provide substantial additional protection in the operation of nuclear facilities and significant upgrading of emergency response capability based on the experience from the accident at TMI–2 and the official studies and investigations of the accident. The requirements are set forth in NUREG–0737, "Clarification of TMI Action Plan Requirements," and in Supplement 1 to NUREG–0737, "Requirements for Emergency Response Capability." Among these requirements are a number of items consisting of emergency response facility operability, emergency procedure implementation, addition of instrumentation, possible

control room design modifications, and specific information to submitted.

On December 17, 1982, a letter (Generic Letter 82-33) was sent to all licensees of operating reactors, applicants for operating licenses, and holders of construction permits enclosing Supplement 1 to NUREG-0737. In this letter operating reactor licensees and holders of construction permits were requested to furnish the following information, pursuant to 10 CFR 50.54(f), no later than April 15, 1983:

(1) A proposed schedule for completing each of the basic requirements for the items identified in Supplement 1 to NUREG-0737, and

(2) A description of plans for phased implementation and integration of emergency response activities including training.

III

VEPCO responded to Generic Letter 82-33 by letters dated April 15, 1983, January 31, 1984, February 21, 1984, March 1, 1984 and March 13, 1984. In these submittals, VEPCO made commitments to complete the basic requirements. The following Table summarizing VEPCO's schedular commitments or status was developed by the NRC staff from the Generic Letter and the information provided by VEPCO.

VEPCO's commitments include (1) dates for providing required submittals to the NRC, (2) dates for implementing certain requirements, and (3) a schedule for providing implementation dates for other requirements. These latter implementation dates will be reviewed, negotiated and confirmed by a subsequent order.

The NRC staff reviewed VEPCO's April 15, 1983 letter and entered into negotiations with the licensee regarding schedules for meeting the requirements of Supplement 1 to NUREG-0737. As a result of these negotiations, certain dates were modified by VEPCO. The NRC staff finds that the modified dates are reasonable, achievable dates for meeting the Commission requirements. The NRC staff concludes that the schedule proposed by the licensee will provide timely upgrading of the licensee's emergency response capability.

In view of the foregoing, I have determined that the implementation of VEPCO's commitments is required in the interest of the public health and safety and should, therefore, be confirmed by an immediately effective Order.

IV

Accordingly, pursuant to sections 103, 161i, 161o, and 182 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2 and 50, it is hereby ordered, effective immediately, that the licensee shall:

Implement the specific items described in this order in the manner described in VEPCO's submittals noted in Section III herein no later than the dates in the Table.

Extensions of time for completing these items may be granted by the Director, Division of Licensing, for good cause shown.

V

The licensee may request a hearing on this Order within 20 days of the date of publication of this Order in the **Federal Register.** Any request for a hearing should be addressed to the Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. A copy should also be sent to the Executive Legal Director at the same address. A request for hearing shall not stay the immediate effectiveness of this order.

If a hearing is to be held, the Commission will issue an Order designating the time and place of any such hearing.

If a hearing is held concerning this Order, the issue to be considered at the hearing shall be whether the licensee should comply with the requirements set forth in Section IV of this Order.

This Order is effective upon issuance.

Dated at Bethesda, Maryland, this 14th day of June 1984.

For the Nuclear Regulatory Commission.

**Darrell G. Eisenhut,**

*Director, Division of Licensing, Office of Nuclear Reactor Regulation.*

LICENSEE'S COMMITMENTS ON SUPPLEMENT 1 TO NUREG-0737

| Title | Requirement | Licensee's completion schedule (or status) |
|---|---|---|
| 1. Safety Parameter Display System (SPDAS) | 1a. Submit a safety analysis and an implementation plant to the NRC. | Complete. |
| | 1b. SPDS fully operational and operators trained | North Ana 1—Prior to Resuming Power Operation After the 5th Refueling Outage (1/1/86 to 2/22/86) [1]; North Anna 2—Prior to Resuming Power Operation After the 4th Refueling Outage (4/18/86 to 6/9/86).[1] |
| 2. Detailed Control Room Design Review (DCRDR) | 2a. Submit a program plan to the NRC | Complete. |
| | 2b. Submit a summary report to the NRC including a proposed schedule for implementation. | Provide Schedule August 30, 1985. |
| 3. Regulatory Guide 1.97—Application to Emergency Response Facilities. | 3a. Submit a report to the NRC describing how the requirements of Supplement 1 to NUREG-0737 have been or will be met. | Complete. |
| | 3b. Implement (installation or upgrade) requirements | Refueling in 1986.[2] |
| 4. Upgrade Emergency Operating Procedures (EOPs) | 4a. Submit a Procedures Generation Package to the NRC | Complete. |
| | 4b. Implement the upgrade EOPs | April 15, 1984. |
| 5. Emergency Response Facilities | 5a. Technical Support Center fully functional | July 1, 1985. |
| | 5b. Operational Support Center fully functional | Complete Except for Cummunications Tie-In with EOF. |
| | 5c. Emergency Operations Facility fully functional | July 31, 1985 except for data communications which follows SPDS schedule. |

[1] Present schedule.
[2] Incore Thermocouples are tracked on separate schedule.

[FR Doc. 84-16757 Filed 6-21-84; 8:45 am]
BILLING CODE 7590-01-M

## Publication of Subagreement #1 Between U.S. NRC and the Illinois Department of Nuclear Safety

**AGENCY:** U.S. Nuclear Regulatory Commission.

**ACTION:** Publication of Subagreement #1 between U.S. NRC and the Illinois Department of Nuclear Safety.

**SUMMARY:** Section 274i. of the Atomic Energy Act of 1954, as amended, allows the Commission to enter into agreements with the States "to perform inspections or other functions on a cooperative basis as the Commission deems appropriate." Section 274i MOUs differ from agreements entered into

between NRC and a State under the "Agreement State" program; the latter is accomplished only by entering into an agreement under section 274b. of the Atomic Energy Act. A 274i. MOU can be entered into by a State whether or not it has a 274b. agreement.

In April of 1984, an "umbrella" MOU was signed by the NRC and the State of Illinois, providing principles of cooperation between the State and NRC in areas of concern to the State.

Subagreement #1 provides the basis for mutually agreeable procedures whereby the State may perform inspection functions for and on behalf of the Commission at certain reactor and materials licensees' facilities which generate low-level radioactive waste.

**FOR FURTHER INFORMATION CONTACT:** Roland Lickus, Director, State and Government Affairs, U.S. NRC, Region III, 799 Roosevelt Road, Glen Ellyn, Illinois 60137 (Telephone 312/790–5666).

Dated at Glen Ellyn, IL, this 15th day of June, 1984.

For the U.S. Nuclear Regulatory Commission.

**James G. Keppler,**

*Regional Administrator.*

[FR Doc. 84–16758 Filed 6–21–84; 8:45 am]

BILLING CODE 7590–01–M

## PENSION BENEFIT GUARANTY CORPORATION

### Exemption From Bond/Escrow Requirement Relating to Sale of Assets By an Employer That Contributes to a Multiemployer Plan; Beloit Manhattan, Inc.

**AGENCY:** Pension Benefit Guaranty Corporation.

**ACTION:** Notice of exemption.

**SUMMARY:** The Pension Benefit Guaranty Corporation has granted Beloit Manhattan, Inc., an exemption from the bond/escrow requirement of section 4204(a)(1)(B) of the Employee Retirement Income Security Act of 1974. A notice of the request for exemption from this requirement was published on March 9, 1984 (49 FR 9039). The effect of this notice is to advise the public of the decision on the exemption request.

**ADDRESS:** The request for an exemption and the PBGC response to the request are available for public inspection at the PBGC Public Affairs Office, Suite 7100, 2020 K Street, NW., Washington, D.C. 20006, between the hours of 9:00 a.m. and 4:00 p.m. A copy of these documents may be obtained by mail from the PBGC Disclosure Officer (190) at the above address.

**FOR FURTHER INFORMATION CONTACT:** Deborah Murphy, Attorney, Corporate Policy and Regulations Department (611), Pension Benefit Guaranty Corporation, 2020 K Street, NW., Washington, D.C. 20006; (202) 254–4860 (not a toll-free number).

**SUPPLEMENTARY INFORMATION:**

#### Background

Under section 4204(a)(1) of the Employee Retirement Income Security Act of 1974 ("ERISA"), a sale of assets by an employer that contributes to a multiemployer pension plan will not constitute a withdrawal from the plan if certain conditions are met. One of these conditions is that the purchaser furnish a bond or escrow for five plan years after the sale.

ERISA section 4204(c) authorizes the Pension Benefit Guaranty Corporation ("PBGC") to grant exemptions from the purchaser's bond/escrow requirement of section 4204(a)(1)(B). Under § 2643.3(a) of the PBGC's regulation on variances for sales of assets (29 CFR Part 2643), the PBGC will approve a request for an exemption if it determines that approval of the request is warranted, in that it—

(1) Would more effectively or equitably carry out the purposes of Title IV of ERISA; and

(2) Would not significantly increase the risk of financial loss to the plan.

The legislative history of section 4204 indicates a Congressional intent that the sales rules be administered in a manner that assures protection of the plan with the least practicable intrusion into normal business transactions.

ERISA section 4204(c) and § 2643.3(b) of the regulation require the PBGC to publish a notice of the pendency of an exemption request in the **Federal Register**, and to give interested parties an opportunity to comment on the proposed exemption.

#### Decision

On March 9, 1984 (49 FR 9039), the PBGC published a notice of the pendency of a request from Beloit Manhattan, Inc. ("Beloit"), for an exemption from the bond/escrow requirement of ERISA section 4204(a)(1)(B), in connection with the purchase by Beloit of the assets of the Huntington Roll Cover Division of Buckhorn, Inc., ("Buckhorn"), located in Federal Way, WA. The sale of assets was effective on October 1, 1982. No comments were received in response to the notice.

In connection with the sale, Beloit assumed Buckhorn's obligation, under a collective bargaining agreement with the Teamsters Local 763, to contribute to the Western Conference of Teamsters Pension Trust Fund (the "Fund"). Buckhorn's potential withdrawal liability to the Fund is estimated at $35,885. The amount of the bond/escrow required under ERISA section 4204(a)(1)(B) is $29,212 (Buckhorn's required annual contributions for the plan year preceding the sale).

Beloit asked that its exemption requests be granted on the ground that the bond/escrow amount is *de minimis* when compared with the average annual contributions to the Fund, totaling approximately $460 million, which were made by all employers together for the three plan years preceding the year of sale. The bond/escrow amount is less than one-tenth of one percent of this average total contribution figure.

Based on the facts of this case and the representations and statements made in connection with the exemption request, the PBGC has determined that an exemption from the bond/excrow requirement is warranted, in that it would more effectively carry out the purposes of Title IV of ERISA and would not significantly increase the risk of financial loss to the plan. Therefore, the PBGC hereby grants Beloit's request for an exemption from the bond/escrow requirement of section 4204(a)(1)(B). The granting of such an exemption does not constitute a determination by the PBGC that the transaction satisfies the other requirements of section 4204(a)(1). That determination is made by the plan sponsor.

Issued at Washington, D.C. on this 18th day of June, 1984.

**C. C. Tharp,**

*Executive Director, Pension Benefit Guaranty Corporation.*

[FR Doc. 84–16771 Filed 6–21–84; 8:45 am]

BILLING CODE 7708–01–M

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**[Release No. 21063; SR-AMEX-84-16]**

### American Stock Exchange, Inc., Filing and Order Granting Accelerated Approval of Proposed Rule Change

June 18, 1984.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (the "Act"), 15 U.S.C. 78s(b)(1), notice is hereby given that on May 31, 1984, the American Stock Exchange, Inc. ("Amex"), 86 Trinity Place New York, New York 10006, filed with the Securities and Exchange Commission the proposed rule change as described herein. The Commission is publishing this notice to solicit comments on the

proposed rule change from interested persons.

The rule change would conform Amex Rule 911 (Communications to Customers) to recent SEC amendments to Rule 134a under the Securities Act of 1933 relating to the content of written options materials disseminated to the public.[1] The purpose of the rule change is to allow offerors of option products to include certain explanatory information in advertisements for those products and permit a fuller explication of the nature of newly developed options products. Specifically, the rule change would eliminate the previous requirement that written materials disseminated to the public contain a legend indicating the name and address of a person from whom an Options Clearing Corporation prospectus can be obtained. Since the options disclosure documents(s), not the Options Clearing Corporation prospectus, advises potential customers of the risks and uses of listed options, it is unnecessary to indicate the name and address of a person from whom a prospectus can be obtained. The rule change would also permit the identification of certain specific securities, namely, those exempt from registration under the 1933 Act, options on such exempt securities and index options.

Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change which are filed with the Commission and all written communications relating to the proposed rule change between the Commission and any person, other than those which may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for inspection and copying at the Commission's Public Reference Room, 450 Fifth Street, NW., Washington, D.C. 20549. Copies of the filing and of any subsequent amendments also will be available for inspection and copying at the principal office of the above-mentioned self-regulatory organization.

The Commission finds that the proposed rule change is consistent with the requirements of the Act and the rules and regulations thereunder applicable to a national securities exchange, and, in particular, the requirements of section 6, and the rules and regulations thereunder.

The Commission finds good cause for approving the proposed rule change prior to the thirtieth day after the date of publication of notice of filing thereof, in that the proposed rule change conforms Amex Rule 991 with recent amendments to Rule 134a of the Securities Act of 1933, which were published in the **Federal Register** for comment, considered and approved by the Commission.

It is therefore ordered, pursuant to section 19(b)(2) of the Act, that the proposed rule change referenced above be, and hereby is, approved.

For the Commission, by the Division of Market Regulations pursuant to delegated authority.

**George A. Fitzsimmons,**

*Secretary.*

[FR Doc. 84-16736 Filed 6-21-84; 8:45 am]

BILLING CODE 8010-01-M

[1] *See* Securities Act Release No. 33-6518, March 22, 1984.

## SECURITIES AND EXCHANGE COMMISSION

**[Release No. 21062; (SR-Amex-84-9)]**

## American Stock Exchange, Inc.; Order Approving Proposed Rule Change

June 18, 1984.

The American Stock Exchange ("Amex"), 86 Trinity Place, New York, NY 10006, submitted on March 12, 1984, copies of a proposed rule change pursuant to section 19(b)(1) of the Securities Exchange Act of 1934 (the "Act") and Rule 19b-4 thereunder to implement on a twelve-month pilot basis an optional procedure permitting a newly listed company to choose the specialist unit in its stock from a list of seven specialist units selected by the Exchange's Committee on Equities Allocation ("Allocations Committee"). The proposal would, however, give the issuer the option of allowing the Amex to continue to select the specialist for its securities under the current allocation system. The proposal also provides that, whether or not a newly listed company chooses to participate in selection of the specialist unit, if a newly listed company becomes dissatisfied for any reason with its specialist unit within the first year of listing, it would be permitted to request a change.[1]

Notice of the proposed rule change together with the terms of substance of the proposed rule change was given by the issuance of a Commission Release (Securities Exchange Act Release No. 20786, March 22, 1984) and by publication in the **Federal Register** (49 FR 12786, March 30, 1984). No comments were received with respect to the proposed rule filing.

### I. Introduction and Background

Amex, like the other stock exchanges, currently allocates new listings to specialist units in part on the basis of their on-floor performance as measured by both objective and subjective criteria established by the Exchange.[2] Under the current system, the Amex Allocations Committee selects what it believes to be the specialist unit best qualified to handle the particular new listing. After narrowing the list of possible choices to what the Allocations Committee believes are the ten best qualified units, it gives the issuer the option to eliminate up to three units before making the final selection.

Amex believes that this proposal, allowing the issuer, rather than the Exchange, to be the final decision-maker regarding the choice of the specialist unit, will enable it to attract new listings and new capital to the floor of the Exchange. Amex contends that prospective listed companies desire greater involvement in the selection process and that the limited role assigned to a prospective listee under the current Amex system may be a significant disincentive to listing with the Exchange. Amex believes that the "issuer choice" proposal would accomplish this goal, while still preserving the incentive system of the performance-based allocation procedures.

The Commission has determined to approve the Amex's proposed procedures on a twelve month pilot basis. Although, as discussed below, the Commission has some reservations about giving Amex issuers the ability to make a final selection of a specialist for its stock, the Commission believes that the Amex has built into the system a sufficient number of safeguards to meet some of the concerns raised by the issuer choice approach. Thus, while Amex believes that such procedures

[1] Such request, however, could not be made until at least 120 days after the commencement of trading. The company is required to furnish an explanation of the reasons for its dissatisfaction. The Exchange will reallocate the stock within 30 days, if attempts at counseling the company and the specialist unit fail. In any such reallocation, the Exchange would follow its current allocation procedures without any imput from the issuer. The Exchange has informed the Commission staff that, under this proposal, the initial selection of a unit would be a conditional allocation, and therefore, no adverse inference would be drawn if a stock was reallocated away. Under the proposal, a company could invoke the reallocation request only once during the first year of its listing.

[2] The Amex submitted for Commission approval its procedures for the evaluation of equities specialist performance and for the allocation and reallocation of equities. See File No. SR-Amex-83-27, Securities Exchange Act Release No. 20353 (November 4, 1983), 48 FR 51992 (November 15, 1983). The Commission is currently in the process of reviewing these procedures.

may have a beneficial impact on its competitive position as a primary market for equity securities, the Commission finds that the proposal nevertheless retains incentives for quality specialist performance.

## II. Specialist Performance Evaluation and Allocation of New Listings

Pursuant to Amex Rule 170,[3] the Amex has designed specialist evaluation procedures and procedures for the reallocation of securities as a result of substandard performance. The performance of a specialist is evaluated on a routine basis by Amex floor brokers, the Amex Performance Committee [4] and Exchange staff, and the data obtained from these sources is used by the Performance Committee to evaluate specialists and to suspend a specialist's registration in a stock as a result of poor performance. The data is also used by the Allocations Committee [5] to allocate new listings.

When the Amex has approved a new issue for listing, the Allocations Committee will convene to select a specialist unit for the issue. All units, except those which are precluded from allocations due to poor performance ratings,[6] are deemed to have applied for every new issue to be allocated.

In selecting a specialist unit, the Allocations Committee first complies a list of the ten specialist units considered most eligible for listing. From this list, an issuer that desires to have a role in the selection of its specialist may eliminate up to three of the ten units. The Allocations Committee will then reconvene to make the final choice from the remaining seven units. Under the current system, the Allocations Committee selects a specialist unit based on a number of performance-related criteria, as well as a number of additional factors regarding the suitability of a particular unit to the stock to be allocated.[7] Thus, under the Amex system, a specialist chosen for the new stock will not necessarily be the specialist unit that has received the highest ratings. Rather, the Allocations Committee will base its final decision on a variety of factors in addition to performance criteria, such as the size of the unit and capital requirements for handling the new stock, as well as factors internal to the Amex stock allocation system itself, such as whether the unit recently has been allocated a stock or whether it has recently lost a stock. The Allocations Committee, will, in effect, allocate a newly listed stock to the specialist unit considered "best suited" to handle that stock.

## III. Discussion

The Amex evaluation system currently appears designed to further two ends: (1) That specialists receiving performance ratings above some minimum level are entitled to receive at least some allocations, and (2) that superior performance will result in a specialist unit receiving more desirable allocations and a greater number of allocations. Thus, although the current stock allocation procedure allocates newly listed stocks to a substantial percentage of all Amex specialist units, the system provides significant incentives for specialists to provide the highest quality markets possible.

The Amex proposal might weaken the link between new stock allocations and superior specialist performance, since the choice of specialist by the newly listed company would not longer be based in large part on the specialists' ratings under Amex's current procedures. Under the Amex proposal, performance criteria would be used only to determine which specialists would be among the seven finalists presented to the issuer. Each specialist qualifying as one of the seven suggested to the issuer, regardless of his relative performance ranking, would have the opportunity to be chosen by the issuer. The proposal could undermine the goals of the allocation system (1) by jeopardizing Amex's policy of distributing allocations to as many qualified specialists as possible, and (2) by no longer assuring top rated specialists that they will receive the bulk of the most desirable new stock allocations.

Specialists may perceive that their concerns about the quality of their performance need extend only to their ability to be chosen among the seven units recommended to the issuer and thus may shift their focus principally from performance-based concerns to promotional efforts designed to increase their visibility to prospective listees. The proposal may encourage a closer interrelationship between specialist and issuer, thereby creating the appearance of impropriety and the possibility of conflict of interest that the current system avoids by distancing issuers from the stock allocation decision.[8]

Questions also exist as to whether the Issuers will have the information or experience to enable them to make an informed decision as to their choice of specialist.[9] Issuers may be inclined to choose specialists that are well-known or well-publicized, and in the process, fail to choose smaller, high quality units that lack the public visibility of their larger or more publicity-oriented competitors. In response to the concerns noted above, the Amex has stated its

[3] Under Rule 170, if the Amex determines that a specialist substantially or continuously fails to engage in a course of dealings reasonably calculated to assist in a fair and orderly market or fails to meet other specified performance standards which are conditions for continued registration as a specialist, it may suspend or revoke the specialist's registration in one or more of the securities in which he is registered.

[4] The Performance Committee is appointed by the Board and is charged with evaluating specialist performance as well as taking appropriate corrective action to improve the quality of Amex markets. The Committee is composed of approximately 20 floor members, including five floor governors, representing specialists, registered traders, and brokers, all of whom are Exchange officials or floor officials.

[5] The Allocations Committee has been delegated authority by the Board to allocate and reallocate securities to specialist units.

[6] The Amex employs two major evaluation tools in assessing specialist performance: (1) The specialist unit evaluation questionnaire ("questionnaire") which elicits the opinions of floor brokers as to the overall performance of a specialist unit, and (2) the Performance Committee evaluation ratings, based on specific trading irregularities detected by exchange staff and reviewed by the Committee. On a quarterly basis, the Exchange distributes the questionnaire to floor brokers and registered traders who evaluate the performance of specialist units based on their floor contact with them. The identity of and specific comments provided by evaluators is confidential. Four categories of specialist performance are evaluated: fiduciary responsibility, specialist unit staffing, communication and auction market maintenance. Members use a 1 (highest) to 5 (lowest) rating system. Brokers may also indicate no opinon due to insufficient contact with a particular unit.

The Performance Committee also provides a quarterly rating of 1 to 5 for each unit based on the number and severity of trading irregularities considered by the Committee. Performance Committee procedures are discussed comprehensively in SR-Amex-83-27. *See* note 2, *supra*.

A unit receiving a score of 4 or 5 on either the quarterly questionnaire or Performance Committee ratings is automatically precluded from applying for new allocations until its ratings improve.

[7] The Allocations Committee will receive a summary statistics sheet, compiled by the Trading Analysis Division, which includes, among other things, performance and questionnaire ratings, average principal participation for the most recent 6 months, average daily volume per active specialist for equities and options for the most recent 12 and 3 month period, and the number of issues allocated in the last 12 months.

[8] The Commission first documented the problems resulting from issuer-specialist relationships in the stock allocation process in the *SEC Staff Report on Organization Management, and Regulation of Conduct of Members of the American Stock Exchange 1962. See Report of Special Study of the Securities Markets*, H.R. Doc. No. 95, 88th Cong., 1st Sess., Pt. 4 pp. 774–775 (1963).

[9] Amex has informed the Commission staff that it will provide the newly listed company only with a limited amount of information, including the names of the seven units, the names of the partners in each of the units and the list of stocks in which the unit specializes. Specifically, performance ratings will not be made available to the companies. Over the course of the pilot, Amex will be considering the nature and amount of additional information it will offer to the issuer.

belief that issuers who elect to choose the specialist would likely do so on an informed basis by consulting their investment bankers and members of their corporate finance department. They would also solicit the opinions of the corporate "grapevine" (such as officers of other companies listed on Amex and their investment bankers) in order to evaluate the various Amex specialists. Indeed, the Amex also has stated that an issuer's decision might, if anything, be based more completely on trading performance than are the present allocation decisions. In particular, issuers would not be required to weigh which firms had not recently received a desirable allocation in making their decision.

The Exchange has informed the Commission that it will be closely monitoring trading in those companies participating in the pilot, as well as those specialist units allocated stock under the procedures.[10] In addition, Amex has agreed to include in the proposed one-year pilot certain provisions to respond to the possibility that the new procedures could increase the likelihood that specialists will develop inappropriate or prohibited relationships with issuers.[11] First, when a prospective company has decided to list on the Amex, specialist units will be barred from contacting the company for the purpose of influencing its decision. Once the Allocations Committee has selected the seven units, each unit will be notified and instructed that it may not initiate any further communication with the company. If the company wishes to interview the individual specialist units, the Exchange will arrange these interviews, providing all the units with an equal opportunity to meet with the company. Second, specialists will be advised that they must notify the Amex Marketing Department of any contact they wish to initiate with unlisted companies as well as of any unplanned contacts that occur with prospective issuers.[12] Third, as part of the Amex's marketing effort, individual specialists sometimes accompany Exchange staff personnel to prospective listees to familiarize them with the auction market operation and, in particular, the role of the specialist in the market. The Amex is aware that participation in this program offers the opportunity for a specialist to meet prospective listees and, thus, may affect the decision of companies that subsequently decide to list with the Exchange. To minimize their potential bias, the Exchange has provided for a procedure whereby all specialist units have an equal opportunity to participate in the marketing program.[13] The Commission emphasizes that it will itself monitor over the next twelve months Amex's operations with respect to both quality of markets and issuer-specialist relationships.

Despite the various possible concerns noted above, the Commission is aware of and is sensitive to the strong competition within the equity markets today for new listings. Amex is arguably competitively disadvantaged by the fact that issuers are often capable of influencing their investment bankers to make a market in their security in NASDAQ, while they have no effective role in the selection of an Amex specialist for their stock. Amex has indicated to the Commission staff that issuers will consult their investment bankers in making their selection and that those firms will generally be able to provide as accurate an evaluation of the relative quality of specialist units as the performance-based criteria. We are persuaded that the Amex should be given the flexibility to experiment with a plan that may positively affect its competitive posture. The Commission believes that, with the implementation of the proposed safeguards, the pilot may produce some important data as to the impact of issuer choice on the Amex specialist evaluation procedures and the Amex markets in general.

For the reasons discussed above, the Commission finds the proposed rule change is consistent with the requirements of the Act applicable to a national securities exchange, and, in particular, with the requirements of section 6 of the Act and the rules and regulations thereunder.

It is therefore ordered, pursuant to section 19(b)(2) of the Act, that the above-mentioned proposed rule change be, and hereby is, approved.

By the Commission.

**George A. Fitzsimmons,**

*Secretary.*

[FR Doc. 84-16737 Filed 6-21-84; 8:45 am]

BILLING CODE 8010-01-M

[10] The Exchange has informed the Commission staff that it will place special emphasis on analyzing the trading patterns and positions of a specialist unit for appropriate periods both prior to and subsequent to the public announcement by a listed company of significant financial news or important corporate developments. The Exchange will also monitor closely abrupt liquidations of short positions or increases in long positions which are followed by announcements of favorable news (or similar liquidations of long positions or increases in short positions in the case of unfavorable news).

[11] *See* letter from Robert J. Birnbaum, President, of Amex, to Richard Ketchum, Associate Director, Division of Market Regulation, dated May 8, 1984.

[12] The Exchange specifically has reserved the right to request specialist units to avoid making such contacts if it believes in any particular case that such activities could hinder its marketing effort or would otherwise be inappropriate.

[13] Each unit will be asked to designate a representative to accompany personnel on visits to companies, who will also become familiar with the Amex marketing program. All visits will be conducted with Exchange officers and marketing personnel present. Participation, which is voluntary, will be organized principally on a rotating basis. The Exchange will specifically inform the specialist that their function on these visits is not to promote themselves but rather to focus their efforts on representing Exchange interests. In addition, the specialists will be informed that their participation in the marketing process has no relation to whether their unit is included on the list presented to the company.

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[Release No. 21064; (SR-CBOE-84-13)]

## Chicago Board Options Exchange, Inc.; Order Approving Proposed Rule Change

June 18, 1984.

The Chicago Board Options Exchange, Incorporated ("CBOE"), LaSalle at Van Buren, Chicago, IL 60605, submitted on April 2, 1984, copies of a proposed rule change pursuant to section 19(b)(1) of the Securities Exchange Act of 1934 (the "Act") and Rule 19b-4 thereunder, to give a Board Broker or Order Book Official ("OBO"), prior to an opening of trade, discretion not to display, or to remove from display, high bids or low offers where such bids or offers appear to be materially away from the expected market in that series.[1] Under the proposal, these orders would be treated as market orders.

Notice of the proposed rule change, together with the terms of substance of the proposed rule change, was given by the issuance of a Commission Release (Securities Exchange Act Release No. 20861, April 13, 1984) and by publication in the **Federal Register** (49 FR 17656, April 24, 1984). No comments were received with respect to the proposed rule change.

The Commission finds that the proposed rule change is consistent with the requirements of the Act and the rules and regulations thereunder applicable to a national securities exchange and, in particular, the requirements of section 6, and the rules and regulations thereunder.

It is therefore ordered, pursuant to section 19(b)(2) of the Act, that the

[1] As originally submitted, the text of the proposed rule change stated that the OBO would have discretion not to display, or remove from display, the highest bid or lowest offer in his book. Amendment No. 1 submitted on June 7, 1984 amends the text of the proposed rule change to clarify that this discretion extends to all high bids or low offers that appear to be materially away from the expected market in that series.

above-mentioned proposed rule change be, and hereby is, approved.

For the Commission, by the Division of Market Regulation pursuant to delegated authority.

George A. Fitzsimmons,

*Secretary.*

[FR Doc. 84-16735 Filed 6-21-84; 8:45 am]

BILLING CODE 8010-01-M

## SMALL BUSINESS ADMINISTRATION

**[License No. 01/01-0331]**

### Advent V Capital Company LP; Application for a License To Operate as a Limited Partnership Small Business Investment Company (SBIC)

Notice is hereby given that an application has been filed with the Small Business Administration (SBA) pursuant to § 107.4 of the Regulations governing SBIC's (13 CFR 107.4 (1983)) under the name of Advent V Capital Co. Limited Partnership, 45 Milk Street, Boston, Massachusetts 02109 for a License to operate in the New England area as a Limited Partnership SBIC under the provisions of the Small Business Investment Act of 1958 (Act), as amended (15 U.S.C. 661 *et seq.*).

The partnership will begin operations with private capital of $20,935,000.

The General Partner of the Partnership is T/A Associates Co., 45 Milk Street, Boston, Massachusetts 02109.

The general partners of T/A Associates Co. are:

Peter A. Brook, 45 Milk Street, Boston, Massachusetts 02109
C. Kevin Landry, 45 Milk Street, Boston, Massachusetts 02109
David D. Croll, 45 Milk Street, Boston, Massachusetts 02109
P. Andrew McLane, 45 Milk Street, Boston, Massachusetts 02109
Jeffery T. Chambers, 45 Milk Street, Boston, Massachusetts 02109
Michael A. Ruane, 45 Milk Street, Boston, Massachusetts 02109
Jacqueline C. Morby, 45 Milk Street, Boston, Massachusetts 02109
Richard H. Churchill, Jr., 45 Milk Street, Boston, Massachusetts 02109

Matters involved in SBA's consideration of the application include the general business reputation and character of the proposed General Partner and the reasonable prospects for successful operations of the SBIC under its management including adequate profitability and financial soundness in accordance with the Act and Regulations.

Notice is further given that any interested person may (not later than 30 days from the publication of this Notice) submit written comments on the application to the Deputy Associate Administrator for Investment, Small Business Administration, 1441 "L" Street, NW., Washington, D.C. 20416.

A copy of this Notice will be published in a newspaper of general circulation in the Boston Area.

(Catalog of Federal Domestic Assistance Program No. 59.011, Small Business Investment Companies)

Dated: June 15, 1984.

Robert G. Lineberry,

*Deputy Associate Administrator for Investment.*

[FR Doc. 84-16647 Filed 6-21-84; 8:45 am]

BILLING CODE 8025-01-M

**[License No. 02/02-0478]**

### ASEA—Harvest Partners II; Application for a License To Operate as a Limited Partnership Small Business Investment Company (SBIC)

Notice is hereby given that an application has been filed with the Small Business Administration (SBA) pursuant to § 107.4 of the Regulations governing SBIC's (13 CFR 107.4 (1983)) under the name of ASEA—Harvest Partners II, 767 Third Avenue. New York , New York 10017 for a License to operate in the New York area as a Limited Partnership SBIC under the provisions of the Small Business Investment Act of 1958 (Act), as amended (15 U.S.C. 661 *et seq.*).

The partnership will begin operations with private capital of $1,000,000.

The General Partners of the Partnership are individuals located at the abovementioned address and they are:

Harvey J. Wertheim, 767 Third Avenue, New York, New York 10017
Harvey Mallement, 767 Third Avenue, New York, New York 10017
Cloyd E. Marvin, 767 Third Avenue, New York, New York 10017

The sole limited partner is ASEA Venture Capital Inc., a New York Corporation wholly owned by ASEA, Inc., a U.S. subsidiary of ASEA AB, a publicly held Swedish Corp. The applicant has entered into a management advisory contract with Harvest Venture, Inc., 767 Third Avenue, New York, New York 10017. The general partners are also officers and directors of the advisor.

Matters involved in SBA's consideration of the application include the general business reputation and character of the proposed General Partners and the reasonable prospects for successful operations of the SBIC under its management including adequate profitability and financial soundness in accordance with the Act and Regulations.

Notice is further given that any interested person may not later than July 23, 1984, submit written comments on the application to the Deputy Associate Administrator for Investment, Small Business Administration, 1441 "L" Street, NW., Washington, D.C. 20416.

A copy of this Notice will be published in a newspaper of general circulation in the New York City Area.

(Catalog of Federal Domestic Assistance Program No. 59.011, Small Business Investment Companies)

Dated: June 15, 1984.

Robert G. Lineberry,

*Deputy Associate Administrator for Investment.*

[FR Doc. 84-16646 Filed 6-21-84; 8:45 am]

BILLING CODE 8025-01-M

**[Declaration of Disaster Loan Area #2146]**

### Mississippi; Declaration of Disaster Loan Area

Coahoma County in the State of Mississippi constitutes a disaster area because of damage caused by tornadoes and high winds which occurred on April 29, 1984, through May 2, 1984. Applications for loans for physical damage may be filed until the close of business on August 13, 1984, and for economic injury until the close of business on March 14, 1985, at the address listed below: Disaster Area 2 Office, Small Business Administration, Richard B. Russell Federal Building, 75 Spring Street, SW., Suite 822, Atlanta, Georgia 30303, or other locally announced locations.

Interest rates are:

| | *Precent* |
|---|---|
| Homeowners with credit available elsewhere | 8.000 |
| Homeowneres without credit available elsewhere | 4.000 |
| Businesses with credit available elsewhere | 8.000 |
| Businesses without credit available elsewhere | 4.000 |
| Business (EIDL) without credit available elsewhere | 4.000 |
| Other (Non/profit organizations including charitable and religious organizations) | 10.500 |

The number assigned to this disaster is 214612 for physical damage and for economic injury the number is 618200.

(Catalog of Federal Domestic Assistance Program Nos. 59002 and 59008)

Dated: June 14, 1984.

James C. Sanders,

*Administrator.*

[FR Doc. 84-16648 Filed 6-21-84; 8:45 am]

BILLING CODE 8025-01-M

### Region VI Advisory Council; Public Meeting

The Small Business Administration, Region VI Advisory Council, located in the geographical area of Phoenix, Arizona, will hold a public meeting on Thursday, July 26, 1984, at the Beefeater Restaurant, 300 West Camelback,

Phoenix, Arizona, to discuss such matters as may be presented by members, staff of the Small Business Administration, or others present.

For further information, write or call Walter Fronstin, District Director, U.S. Small Business Administration, 3030 North Central Avenue, Suite 1201, Phoenix, Arizona 85012, telephone (602) 241–2206.

Dated: June 15, 1984.

**Jean M. Nowak,**

*Director, Office of Advisory Councils.*

[FR Doc. 84–16645 Filed 6–21–84; 8:45 am]

BILLING CODE 8025–01–M

## VETERANS ADMINISTRATION

### Agency Forms Under OMB Review

**AGENCY:** Veterans Administration.

**ACTION:** Notice.

The Veterans Administration has submitted to OMB for review the following proposals for the collection of information under the provisions of the Paperwork Reduction Act (44 U.S.C. Chapter 35). This document contains extensions and lists the following information: (1) The Department or Staff Office issuing the form; (2) The title of the form; (3) The agency form number, if applicable; (4) How often the form must be filled out; (5) Who will be required or asked to report; (6) An estimate of the number of responses; (7) An estimate of the total number of hours needed to fill out the form; and (8) An indication of whether section 3504(h) of Pub. L. 96–511 applies.

**ADDRESSES:** Copies of the forms and supporting documents may be obtained from Patricia Viers, Agency Clearance Officer (732), Veterans Administration, 810 Vermont Avenue, NW., Washington, DC 20420, (202) 389–2146. Comments and questions about the items on this list should be directed to the VA's OMB Desk Officer, Dick Eisinger, Office of Management and Budget, 726 Jackson Place, NW, Washington, DC 20503, (202) 395–6880.

**DATES:** Comments on the information collections should be directed to the OMB Desk Officer within 60 days of this notice.

**DATED:** June 19, 1984.

By direction of the Administrator.

**Dominick Onorato,**

*Associate Deputy Administrator for Information Resources Management.*

### Extensions

1. Department of Veterans Benefits.
2. VA Request for Determination of Reasonable Value/HUD Application for Property Appraisal and Commitment.
3. VA Form 26–1805/HUD 92800–1.
4. On occasion.
5. Individuals or households.
6. 448,000 responses.
7. 89,600 hours.
8. Not applicable.

* * * * *

1. Department of Veterans Benefits.
2. Enrollment Certification (Under 38 U.S.C. 32, 34 or 35).
3. VA Forms 22–1999, 22–1999–1 and 22–1999–2.
4. On occasion, quarterly, semi-annually, or each school term.
5. Individuals or households, State or local governments, Farms, Businesses or other for-profit, Federal agencies or employees, Non-profit institutions, Small businesses or organizations.
6. 76,899 responses.
7. 286,667 hours.
8. Not applicable.

* * * * *

1. Department of Veterans Benefits.
2. Notice of Lapse.
3. VA Forms 29–389 and 29–389–1.
4. On occasion.
5. Individuals or households.
6. 25,000 responses.
7. 4,166 hours.
8. Not applicable.

* * * * *

1. Department of Veterans Benefits.
2. Request for Supplemental Information on Medical and Non-Medical Applications.
3. VA Form 29–615.
4. On occasion.
5. Individuals or households.
6. 15,000 responses.
7. 5,000 hours.
8. Not applicable.

* * * * *

1. Department of Veterans Benefits.
2. Application for Ordinary Life Insurance (at age 65) and Information about Modified Life Insurance Reduction and Replacement Features (age 65).
3. VA Forms 29–8485 and 29–8700.
4. On occasion.
5. Individuals or households.
6. 6,818 responses.
8. 568 hours.
8. Not applicable.

* * * * *

1. Department of Veterans Benefits.
2. Application for Ordinary Life Insurance (at age 70) and Information about Modified Life Insurance Reduction and Replacement Features (age 70).
3. VA Forms 29–8485a and 29–8701.
4. On occasion.
5. Individuals or households.
6. 6,818 responses.
7. 568 hours.
8. Not applicable.

* * * * *

1. Department of Veterans Benefits.
2. Notice—Payment Not Applied.
3. VA Form 29–4499a.
4. On occasion.
5. Individuals or households.
6. 2,000 responses.
7. 500 hours.
8. Not applicable.

* * * * *

1. Department of Veterans Benefits.
2. Application for Accrued Benefits by Veteran's Surviving Spouse, Child or Dependent Parent.
3. VA Form 21–551.
4. On occasion.
5. Individuals or households.
6. 1,000 responses.
7. 333 hours.
8. Not applicable.

* * * * *

1. Department of Veterans Benefits.
2. Employment of Questionnaire.
3. VA Form 21–4140.
4. On occasion.
5. Individuals or housholds.
6. 45,480 responses.
7. 3,790 hours.
8. Not applicable.

* * * * *

1. Department of Veterans Benefits.
2. Application for Accrued Amounts of Veteran's Benefits Payable to Widow, Widower, Child, or Dependent Parent.
3. VA Form 21–614.
4. On occasion.
5. Individuals or households.
6. 8,000 responses.
7. 4,000 hours.
8. Not applicable.

* * * * *

1. Department of Veterans Benefits.
2. Obtaining Supplemental Information from Hospital or Doctor.
3. VA Form Letter 29–551b.
4. On occasion.
5. Individuals or households.
6. 250 responses.
7. 125 hours.
8. Not applicable.

* * * * *

1. Department of Veterans Benefits.
2. Information from Remarried Widow/er.
3. VA Form 21–4103.
4. On occasion.
5. Individuals or households.
6. 22,000 responses.
7. 7,333 hours.
8. Not applicable.

* * * * *

1. Department of Veterans Benefits.
2. Student Beneficiary Report—REPS.
3. VA Form 21–8938.
4. Annually.
5. Individuals or households.
6. 10,000 responses.
7. 3,333 hours.
8. Not applicable.

[FR Doc. 84–16310 Filed 6–21–84; 8:45 am]

BILLING CODE 8320–01–M

# Sunshine Act Meetings

Federal Register
Vol. 49, No. 122
Friday, June 22, 1984

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).

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1

### FEDERAL TRADE COMMISSION

**TIME AND DATE:** 2:00 p.m., Wednesday, June 20, 1984.

**PLACE:** Room 532, (open); Room 540 (closed) Federal Trade Commission Building, 6th Street and Pennsylvania Avenue, NW., Washington, D.C. 20580.

**STATUS:** Parts of this meeting will be open to the public. The rest of the meeting will be closed to the public.

**MATTERS TO BE CONSIDERED:** Portions Open to Public:

(1) Oral Argument in Boise Cascade Corp., Docket No. 9133.

Portions closed to the Public:

(2) Executive Session to follow Oral Argument in Boise Cascade Corp., Docket No. 9133.

**CONTACT PERSON FOR MORE INFORMATION:** Susan B. Ticknor, Office of Public Affairs: (202) 523-1892; Recorded Message: (202) 523-3806.

**Emily H. Rock,**

*Secretary.*

[FR Doc. 84-16780 Filed 6-20-84; 9:31 am]

BILLING CODE 6750-01-M

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### UNITED STATES POSTAL SERVICE BOARD OF GOVERNORS

Meeting

The Board of Governors of the United States Postal Service, pursuant to its Bylaws (39 CFR 7.5) and the Government in the Sunshine Act (5 U.S.C. 552b), hereby gives notice that it intends to hold meetings at 1:00 p.m. on Monday, July 9, 1984, in Washington, D.C., and at 8:30 a.m. on Tuesday, July 10, in the Benjamin Franklin Room, U.S. Postal Service Headquarters, 475 L'Enfant Plaza, SW., Washington, D.C. As indicated in the following paragraph, the July 9 meeting is closed to public observation. The July 10 meeting is open to the public. The Board expects to discuss the matters stated in the agenda which is set forth below. Requests for information about the meetings should be addressed to the Secretary of the Board, David F. Harris, at (202) 245-3734.

At its meeting on June 5, 1984, the Board voted in accordance with the provisions of the Government in the Sunshine Act to close to public observation its meeting scheduled for July 9. (See 49 FR 24248, June 12, 1984.) The agenda item of the meeting to be closed concerns strategic planning in connection with collective bargaining negotiations involving parties to the 1981 National Agreements, between the Postal Service and four labor organizations representing certain postal employees, which are scheduled to expire in July 1984.

**Agenda**

*Monday Session, July 9 (Closed)*

1. Strategic Planning—Collective Bargaining.

*Tuesday Session, July 10 (Open)*

1. Minutes of the Previous Meeting, June 4-5, 1984.
2. Remarks of the Postmaster General. (In keeping with its consistent practice, the Board's agenda provides this opportunity for the Postmaster General to inform the Members of miscellaneous current developments concerning the Postal Service. Nothing that requires a decision by the Board is brought up under this item.)
3. Report on Operations Group Programs. (Mr. Jellison, Senior Assistant Postmaster General, Operations Group, will provide a report on Operations Group programs.)
4. Briefing on status of the Neighborhood Distribution and Collection Box Unit Program. (Mr. Hagburg, Assistant Postmaster General, Delivery Services Department, will brief the Board on the status of the "clusterbox" program.)
5. Review of Public and Employee Communications Programs. (Ms. Layton, Assistant Postmaster General, Public and Employee Communications Department, will report on communications and public affairs programs.)
6. Consideration of tentative agenda for the August 6-7, 1984, meeting of the Board in Cleveland, Ohio.

**David F. Harris,**

*Secretary.*

[FR Doc. 84-16828 Filed 6-20-84; 3:15 pm]

BILLING CODE 7710-12-M

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### TENNESSEE VALLEY AUTHORITY

**[Meeting No. 1332]**

**TIME AND DATE:** 6:00 p.m. (CDT), Tuesday, June 26, 1983.

**PLACE:** Jaycee Civic Center, 2701 Park Avenue, Paducah, Kentucky.

**STATUS:** Open.

**AGENDA ITEMS:** Approval of minutes of meeting held on June 11, 1984.

**C—Power Items**

C1. Amendment to power contract with Bowater Incorporated, Calhoun, Tennessee, providing for a 35.2-MW increase of firm power.

C2. Joint memorandum governing power supply to the Office of Agricultural and Chemical Development's water-pumping station.

C3. Supplement to Contract No. TV-34823A with Memphis Light, Gas and Water Division for natural gas at Allen Steam Plant.

C4. Marketing agreement with Southeastern Power Administration covering the marketing of Cumberland River Power and Energy.

C5. Operating agreement with Southeastern Power Administration and Army Corps of Engineers covering the operations of the Cumberland River Projects.

C6. Supplement to Contract No. TV-55782A with the Massachusetts Institute of Technology for Atmospheric Fluidized Bed Combustion Technology Studies.

**D—Personnel Items**

D1. Renewal of consulting contract with John M. Kellberg, Knoxville, Tennessee, for consultation on major hydro projects and engineering problems associated with thermal power plants, requested by the Division of Engineering Design.

D2. Supplement to personal services Contract No. TV-63924A with United Engineers & Constructors, Inc., Philadelphia, Pennsylvania, for services in connection with pipe support design for Watts Bar and Bellefonte Nuclear Plants, requested by the Division of Engineering Design.

D3. Supplement to personal services Contract No. TV-63923A with Gilbert Associates, Inc., Reading, Pennsylvania, for services in connection with pipe support design for Watts Bar and Bellefonte Nuclear Plants, requested by the Division of Engineering Design.

**E—Real Property Transactions**

E1. Grant of permanent easement to the city of Bristol, Virginia, for public recreation purposes, affecting approximately 41 acres of Beaver Creek Reservoir land located in Washington County, Virginia—Tract No. XTBBCR-2E.

E2. Grant of permanent easement to McMinn County, Tennessee, for the construction, operation, and maintenance of a road and appurtenances, affecting approximately 0.32 acre of Chickamauga Reservoir land located in McMinn County, Tennessee—Tract No. XTCR–173H.

E3. Grant of 20-year easement to Boy Scouts of America, Four Rivers Council, Inc., for group camp purposes, affecting approximately 354.8 acres of Kentucky Reservoir land located in Marshall County, Kentucky—Tract No. XGIR–906RE.

**F—Unclassified**

F1. Revised TVA Policy Code Relating to Budget, Plan.

F2. Revised TVA Policy Code Relating to Budget, Controls.

F3. TVA Policy Code Relating to Cooperative Agreements.

F4. Agreement No. TV–64012A with Tennessee State University and the State of Tennessee Board of Regents for construction, operation, and maintenance of Private Enterprise Incubation Center in Nashville, Tennesseee.

**CONTACT PERSON FOR MORE INFORMATION:** Craven H. Crowell, Jr., Director of Information, or a member of his staff can respond to requests for information about this meeting. Call (615) 632–8000, Knoxville, Tennessee. Information is also available at TVA's Washington Office (202) 245–0101.

Dated: June 19, 1984.

**W. F. Willis,**

*General Manager.*

[FR Doc. 84–16808 Filed 6–20–84; 1:37 pm]

BILLING CODE 8120–01–M

federal register

Friday
June 22, 1984

Part II

# Department of Labor

Occupational Safety and Health Administration

29 CFR Part 1910

Occupational Exposure to Ethylene Oxide; Final Standard

**DEPARTMENT OF LABOR**

**Occupational Safety and Health Administration**

**29 CFR Part 1910**

# Occupational Exposure to Ethylene Oxide

**AGENCY:** Occupational Safety and Health Administration (OSHA), Labor.

**ACTION:** Final Standard.

**SUMMARY:** In this Final Standard, the Occupational Safety and Health Administration (OSHA) establishes a permissible exposure limit for occupational exposure to ethylene oxide (EtO) of 1 part EtO per million parts of air (1 ppm) determined as an 8-hour time-weighted average concentration. The basis for this action is a determination by the Assistant Secretary, based on animal and human data, that exposure to EtO presents a carcinogenic, mutagenic, genotoxic, reproductive, neurologic and sensitization hazard to workers. The standard provides for, among other requirements, methods of exposure control, personal protective equipment, measurement of employee exposures, training, medical surveillance, signs and labels, regulated areas, emergency procedures and recordkeeping. An "action level" of 0.5 ppm as an 8-hour time-weighted average is established as the level above which employers must initiate certain compliance activities such as periodic employee exposure monitoring and medical surveillance. In instances where the employer can demonstrate that employee exposures are below the action level, the employer is not obligated to comply with most of the requirements set forth in this final rule. The 1 ppm 8-hour limit reduces significant risk from exposure to EtO and is considered by OSHA to be the lowest levels feasible.

**EFFECTIVE DATE:** This final standard shall become effective August 21, 1984, except the following paragraphs which contain information collection requirements which are under review at OMB: § 1910.1047 (a)(2), (d), (e), (f)(2), (g)(3), (h), (i), (j)(1), (j)(2), and (j)(3).

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## I. Physical Properties, Manufacture and Uses of Ethylene Oxide

Ethylene oxide (EtO), also known as 1,2-epoxyethane, oxirane, and dimethylene oxide, is a colorless gas with a characteristic ether-like odor. Its chemical formula is $C_2H_4O$, molecular weight is 44.06 and CAS Registry Number is 75-21-8. Although several processes exist for the production of EtO, all United States producers currently manufacture EtO through the catalytic oxidation of ethylene in the presence of a silver catalyst. EtO is completely miscible with water, alcohol, acetone, benzene, ether, carbon tetrachloride and most organic solvents. It is also highly reactive and potentially explosive when heated or when in the presence of alkali metal hydroxides and highly active catalytic surfaces. EtO is relatively stable in aqueous solutions or when diluted with carbon dioxide ($CO_2$) or halocarbons. In order to reduce explosion hazards when EtO is used as a fumigant or sterilant, it is often used in gaseous mixtures (such as 10% EtO and 90% $CO_2$, or 12% EtO and 88% halocarbon).

Since its first domestic production in 1925, EtO has become a major industrial chemical and is presently one of the 25 chemicals of highest production volume in the United States. During the period from 1967 to 1978, for example, the average rate of growth in the EtO industry was 6.7 percent. In 1980, over 5.2 billion pounds of EtO were produced domestically. Current production capacity is about 6.7 billion pounds per year [Ex. 2-14].

The primary use of EtO is as an intermediate in the manufacture of other products. Over 99% of total EtO production is used in the manufacture of other products, and almost 90% is consumed by the EtO manufacturers themselves. On a volume basis, the largest use of EtO is as an intermediate in the production of ethylene glycol, a major component of automotive and other anti-freeze products. Approximately 70% of all domestically produced EtO goes into the manufacture of ethylene glycol.

EtO is also widely employed in the production of non-ionic surface-active agents which are used in household detergents and as industrial sufactants. Other products manufactured from EtO include: (1) ethanolamines, used in sweetening natural gas and in the production of specialty chemicals, detergents and cosmetics; (2) glycol ethers, utilized as a jet fuel additive and in the formulation of coatings, cleaners,

automotive brake fluids and inks; (3) diethylene and triethylene glycol, used in drying natural gas and in the manufacture of polyester resins, emulsifiers, lubricants and plasticizers; (4) tetraethylene glycol, utilized to extract aromatic hydrocarbons from nonaromatic hydrocarbons; (5) polyethylene glycols, from which cosmetics, plasticizers, lubricants and dispersants are produced; (6) polyethylene glycols, used for water-soluble packaging and for warp sizing, and (7) crown ethers, used for extraction of liquids.

A small fraction of EtO production (less than 0.5 percent) is consumed by sterilant or fumigant users. EtO is utilized as a sterilizing agent by various facets of the health care industry for the sterilization of delicate instruments and heat or moisture sensitive devices, and is employed as a fumigant for a number of miscellaneous items, such as spices, black walnut meats, books, furniture, textiles, empty bin equipment, empty cargo holds, cosmetics and dairy packaging.

As used in the U.S. for gas sterilization, EtO is generally sold in gas cylinders. The cylinder contains various mixtures of EtO with either chlorofluorocarbons or carbon dioxide. EtO is also available in glass ampules. The concentration and duration of exposure to EtO plus the temperature, atmospheric pressure, and relative humidity determine the effectiveness of sterilization. The sterilant gas is held in the chamber, generally under high pressure, long enough to thoroughly penetrate all articles. In determining exposure time, the types of articles and wrappings are important considerations. Some porous articles require longer exposures, as do articles sealed in polyethylene bags. Moreover, some bacteria are expecially resistant and, thus, take longer to destroy. The concentration of EtO is important, but even with the highest concentration it is still necessary to properly humidify articles to be sterilized, and to allow sufficient time for the sterilant gas to diffuse into small pores and crevices. After a sufficient exposure time, the sterilant gas is evacuated from the chamber. When high ethylene oxide concentrations are used, extended aeration time (5 to 45 minutes) may be required to thoroughly purge the chamber of EtO vapor. After sterilization, all plastic and rubber articles must be aerated to allow residual ethylene oxide to diffuse from the article. This phase of the sterilization procedure is particularly critical for any articles that are used to administer materials to the human body. Examples of such articles are catheters, face masks, and tubing used in heart-lung machines and artificial kidneys.

## II. Pertinent Legal Authority

The primary purpose of the Occupational Safety and Health Act (29 U.S.C. 655 *et seq.*) (the Act) is to assure, so far as possible, safe and healthful working conditions for every American worker over the period of his or her working lifetime. One means prescribed by the Congress to achieve this goal is the mandate given to, and the concomitant authority vested in, the Secretary of Labor to set mandatory safety and health standards. The Congress specifically directed that:

> The Secretary, in promulgating standards dealing with toxic materials or harmful physical agents under this subsection, shall set the standard which most adequately assures, to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity even if such employee has regular exposure to the hazard dealt with by such standard for the period of his working life. Development of standards under this subsection shall be based upon research, demonstrations, experiments, and such other information as may be appropriate. In addition to the attainment of the highest degree of health and safety protection for the employee, other considerations shall be the latest available scientific data in the field, the feasibility of standards, and experience gained under this and other health and safety laws. [Section 6(b)(5).]

Where appropriate, the standards are required to include provisions for labels or other appropriate forms of warning to apprise employees of hazards, suitable protective equipment, exposure control procedures, monitoring and measuring of employee exposure, employee access to the results of monitoring, appropriate medical examinations, and training and education. Moreover, where a standard prescribes medical examinations or other tests, they must be available at no cost to employees [section 6(b)(7)]. Standards may also prescribe recordkeeping requirements where necessary or appropriate for enforcement of the Act or for the development of information regarding occupational accidents and illnesses [section 8(c)].

In vacating OSHA's revision to its benzene standard, the Supreme Court required in *Industrial Union Department, AFL–CIO* v. *American Petroleum Institute*, 448 U.S. 601, 65 L. Ed. 2d 1010, 100 S. Ct. 2844 (1980), that before the issuance of a new or revised standard pursuant to section 6(b)(5) of the Act, OSHA must make two threshold findings. These are that a significant risk exists under the current standard and that the issuance of a revised standard would reduce or eliminate that risk. The Court stated:

> We agree * * * that § 3(8) requires the Secretary to find, as a threshold matter, that the toxic substance in question poses a significant health risk in the workplace and that a new, lower standard is therefore "reasonably necessary or appropriate to provide safe and healthful employment and places of employment." (448 U.S. 607 at 614–15; 65 L. Ed. 2d 1010 at 1018–19)

The Court also stated:

> * * * before he can promulgate any permanent health or safety standard, the Secretary [of Labor] is required to make a threshold finding that a place of employment is unsafe—in the sense that significant risks are present and can be eliminated or lessened by a change in practices * * * (448 U.S. at 642, 65 L. Ed. 2d at 1035)

The decision, although it recognized the uncertainties involved, indicated that the determination of "significant risk" should, if at all possible, be established on the basis of an analysis of the best available evidence through such means as quantitative risk assessments. However, in making that determination, the Supreme Court in its general guidance for the future, noted that:

> * * * the requirement that a "significant" risk be identified is not a mathematical straitjacket. It is the Agency's responsibility to determine, in the first instance, what it considers to be a "significant risk". (448 U.S. at 655, 65 L. Ed. 2d at 1043)

It pointed out that while OSHA:

> * * * must support its finding that a certain level of risk exists by substantial evidence, we recognize that its determination that a particular level of risk is "significant" will be based largely on policy considerations. (448 U.S. at 656, n. 62, 65 L. Ed. 2d at 1043, n. 62)

Finally, the Court pointed out that:

> * * * OSHA is not required to support its finding that a significant risk exists with anything approaching scientific certainty. Although the Agency's findings must be supported by substantial evidence * * * OSHA [has] some leeway where its findings must be made on the frontiers of scientific knowledge. (448 U.S. at 656, 65 L. Ed. 2d at 1043)

In the only concrete example of "significance of risk," the Court stated:

> Some risks are plainly acceptable and others are plainly unacceptable. If, for example, the odds are one in a billion that a person will die from cancer by taking a drink of chlorinated water, the risk clearly could not be considered significant. On the other hand, if the odds are one in a thousand that regular inhalation of gasoline vapors that are 2% benzene will be fatal, a reasonable person might well consider the risk significant and

take appropriate steps to decrease or eliminate it. (*Id.* at 655, 656 L. Ed. 2d at 1043)

After OSHA has determined that a significant risk exists and that such risk can be reduced or eliminated by the revised standard, it must set the standard "which most adequately assures, to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health * * *." [section 6(b)(5) of the Act] The Supreme Court has interpreted this section to mean that OSHA must enact the most protective standard possible to eliminate a significant risk of material health impairment, subject only to the constraints of technological and economic feasibility. (*American Textile Manufacturers Institute, Inc.* v. *Donovan*, 452 U.S. 490 (1981)). The Court held that "cost-benefit analysis is not required by the statute because feasibility analysis is." (*Id.* at 509.)

In addition to section 6(b), authority to issue this standard is also found in section 8(c) of the Act. In general, this section empowers the Secretary to require employers to make, keep, and preserve records regarding activities related to the Act. In particular, section 8(c)(3) gives the Secretary authority to require employers to "maintain accurate records of employee exposures to potentially toxic materials or harmful physical agents which are required to be monitored or measured under section 6." Provisions of OSHA standards which require the making and maintenance of records of medical examinations, exposure monitoring, and the like are issued pursuant to section 8(c) of the Act.

The Secretary's authority to issue this final standard is further supported by the general rulemaking authority granted in section 8(g)(2) of the Act. This section empowers the Secretary "to prescribe such rules and regulations as he may deem necessary to carry out (his) responsibilities under the Act"—in this case as part of, or ancillary to, a section 6(b) standard. The Secretary's responsibilities under the Act are defined largely by its enumerated purposes which include:

Encourage employers and employees in their efforts to reduce the number of occupational safety and health hazards at their places of employment, and to stimulate employers and employees to institute new and to perfect existing programs for providing safe and healthful working conditions (29 U.S.C. 651(b)(1));

Authorizing the Secretary of Labor to set mandatory occupational safety and health standards applicable to business affecting interstate commerce, and by creating an Occupational Safety and Health Review Commission for carrying out adjudicatory functions under the Act (29 U.S.C. 651(b)(3));

Building upon advances already made through employee and employer initiative for providing safe and healthful working conditions (29 U.S.C. 651(b)(4));

By providing for the development and promulgation of occupational safety and health standards; providing for appropriate reporting procedures with respect to occupational safety and health, which procedures will help achieve the objective of this Act and accurately describe the nature of the occupational safety and health problem; exploring ways to discover latent diseases, establishing causal connections between diseases and work in environmental conditions * * * (29 U.S.C. 651(b)(6));

Encouraging joint labor-management efforts to reduce injuries and diseases arising out of employment (29 U.S.C. 651 (b)(13));

And developing innovative methods, techniques, and approaches for dealing with occupational safety and health problems (29 U.S.C. 651(b)(5)).

Because the EtO standard is reasonably related to these statutory goals, the Secretary finds that this standard is necessary to carry out his responsibilities under the Act. In addition to its status as a section 6(b) standard, therefore, it also falls within the broader class of section 8 regulations.

In addition, section 4(b)(2) of the Act provides for OSHA standards to apply to construction and other workplaces where the Secretary determines these standards to be more effective than existing standards which would otherwise apply to these workplaces. The Secretary so finds, and this standard will therefore apply to all workplaces where the Secretary has authority to regulate.

Section 4(b)(1) of the Act restricts application of the Act so that it does not apply to working conditions with respect to which other Federal Agencies exercise statutory authority to prescribe or enforce standards or regulations affecting occupational safety and health. On April 18, 1984, the Environmental Protection Agency published a notice under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), 7 U.S.C. 136 *et seq.*, containing labeling changes for EtO pesticide products, and designed to limit ethylene oxide exposures resulting from the application of EtO as a sterilant or fumigant (49 FR 15268). The relevance of the FIFRA rule to OSHA jurisdiction is discussed below.

### III. History of the Regulation

The OSHA standard for EtO that is being revised by this rule (29 CFR 1910.1000, Table Z–1) required employers to ensure that the level of employee exposure to EtO did not exceed 50 parts of EtO per million parts of air (50 ppm), determined as an 8-hour time-weighted average (TWA). That standard was adopted in 1971 from an existing Walsh-Healey Federal standard. The source of the Walsh-Healey standard was the Threshold Limit Value (TLV) recommend in 1968 by the American Conference of Governmental Industrial Hygienists (ACGIH) [Ex. 2–2].

The documentation for the exposure level recommended by the ACGIH in 1968 consisted of limited data from six month animal inhalation studies in which no adverse effects were observed at levels below 50 ppm and a study of employees exposed for 10 years or more to EtO at levels of 5 to 10 ppm with no reported adverse effects [EX 2–3]. No indications of the potential carcinogenicity of EtO were available at that time. Since 1968, however, a substantial number of new studies have become available that have added significantly to the body of knowledge regarding potential adverse health effects related to EtO exposure.

In 1977, the National Institute for Occupational Safety and Health (NIOSH) issued a "Special Occupational Hazard Review" [Ex. 2–5] on EtO, in which it recommended adoption of a ceiling limit of 75 ppm (based on a 15-minute sampling period) for EtO in addition to the 50 ppm TWA. Based upon observation of changes in the genetic material of cells in at least 13 biological species following EtO exposure and covalent chemical bonding between EtO and DNA, NIOSH also concluded that occupational exposure to EtO might increase the frequency of mutations in exposed populations. Although these observations raised concern regarding the potential carcinogenicity of EtO, no epidemiologic studies or long-term bioassays were available to assess its carcinogenic potential for humans.

In 1979, ACGIH published a Notice of Intended Change for EtO to lower its TLV to 10 ppm [Ex. 2–6]. ACGIH based its recommendation on a number of short-term, *in vitro* studies which demonstrated positive mutagenic responses for EtO and on a 1979 case report by Hogstedt et al. [Ex. 2–8] regarding the occurrence of 3 cases of leukemia in a group of 230 workers (more fully discussed in the Health Effect section). The ACGIH adopted this change in 1981 [Ex. 2–7].

The 1981 ACGIH publication [Ex. 2–7] also designated EtO as a substance suspected of having carcinogenic potential in humans and proposed to further lower the TLV for EtO to 5 ppm, based on the positive results from a two

year inhalation study in rats conducted at the Bushy Run Research [Ex. 2–9], which is discussed in the Health Effects section. On June 10, 1982, ACGIH adopted a proposal to lower the TLV to 1 ppm, such change to be effective in 1984.

On May 22, 1981, NIOSH issued a "Current Intelligence Bulletin" [Ex. 2–10] to inform employees and employers about the potential carcinogenic hazard of exposure to EtO. NIOSH recommended that EtO be regarded as a potential occupational carcinogen and that the current OSHA standard be reexamined in light of the information which has become available subsequent to the original adoption of that standard.

On January 26, 1982, OSHA published an ANPR (47 FR 3566) announcing its intention to conduct a reevaluation of the EtO standard. Interested parties were invited to submit data, views and comments with respect to the development of a revised standard for EtO and particularly with respect to a number of specified questions.

In August 1981, prior to publication of the ANPR, Public Citizen Health Research Group (Public Citizen) petitioned OSHA to issue an Emergency Temporary Standard (ETS) reducing the permissible exposure limit for EtO to an eight-hour time-weighted average of 1 ppm [Ex. 2–11]. OSHA denied Public Citizen's petition in September 1981 on the grounds that the available evidence did not indicate that an emergency situation existed to trigger the issuance of an ETS in accordance with section 6(c) of the Act [Ex. 2–12]. Prior to the denial of the petition, Public Citizen brought suit in U.S. District Court for the District of Columbia to obtain an order requiring the Agency to issue an ETS (*Public Citizen Health Research Group et al.* v. *Auchter*, 554 F. Supp. 242). On January 5, 1983, the District Court Judge ruled that OSHA's determination not to issue an ETS represented a "clear error of judgment," and ordered the Agency to promulgate an ETS within 20 days of the Court's decision [Ex. 6–1]. OSHA then sought and obtained a temporary stay of the District Court order pending review on the merits by the U.S. Court of Appeals for the District of Columbia Circuit.

On March 15, 1983, the Court of Appeals rendered its decision on the merits in *Public Citizen Health Research Group et al.* v. *Auchter et al.*, 702 F. 2d 1150 [Ex. 6–2]. In that decision, the Court ruled that the District Court had "impermissibly substituted its evaluation for that of OSHA" in ordering an ETS to be issued, 702 F. 2d at 1153. However, the Court then determined that, because, in the Court's terms, a "significant risk of grave danger" exists with regard to EtO exposures, the failure of the Agency to publish a proposed standard of EtO for 18 months after the Advance Notice of Proposed Rulemaking constituted rulemaking action "unreasonably delayed," under section 6(g) of the OSHA Act (29 U.S.C. 655(g)), and sections 555(b) and 706(1) of the Administrative Procedure Act (5 U.S.C. 555(b), 706(1)). Therefore, the Court ordered the Agency to expedite its development of a proposed rule on EtO, and to issue its proposal within 30 days of the Court decision.

In its January 5 decision, the District Court considered OSHA's arguments that the Environmental Protection Agency (EPA) had exercised its statutory authority over working conditions involving the application and use of EtO as a sterilant and fumigant under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), 7 U.S.C. 136 *et seq.*, and that this exercise served to preempt OSHA regulation of these same working conditions pursuant to section 4(b)(1) of the OSH Act. The District Court determined, and the Court of Appeals subsequently agreed, that OSHA coverage of EtO was not preempted in "areas—such as the health care industry—where EPA has apparently exercised *minimal if any regulatory authority in an overlapping manner*" (emphasis added).

Pursuant to the Court decision, OSHA's proposed rule on Ethylene Oxide was published April 21, 1983 (48 FR 17284) and included within its scope EtO exposures resulting from the application of EtO as a sterilant or fumigant, including hospital and health care uses, as well as exposure to employees involved in the production and ethoxylation of EtO.

The proposal limited EtO exposure to 1 ppm (8-hour TWA) and contained additional provisions which OSHA believed appropriate. In the preamble to the proposal, OSHA requested public comments, information, and evidence on all issues raised.

The informal rulemaking hearing was convened by Administrative Law Judge Rhea Burrow on July 19, 1983 pursuant to notice and section 6(b) of the Act (29 U.S.C. 655(b)(3)). The hearing lasted through July 28, 1983. Post-hearing submissions of data requested by parties at the hearing were received through August 29, 1983; post-hearing comments and briefs were received through September 19, 1983.

The entire record, including over 300 exhibits and approximately 1600 transcript pages and errata, was certified by Judge Burrow on November 7, 1983, in accordance with 29 CFR 1911.17. Copies of materials contained in the record may be obtained from the OSHA Docket Office, Room S6212, U.S. Department of Labor, 200 Constitution Avenue N.W., Washington, D.C. 20210. The final standard on occupational exposure to Ethylene Oxide is based on full consideration of the entire record of this proceeding, including materials discussed or relied upon in the proposal, the record of the informal hearing, and all written comments and exhibits received.

In the *Public Citizen* case discussed above, OSHA argued that the labeling requirements which are mandated under FIFRA, and which are enforceable against users of EtO pesticides, constituted an exercise by EPA of that agency's statutory authority over working conditions involving EtO. Because of section 4(b)(1) of the OSH Act, OSHA contended that EPA's exercise of authority under FIFRA was sufficient to preempt OSHA's exercise of authority over the same working conditioins.

The Court in *Public Citizen* determined that EPA's exercise of authority under FIFRA was not sufficient to oust OSHA of jurisdiction, and directed OSHA to proceed with its rulemaking over all uses of EtO, including its use in pesticides and sterilants. Although OSHA maintains its previous views on the preemption issue, the Agency has complied with the Court decision, and has included hospital, health care, and other sterilant uses of EtO within the scope of both its proposed and final rules.

EPA has since published a notice in the **Federal Register** (April 18, 1984, 49 FR 15268), as modified in today's **Register**, providing guidance to manufacturers of certain EtO sterilants used in hospitals and health care facilities control methods and work practices to reduce EtO exposures.

OSHA has reviewed the EPA notice and has determined that the recommendations are not inconsistent with OSHA's final standard. As noted earlier, OSHA maintains the views on preemption that it argued unsuccessfully in *Public Citizen*. Nonetheless, based on the Court decision, OSHA is proceeding to regulate employee exposure to EtO in hospitals, health care facilities, and other workplaces where EtO is used as a sterilant or fumigant.

## IV. Health Effects

OSHA has found that EtO can cause several serious adverse health effects. Studies in experimental animals supported by epidemiological studies of

working populations indicate that EtO is a potential occupational carcinogen. The evidence suggests that EtO may cause cancers of the blood (leukemia), as well as other organs in humans. In addition, EtO exposure causes mutations, increases the rate of chromosomal aberration and sister chromatid exchange, and causes other undesirable changes in the DNA of mammalian cells. These effects support OSHA's conclusion regarding the carcinogenicity of EtO. EtO exposure has also been associated with an increased risk of spontaneous abortion among pregnant women and is capable of causing other adverse reproductive effects in both men and women. Exposure to high concentrations of EtO causes central nervous system depression and other neurological effects which are thought to be reversible with cessation of exposure. In addition, exposure to EtO gas causes sensitization and irritation of human tissues, including the eyes and respiratory tract.

Three epidemiological studies indicate an association between worker exposure to EtO and a significant increase in the risk of death from cancer. Hogstedt et al. [Ex. 2–8] found an increased risk of death from leukemia among employees exposed to EtO when used as a sterilant. In a second study, these investigators confirmed an increased leukemia risk and also observed a significant excess of stomach cancer deaths and total cancer deaths among production workers [Ex. 2–22]. Morgan et al. [Ex. 6–5] found an increased risk of mortality from Hodgkin's disease and pancreatic cancer among EtO production workers.

Studies in experimental animals have provided definitive evidence that EtO is carcinogenic in multiple species and by several routes of administration. Leukemia, brain cancer and mesothelioma have been induced in animals exposed to EtO by inhalation. Cancers of the forestomach have been induced as a result of EtO administration by oral gavage. Injection site sarcomas and skin cancers have been observed in animals exposed to EtO by injection.

The studies in experimental animals in conjunction with the epidemiological studies indicate that EtO has the potential to cause cancers of the lymphohematopoietic system and other organs in humans. in addition, evidence derived from short-term tests clearly demonstrates DNA damage, mutations and chromosomal change in non-mammalian cells, mammalian cells, intact experimental animals or in occupationally exposed workers. These data provide supportive evidence that EtO is carcinogenic to humans.

EtO has been shown to induce cancer in laboratory animals at concentrations that are well below the current PEL of 50 ppm. Further, the available data on the effects of human exposure are consistent with the results of the animal studies. The health effects of EtO have been comprehensively and strikingly established. OSHA considers EtO to be a potential occupational carcinogen.

Based on the Hemminki et al. study (Ex. 6–7) of increased spontaneous abortions among hospital workers exposed to EtO and numerous studies in experimental animals supporting these findings, OSHA also concludes that exposure to EtO constitutes an occupational reproductive hazard. Adverse reproductive consequences of exposure to EtO have been manifested most frequently in animal studies by embryonic or fetal loss related to exposure of the female parent during critical periods of gestational development or exposure of the male parent prior to conception.

There is also substantial evidence that EtO is a direct-acting mutagen capable of causing mutations in the tissues of exposed humans. Inhaled EtO reacts with mammalian gonadal DNA as demonstrated by the induction of heritable translocations in male offspring and unscheduled DNA synthesis and dominant-lethal mutations in germinal cells. EtO that reaches the DNA of human germ cells is presumed to induce heritable mutations affecting future generations.

Exposure to high airborne concentrations of EtO causes respiratory tract irritation and central nervous system depression. Excessive exposures have produced convulsive movements, neuropathy, pulmonary edema and bronchitis in humans; headache, nausea, vomiting and diarrhea also are common systemic effects of EtO exposure. Evidence from human case reports also indicates that neurological effects (sensory motor neuropathy, seizures, headache) may result from intermittent high exposures. Hematologic effects (reduced hemoglobin and elevated lymphocytes) have been observed in production plant workers chronically exposed to EtO.

Following accidental or experimental exposure of human skin, liquid EtO has caused edema and erythema with progression to blister formation in 6–12 hours. The degree of skin injury is related to concentration and duration of exposure. These effects are reversible. As concentrated EtO evaporates, a freezing effect occurs, which may cause frostbite. Dilute solutions may penetrate the skin, producing a chemical burn. Skin burns have also been caused by the residual EtO in leather goods, belts and footwear. Skin sensitization has been associated with repeated dermal exposure.

High concentrations of EtO are irritating to the eyes of humans and animals. Direct ocular contact with liquid EtO can produce corneal injury. Repeated exposure to high airborne concentrations of EtO may result in the formation of cataracts.

Adverse effects of acute exposures also have been observed in experimental animals. Paralysis and periodic convulsions frequently have preceded death due to lung edema or secondary infection. Signs of poisoning from subchronic exposure by different routes of administration in various species of experimental animals include hindquarter neuropathy indicating neurotoxicity, and congestive and degenerative changes in the lungs, liver, spleen and kidneys. In addition, adverse testicular changes (tubular degeneration) and hematologic changes (anemia) have been produced.

Detailed information on the effects of exposure to EtO and deliberations on these data during the rulemaking are discussed in this section.

*A. Carcinogenicity*

Epidemiologic Studies

Three epidemiologic studies investigating the relationship between occupational EtO exposure and cancer have appeared in the scientific literature: Morgan et al. (Ex. 6–5); Hogstedt et al. (Hogstedt I, Ex. 2–8); and Hogstedt et al. (Hogstedt II, Ex. 2–22).

The Morgan et al. study (Ex. 6–5) reported the mortality experience of 767 potentially exposed (based on work history records) male workers who had been employed at an ethylene oxide-producing chemical plant for at least 5 years between 1955 and 1977. Industrial hygiene measurements taken at typical leak sources in the facility's operating units in July 1977 revealed no detectable EtO levels in most of the production areas. A leak in the tube used to gauge the level of EtO in tank cars during loading operations resulted in an isolated measurement of 6,000 ppm. At the sources of EtO (pump, valve, pipe flanges, spigots, and gauges), levels of less than 10 ppm were recorded. All other measurements were below 50 ppm. Fewer deaths were observed in the study population than expected from all causes and from all malignancies, based on U.S. mortality statistics; the

standardized mortality ratios (SMR's) for these causes were 58 and 79, respectively. No deaths from leukemia were observed, compared to 0.70 expected. A significant excess of deaths was demonstrated for pancreatic cancer (3 observed versus 0.8 expected, P less than 0.5) and for Hodgkin's disease (2 observed versus 0.35 expected, P less than 0.05) among workers at this plant.

Hogstedt and coworkers (Hogstedt I, Ex. 2–8) reported that three cases of leukemia had occurred between 1972 and 1977 among workers in a Swedish factory where a mixture of 50 percent ethylene oxide and 50 percent methyl formate had been used since 1968 to sterilize hospital equipment. Based on age and sex-specific Swedish national rates for 1972, 0.2 leukemia cases would have been expected between 1968 and 1977 among the 230 workers potentially exposed in this facility during this period. In 1977, the 8-hour TWA exposure concentration in the areas where two women who died from leukemia had worked was estimated to be 20±10 ppm; the levels of previous exposure for these women were not known. These two individuals had had no known occupational exposure to suspect leukemia-inducing agents other than EtO; the third individual who died from leukemia (a male manager exposed to EtO approximately 3 hours per week) had had occasional contact with benzene in laboratory work. The leukemias were classified as chronic myeloid leukemia and acute myelogenetic leukemia in the women and as primary macroglobulinemia in the man.

Hogstedt et al. (Hogstedt II, Ex. 2–22) reported the results of an historical prospective mortality study of 241 workers employed for more than one year in a Swedish EtO production facility. The study included three subcohorts, comprised of 89 full-time exposed men, 86 intermittently exposed men (maintenance workers), and 66 men who had no known exposure to EtO. The follow-up period started in January 1961 and continued until the end of December 1977. Exposure to EtO in the production areas was estimated to average below 14 ppm with peaks to 728 ppm in the 1940's, 6 to 28 ppm during the 1950's and 1960's with peaks above the odor threshold (approximately 700 ppm), and 0.6 to 6 ppm in the 1970's with occasional higher values. Among the 89 full-time workers in the EtO production areas, a significant excess in total mortality was observed (23 deaths observed, 13.5 expected based on Swedish national statistics, $p < 0.05$). Significant excesses in total cancer mortality (9 observed, 3.4 expected, $p < 0.01$) and in deaths from diseases of the circulatory system (12 observed, 6.3 expected, $p < 0.05$) were also reported in this group. Site-specific excess cancer mortality was noted for leukemia (2 observed, 0.14 expected, $p < 0.01$) and stomach cancer (3 observed, 0.4 expected, $p < 0.01$) for the full-time exposed workers. No statistically significant excess mortality was noted among the 86 intermittently exposed maintenance workers from the same facility or among the 66 workers who had never been exposed to EtO, although one leukemia death was noted among the group of maintenance workers (0.13 expected). The production and maintenance workers who were exposed to EtO were also exposed to ethylene, ethylene dichloride, ethylene chlorohydrin, and bis(2-chloroethyl) ether. Because of these multiple exposures, the authors were unable to attribute the excess cancer incidence to a specific chemical, although they speculated that EtO and ethylene dichloride were the most likely causative agents.

Several commenters (Exs. 66, 110, Tr. 632, 1529) pointed to weaknesses in these epidemiological studies. For example, Robert W. Morgan of Environmental Health Associates, who had been asked by the Ethylene Oxide Industry Council (EOIC) of the Chemical Manufacturers Association to evaluate the epidemiologic data on ethylene oxide, testified (Tr. 636) that the results of his study (the Morgan et al. study, Ex. 6–5) failed to support a causal link between EtO exposure and leukemia, and that his study should therefore be considered a negative study. However, OSHA notes that the study demonstrates a significant excess of deaths from pancreatic cancer and Hodgkin's disease among workers in EtO production.

Sidney Wolfe of the Public Citizen Health Research Group noted (Tr. 792) that the Morgan et al. study (Ex. 6–5) contained little information on the exposures of the 767 workers in the study, and thus the true size of the cohort exposed to EtO was not known. The inclusion in the Morgan et al. study of individuals with little or no exposure to EtO would bias the results toward an underestimation of any risk associated with EtO exposure.

Philip Landrigan, Director of NIOSH's Division of Surveillance, Hazard Evaluation and Field Studies, suggested that the findings of the Morgan study should be considered inconclusive rather than negative for leukemia because of the study's limited statistical power (Tr. 341). OSHA believes that Landrigan's characterization of the Morgan et al. study is an accurate one, because, as the study's authors themselves report, only "an excess of leukemia deaths as small as 10.5-fold could be detected at the 95 percent confidence level" (Ex. 6–5). As noted by Jeanne M. Stellman of the Women's Occupational Health Resource Center, Columbia University, "* * * a 10.5-fold (increase in) risk is well beyond the risk observed for most environmental agents, including cigarette smoking" (Ex. 4–59). Stellman, supporting the conclusion reached by Landrigan regarding the Morgan et al. study, commented:

> Had * * * (Morgan et al.) subsumed Hodgkin's disease under hematologic and hematopoietic cancer sites, this organ system would have shown an elevated SMR of 191.
>
> Therefore, instead of contradicting previous studies * * * (the two Hogstedt studies), this paper confirms an increased risk of hematologic and hematopoietic malignancy due to EtO exposure * * * Rather than being viewed as a negative study, Morgan et al. * * *. (Ex. 6–5) should be considered as a strong piece of evidence indicating that even in very small cohorts, with exposures well below the current OSHA standard, excess cancer risk (sic) was detected (Ex. 4–59).

Morgan criticized the first Hogstedt et al. paper (Ex. 2–8) reporting three leukemia deaths as being "anecdotal," and noted further that the numbers in this study were "simply too small," (Ex. 66). In testimony (Tr. 634), Morgan stated that the first Hogstedt study (Ex. 2–8) was "a description of a cluster * * * rather than an epidemiologic study."

The first Hogstedt study (Ex. 2–8) was also criticized by several commenters (Exs. 11–74, 47, 126) because workers in the cohort were exposed to a mixture of EtO and methyl formate. For example, Saul Kaye, independent consultant to hospitals and industry on sterilization practices, stressed that exposure to a mixture of EtO and methyl formate might be more hazardous to humans than exposure to EtO alone (Exs. 11–74, 126, Tr. 841). However, at the hearing, Kaye acknowledged the fact that there is no evidence in the reported literature that would indicate that methyl formate itself is carcinogenic (Tr. 845).

Several commenters (Exs. 11–74, 47, 126) also noted that the second Hogstedt study (Ex. 2–22) cohort had been exposed to several other chemicals (including ethylene dichloride, ethylene, ethylene chlorohydrin, bis (2-chloroethyl)ether).

NIOSH reviewed the two Hogstedt studies (Exs. 2–8, 2–22) in its Current

Intelligence Bulletin on EtO and concluded:

> These epidemiological investigations cannot be cited as definitive evidence of an excess risk of cancer resulting from EtO exposure, but they should be considered evidence that excess risk of cancer may exist for the EtO workers studied. (Ex. 2–10)

Despite these methodological shortcomings, only two commenters (Exs. 66, 110) concluded that the epidemiologic evidence failed to demonstrate that EtO exposure posed an increased risk of cancer. In comments prepared for the EOIC, Morgan concluded that, " * * * the ethylene oxide mortality studies fail to demonstrate any appreciable or significant risk of malignancy" (Ex. 66). However, Morgan went on to state " * * * because of the limited number of subjects involved in these studies, they may not provide as much reassurance (that EtO is not a carcinogen) as some would like" (Ex 66).

Although OSHA believes that none of the available epidemiologic studies are, in and of themselves, definitive evidence of EtO's carcinogenicity, the Agency agrees with Philip Landrigan of NIOSH that the two Hogstedt studies "provide evidence of a possible association between occupational exposure to ethylene oxide and death from leukemia" (Tr. 341). As Leon Golberg, Professor of Community and Occupational Medicine at Duke University and consultant to the EOIC observed, although "one cannot say that * * * (the human data) are positive, it is * * * impossible to say that they are entirely negative" (Tr. 520).

The increasing number of reports of EtO-induced mutagenic changes, manifested by alterations in the genetic material of peripheral blood cells in humans, as well as EtO's established genotoxic effects in other species, and the evidence for the induction of leukemia and solid tumors in experimental animals, such as brain tumors, lend credence to the observations of excess risk from leukemia and other cancers (including brain tumors) observed in the epidemiologic studies of workers exposed to EtO. The Hogstedt et al. and Morgan et al. studies are limited by the constraints that accompany any attempt in humans to characterize rare events in small populations that have been exposed to unspecified levels of contaminants. Nonetheless, OSHA finds that the epidemiologic evidence, although not by itself conclusive, is supportive of EtO's potential carcinogenic, and particularly leukemogenic, effects. OSHA thus agrees with NIOSH's assessment that EtO should be regarded as a potential human carcinogen (Tr. 303).

Experimental Studies

The experimental evidence most applicable to the question of EtO's occupational carcinogenicity is that provided by two studies involving inhalation as the route of EtO exposure: The Snellings et al. study performed at Bushy Run Research Center (BRRC Study, Bushy Run study) (Ex. 2–9) and the Lynch et al. study at NIOSH (NIOSH study) (Exs. 6–6, 6–16).

*The Bushy Run Study.* Snellings and colleagues conducted a two-year chronic inhalation study in which three groups of male and female Fischer 344 rats (120 rats per sex per group) were exposed to EtO at concentrations of 100, 33, or 10 ppm for 6 hours per day, 5 days per week. Two groups of rats served as concurrent controls and were exposed to air only.

Based on histopathological evaluation, the Bushy Run researchers concluded that the incidence of mononuclear cell leukemia and of peritoneal mesothelioma was significantly increased as a result of exposure to EtO. The incidence of mononuclear cell leukemia in female rats was dose-related, increasing with exposure concentration. A statistically significant increase in mononuclear cell leukemia was observed in the group of female rats exposed at 100 ppm. For female rats exposed to 33 ppm, the cumulative percentage of animals developing leukemia was significantly higher than that for one control group and for both control groups combined, but was not higher than the incidence for the second control group alone. The regression analysis of leukemia incidence versus exposure concentration was significant, with a correlation coefficient of +0.99, indicating that the induction of the leukemia was highly correlated to exposure at each concentration.

An increase in mortality from peritoneal mesothelioma was reported in the male rats exposed to 33 and 100 ppm. Among the males exposed at 100 ppm, the cumulative percentage developing a tumor of this type was reported to be statistically significantly higher than that of the controls, beginning with the 21st month of exposure, whereas the incidence of these tumors in males exposed at 33 ppm was not appreciably higher than that in the controls until the final month (the 24th) of the study. These peritoneal tumors originated in the testicular mesothelium and were confined to the abdominal cavity.

In addition, the Bushy Run investigators reported that EtO exposure was associated with a higher frequency and/or earlier onset of mononuclear cell leukemia in male rats. The researchers also reported that a mortality-adjusted trend analysis indicated that the onset of normally occurring pituitary adenomas in male and female rats was significantly accelerated by exposure to EtO.

Finally, the authors concluded that there was a dose-related increase in the number of rats with one or more primary neoplasms. Specifically, female EtO-exposed rats had an increase in the mean number of neoplasms per neoplasm-bearing rat, and the incidence of multiple neoplasms in females at all three exposure levels was significantly greater than that in the combined controls. The authors further pointed out: "* * * biologically significant adverse effects were observed at all concentrations tested" (Ex. 2–9).

The BRRC investigators also have reported, based on further evaluation of their slides, that there was a dose-related increase of gliomas (brain cancers) in the experimental animals (Ex. 15). The incidence of these tumors is given in Table 1. As can be seen from Table 1, there was a statistically significant increase in the incidence of gliomas in the male rats exposed at 100 ppm. The incidence of gliomas in the female rats exposed at 100 ppm was not statistically significant when a Bonferroni correction was applied to the test. (A Bonferroni correction adjusts p-values to account for multiple comparisons). However, the results of the test for linear trend were significant at the 5% level for both males and females, which corroborates that there is a dose-effect relationship between exposure to ethylene oxide and the incidence of these rare brain tumors.

TABLE 1.—FREQUENCY OF PRIMARY BRAIN NEOPLASMS IN RATS IN TWO-YEAR INHALATION STUDIES

| Study | Sex | O C(I) | O C(II) | 10 ppm | 33 ppm | 50 ppm | 100 ppm |
|---|---|---|---|---|---|---|---|
| BRCC [1] | Male | [2] 1/98 | 0/98 | 1/99 | 5/98 | | 7/99 |
| | p-values [3] | 0.0003 | | | 0.017 | | 0.0024 |
| | Female | 1/98 | 0.96 | 1/95 | 3/99 | | 4/99 |
| | p-values | 0.014 | | | 0.11 | | 0.046 |

TABLE 1.—FREQUENCY OF PRIMARY BRAIN NEOPLASMS IN RATS IN TWO-YEAR INHALATION STUDIES—Continued

| Study | Sex | O C(I) | O C(II) | 10 ppm | 33 ppm | 50 ppm | 100 ppm |
|---|---|---|---|---|---|---|---|
| NIOSH [4] | Male | | 0/76 | | | 2/77 | 5/79 |
| | p-values [5] | | 0.011 | | | 0.2516 | 0.0323 |

[1] Ex. 15, Data for 18 and 24 months sacrifices, dead/euthanized.
[2] Numerator equals the number of brains with neoplasms. Denominator equals total number of animals whose brain tissues were examined microscopically.
[3] First p-value in row is for one-sided Cochran-Armitage test for a dose-response trend. Remaining p-values are for Fisher's exact test (one-sided) comparing responses in combined controls to those in the respective treatment groups (Ex. 34).
[4] Ex. 40.
[5] First p-value in row is for one-sided Cochran-Armitage test for a dose-response trend. Remaining p-values are for Fisher's exact test (one-sided) comparing responses in combined controls to those in the respective treatment groups.

Several commenters (Exs. 11–74, 47, 110, 126, 144, 152) submitted specific criticisms of the Bushy Run study to the record. Despite these criticisms, however, both the EOIC (Ex. 152) and the Health Industry Manufacturers Association (HIMA) (Ex. 153) concluded that the Bushy Run study presents evidence that EtO is carcinogenic. Several issues related to the Bushy Run study that were raised by commenters are discussed below.

First, two commenters (Exs. 11–74, 47) questioned the validity of the study results because they believe that the occurrence of the sialodacryoadenitis (SDA) viral infection among the rats in the study during the fifteenth month may have confounded the results. The EOIC (Ex. 47) speculated about the effects such a viral infection might have had on the immune status of the rats, and HIMA (Ex. 11–74) suggested that the SDA infection might have had an impact on the rat's long-term pulmonary absorption of EtO.

Clinically, SDA infections usually occur as acute epizootics that are manifested as cervical swellings, enlarged submaxillary salivary glands, red-brown-colored ocular and nasal discharges, sneezing, photophobia, and ophthalmic lesions. Histopathological lesions in rats infected with SDA virus have been characterized and described; the lesions involve the submaxillary salivary glands, Harderian gland, and parotid salivary glands. SDA viral epizootics vary in duration from 12 to 32 days.

The development of SDA viral infections among study animals would in general have an insignificant impact on the outcome of most toxicological studies. The possible occurrence of secondary infection could compromise respiratory ventilation and result in the appearance of acute clinical symptoms. Such an occurrence may compromise the results of an inhalation toxicology study in terms of high mortality from infectious diseases, altered pulmonary absorption of the test substance and, consequently, altered pulmonary morphology.

William Snellings, director of the Bushy Run study, testified (Tr. 525) with regard to the potential effects of the viral infection and the possibility of flaws in the study as follows:

> The thing that we did was to look not only at our two control groups very carefully, but control groups in our laboratory, the historical controls and also controls that have been published in (the) literature and results from controls published in (the) literature. In particular, in the tumors that were found * * * we found no difference * * * between the two controls * * * in the group * * * in the same study or the controls in our lab (or) historical controls or (controls) within (the) literature.
>
> So we made a statement that at least in the control groups we had no adverse affect (sic) that would contribute to an increase or a decrease in the normal spontaneous rate of tumor production in the Fisher (sic) rat.

J.M. Ward of the National Cancer Institute (NCI), a pathologist active in NCI's bioassay program, testified on behalf of OSHA (Tr. 1113) that:

> * * * There's been no evidence for any types of studies that show that (the) presence or absence of a virus or a bacterial infection or pneumonia will actually make a chemical become a carcinogen or not become a carcinogen * * *. I would * * * not consider any infections in these rat bioassays as being significantly important for deciding whether the chemical may or may not be a carcinogen * * *. There are many bioassays performed all throughout the world where most animals will have some type of infectious disease even when they're maintained in a very clean environment (Tr. 1114).

Since the tissues giving rise to tumors in the Bushy Run experiment are not those traditionally affected by the SDA virus (salivary glands, Harderian gland), and since in the Bushy Run controls the SDA infection did not have any effect that might conceivably influence the rate or occurrence of tumors, and in light of Ward's testimony, OSHA concludes that the outbreak of this infection among the animals used in this study did not have a substantial impact on the validity of the results of the study.

Other commenters (Exs. 47, 126) noted that the mononuclear cell leukemia (MCL) observed in the rats of the Bushy Run study did not occur in other strains of rats and mice and had no human counterpart. However, Jerrold M. Ward of NCI, testifying on behalf of OSHA, noted that:

> The leukemia in the Fisher (sic) rats in the Bushy Run study that was increased in incidence has been recently described as a specific type of leukemia not only in rats but also in humans as well * * * Recent reports of specific kinds of lymphocytic leukemia in humans have demonstrated that there are some, if not many, types of lymphocytic leukemias which have a similar or identical characteristics as * * * (those) of the Fisher (sic) rat mononuclear cell leukemia (Tr. 1107).

OSHA agrees with Ward that these recent findings demonstrate similarities between certain types of human and rat leukemias, a finding which increases the relevance of the BRRC results to humans.

The EOIC (Ex. 47) also criticized the findings of the Bushy Run study because, they contended, the only types of tumors that occurred among the treated animals were those that occur spontaneously in this strain of rat.

In this regard, the EOIC stated that:

> The tumors which have been observed have all been late-occurring neoplasms with a spontaneous incidence in the Fischer 344 rat. No unique tumors were produced by EO exposure, suggesting the possibility that EO is active through a mechanism which does not involve initiation but rather promotion or another form of modulation of the spontaneous tendency to tumor development (Ex. 47).

However, when questioned about the likelihood that EtO is a promoter rather than a frank carcinogen, Ward responded as follows:

> * * * The increase[d] incidence of spontaneous tumors (in the Bushy Run study) has been used by many people to say that the chemical is not a true carcinogen but * * * may be a promoter or a potentiator or a modifier * * *.
>
> But there are many potent carcinogens that most people will agree * * * also increase the incidence or apparently increase the incidence of spontaneous tumors and you can almost say that every type of induced tumor * * * seen in rats has also been seen in control animals at least once.
>
> * * * I think the fact that ethylene oxide causes an increased incidence of leukemias and also squamous cell carcinomas may be indicative of the fact that the chemical may act on different types of tissues * * * which may increase the incidence or actually cause the type of leukemia that's found (Tr. 1119–1120).

When asked about whether there might be a promotional effect by EtO and

what the significance of such an effect might be, Ward responded:

> * * * Promotion is a fairly broad term * * *. [W]e can almost say that * * * most carcinogens are promoters because they would promote * * * rare tumors. So I don't like to use that term unless we really know more about the chemical (Tr. 1120).
>
> * * * Up until now, many papers and scientists have said that promoters may be less dangerous than carcinogens * * *. In the last two years * * * we have evidence that tumor promotion may also occur after * * * not only long-term exposure but after short-term exposure to low doses. So the tumor promoters may in fact be just as dangerous for causing or increasing the risk of cancer as * * * potent carcinogens * * * in my opinion, promoters may be as dangerous * * * as chemicals that are not thought of * * * [as] promoters. (Tr. 1121).

Although the EOIC argued (Ex. 47) that interpretation of the results of this study may be "complicated by the absence of a unique early-occurring tumor," this uncertainty was put to rest by the observation of gliomas in the Bushy Run slides. Gliomas, malignant tumors of the central nervous system, were generally characterized by Legator as "very rare" tumors (Tr. 104), and, as was pointed out by Lemen of NIOSH: "Gliomas had a low spontaneous instance (sic, incidence) in these two studies (BRRC, NIOSH): Goodman reported incidence rates of 1 to 2 per thousand in untreated Fischer 344 rats used as controls in several carcinogenicity tests" (Tr. 312).

Another study (Ex. 93) submitted by Ward confirmed the historically low spontaneous incidence of gliomas in the Fischer 344 rat; the spontaneous incidence of gliomas among almost 52,000 Fischer 344 rats used in the NCI bioassay program was reported to be 6.6 per thousand in male rats and 5.4 per thousand in female rats. Ward also testified that the incidence of brain tumors in EtO-treated rats might have been higher than the incidence found in the Bushy Run study if the rats had been exposed to EtO in utero or postnatally:

> * * * (The presence of) brain tumors suggest[s] that * * * these animals may, if exposed to this chemical * * * (in utero or postnatally) develop a higher incidence of tumors * * *.
>
> The brain tumors (found) * * * are also very disturbing because there are very few chemicals that cause brain tumors * * * (in animals exposed) after four weeks of age * * *.
>
> So I would have to say that potentially this chemical poses a * * * significant hazard based on the results of [the Bushy Run] bioassay * * * (Tr. 1128–1129).

The Health Industry Manufacturers Association (HIMA) questioned (Ex. 11–74) whether the large number of statistical analyses performed on Bushy Run data "may have produced some misleading results identified as significant" (Ex. 11–47, Appendix H). The Bushy Run researchers applied a statistical correction to their results, based on the Boneferroni inequality, to prevent just this type of problem. However, HIMA (Ex. 11–74, Appendix H) argued that had the BRRC study protocol been designed originally to include life-table analysis and the performance of statistical tests only at 12, 18, and 24 months, rather than at monthly intervals, the study's conclusions would have been more valid. HIMA pointed out that conducting so many statistical tests increases the likelihood of obtaining a significant number of false positives.

To test whether the number of statistical tests conducted had influenced the BRRC results, OSHA used an alternative approach to the Bonferroni inequality correction. The alternate approach bases calculations of significance on the assumption that the individual tests are independent. This would represent the "worst case," since any relation among tests decreases the probability of detecting false positives. After removing the Bonferroni corrections made by the BRRC researchers and applying the assumption that tests for survival rate are independent, OSHA determined that the probability of finding 15 tests with $p < 0.01$, or of finding five tests with $p < 0.001$ among the 260 tests is much less than 0.05. Therefore, OSHA finds that the statistical tests employed in treating the BRRC data are valid and that the Agency can be confident in its conclusion that the survival of male rats in the Bushy Run study was significantly diminished by exposure to ethylene oxide. If a similar probability approach is used on the survival test results for the female rats, the null hypothesis—that there was no mortality increase with exposure—is rejected even more decisively

If similar probability calculations are made for the results of the life table analysis, significant exposure-related effects are demonstrated for mononulcear cell leukemia among the female rats and for peritoneal mesothelioma among the male rats. To indicate a significant ($p < 0.05$) tumorigenic effect among the more than 250 tests conducted, at least 20 tests must be significant at $p < 0.05$, or 6 tests must be significant at $p < 0.01$, or 2 tests must be significant at $p < 0.001$. In the tests for female mononuclear cell leukemia, the results of at least 10 tests are significant at $p < 0.001$. In the tests for male peritoneal mesothelioma the results of at least 15 tests were significant at $p < 0.01$, and at least 7 tests are significant at $p < 0.001$. A significant overall tumorigenic effect is confirmed by the fact that the number of tests that are significant at the lower values of P exceeds the minimum number of tests that would have to be significant to demonstrate a significant overall tumorigenic effect.

The most important statistical argument for a dose effect is the identification of a progressive relationship between dose group and response. The BRRC used time-adjusted trend test analyses that were sensitive to differences in both tumor frequency and time-to-tumor, and consistently found significant positive trends in each of the five tests conducted to examine dose-effect. Further, the tests demonstated significant effects when dose groups were compared to controls, and additionally found significantly increased tumor incidences when high-dose groups were compared to low-dose groups. Because the BRRC study clearly identified these relationships, OSHA concludes that exposure to EtO significantly increased both mortality and tumorigenicity among the BRRC rats.

*The NIOSH Study.* The other animal evidence that relates most strongly to the question of carcinogenicity from occupaitonal exposure to EtO is provided by a two-year, NIOSH-conducted chronic inhalation study of male rats and male monkeys. The preliminary results of this study were reported in a 1982 memorandum from NIOSH (Ex. 6–16). In that study, two groups each of 80 male Fischer 344 rats and 12 male Cynomolgus monkeys were exposed to EtO at 50 ppm and 100 ppm, respectively. Two groups, one of 80 rats and one of 12 monkeys, were used as controls and exposed to conditioned ambient air. Durign the study, all of the rat groups became infected with *Mycoplasma pulmonis* which, begining with the sixteenth month, caused the death of a large portion of the rat population (Lynch et al. 1982, as cited in Ex. 47). Exposure was discontinued for two weeks to permit animals to recover from the infection.

Preliminary results of histopathological evaluations of the spleens from the EtO-exposed rats indicate an exposure-related increase of mononuclear cell leukemia in the rats exposed at 50 ppm but not in those exposed at 100 ppm. NIOSH has acknowledged (Ex. 6–16) that these preliminary results must be interpreted in light of the known spontaneous incidence of leukemia in Fischer 344

rats. It should be noted, however, that excess mortality occurred in the 100 ppm group (19 percent survived as compared to 49 percent of the controls). At the terminal kill a significantly higher frequency of leukemia was found only in the group exposed to EtO at 100 ppm.

Of equal or greater importance, however, is the study's dose response relationship between exposure and the development of gliomas, a rare tumor in Fischer 344 rats, as noted earlier (Ex. 15). Gliomas were found in 5 of 79 rats exposed at 100 ppm and 2 of 77 rats exposed at 50 ppm of EtO. There were no gliomas found in the 76 control rats (see Table 1). A significant association between exposure to EtO and the occurrence of peritoneal mesothelioma was also found in rats exposed to 100 ppm EtO, but not in those exposed at 50 ppm EtO. The findings of gliomas, peritoneal mesothelioma, and leukemia in the study parallel the findings made in the Bushy Run study.

None of the monkeys in the NIOSH study (Ex. 6–16) demonstrated any evidence of leukemia. Two of the monkeys in each exposure group were sacrificed for neuropathological evaluation. The only significant findings were the presence of axonal dystrophy in the nucleus gracilis (a specialized component of the central nervous system) and demyelination of portions of the gracilis tract in one monkey from the low and one from the high dose groups (Sprinz et al., 1982, as cited in Ex. 47). Based on this limited evidence, the researchers were not able to reach any conclusions as to the cause or significance of these findings, but they remain noteworthy in view of the findings of gliomas in the rats in this study, and confirm that EtO affects the central nervous system.

The overwhelming majority of comments on the NIOSH study agreed with OSHA's conclusions that these preliminary results provide additional evidence of EtO's carcinogenicity in experimental animals. Leon Golberg, consultant to the EOIC, testified that the Bushy Run and NIOSH studies "yield mutually confirming information, a dose response relationship is apparent for certain endpoint effects, and the exposure conditions were well controlled and monitored" (Tr. 491). In light of the finding of gliomas in the Bushy Run and NIOSH studies, Jerrold Ward (NCI) stated (Tr. 1129) that these "consistent results are also very disturbing because there are very few chemicals that cause brain tumors postnatally."

*Other studies.* Additional evidence supporting EtO's carcinogenicity has been obtained from animal studies using routes of exposure other than inhalation. Dunkelberg (Ex. 2–18) and Walpole (Ex. 2–20) administered EtO by subcutaneous injection; Van Duuren et al. (Ex. 2–21) observed the effects of dermal exposure, and Reyniers et al. (Ex. 2–19) observed the effects in rats accidentally exposed to EtO-treated bedding, while another study by Dunkelberg (Ex. 19) investigated the effects of intragastric administration of EtO. Several of these studies were discussed in the preamble to the proposal; a short review of each will be presented here.

In 1979, Dunkelberg (Ex. 2–18) reported preliminary results of a long-term carcinogenicity bioassay in which 100 female NMRI mice were given subcutaneous injections of EtO in 0.1 ml tricaprylin in weekly dosages of 0.1, 0.3, or 1.0 mg EtO per animal. Two control groups, 100 untreated and 100 tricaprylin-treated mice, were used. After 91 weeks of treatment, Dunkelberg reported that the number of sarcomas at the injection site increased with dosage, while no injection-site tumors had occurred in the control mice. The first tumor appeared in the fiftieth week of treatment. The number of tumors at sites distant from the injection sites was not significantly greater in the treated groups than in the controls.

HIMA's submission to the docket stated that, "the Dunkelberg study is of limited value because it lacked suitable controls and because irritants are known to cause oncogenic effects at the site of injection" (Ex. 11–74, Appendix G). However, OSHA agrees with Ward of the National Cancer Institute, who stated that, "inductions [sic] of tumors at the injection site means generally that when the chemical is given at other sites, it will cause tumors as well at other sites, either at the site of application or systemically" (Tr. 1124).

The further importance of the Dunkelberg study (Ex. 2–18) was brought to light when OSHA reviewed the results of that study, which were tabulated by the EOIC in its "Hazard Assessment" (Ex. 47). This tabulation shows that, regardless of the control population used, EtO treatment at the middle dose only once weekly induced a 100% increase in tumors as compared to treatment at the low dose.

Walpole (Ex. 2–20) subjected 12 "stock" rats to repeated subcutaneous injections of a dose of 1 g/kg EtO in Archis oil for 94 days. The small sample of animals was observed over their lifetimes. No sarcomas were observed at the injection site.

Van Duuren et al. (Ex. 2–21) applied 100 mg of a 10 percent EtO solution in acetone to the dorsal skin of 30 female Swiss Millerton mice three times per week for life. No tumors were observed. However, as Jeanne M. Stellman suggested, either the minimal dose of EtO administered or the route of dermal application may have accounted for the negative results seen in this study (Ex. 4–59).

Reyniers et al. (Ex. 2–19) accidentally exposed a colony of inbred albino mice to EtO-treated bedding for 150 days and then moved the survivors to untreated bedding for the remainder of their lifespans. The tumor incidence in the 73 surviving females, ranging in age from 300 to 900 days, was 86.3 percent. The most common tumors were ovarian, leukemic (malignant lymphomas), and pulmonary. In contrast, there were no grossly detectable tumors in 86 females, 100 to 600 days of age, in the mouseline from which the accidentally exposed colony was started. HIMA criticized the validity of this study on the grounds that any residual EtO would have been desorbed before the mice contacted the EtO-treated bedding (Ex. 11–74). Since the bedding was not analyzed for EtO content, the validity of HIMA's assertion cannot be tested. However, the authors of this study concluded that the incidence of tumors in the surviving mice could only be explained by their contact with the EtO-impregnated bedding.

Dunkelberg (Ex. 19) reported the results of a study in which 50 female Sprague-Dawley rats were intragastrically given EtO in 1 ml of salad oil twice weekly in doses of 7.5 or 30 mg/kg body weight for 150 weeks. Two control groups, 50 untreated rats and 50 salad-oil-treated animals, were used. Although no local tumors were induced in either of the control groups, 16 percent and 62 percent of the EtO-treated groups, respectively, incurred local tumors, mainly squamous cell carcinomas of the forestomach. The first tumor occurred in the 79th week. No tumors were induced at sites distant from the point of administration.

Conclusions

This comprehensive review of the scientific evidence in the rulemaking record has convinced OSHA that EtO is carcinogenic in laboratory animals and that a significant cancer risk exists for workers exposed to EtO. The Agency's conclusion is based on information from many investigations in several species of experimental animals involving different routes of administration, as well as positive results from several human studies.

The epidemiological study conducted by Morgan and coworkers (Ex. 6–5) showed that a significant increase in

pancreatic cancer and Hodgkins disease occurred among 767 workers generally exposed to EtO levels of 50 ppm or less. Another study (Ex. 2–8) described three cases of leukemia (vs. 0.2 expected) during the period 1972–1977 among Swedish factory workers exposed to an EtO-methyl formate mixture. Two of these workers with leukemia were exposed to an estimated EtO level of approximately 20 ppm (plus or minus 10 ppm). In a third human study (Ex. 2–22) significant excesses of mortality from leukemia and mortality from stomach cancer occurred among 89 full-time workers exposed to EtO. Although each of these studies report small numbers of cancer cases and is limited by the methodological constraints that usually accompany any attempt to describe rare events in small populations exposed to hazardous substances, both Stellman (Ex. 4–59) and representatives of NIOSH (Ex. 2–10) commented that these studies should be considered as evidence that EtO may produce an excess cancer risk for exposed workers. The Agency also agrees with the opinions of Landrigan (Tr. 341) and Golberg (Tr. 520) that, although these studies do not provide definitive evidence of carcinogenicity, they are suggestive of an association between occupational exposure to EtO and cancer (leukemia) mortality.

Among the animal studies examined in the record, the BRRC study (Ex. 2–9) provided the strongest evidence that EtO is carcinogenic. Following lifetime exposure to 33 ppm or 100 ppm EtO, there was a significant increase in the incidence of mononuclear cell leukemia in female Fischer 344 rats and of peritoneal mesothelioma in male rats of the same species, and both of these effects were shown to be dose-related. In addition, there was a significant dose-related increase in the incidence of gliomas, which are characterized as rare tumors, in both male and female rats. A study performed by NIOSH (Ex. 6–6, 6–16), in Fischer 344 rats showed results similar to those of the Bushy Run study. In the NIOSH study, there were significant increases in mononuclear cell leukemia, peritoneal mesothelioma, and gliomas among rats exposed to 50 or 100 ppm. Although not as well documented as the BRRC study, other studies have demonstrated the carcinogenicity of EtO in animals exposed by injection (Ex. 2–18) or oral (Ex. 19) routes.

OSHA agrees with NCI's Ward, who testified that these studies "provide significant evidence for the carcinogenicity of ethylene oxide" (Tr. 1106).

OSHA also concludes that the findings of gliomas among exposed rats in both the Bushy Run and NIOSH studies and findings described by Ward of similarities between the Fischer 344 rat leukemia model and some human leukemias, dramatically increase the importance and relevance of these studies in assessing the carcinogenic risk to EtO-exposed employees. In addition, since significant increases in tumor incidence occurred among rats exposed to EtO at 50 ppm (in the NIOSH study) or less (in the BRRC study), OSHA is confident that EtO's carcinogenic response is manifested at levels at and below those of OSHA's current PEL of 50 ppm, thus establishing that an excess significant cancer risk exists at the 50 ppm PEL.

*B. Mutagenic and Cytogenetic Effects*

In the preamble to the proposed rule on EtO, OSHA presented evidence that EtO is mutagenic in both experimental animals and in humans. As stated by NIOSH in its Current Intelligence Bulletin on EtO:

> The ability of a chemical to serve as an alkylating agent and to cause mutations in a variety of biological test systems is widely accepted as an indicator that the chemical may have carcinogenic potential. Both alkylation and mutagenicity have been demonstrated for EtO. Further, effects of a chemical on basic genetic material within the cells of living mammals are relevant for assessing mutagenic and carcinogenic hazards for humans. Evidence of this nature is available for EtO (Ex. 2–10).

The mutagenicity of EtO has been observed in a wide range of biological systems, including several microbial and plant systems, Drosophila, mice and rats. The submammalian studies have been reviewed extensively elsewhere (Ex. 2–10) and serve to further demonstrate the mutagenicity of EtO. Virtually every mutagenicity test system applied to EtO has shown the chemical to be mutagenic. Considerable scientific evidence also demonstrates the ability of EtO to induce chromosomal aberrations (structural changes in chromosomes that are mutational events) and sister chromatid exchanges (SCE) (the exchange of segments between the two chromatids of a chromosome) in several mammalian species, including humans.

Experimental Studies

Embree and coworkers (Ex. 2–35) have shown that EtO causes mutations in rat germinal cells using the dominant-lethal assay. Male Long-Evans rats were exposed to a single inhalation exposure of 1,000 ppm EtO for 4 hours. Each male rat was then mated to two females each week for 10 weeks. Significant increases in post-implantation fetal deaths were observed in the EtO test group when compared with the control group.

Dominant-lethal mutations and heritable translocations (a rearrangement between chromosomes which results in reduced fertility and has been passed from one generation to the next) were induced by EtO in two experiments conducted by Generoso and colleagues (Ex. 2–36). In the first experiment, male mice were injected intraperitoneally with 150 mg/kg EtO (the maximum tolerated dose) and caged with female mice for 22 days after treatment. In the second experiment, male mice were given intraperitoneal EtO injections of either 60 or 30 mg/kg for 5 days per week for 5 weeks. Immediately after the last injection, males were each caged with 3 females for one week. In addition to observed dominant-lethal effects, a dose-related increased frequency of heritable translocations was reported in male offspring of mice exposed to EtO. These findings demonstrated that EtO is highly effective in inducing genetic damage that is transmittable to subsequent generations.

Cumming et al. (Ex. 2–37) found that unscheduled DNA synthesis (a measure of repair of DNA damage) in the germ cells increased with increasing dose after male (101 x C3H) F1 hybrid mice were exposed to 300 or 500 ppm of EtO for 8 hours per day, 5 days per week for one week. Furthermore, EtO at doses of 600 and 800 ppm was found to inhibit the repair of DNA damage, as measured by a reduction in unscheduled DNA synthesis occurring after the first 4 hours of exposure. Following several exposure periods in a work-week type of exposure regimen, the capacity of germ cells to repair DNA damage decreased. Thus, EtO was found both to induce and to inhibit DNA repair, depending on dose and exposure schedule.

A study conducted by NIOSH (Exs. 4–60; 6–6; 6–16) was designed to explore the cytogenetic effects of EtO exposure in monkeys. Groups of 12 Cynomolgus monkeys were exposed by inhalation for 7 hours per day, 5 days per week for 24 months, to 0, 50, or 100 ppm EtO. Cytogenetic and spermatogenic evaluations of the monkeys were performed after 24 months of exposure. Peripheral lymphocytes were cultured and examined for chromosomal aberrations and sister chromatid exchanges (SCE); bone marrow was examined for the presence of micronucleated erythrocytes. NIOSH reported that exposure to EtO significantly increased the frequency of chromosomal aberrations in peripheral lymphocytes of monkeys in both

exposed groups; lymphocytes from animals exposed at 50 or 100 ppm showed approximately a 3-fold or 5.6-fold increase, respectively, in abnormal cells compared to the rate of aberrations found in unexposed animals. The aberrations observed by NIOSH included triradials and quadriradials. NIOSH noted that the presence of triradial and quadriradial aberrations in lymphocytes was also observed by Abrahams among EtO-exposed workers (Ex. 2–39), and the NIOSH results lend strong support to his findings. The mean number of SCE per cell was also significantly increased in EtO-exposed monkeys. The mean number of SCE per cell was 5.7 in the unexposed group, 10.2 in the group exposed at 50 ppm, and 16.8 in the group exposed at 100 ppm. There was also an increase in the number of micronuclei in polychromatic erythrocytes from the bone marrow of EtO-exposed monkeys (5 per 1,000 cells) as compared to controls (1 to 2 per 1,000 cells). NIOSH concluded that these results support the cytogenetic toxicity of EtO. The total sperm count and the percentage of motile sperm were reduced in monkeys exposed to either 50 or 100 ppm EtO when compared with controls, indicating an adverse effect on testicular function and thus on fertility.

Yager and Benz (Ex. 22) exposed groups of four male New Zealand white rabbits to 0, 10, 50, or 250 ppm of EtO by inhalation for 6 hours per day, 5 days per week for 12 weeks. Peripheral blood samples were taken before the start of exposure, at intervals during exposure, and up to 15 weeks after the end of exposure to measure SCE rates in peripheral lymphocytes. Lymphocytes taken from rabbits exposed at 50 ppm and 250 ppm showed statistically significant increases in mean number of SCE per cell (9.47 and 13.17, respectively, after 12 weeks of exposure) over lymphocytes from unexposed controls (mean number of SCE after 12 weeks was 7.26 per cell). Fifteen weeks after exposure ceased, the mean SCE levels in rabbits exposed to 50 or 250 ppm of EtO had declined but continued to remain above their baseline SCE levels. Mean SCE levels in the rabbits exposed to EtO at 10 ppm did not increase significantly above the baseline level. Yager and Benz concluded that EtO exposure results in a dose-related SCE effect.

### Studies of Occupationally Exposed Workers

Several studies have demonstrated that mutagenic effects similar to those seen in animals can occur among humans exposed to EtO. Ehrenberg and Hallstrom (Ex. 2–38) examined lymphocytes taken from the blood of seven workers who were accidentally exposed to high (otherwise unspecified) levels of EtO for about 2 hours, and who had experienced acute symptoms. Two of these workers required hospitalization due to respiratory difficulties. Eighteen months after this accidental exposure, the authors observed a greater number of chromosomal aberrations (breaks, gaps, and exchanges) in the exposed workers than in an unexposed control group of persons from the same factory ($p$ less than 0.05).

Pero and colleagues (Ex. 6–13) examined the effects of exposure to EtO on unscheduled DNA synthesis induced by N-acetoxy-2-acetylamino fluorene (2–AAF), a measure of repair of damage to DNA, and on chromosomal aberrations in the peripheral lymphocytes of women employees in a Swedish factory that manufactured disposable medical equipment. Seventeen EtO-exposed workers and 11 matched controls working at the same plant were examined. Group A consisted of 12 packers exposed to an average of 0.5 to 1 ppm EtO throughout each working day for 8 years. Group B was composed of 5 sterilizer technicians who had been exposed for 0.8 to 3.0 years at EtO concentrations of 5 to 10 ppm for 1 hour per day. Chromosomal aberrations were scored for both breaks and gaps. Significant increases in the number of total aberrations and the number of breaks were found for Group B alone and for Groups A and B combined, as compared to controls. 2–AAF-induced unscheduled DNA repair synthesis was inhibited significantly in Group A employees. Pero and coworkers verified these findings in *in vitro* studies of EtO-induced unscheduled DNA synthesis in human lymphocytes. Based on these tests of the effects of EtO *in vivo* and *in vitro*, Pero and colleagues reported that EtO can both induce and inhibit DNA repair and suggested that inhibited repair might play a role in the development of leukemia that has been reported among EtO-exposed workers.

In another study, Pero and coworkers (Ex. 6–12) examined the effects of EtO exposure on unscheduled DNA synthesis induced by 2–AAF in peripheral lymphocytes. Blood samples were obtained from five male workers, employed as sterilizing, packing, or truck-driving personnel, who were exposed to EtO at 8-hour TWA concentrations of 0.5 to 1 ppm for 0.3 to 5 years. Control samples were obtained from 12 men employed in a nearby facility where no known mutagens were in use; controls were matched with the exposed group for age and smoking history. A significant decrease in DNA repair proficiency was observed in the EtO-exposed workers when compared to controls. These results, when taken in conjunction with other study results, imply that EtO not only can induce genetic lesions but inhibits their repair. The two studies by Pero et al. indicate that exposure to EtO at average levels as low as 0.5 ppm can cause alterations in the genetic material of human cells, including significant increases in chromosomal breaks and aberrations.

The Pero studies (Exs. 6–12, 6–13) were criticized on the basis that the workers were exposed to methyl formate as well as EtO (Ex. 71). OSHA points out, however, that EtO was not mixed with methyl formate in the *in vitro* studies reported by Pero et al. (Ex. 6–13), which demonstrated similar effects of EtO. OSHA believes it is unlikely, therefore, that methyl formate elicited the *in vivo* effects.

Garry and coworkers (Ex. 6–14) studied a group of 15 employees who worked in an EtO sterilization facility. Clinical symptoms of the upper respiratory tract and central nervous system had been reported periodically by many of these employees. Air samples taken over a period of one-half hour or more revealed a maximum EtO concentration of 36 ppm at a distance of 15 feet from the sterilizer. Concentrations of EtO greater than 1,500 ppm during the purge cycle were reported near the open drain. Measured TWA concentrations of EtO were reported to be less than 50 ppm. Four of the employees reporting symptoms a significantly increased number of sister chromatid exchanges at 3 weeks and 8 weeks after their last known exposure to EtO as compared to a group of 12 employees who worked in an adjacent operating room. Another group of 8 EtO-exposed workers reporting fewer clinical symptoms showed a significant increase in the number of SCE as late as 9 weeks after their last EtO exposure.

A company using EtO in the manufacture of health care products reported the results of cytogenetic evaluations of 75 workers with potential EtO exposure at nine facilities (Ex. 2–39). A group of 37 workers with no known EtO exposure, who were employed at one of the facilities, served as controls. Exposure data indicated that the facilities had complied with the OSHA EtO PEL of 50 ppm as an 8-hour TWA, although there were instances when short-term exposures exceeded 75 ppm, the NIOSH recommended short-term limit at that time. Routine physical

examination showed no unusual clinical findings among EtO-exposed persons. However, the number of chromosomal aberrations was significantly increased in peripheral lymphocytes from exposed workers when compared to the number in the unexposed group. Chromosomal aberrations in exposed workers included quadriradials, a rare form of aberration. The frequency of sister chromatid exchanges was also significantly increased in exposed workers when compared to the unexposed group.

Shortly after these results were reported, Johnson & Johnson initiated a study to determine whether employees potentially exposed to EtO showed more chromosome changes than employees thought to be unexposed. Johnson & Johnson submitted results from the 24-month Pilot Research Chromosome Study of workers exposed to EtO at three facilities (Ex. 4–17, Ex. 137 A, B, C). The worksites selected were chosen on the basis of potential employee exposures to EtO prior to September 1980, with one site (Plant III) representing high exposures (5–200 ppm, 8–hour TWA), another site (Plant II) representing moderate exposures (1–10 ppm, 8–hour TWA), and the third site (Plant I) representing low exposures (less than 1 ppm, 8-hour TWA). Study participants wer employed in sterilizing areas and were classified according to whether their potential exposure to EtO was high or low for their particular worksite. Controls were randomly selected from other areas of each plant and matched by age and gender with exposed workers; in addition, an outside (community) control group was selected for the study conducted at Plant III (the high exposure worksite). Peripheral blood samples were collected at the start of the study and at 6–, 12–, and 24–month intervals. Chromosome studies included assays of the frequency of sister chromatid exchanges (SCE) and chromosomal aberrations. Study participants were interviewed to obtain information on work history, medical history, demographic data, and exposure to other agents considered to be potential confounders of a chromosome effect.

Preliminary results of initial testing and 6-month follow-up (Ex. 4–17) indicated that at Plants II and III a dose-related trend was observed for increases in SCE. All use of EtO at Plant III was discontinued after the first survey. In spite of the cessation of exposure at this plant, there was no significant reduction in SCE scores by the time of the 6-month follow-up study. Dose-related increases in the frequency of complex chromosomal aberrations were also observed at this plant (III). No significant differences in SCE scores were noted between potentially exposed and control groups at Plant I (the low exposure plant). Workers at Plant I were not sampled at the 6-month period.

In August 1983, Johnson & Johnson submitted to OSHA the 24-month SCE Report of the Pilot Research Chromosome Study, which completed the analysis of SCE data through the 24–month follow-up period (Ex. 137A). The aberration data through the 6-month follow-up period were also submitted (Ex. 137C).

At Plant I, where exposures were estimated to be below 1 ppm, when the results were adjusted for smoking habits, gender, and age, SCE levels for the high-exposure group were significantly higher than those of worksite controls at the initial examination only; there were no significant differences in adjusted SCE levels between the high-exposure, low-exposure, or control groups at Plant I at any of the other survey periods, nor were there differences in the unadjusted SCE level at this worksite at any survey period.

At Plant II, where exposures were estimated to range between 1 and 10 ppm, the ajusted SCE levels for the high-exposure group were significantly higher than those of worksite controls and the low-exposure group at the initial and 12-month surveys but were not significantly different at the 6-month or 24-month surveys.

Adjusted SCE levels at Plant III for both the high-exposure and low-exposure groups were significantly higher than worksite control levels at the initial and 6-month surveys. In addition, a clear dose-response trend was evident in the findings for this worksite. Although the use of EtO was discontinued at Plant III after the initial chromosome survey, adjusted SCE levels among the high-exposure group remained significantly higher than worksite control and community control levels throughout the 24-month testing period. Community controls were tested at the 6- and 24-month follow-up periods. SCE levels for the low-exposure group remained significantly higher than those of worksite controls at the time of the 6-month survey, but not at the 12- or 24-month survey; they were significantly higher than community controls at both the 6-month and 24-month follow-up.

Johnson & Johnson (Ex. 137A) concluded that an increase in the number of SCE in human peripheral lymphocytes is associated with EtO exposure and that the occurrence of this effect is related to exposure levels. Johnson & Johnson considers the persistence of high SCE levels among employees at Plant III, where exposures were highest for the three plants studied, to be the most striking observation of its study. It also concludes from results at Plant I that environmental control of EtO can prevent SCE levels that are above baseline even among workers in "high risk" jobs such as sterilizer operators.

Results of the 6-month aberration analysis (Ex. 137C) for this study are similar to those for the initial study. However, the analysis of aberration data for the 12- and 24-month follow-up periods had not been completed by Johnson & Johnson by the close of the rulemaking record.

Johnson & Johnson also prepared a summary of a chromosome surveillance project (Ex. 137D) conducted at three other plants (plants A, B, and C) independent of the Pilot Research Chromosome Study. For this study, historical EtO exposure information was collected from 1977 until the date the first blood samples were drawn for chromosome testing in 1981. These exposure histories include data from 8-hour TWA personal monitoring samples, short-term exposure samples, and exposure data collected for each employee on the date of blood sampling. The high potential EtO exposure group at Plant A had an increased frequency of SCE when compared to controls. The low potential exposure group did not have an increased frequency of SCE. The 8-hour average exposure levels on the date of blood sampling appear to be virtually the same for the high and low exposure groups. The high exposure group employees appear to have experienced higher short-term peak exposures (median short-term peak of about 9 ppm) than did the low potential exposure group (median short-term peak of about 2 ppm), based on available data for short-term exposure levels for Plant A between 1976 and 1981.

The effect of EtO exposure on SCE levels in humans was also studied by Yager and coworkers (Ex. 4–10, 6–15). The study population consisted of 14 sterilizer operators employed in two hospitals. Short-term breathing zone EtO exposures for these workers were rigorously characterized. EtO exposure for each worker and for each task was expressed as an estimated cumulative dose for the 6-month study period, on the basis of results of breathing zone samples and estimated EtO uptake. The cumulative EtO doses of the 14 workers studied ranged from 0 to 744 mg. For 30 observations of short-term exposure, the

mean concentration of EtO was found to be 82 ppm averaged over 3.5 minutes. Three sterilizer operators with cumulative doses of 0 mg were subsequently included in the control group. Control subjects were selected from clerical and administrative staff of the hospitals and two nearby research institutions. Exposed and control subjects were matched for smoking habits. Linear regressions of SCE with dose showed a positive slope and intercept (Ex. 6–18). The mean frequency of SCE per cell was significantly higher in workers with cumulative EtO doses exceeding 100 mg (10.69 SCE per cell) than for workers with cumulative doses of less than 100 mg (7.76 SCE per cell) or for controls (7.56 SCE per cell). Moreover, the emergence of a cell population with very high frequencies of SCE was evident in the high exposure group when the frequency distributions of pooled cells from the two worker populations were compared. This observation was analogous to the cell frequency distributions seen among highly exposed groups in the rabbit study reported by Yager and Benz (Ex. 22). Yager suggested that this shift in the SCE distribution may be attributable to the effect of cumulative unrepaired lesions in the non-dividing population of long-lived circulating lymphocytes.

The mutagenic potential of EtO and the relative importance of the results of investigations concerning its mutagenic potential received numerous comments during the hearings. There was little dispute that EtO is a mutagen and that the investigations indicated that this material has a genotoxic mode of action, that is, it directly affects the DNA.

For example, Leon Golberg testified for the EOIC with regard to EtO's mutagenic effects:

> In view of the alkylating properties of ethylene oxide it is not surprising that it gives rise to gene mutations and chromosomal aberrations in very short time test systems. Genotoxic effects observed in vivo include dominant lethality and inheritable translocations (Tr. 487).

Comments centered around three related issues. These are: (1) The exposure levels and durations that are associated with EtO-induced cytogenetic effects in humans, (2) the relationship between induction of chromosomal aberrations or SCE and health impairment, and (3) the usefulness and necessity of routine cytogenetic testing for EtO-exposed workers (see Medical Surveillance discussion in the Summary & Explanation Section). Arguments pertaining to the first two issues are discussed in the following sections.

Exposure Levels Associated With EtO-Induced Human Cytogenetic Effects

Testimony and comments received on the issue of the cytogenetic dose-response relationship and the relevance of the results of these studies to the promulgation of a specific PEL focused on the human studies conducted by Yager and coworkers (Ex. 6–15) and by Johnson & Johnson (Ex. 137). After a thorough review and evaluation of this evidence, OSHA finds that these studies indicate that chromosomal aberrations and SCE are induced in workers exposed to EtO levels between 1 and 10 ppm as an 8-hour TWA.

In reviewing the Johnson & Johnson study, Marvin S. Legator, testifying for OSHA, stated:

> The study conducted by Johnson & Johnson will probably rank as one of the most well conducted investigations in this area. The protocol is excellent, confounding factors were controlled, and an expert committee was convened to consult on this investigation. . . . The significance of this well conducted study can be appreciated better when one realizes that the pronounced effect was seen with a limited population. In one of the three plants studied, eight workers were considered in the high exposure, five in the low exposure and eleven in the control. A dose-related response and persistent effect was found at a TWA of 1–10 ppm. I know of no other chemical which, in a well conducted study, a persistent effect was detected at this low a concentration (Ex. 21–2).

**Relationship Between Human Cytogenetic Effects and Health Impairment**

Concern over the application of mutagenic investigations and/or testing centered on the ability of the Agency to use the mutagenicity data available to determine occupational risk in terms of current or subsequent disease. Legator testified as follows:

> In the area of toxicology, some of the most serious adverse health outcomes are those induced by chemicals that cause genetic damage. Following the initial chemical exposure, the induced genetic lesion may lead to irreversible, transmissible damage. The effects on somatic (body) cells include cancer, cellular senescence, behavorial anomalies (if neural dysfunction is involved), among other conditions. The effects of genotoxic agents on germinal cells may include aspermia and oligospermia, spontaneous abortions, congenital anomalies, diseases with chromosomal anomalies, and multifactoral conditions (Ex. 21–2).

Although at the present time, quantitative predictions of the human disease that may be induced by chromosomal or mutagenic changes cannot be made, it is clear that chromosomal abnormalities indicate an adverse effect on DNA. Furthermore, as a biological monitor, chromosomal changes indicate that changes have occurred in the genetic material of the cells and hence serve as an indicator of systemic tissue exposure and response in the DNA of the cells. Evidence in the record indicates that, in humans, changes in the genetic material and alterations in its repair occur at average EtO exposure concentrations of 1 ppm or less (Exs. 4–10, 6–12, 6–13, 6–15 173–D).

Comments on the use of the results of cytogenetic studies as a basis for promulgating a specific PEL centered on OSHA's ability to determine the risk of disease associated with EtO-induced cytogenetic effects. OSHA believes that the cytogenic effects of EtO exposure are of serious concern, particularly when viewed in combination with its carcinogenic and reproductive effects. Nonetheless, the Agency has determined that at the current state of scientific knowledge, the cytogenetic data cannot be used to quantify the excess risk of disease caused by EtO exposure.

Several commenters (Exs. 11–74, 11–135, 66, 141–A, 150, 153) questioned the nature of the health impairment resulting from cytogenetic changes associated with EtO exposure. On this issue, Johnson & Johnson commented that:

> (T)here is agreement in the scientific community that (correlations between chromosome changes and human health effects) have *not* been established with regard to ethylene oxide specifically, and that in general the mechanism of cancer induction has *not* been defined (Ex. 150).

Speaking for the EOIC, Julian Preston of Oak Ridge National Laboratory testified that increased frequencies of SCE or chromosomal aberrations "have not been associated with any subsequent health effects, such that they are not quantitative predictors of adverse health effects" [Tr. 1009]. Janice Yager commented that:

> A sister chromatid exchange (SCE) is the visual manifestation of a four-stranded exchange in the DNA. The number of such exchanges in eukaryotic chromosomes has been shown to be increased upon *in vitro* or *in vivo* exposure to agents that damage DNA by forming covalent adducts or distorting the bases by intercalation or formation of dimers. Many such compounds are known mutagen—carcinogens * * *. An association between SCEs and chronic health effects such as cancer has not been established. However, the biological significance of increased exchange rates may be of importance since SCEs appear to reflect perturbations during the synthesis phase of the cell cycle, and further, increases in SCE rates occur upon exposure to many mutagen/carcinogens

which also increase response in other tests for DNA damage (Ex. 2–13].

Regarding the uncertainty associated with predicting specific health outcomes from the appearance of SCE or chromosomal aberrations, Marvin Legator testified as follows:

(E)ven though the (correlation between chromosome abnormalities and cancer in experimental animals) is extremely good we are talking about the early stage in a multi-stage process. Therefore, we don't know the final, clinical outcome. We simply haven't got that data in front of us.

What we do know is, given a chemical that causes chromosome abnormalities in any biological system—this is a prime indicator of exposure to a carcinogen * * * if we're talking about ethylene oxide * * * not only do we have the animal data, but we show that this compound is also functioning and biologically active in man. And that kind of takes away a lot of the uncertainties in extrapolation, because we have biological effects in man at the cytogenetic level * * * multiple studies with ethylene oxide, where indeed we have had effects below ten parts per million.

I can't emphasize to you strongly enough * * * how unique this is. Again, I know of almost no chemical that would cause that effect at that low level (Tr. 68)

On the basis of the evidence in the record, OSHA concludes that EtO exerts a persistent and potent cytogrenetic effect in humans as well as in experimental mammalian and non-mammalian systems. EtO has been found to interact directly with DNA, most likely by an alkylation reaction. Cytogenetic findings in humans exposed to EtO have included unscheduled DNA synthesis and deficiencies in DNA repair, sister chromatid exchanges, and chromosomal aberrations, including quadriradials, a relatively rare aberration. Moreover, the mutagenic and cytogenetic findings described above support and strengthen OSHA's conclusion that EtO is a carcinogen.

*C. Reproductive Effects*

Experimental Studies

Four studies have assessed the reproductive and teratogenic potential of EtO in rodents. Snellings and coworkers (Exs. 2–23, 54) exposed groups of 30 male and 30 female Fischer 344 rats to 100, 33, or 10 ppm of EtO vapor for 6 hours per day, 5 days per week, for 12 weeks prior to mating. Males and females were exposed 6 hours per day, 7 days per week during the 2-week mating period, after which the females were exposed for 6 hours a day, 7 days a week from day 0 through day 19 of gestation. Two air-exposed control groups were used. The median number of pups born per litter in the 100 ppm exposure group (4) was significantly lower ($p < 0.001$) than the median number for either control group (9 or 10). The median number of implantation sites per pregnant female in the 100 ppm exposure group (6) was significantly lower than the median of 10 or 11 for the control groups. The percentage of females that became pregnant and the percentage of males proven fertile for the 100 ppm exposure group were lower than those for the control groups, but these differences were not statistically significant. No treatment-related effects were noted among dams or their litters in the 33 or 10 ppm exposure groups.

Hackett et al. (Ex. 6–10) exposed 50 female Sprague-Dawley CD rats to 150 ppm of EtO for 7 hours per day, 5 days per week, for 3 weeks prior to mating. After the mating period, the pregnant females were exposed to the same regimen through the 16th day of gestation. Two other previously unexposed groups of pregnant rats were exposed to 150 ppm of EtO from day 7 through day 16 of gestation, or from day 1 through day 16 of gestation. There was a significant increase in fetal deaths (resorptions) in the group receiving both pregestational and gestational exposure when compared with either of the groups receiving gestational exposure alone or the control groups. Ossification of fetal skulls and sternebrae was significantly reduced among EtO-exposed rats compared with non-exposed rats.

In the third study (Ex. 55), groups of 17–22 pregnant Fischer 344 rats were exposed to 100, 33, or 10 ppm of EtO vapor for 6 hours per day on days 6 through 15 of gestation. No significant differences were found between EtO-exposed groups and control groups in the number of dead fetuses per dam or the number of resorption sites per dam. However, there was significant weight reduction among fetuses in the 100 ppm exposure group compared with controls. The percentages oflitters and of fetuses in the 100 ppm exposure group having variations in ossification of distal thoracic vertebral centra were elevated compared with controls, but the difference was not significant. No gross abnormalities were noted among fetuses in any group. The authors interpreted the variation in ossification and depressed fetal weight in the 100 ppm group to be consequences of maternal or embryonic toxicity, not teratogenic effect.

LaBorde and Kimmel (Ex. 2–24) administered 75 or 150 mg/kg intravenously to pregnant CD–1 mice at one of four periods during gestation: days 4–6, days 6–8, days 8–10, or days 10–12. Mice administered the 150 mg/kg dose showed signs of toxicity, and a significant reduction in mean fetal body weight was noted for all four treatment periods compared with controls. A significant increase in the number of malformed fetuses per litter was observed among mice treated during days 6–8 or days 10–12 of gestation. The majority of defects involved the thoracic and cervical skeleton.

Two studies are available that examined the teratogenic potential and reproductive toxicity of EtO in rabbits. Hackett and coworkers (Ex. 6–10) exposed pregnant New Zealand white rabbits to 150 ppm of EtO by inhalation for 7 hours per day from day 7 through day 19 or day 1 through day 19 of gestation. No evidence of maternal toxicity, fetal toxicity, or teratogenicity was detected in exposed rabbits.

In another study conducted by Jones-Price and coworkers (Ex. 6–9), artificially inseminated New Zealand white rabbits were administered intravenous doses of 9, 18, or 36 mg EtO/kg/day on day 6 through day 14 of gestation, or doses of 18 or 36 mg/kg/day on day 6 through day 9 of gestation. Fifteen to 22 dams per group were evaluated at sacrifice on day 30. Among groups treated on day 6 through day 9 of gestation, maternal toxicity was minimal and no evidence of fetal toxicity or teratogenicity was observed. Administration of EtO on day 6 through day 14 of gestation resulted in a dose-related decrease in maternal body weight gain and gravid uterine weight. There were significant dose-related increases in the percentage of resorptions and dead fetuses per litter, and decreases in average live litter size. No evidence of a teratogenic effect was observed at any of the doses administered.

The studies described above demonstrate that at doses sufficient to cause signs of materials toxicity, EtO is fetotoxic in rabbits, mice, and rats, and teratogenic in mice, when administered during the gestation period. At doses below those that cause maternal toxicity, EtO is fetotoxic in rats when both males and females are exposed prior to and during mating, followed by exposure of females during the gestation period (Ex. 2–23). In addition to the fetotoxic effect of EtO , OSHA belives that the study by Snellings and coworkers (Ex. 2–23) indicates an effect on the male reproductive capacity. This is supported by studies (discussed in the section on Mutagenic and Cytogenetic Effects) showing the induction of dominant-lethal effects to EtO-exposed rats (Exs. 2–35, 2–36), increased levels of unscheduled DNA synthesis in the

testes of exposed male mice (Ex. 2–37), and reduced sperm count and motility in EtO-exposed monkeys (Ex. 6–6). Furthermore, the OSHA analysis (Ex. 6–18) of the Bushy Run one generation rat reproduction study (Exs. 2–33, 54) indicated that the adverse reproductive responses could be correlated with specific EtO exposure levels.

In its "Health Assessment of Ethylene Oxide" (Ex. 47), the EOIC emphasized two important facts with regard to EtO reproductive effects: 1. Evidence from a number of experimental studies indicates that EtO does reach and penetrate into the reproductive organs (Appelgren et al., 1977; Ehrenberg et al., 1974; Cumming et al., 1981; Sega et al., 1981). 2. EtO does cause damage to the gonads including testes and sperm (Hollingsworth et al., 1956; NIOSH 1982; Lynch et al., 1983; Embree et al., 1977; Cumming and Michaud, 1979; Generoso et al., 1980; Sega et al., 1981).

Considered as a body of evidence, OSHA believes that these experimental studies strongly indicate that EtO presents a potential reproductive hazard when males or females are exposed.

Epidemiologic Studies

Comment and testimony concerning the issue of EtO-induced reproductive toxicity focused primarily on a report published by Hemminki and coworkers (Ex. 6–7), which suggests that women exposed to EtO may be at an increased risk of spontaneous abortion. Postal questionnaires were sent to supervising nurses at all general hospital (about 80) in Finland to identify female workers using EtO, glutaraldehyde, or formaldehyde to sterilize medical instruments. Six months later, questionnaires were sent to all hospital staff engaged in sterilizing activities and to an equal number of unexposed nurses (controls) chosen by supervising nurses from nurse auxiliaries in the same hospitals. The response rate was greater than 90 percent for both groups. Information collected in the questionnaire permitted the researchers to adjust for age, parity (number of live-born children), decade of reported pregnancy, coffee and alcohol consumption, and smoking habits using a linear logistic regression model. The total number of reported pregnancies among the sterilizing staff and controls was 1,443 and 1,179, respectively.

No significant difference in crude spontaneous abortion rate was detected between sterilizing staff and controls (11.3 percent versus 10.6 percent). However, when pregnancies of sterilizing staff were stratified according to employment status at time of conception, significant increases ($p < 0.001$) in both crude and adjusted spontaneous abortion rates were observed among sterilizing staff who were exposed during pregnancy compared with sterilizing staff who were not exposed during pregnancy (15.1 percent versus 4.6 percent, adjusted rates). The controls had an intermediate adjusted spontaneous abortion rate of 10.5.

The effects of exposure to different sterilizing agents on the frequency of spontaneous abortion were analyzed. Although the number of pregnancies in exposed women was relatively small for some of the exposure categories when compared with the number of pregnancies in non-exposed women, significant increases in the spontaneous abortion rates were observed for the following categories: (1) Pregnancies among women exposed to EtO with and without other agents, (2) pregnancies among women exposed to EtO or glutaraldehyde, and (3) pregnancies among women exposed to EtO alone. (In the report, the category "ethylene oxide (with glutaraldehyde)" should read "ethylene oxide (or glutaraldehyde)". Correction explained in Ex. 6–25). No significant increases in adjusted spontaneous abortion rates were found among women exposed to glutaraldehyde (with and without other agents), formaldehyde (with and without other agents), or glutaraldehyde alone.

An examination of the trend in spontaneous abortion rates covering the period 1950–1981 revealed a significant increase in those rates for all pregnancies in the later decades. This result was interpreted by Hemminki and coworkers as being due perhaps to aging of the population or a potential bias resulting from the failure of women to recall spontaneous abortions that occurred 20–30 years ago. There appeared to be a slightly lower adjusted rate of spontaneous abortion among non-exposed sterilizer operators than among controls for each decade covered by the study. This difference was not explained by the authors, but may have been related to employment status, as many of the unexposed sterilizer operators were not employed during unexposed pregnancies, whereas many of the nurse auxiliaries (controls) were employed during pregnancies.

When the authors examined data on the pregnancies of the sterilizing staff and controls from the Finnish hospital discharge register, covering the period 1973–1979, they found a significantly higher rate of spontaneous abortion among EtO-exposed staff (22.6 percent) compared with the rate for controls (9.2 percent). The spontaneous abortion rate for non-exposed sterilizing staff was 9.9 percent. The ratio of the number of spontaneous abortions to the number of live births was also significantly higher among EtO-exposed staff (33.3 percent) compared with controls (11.8 percent). Since spontaneous abortion is known to affect the outcome of future pregnancies, data on one EtO-exposed woman and two control-group women who had had two or more spontaneous abortions were eliminated from the analysis (Ex. 6–25). After this adjustment, the spontaneous abortion rates were 17.2 percent for EtO-exposed women as compared with 8.2 percent for controls. The findings from the hospital register thus appear to corroborate the findings based on the postal questionnaire and suggest that a prior history of spontaneous abortion does not significantly affect the trend seen in the total register data set.

Exposures to EtO between 1976–1981 in Finnish hospitals were estimated to be 0.1 to 0.5 ppm TWA, with the highest recorded peak reaching 250 ppm. Exposure levels of other sterilizing agents were not reported.

The investigators had no measurements of exposure concentrations before 1976, but stated that no major changes in technology or instrumentation in these sterilizing units have taken place since 1964 when the present EtO gas mixture was introduced. However, on the basis of information obtained from supervisors of sterilizing units, they believed exposures to EtO may have been higher in the past because less information was available on EtO's harmful effects, and less caution, was taken in its use.

In response to comments on the appropriateness of the comparison group and the need for further age adjustment, Hemminki et al. performed an additional analysis of the interview data (Ex. 29), comparing only those pregnancies that began during hospital employment for both women exposed to sterilizing agents and unexposed nursing auxiliaries from the same hospitals. Data were age-adjusted by 5 year age groups. The rate of spontaneous abortion was found to be highest for pregnancies with exposure only to EtO and was significantly different ($p$ less than 0.05) from the rate for controls working during pregnancy. In addition, Hemminki et al. found, using hospital discharge data, that the rate of spontaneous abortion for controls working in hospitals during pregnancy was not significantly different from the rate for all controls. These authors reiterated that in various tabulations, exposure to EtO, rather than to other agents, correlated with the highest rate

of spontaneous abortions. Hemminki et al. further addressed criticisms regarding potential sources of bias and concluded that none of these could explain the consistent increases in rate of spontaneous abortion with exposure to EtO.

Several concerns over possible limitations of the Hemminki study surfaced during the hearings and comment period. Much of this testimony was the result of a visit to Dr. Hemminki by representatives of the EOIC and HIMA, which was conducted to examine supplemental data (Exs. 63, 64). Concerns expressed by commenters fall generally into three categories. These include: (1) The possibility that participants in the study knew of its purpose, resulting in biased selection of cohort members and reporting of pregnancy outcomes, (2) inadequate control of confounding factors relevant to the induction of spontaneous abortion, and (3) the lack of industrial hygiene data that would relate exposure levels and durations to spontaneous abortion rates. Testimony and comments received by OSHA on these issues are summarized in the following sections.

Control of Potential Recall and Reporting Biases

Several commenters (Exs. 11–74, 11–135, 61, 67, 141–E, 141–E–2, 141–E–3, 152, 153, Tr. 622, Tr. 689) expressed the opinion that the methods used by Hemminki and coworkers could have resulted in a biased selection of study participants as well as a biased recall of pregnancy outcomes. On the recall bias issue, Susan Austin of the EOIC commented in a letter to the editor of the British Medical Journal:

> If the questionnaire stated that the study was investigating sterilization gases, this could have introduced a stimulus for differential reporting of adverse outcomes between controls and sterilizers and * * * between the sterilizers' exposed and unexposed pregnancies. The direction of the bias * * * would be consistent with the observed excess of spontaneous abortions among exposed pregnancies. Although the hospital discharge data suggest that the observed elevation in abortion rates may be real, the data shown in Table 3 (of the Hemminki study) were crude, rather than adjusted rates and were based on smaller numbers of pregnancies than encompassed by the questionnaire. (Ex. 62, Attachment II.)

This comment was reiterated by the EOIC in its written assessment of the Hemminki study (Ex. 63).

Similarly, Otto Wong and Robert Morgan of Environmental Health Associates stated in a report to the EOIC that:

> Once the woman received a questionnaire, she might be more likely to report reproductive failure if she understood the purpose of the study * * * and that she was exposed (Ex. 67).

However, two other commenters suggested in letters to Austin that the extent of any recall bias is minimal. Jennie Kline of Columbia University pointed out that, because the data from the hospital discharge register are consistent with the questionnaire data, "* * * it seems unlikely that the increased risk of abortion among pregnancies exposed to ethylene oxide compared to those unexposed is owed in any large part to differences in recall" (Ex. 61). Bernard Pasternack of New York University School of Medicine stated that:

> (After adjustment for decade of pregnancy) the time-dependent recall effect appeared to be roughly equivalent for exposed sterilizers, unexposed sterilizers, and controls * * *. A selective recall bias may have existed to some extent as many of the non-exposed sterilizers were unemployed during their first pregnancies. The degree to which employment status affected recall or awareness of miscarriages would determine the importance of this factor. (Ex. 141E–2).

In response to the criticism that bias may have been present because many nonexposed sterilizers were unemployed at the time of their first pregnancies, Hemminki conducted a new analysis of the questionnaire data, including only those pregnancies that had occurred during hospital employment (Ex. 29). Spontaneous abortion rates, adjusted by 5-year age groups, were 20.4 percent among women exposed to EtO alone, as compared with 11.3 percent among non-exposed hospital workers ($p < 0.05$).

From this analysis, Hemminki concluded, "* * * we are unaware of any such bias that could explain why exposure to ethylene oxide rather than to glutaraldehyde or formaldehyde would correlate with an increased rate of spontaneous abortions * * *" (Ex. 29).

On the issue of the potential for selection bias among supervising nurses who were requested to identify control and sterilizer cohort members, Susan Austin commented as follows:

> [Dr. Hemminki] states that the covering letter to supervising nurses specified that the control group was to be selected preferably, from one clinic, which would inhibit them from selecting women based on a knowledge of their reproductive history. (Tr. page 725, lines 12–13). The actual wording of the questionnaire does not bear this out. It states: "For the control group, we wish you to choose assistant nurses who do not work in equipment maintenance, X-ray or operating rooms. There should be the same number of assistant nurses as there are of the individuals studied. This group could include, for example, all assistant nurses who work in a certain department. We hope that you will decide in advance (without consulting with the individuals in question) which assistant nurses are chosen for the study." These instructions permit a great deal of flexibility on the part of the supervisory nurses on the actual selection method which they could use. It does *not* specify how controls *must* be selected and therefore introduces a strong possibility that selection bias may have occurred. Dr. Hemminki further asserts that this letter to the supervisory nurses "did not give any specific information to the supervising nurses of the exact idea of the study" (Tr. page 727, lines 9–13). However, the letter does in fact explain very clearly the specific purpose of the study. To quote: "The purpose of the second part of our study is to concentrate on the possible harmful effects connected with the use of ethylene-oxide, glutaraldehyde and formaldehyde. For this, we are asking for information directly from those individuals who use these substances and from their control group." Therefore, bias could have been introduced as a result of this knowledge (Ex. 141–E).

In responding to this criticism, Hemminki testified as follows:

> * * * I should like to emphasize that the hospitals in Finland are fairly large. There are hundreds of nursing staff for each supervising nurse * * * It requires very much imagination to think [that] the supervising nurses would be aware of the pregnancies of all their staff * * * These matters are not openly discussed in Finland * * *. So, on this point I would say that * * * chances for selection * * * would be very minimal (Tr. 726).

Pasternack agreed with this assessment, commenting that:

> The authors rightfully pointed out the fact that (selection bias) was not likely to be a factor. As mentioned earlier, each supervisor had an excess of 100 employees, making contacts infrequent. Besides, it is apparently a custom in Finland not to openly discuss matters pertaining to pregnancies and miscarriages at work (as per Dr. Hemminki's testimony). In addition, the exposing agent information was obtained six months prior to the questionnaire distribution (Ex. 141E–2).

Kline commented that:

> Although the introductory paragraph to the questionnaire indicates a focus on the effects of exposure to instrument caretaking gases on fertility and health of offspring, response rates were similar and high for the sterilizing workers and comparison workers. We cannot, however, exclude the possibility that the reproductive experiences of these women who declined to complete the questionnaire differed for sterilizing workers and comparison workers. The somewhat greater proportion of women who had been pregnant at least once among the sterilizing workers who responded to the questionnaire than among the comparison workers who

responded is consistent with this possibility. With the data at hand, it is unclear whether or not response rates varied with exposure status (including sterilizing agent) and reproductive experiences for women who had been pregnant at least once (Ex. 61).

OSHA agrees with the comments and testimony of Hemminki, Pasternack, and Kline. Although, because of the wording of the letters to supervising nurses and of the questionnaires, there was a potential for recall and selection biases in the Hemminki study, it is unlikely that these biases significantly affected the results. This is suggested by the results obtained by Hemminki and coworkers . from the hospital discharge register, which is relatively free of such biases, indicating that exposure to EtO is associated with an increased risk of spontaneous abortion. In addition, if significant recall and selection biases were present, one would expect that they would be reflected similarly in the adjusted spontaneous abortion rates among pregnant women exposed to glutaraldehyde or formaldelhyde. This is, in fact, contrary to the findings of Hemminki and coworkers.

Control of Factors Related to Spontaneous Abortion

Several commenters (Exs. 11–74, 11–135, 63, 64, 65, 67, 141C, 141E–2, 152, 153) expressed the opinion that there was inadequate control of confounding factors in the study by Hemminki and coworkers. Confounding factors that were discussed include age, prior reproductive history, and smoking and drinking habits. For example, the EOIC assessment of the Hemminki study reported as follows:

Although the rates reported in Tables I and II (of the Hemminki report) are adjusted for a number of variables including age, parity, year (or decade) of pregnancy, coffee drinking, smoking status and alcohol consumption, the adjusted rates for the two non-exposed groups continue to reflect considerable disparity. This could suggest that the adjustment procedure used was inadequate. The age control is of questionable usefulness given that 80 to 90 percent of all pregnancies fell within the 20 to 34 years of age group, and within this category, no further age adjustment was made. No control for employment status or history of previous spontaneous abortion was included and controls for alcohol, smoking and drinking habits related to a woman's "current" habits and not to her habits at the start of each pregnancy. These considerations suggests that disparities in the distribution of risk factors between groups may not have been completely corrected. (Another) concern is that this study focuses on "pregnancies" rather than "women" * * *. The analyses presented in the study require the assumption that the pregnancies are independent observations, which they are not (Ex. 63).

On the issue of appropriate control of the effects of age on reproductive outcome, Susan Austin added for the EOIC that:

The differential age distribution between the exposed and unexposed pregnancies of the sterilization workers is reported to have been "rather small" by Dr. Hemminki (Tr. page 767, lines 8–13). Table A–6 of the Trip Report (OSHA Ex. 64) contradicts this assertion * * *. When ethylene oxide exposed pregnancies are compared to the non-exposed sterilant workers pregnancies, the difference in maternal ages is quite marked. Sixty-four percent (64.5%) of the EtO exposed pregnancies were [among women] greater than 30 years of age compared with only nineteen percent (19%) of the non-exposed pregnancies. Such a large difference in maternal age distributions calls into question the adequacy of the method used to control [f]or age in this study (Ex. 141E).

The disparity between spontaneous abortion rates of non-exposed women and controls was also cited by the EOIC (Ex. 63) as evidence of improper control of age and other confounding factors. On this point, Kline responded as follows:

The Ethylene Oxide Industry Council critique points out that the frequency of abortions among the unexposed pregnancies of the sterilizing workers is lower than that among the pregnancies of the control group. Several possible sources for this disparity are suggested including insufficient analytic control of year of pregnancy, maternal age and parity, and differences in employment status (working/not working) during pregnancy. With regard to the conjecture that there was insufficient analytic control, the data at hand do not permit a full evaluation. I think it unlikely that differences in the distributions of pregnancies over time explain the disparity between unexposed and control pregnancies because Figure 1 (of the Hemminki study) suggests that the disparity has been relatively constant over time * * *. With respect to maternal age, in most populations the rates of spontaneous abortion between ages 21 and 34 years are fairly constant, increasing by about 25% during the interval. Thus it seems unlikely that a disparity between the unexposed pregnancies of sterilizing workers and controls is due to inadequate analytic control of maternal age. Parity was analyzed as a continuous variable, and *thus any disparities between unexposed pregnancies to sterilizers and controls that might exist have probably been controlled for adequately. We should note that these three factors undoubtedly vary together and so that even if there was inadequate control of all, the effects would be unlikely to be additive (emphasis added) (Ex. 61).*

Criticism of inadequate control for lifestyle and prior reproductive or medical history focused on the fact that information only on current health was sought on the questionnaire. As discussed by Austin, "* * * the factors smoking, drinking and coffee consumption, could not have been well controlled as they reflected the womans' [sic] habits at the time she answered the questionnaire—not at the time of her pregnancy" (Ex. 141E).

The lack of control for prior medical history was discussed by Shirley R. Andersen of H. W. Andersen Products, Inc.:

The Finnish questionnaire failed to collect crucial information concerning maternal health. Examination of the etiology of spontaneous abortions emphasizes the importance of this factor * * * maternal chronic diseases which affect the outcome of pregnancy (e.g., hypertension, diabetes, heart or renal disease), drug therapy or use of narcotics, and family history of illness * * * intercurrent illness during pregnancy (e.g., toxoplasmosis, herpes simplex or mycoplasma infections) and blood (ABO) incompatibilities. No sections of the Finnish questionnaire addressed these factors, which exert more influence than use of tobacco or alcohol, on the outcome of pregnancy (Ex. 11–135).

OSHA agrees that these factors may influence the outcome of pregnancy. However, many of the illnesses listed by Dr. Andersen are associated with late pre-natal and post-natal adverse effects such as low birth weight and neonatal morbidity and mortality.

Their influence on the rate of spontaneous abortion is not well defined. Second, the purpose of including comparison groups in the study is to control, via the design of the study, for other factors which might influence pregnancy outcome, and which could be assumed to be distributed randomly among EtO-exposed and unexposed groups of women.

A comment by Austin was typical of comments received on the issue of inadequate control for prior reproductive history:

Dr. Hemminki argued that multiple spontaneous abortions were not confounding factors in his study. (Tr. page 759, lines 107). However, it is possible that the distribution of women who had multiple spontaneous abortions could have differed sufficiently between the groups being compared to have produced artificial differences in rates. Dr. Hemminki produced data which suggested that this was not a problem with the subset of pregnancies hospitalized but no such data have been made available with respect to the much larger set of self-reported pregnancies. Since the risk of spontaneous abortion nearly doubles after a woman's first spontaneous abortion, failure to consider this problem in the analysis must be considered a great weakness of this study (Ex. 141E).

As pointed out by Kline, prior reproductive history and the issue of whether women or pregnancies are the proper unit of analysis are difficult

problems to resolve in conducting human studies like that of Hemminki and coworkers. Kline states:

As the Ethylene Oxide Industry Council critique notes, the unit of analysis was pregnancies, not women. One assumption of maximum likelihood logistic regression is that observations are independent. This assumption was violated, and it is unclear what effects, if any, this might have on the results of the analysis. Studies of spontaneous abortions pose a particularly difficult problem since not only are characteristics of the woman, such as maternal age, related to abortion risk, but also characteristics of successive pregnancies; that is, women with one spontaneous abortion are at increased risk of a subsequent abortion. There is not even a modest experience in the literature to draw on which compares analyses of pregnancies versus analyses of women (Ex. 61).

In spite of these analytical problems, many commenters agreed that the results of the Hemminki study, taken in combination with animal data that demonstrate the fetotoxic potential of EtO, suggest that occupational exposure to EtO results in an increased risk of spontaneous abortion. For example, Kline commented as follows:

In sum, I consider that the data presented by Hemminki et al. (1982) raise the possibility that working during pregnancy in a hospital job which involves exposure to ethylene oxide may increase the risk of spontaneous abortion. In spite of the several questions which we have discussed, the data show a good deal of internal consistency. Similar results were obtained from an analysis based on questionnaire data and one which was based on recent pregnancies ascertained in the hospital discharge data. The association was similar for registered nurses and for full-time instrument caretakers (data provided by Dr. Hemminki). Given that it appears that the increased risk of abortion related to work with ethylene oxide is greater than that related to work with glutaraldehyde, these data raise the possibility that the association is owed to exposure to the agent, ethylene oxide, rather than to employment during pregnancy (Ex. 61).

Similarly, Pasternack commented that:

In spite of several problems in the study design, it is possible that EtO was responsible for an excess of spontaneous abortions (especially if supported by animal studies * * *). The fact that two other sterilizing agents did not result in a statistically significant excess of spontaneous abortions further supports this finding * * * (Ex. 141E-2).

After reviewing the Hemminki report NIOSH concluded that Hemminki's findings cannot be discounted, even though the study was not as definitive as desired. (Ex. 40).

The EOIC (Ex. 47) reported an investigation by Yakubova *et al.*, who examined the effects of EtO exposure in female production workers and reported an increased incidence of gynecological disorders among those with EtO exposure. Two hundred eighty-two exposed workers (equipment operators and laboratory assistants) were compared to plant administrators (259) in the same factory and 100 other nonexposed workers from other institutions. The level of EtO exposure was said not to have exceeded 1 $mg/m^3$ (approximately 0.5 ppm). The increased incidence of gynecological disorders (described as diseases of the cervix and uterus) was reported to be highest among equipment workers and was attributed to exposure to higher concentrations of EtO for longer periods during a working day than was the case for the laboratory assistants. Other effects on pregnancy, such as threat of miscarriage and toxemia, were reported to have occurred in equipment operators and laboratory assistants at a higher frequency than in the nonexposed groups. Because of insufficient information on either the study design or the methods of assessing exposure or outcome, and an inadequate description of the study groups, this study is very difficult to evaluate and can only serve as suggestive supporting evidence for the findings of Hemminki et al. that EtO exerts an adverse effect on reproduction in females.

Although several commenters (Ex. 47) have characterized the reported findings on reproductive effects as attributable to a variety of other chemicals, the record evidence, especially that pertaining to the work of Hemminki and his co-investigators, suggests that reproductive disturbances do occur as a result of exposure to EtO. Moreover, these findings are supported by extensive evidence from experimental studies conducted at several institutions (Exs. 2-23, 2-36, 6-10).

The proper interpretation of reproductive animal data is a subject of debate among toxicologists. Little information is available as to the appropriateness of using animal reproduction data as a basis for the quantitative assessment of risk in humans. OSHA notes, however, that the excess adverse reproductive responses shown by the Bushy Run reproduction study are consistent with the excess in spontaneous abortions demonstrated by the Hemminki data.

Although it is possible to find methodological shortcomings in any one of these reproductive investigations, it is prudent to consider these findings as a body of evidence that provides additional support for the Agency's decision to take regulatory action on EtO. OSHA concludes that there is sufficient qualitative evidence in the rulemaking record to indicate that EtO poses a reproductive hazard for both men and women.

*D. Other Health Effects*

The ACGIH TLV of 50 ppm was established in 1968 on the basis of the toxic effects of EtO encountered in industry resulting from cutaneous contact with aqueous solutions of the compound (Ex. 6-3). These solutions cause primary irritation and sensitization of the skin. Chronic intoxication of humans by EtO had not been reported prior to 1968.

The ACGIH's 1966 documentation did discuss several experimental studies involving laboratory animals that showed that exposure to high concentrations of EtO vapor (204-841 ppm) caused irritation of the respiratory passages, growth depression, and injury to various organs. Repeated exposures for 6 or 7 months (at 113 or 49 ppm) in rats caused no effects except for a growth depression and a moderate increase in lung weight at 113 ppm. The 1966 documentation also noted that repeated exposure of dogs, rats, and mice at 100 ppm for six months caused no significant effects except for slight anemia in the dogs.

In the preamble to the proposal, OSHA requested additional information on all health effects resulting from exposure to ethylene oxide, including cancer. Several participants in the rulemaking submitted information and testimony about the neurotoxic and sensitization effects which can result from EtO exposure. Considerable evidence in the rulemaking record suggests that reducing the 8-hour TWA to 1 ppm will not only reduce the risk of EtO-related cancer but will also decrease the risk that workers will experience these unpleasant and potentially dangerous effects of exposure. Several of these effects have been observed in both animals and humans and will be discussed below.

Several animal species have shown the effects of peripheral neurotoxicity due to EtO exposure. The EOIC noted that:

This (effect) takes the form of a paralysis and subsequent atrophy of the muscles of the hind limbs, with an associated decrease in pain perception and reflexes, also in the hind limbs. In those studies where post-exposure observations have been sufficiently prolonged, it has been observed that there is a slow but apparently full recovery within 3 to 6 months of the cessation of exposure to EO vapor. The species in which this peripheral neurotoxic effect has been described are rat, mouse, rabbit, monkey, dog and cat (Ex. 47).

A discussion of the neurotoxic effects seen in the EtO-exposed primates used in the NIOSH inhalation study (dose groups of 50 and 100 ppm) was described in the preamble to OSHA's proposed standard as follows:

> Two of the monkeys in each exposure group were sacrificed for neuropathological evaluation. The only significant finding was an increase of axonal dystrophy in the nucleolus [SIC, nucleus] gracilis of the experimental monkey as compared to the two controls and demyelination of portions of the gracile tract in one of the monkeys in each of the low and high dose groups (Ex. 6–6).

In its "Hazard Assessment", the EOIC also described the loss of reflex responses and neuromuscular function in mice exposed to EtO at 100 and 50 ppm (Ex. 47). The authors report that there were no effects at 10 ppm EtO and that histomorphological changes were not observed at any level. OSHA cannot evaluate the significance of these results because the detailed report of these findings is not available to the Agency at this time. OSHA is able to point out, however, that based on available evidence, the threshold for effects in mice, if one exists, is below 50 ppm, the level of the current OSHA PEL. Furthermore, the lack of neuromorphological changes in rodents at comparable concentrations suggests that primates may be more sensitive to neurotoxicity induced by EtO.

The EOIC further noted that (Ex. 47):

> * * * The lowest concentrations of EO likely to produce clinical evidence of hind-limb paralysis lie above 200 ppm, with no-effect concentrations having been demonstrated in the range of 100 to 115 ppm. It follows that the threshold concentration for the induction of paralytic neurotoxic effects for most species is in the range 100–200 ppm. This accords with the absence of clinical signs of neurotoxicity in Fischer 344 rats exposed to EO vapor at concentrations of 10, 33 and 100 ppm for 6 hours a day, 5 days a week for up to 2 years (Snellings *et al.*, 1981). Additionally, primates exposed to 50 or 100 ppm of EO for 6 hours a day, 5 days a week for (a) total of 24 months showed no clinical evidence of neurotoxicity, * * *. However, demyelination was seen in the distal portion of the fasciculus gracilis in 1 of 2 monkeys of both the high- and low-dose EO groups, and the presence of axonal dystrophy was also noted in the nucleus gracilis (Sprinz *et al.*, 1982).

However, when the early signs of neurotoxicity are considered, the no-effect level in animals is lower than that reported for obvious neurotoxic effects such as peripheral paralysis. Mice repeatedly exposed to EtO vapor at various concentrations in the range 10–236 ppm showed a dose-related trend in their responses on several neurobehavioral measures included in the Irwin neurobehavioral screen (Ex. 47). The EOIC (Ex. 47) reported that the threshold for induction of borderline neurotoxic effects, such as abnormal gait and locomotor activity, was 48 ppm, and the no-effect level was 10 ppm.

In humans, the most frequently cited effects of acute EtO overexposure include the following reversible effects: Eye and respiratory tract irritation, lassitude, nausea, vomiting, diarrhea, vertigo, headache, loss of consciousness, convulsions, and occasionally, disturbances of behavior (Ex. 47). Many of these effects appear to be neurotoxic in origin. For example, the EOIC (Ex. 47) noted the fact that nausea and vomiting occur following percutaneous absorption as well as inhalation of EtO. It suggested that these effects may be neuropathologic in origin, because substantial relief is obtained if anti-emetics are given intravenously. Dizziness, coma and convulsions are often also ascribed to a central depressant effect because they may occur even when lung function is not compromised.

The EOIC further discussed the matter of neuropathology when it reported that:

> The first credible clinical description of peripheral polyneuropathy occurring in man as a result of occupational overexposure to ethylene oxide (EO) vapor was not published until 1979 (Gross *et al.*, 1979). However, it had been appreciated since the 1930's that EO is capable of producing centrally mediated pharmacologic and behavioral effects. Now the number of published observations on exposed animals or clinical cases of overexposure to EO suffices to confirm that, under appropriate exposure conditions, inhalation of EO vapor can produce pharmacologic and toxic effects on the nervous system that present as sensorimotor central or peripheral signs and symptoms which may be accompanied by behavioral changes. (Ex. 47)

Although the effects of repeated exposure to EtO were reported in the literature as early as 1937, the first clear clinical description of peripheral neuropathy caused by such exposure was provided by Gross and his co-workers (1979), who examined four workers employed in a sterilizing facility that had a leaking sterilizing unit (Ex. 47). The EOIC reported that:

> * * * There was one case of acute encephalopathy with normal nerve conduction studies, two cases having both clinical and neurophysiological evidence of peripheral neuropathy affecting the upper and lower limbs, and one asymptomatic individual who had evidence of sensorimotor polyneuropathy on electrophysiological examination. The amplitude of muscle action potentials, moderate decrease in conduction velocity, and signs of denervation were compatible with an axonal degenerative neuropathy. In the symptomatic cases there was marked subjective improvement within two weeks of terminating EO exposure, but over a period of 10 months there was improvement in conduction studies in only one of the three individuals originally found to have abnormalities. The concentrations of EO to which the workers were exposed are unknown but all intermittently smelled the vapor, indicating an exposure on such occasions to at least 700 ppm, the mean detection odor concentration (Jacobson et al., 1956).

Two recent case studies of sterilizer workers exposed to EtO have come to OSHA's attention (Finelli et al., 1983 and Kuzuhara et al., 1983) (Ex. 47). Kuzuhara et al. found axonal degeneration with changes in the myelin sheath; unmyelinated nerves were also involved in the degenerative process; and muscle tissue showed typical denervation atrophy. The morphological degeneration was accompanied by electrophysiologic changes which implied axonal neuropathy. EOIC cites the authors as commenting that:

> Our experiences indicate that chronic repeated exposure to ethylene oxide can cause sensorimotor polyneuropathy of axonal type, even if each exposure is very brief. To eliminate the hazards, ethylene oxide levels should be monitored strictly, and a safety limit for peak exposure should be established. The ventilation system should efficiently reduce the ethylene oxide gas that diffuses from the sterilizer when the door is open in loading and unloading (Ex. 47).

The EOIC reported that Finelli et al. (1983) described similar peripheral nerve conduction abnormalities (Ex. 47). These authors noted that the changes detected by electromyogram as well as the signs and symptoms of neurological damage to be reversible, as NIOSH has previously noted. In commenting on the current OSHA standard, Finelli et al. (1983) stated:

> As in other toxic neuropathies, individual vulnerability to EtO is suggested by the involvement of only some exposed workers. The US standard for occupational exposure to EtO is 50 ppm for an eight-hour time weighted average. However, the concentration to which humans may be exposed safely is uncertain. In addition to measuring the concentration of EtO, it is suggested that when symptomatic cases of EtO-induced polyneuropathy are identified, fellow workers should be examined clinically and electrodiagnostically to determine the incidence of asymptomatic neuropathy in that particular facility. This may help to identify susceptible persons for whom removal from exposure to EtO would be advisable.

The lowest concentrations of EtO that have been reported to produce the early symptoms of neurotoxicity in humans were observed by Garry and colleagues

(Ex. 6–14), who conducted a study of 12 exposed employees working in a hospital sterilization area. The maximum EtO concentration to which these workers were exposed was stated to be 36 ppm. The investigators reported incoordination in 2 of the 12 exposed employees, dizziness in 3, weakness in 4, nausea and difficulty of speech in 5, headaches in 6, and diarrhea and conjunctival irritation in 7. None of the persons who served as controls in this study reported any of these symptoms (Ex. 6–14). However, there is little quantitative documentation concerning the concentrations of EtO that cause these effects in humans. The EOIC (Ex. 47) concluded that, "Since sensory irritant effects are often present, and because it has been stated that EO (in these cases) could be smelled, the signs and symptoms noted above probably only occur in man at EO concentrations of several hundred ppm."

During the informal public hearing, several witnesses described neurotoxic effects caused by repeated exposure to EtO at concentrations below 50 ppm. June McMahon of the Service Employees International Union, AFL–CIO, reported that several workers in Local 715 complained of tingling sensations in their extremities, headaches, and skin lesions, although air samples showed that exposure levels were below the 50 ppm limit prescribed by Table Z–1 (Tr. 1247). One of these workers was diagnosed as having neurological problems of unknown cause (Tr. 1247).

Eric Frumin of the Amalgamated Clothing and Textile Workers Union, AFL–CIO, testified that at Johnson & Johnson Company facilities, where an internal standard of 1 ppm as an 8-hour TWA has generally been met, there are still a substantial number of EtO-exposed workers who complain about eye irritation, dizziness, nausea, extreme fatigue, disorientation, and, in some cases, rashes (Tr. 1307–1308). Although the company does not believe that EtO is the cause of these complaints, the workers are convinced that they are caused by EtO (Tr. 1307).

Peter A. Roy, a Certified Industrial Hygienist from the University of Minnesota, testified about two cases of EtO-related peripheral neuropathy in his experience, one of which also resulted in permanent lung damage (Tr. 268). Roy (Ex. 36) and others also submitted information suggesting that EtO exposure may cause occupational EtO sensitizations in susceptible individuals. He noted that in one facility there were medically verified cases of damage to the sense of smell, which was attributed to nerve damage in the nasal epithelium.

Roy also testified (Tr. 269) about several cases of sensitization personally known to him that occurred as a result of relatively constant occupational exposures of 10–15 ppm as 8-hour TWA's in areas where sterilized products were being stored. According to Roy (Tr. 270–271), "Some of the people who developed the sensitizations * * * indicate that * * * (these) sensitization(s) kept getting worse and even levels similar to the existing or proposed PEL could still elicit the (sensitization) response."

In his written testimony, Roy (Ex 36) indicated that in numerous cases:

> Sensitizations were severe enough to require the affected employees to avoid all subsequent contact with ethylkene oxide. These health effects have resulted in workers compensation claims, difficulties in finding new employment, disruption of lifestyles, and apparent cross-sensitization susceptibilities in individuals that were so sensitive that other irritant or sensitizing chemicals would also have an effect.

According to Roy (Ex. 36), EtO sensitization symptoms

> * * *Included pulmonary sensitization, similar to asthma, and the development of skin rashes and facial swelling similar to "hives." This skin reaction to airborne EtO is, I presume, a systemic reaction to EtO exposure, and is not likely a direct skin contact phenomenon [sic]. My original reports of apparent EtO sensitizations were questioned by some, but I submit that if one analyzes the chemical activity of ethylene oxide, and its ready ability to alkylate other organic chemicals, including body proteins, then an immune allergic response via the "Hapten" mechanism, similar to that of many other small highly reactive molecules, is not hard to envision for EtO. In my opinion the occupational allergic illnesses, irritations I have seen (occur) at levels below the existing PEL. (Tr. 214)

Some similar reactions resulting from exposure to EtO were summarized by the EOIC (Ex. 47):

> For humans exposed to ethylene oxide vapor (EO), sensory warning signs, such as odor, cannot be detected until high concentrations of EO occur. Continued exposure results in olfactory fatigue (Cawse *et al.*, 1980). Other sensory warning signs, including irritation of the upper respiratory system, have been reported to be undetectable in humans accidentally exposed to high concentrations of EO (Thiess, 1963).
>
> Some of the problems encountered in human exposure to EO have resulted from cutaneous contact. Not only is EO a potent skin irritant (Taylor, 1977), but it has been reported in a study with humans, under laboratory research conditions, to result in delayed hypersensitivity following dermal exposure (Sexton and Henson, 1950). However, the authors of this report stated that these types of allergic reactions have not been observed in the workplace with employees who have had frequent contact with EO over a period of many years. Other reports of human signs from acute exposure to high concentrations of EO have included observations of diarrhea, delayed nausea, and vomiting (Thiess, 1963).

On the basis of the above evidence, OSHA believes that adverse neurotoxic and sensitization effects are occurring as a result of exposure conditions permitted by OSHA's current 50-ppm EtO standard. Regarding the neurologic effects, it is likely that these effects occur from chronic exposures at EtO levels lower than 50 ppm. Although current information does not permit the no-effect exposure levels for EtO neurotoxicity and sensitization to be determined with certainty, the record as a whole clearly suggests that lowering the TWA will significantly reduce the risk that employees exposed to EtO will experience these effects.

*E. Conclusions*

OSHA's determination that EtO is a potential occupational carcinogen was based primarily on the positive findings of the chronic inhalation studies performed at the Bushy Run Research Center and for NIOSH. This is supported by the strongly suggestive epidemiological findings of Morgan et al. and Hogstedt et al. Many positive effects from *in vitro* mutagenic investigations establish the genotoxic mechanism of cancer induction. The work of Calleman et al. suggests that EtO may elicit this action by alkylation of DNA.

The work of Pero et al. and the data submitted by Johnson & Johnson establish that EtO exposure at relatively low levels produces effects in man related to its probable carcinogenic mechanism.

The recent report of Hemminki et al. suggests that EtO exposure may cause an increase in spontaneous abortions. The fetotoxic hazard of EtO with regard to exposure of the female is supported by positive findings in the animal studies performed by Hackett et al., Jones-Price et al., and La Borde and Kimmel. This type of effect could be induced by changes in the DNA and which are known to be produced by many alkylating agents such as EtO. OSHA feels that the adverse spermatogenic effects of EtO on the primates alone, which are consistent with EtO's effects on DNA, are suggestive of an effect on the male reproductive capacity. This conclusion is supported by the one generation study in rats conducted at the Bushy Run

Research Center. Furthermore, the establishment of the dominant lethal effect by Embree et al., heritable translocations by Generoso et al., and alteration of DNA in testes of experimental animals establish the hazard of heritable changes following exposure of the male.

In summary, findings in humans and experimental animals exposed to EtO are indicative of damage to the genetic material (DNA). These include hemoglobin alkylation, unscheduled DNA synthesis, sister chromatid exchange, chromosomal aberrations, and functional sperm abnormalities. In addition, evidence from *in vivo* studies shows that in animals and man, DNA damage may occur in the form of increased incidence of cancer, mutation in offspring, and spontaneous abortions following exposure to EtO. Other adverse effects from EtO exposure such as neurotoxicity and sensitization, and acute effects such as skin lesions, eye irritation, dizziness and nausea have also been observed.

## V. Quantitative Risk Assessment

As discussed in the proposal, OSHA's approach to risk assessment is guided by recent Supreme Court interpretations of the OSH Act, namely decisions involving benzene (*Industrial Union Department, AFL–CIO* v. *American Petroleum Institute*, 448 U.S. 607 (1980)); and cotton dust (*American Textile Manufacturers Institute* v. *Donovan*, 452 U.S. 490 (1981)). The Court has ruled that OSHA may not promulgate a standard unless it has determined, based on substantial evidence in the record considered as a whole, that there is a significant risk of health impairment at existing permissible exposure levels and that issuance of a new standard is necessary to achieve a significant reduction in that risk. Although in the cotton dust case the Court rejected the use of cost-benefit analysis in setting OSHA standards, it reaffirmed its earlier holding in the benzene case that a risk assessment relating to worker health is not only appropriate, but is, in fact, required in order to identify a significant worker health risk and to determine whether a proposed standard will achieve a reduction in that risk. Although the Court did not require OSHA to perform a quantitative risk assessment in every case, the Court implied, and OSHA as a policy matter agrees, that such assessments should be put in quantitative terms to the extent possible (48 FR 17292).

OSHA has presented its views on risk assessment in detail in several proceedings (48 FR 1867, 48 FR 45956, 48 FR 51124), as well as in the rulemaking record for EtO, including the preamble to the proposed standard and the preliminary quantitative risk assessment for ethylene oxide (48 FR 17292, Ex. 6–18). A summary of OSHA's approach to quantitative risk assessment is offered below as introduction.

Several approaches have been used to estimate cancer risk from exposure to toxic agents. A standard approach uses mathematical models to describe the relationship between dose (such as airborne concentration) and response (e.g., cancer). Generally, curves are fit to the data points observed at different exposure levels and these curves are used to predict the risk that would occur at exposure levels which were not observed. The shape of these curves is varied, ranging from linear extrapolations from the observed points through the origin (zero exposure and zero risk) to curves which may deviate far from linearity at the very highest and very lowest doses. The use of a particular model or curve can be justified in part by a statistical measure of "fit" to available data points, that is, a statistical test which measures how closely a predicted dose-response curve is to the actual observed data.

In all cases it is assumed that the mathematical curves are reflective of biological processes that control the biological fate and action of the toxic compound. To date, many of these factors have not been quantitatively linked to the mathematical models. Biological factors which may play important roles in the risk assessment are: (1) Dose of the material at the sensitive tissue; (2) the sensitive tissue(s) itself; (3) the nature of the response(s); (4) rates and sites of biotransformation; (5) toxicity of metabolites; (6) chronicity of the compound (cumulative nature of the material or its actions); (7) pharmacokinetic distribution of the material (especially effects of dose on the distribution); (8) the effect of biological variables such as age, sex, species and strain of test animal; (9) and the manner and method of dosing the test animals (48 FR 45969).

It is clear that all of these factors cannot be easily incorporated into a single mathematical model. Therefore, careful selection of the data for evaluation in the model is important to the risk assessment in order to make use of as much information as possible. In cases where several data sets are available, such as the case of EtO, the results of different approaches applied to different data sets should provide a guide as to the optimal approach to risk assessment, and they should compare logically with each other.

Several different mathematical models are discussed in this preamble. Most of the models are based on theories of cancer development, such as the onehit, the multistage, and the gamma multihit models. Other models commonly used for risk assessment (such as the probit, logit, and Weibull models) have developed from tolerance curves of responses to toxic substances. These are often applied in the prediction of cancer but have also been used to predict risk for other actions of toxins. A linear model is generally used for epidemiologic data due to its biological plausibility and simplicity of use. Details on the form of these mathematical models can be found in OSHA's preliminary quantitative risk assessment (Ex. 6–18).

A number of participants in the ethylene oxide rulemaking commented on OSHA's approach to quantitative risk assessment (QRA) in general, particularly noting the need for human data on which to base a quantitative assessment of risk (Exs. 4–18, 4–22, 11–39, 11–110). However, the Court specifically noted in the benzene decision that "imposing a burden on the Agency of demonstrating a significant risk of harm will not strip it of its ability to regulate carcinogens, nor will it require the Agency to wait for deaths to occur before taking any action" (448 U.S. at 655). This holding by the Court strengthened OSHA' confidence in proceeding with the quantitative risk assessment based on animal data.

In the preamble to the proposed standard, OSHA outlined its approach to the quantitative estimation of risk from exposure to EtO, including the selection of the data base, general assumptions and models used. On the basis of its preliminary quantitative risk assessment, OSHA concluded that the best estimate of occupational risk from exposure to EtO 50 ppm was 634 to 1,093 excess cancer deaths per 10,000 exposed workers. This figure was used to support OSHA's finding that exposure to ethylene oxide represented a significant risk to workers.

Some commenters disagreed with OSHA's quantitative approach to risk assessment, specifically the reliance on results from mathematical models and experimental data in predicting human response (Exs. 4–51, 11–110). However, the comments submitted by BASF Wyandotte, a producer of EtO, expressed the views of many participants and recognized the suitability of OSHA's approach; BASF Wyandotte concluded that:

OSHA must perform formal risk assessments based on valid animal tests. The Agency must: (1) Extrapolate from the higher dose levels of response to the much lower exposure levels normally found in the workplace, and (2) extrapolate from the animal species to man. The methodology of extrapolations necessarily includes the use of mathematical models. This procedure is necessary in order for the Agency to establish a new standard which minimizes the possibility of adverse health effects from exposure to ethylene oxide based on cost-effective control measures (Ex. 4–54).

While a number of commenters expressed concern over certain aspects of the OSHA risk assessment, in general the comments noted the clear inadequacy of the 50 ppm PEL and the need to lower the PEL based on assessments of risk (Exs. 4–28, 11–68, 11–71, 11–110, 11–131, 11–133, 47).

The following discussion reviews OSHA's risk assessment as presented in the proposal, summarizes and evaluates comments submitted on that risk assessment, including alternative risk assessments, and offers OSHA's final assessment of the level of risk posed by occupational exposure to ethylene oxide.

*A. Experimental Evidence Available for Risk Assessment.*

The Bushy Run Research Center Carcinogenicity Study

OSHA's prelminary quantitative estimates of risk were derived from results of a two-year inhalation study on rats performed at the Bushy Run Research Center (Snellings et al., BRRC study, Bushy Run study) (Ex. 2–9). The study was selected for the quantitative assessment of risk because it provided at that time, by far, the most precise quantitative information available from any study on ethylene oxide. In the study, Fischer 344 rats were exposed to airborne concentrations of 100, 33, or 10 ppm of ethylene oxide vapor for six hours per day, five days per week, for approximately two years. Two control groups were exposed only to air under similar conditions. Initially, 120 rats per sex group were exposed, and at each six-month interval a portion of the animals was sacrificed to determine possible exposure-related effects.

The investigators employed two independent control groups in the study to gain a better assessment of variability in the unexposed animals. Results in the two control groups (for the tumors of interest) were not significantly different and the two groups were combined for purposes of the OSHA quantitative risk assessment.

In the preamble to the proposed standard, OSHA characterized the suitability of the BRRC study for risk assessment (48 FR 17293). OSHA concluded that the data were appropriate for risk assessment purposes for the following reasons:

(A) High quality of information (FDA good laboratory practices inspection);

(B) Statistical significance of observed increases in neoplasm incidence;

(C) Availability of concurrent control information;

(D) Dose-response relationships that were observed in both sexes;

(E) Well-documented specifics of the dosing regimen;

(F) Availability of information on ages of individual rats at death; and

(G) The inhalational dosage which is the major route of human exposure.

The usefulness of this study for quantifying risk was also attested to by the Ethylene Oxide Industry Council (EOIC) in its "Hazard Assessment of Ethylene Oxide":

> The results which are best able to support a quantitative assessment of human cancer risk are those of the Bushy Run study, with a preference expressed for use of the incidence data on peritoneal mesotheliomas. The leukemia data, while capable of supporting a quantitative risk assessment, offer a lower level of confidence in the results because of the higher spontaneous incidence of MCL than peritoneal mesothelioma in Fisher (sic) 344 rats (Goodman *et al.*, 1979), the possible specificity of this disease for this strain of rat, and the late-occurring nature of the disease (Ex. 47).

Several commenters raised a number of issues involving the suitability of using the results of the Bushy Run study as indicative of a carcinogenic effect of EtO, and the applicability of risk estimates derived from these data to the human situation. Several of these issues were well-delineated by the Health Industry Manufacturers Association (HIMA) in its review of the Bushy Run study (Ex. 11–74), and they include discussion of the effects of possible differences in dosage, dynamics of exposure, metabolism, pharmacokinetics and repair mechanisms between species. The questions raised concerning the use of this animal study for risk assessment purposes are not specific to ethylene oxide. These issues often present themselves in the task of extrapolating risks derived from animal data to man. The issue of the carcinogenicity of EtO has been discussed in detail in the Health Effects section of this preamble where OSHA concluded with confidence that EtO should be considered a potential human carcinogen. Moreover, in terms of the appropriateness of applying risks derived from animal data to the human situation, Crump testified that:

> * * * So, I would not certainly hold to the idea that regulation must wait until positive human data are available. I believe that animal data do provide an adequate basis for quantifying human risk (Tr. 142).

He noted that support for this comes from the fact that:

> Estimates of human risk from animal data are based upon the imperical (sic) observation that there is a quantitative relationship between chemical effects in animals and chemical effects in humans.
>
> Actually, this really forms a basis of toxicological investigations with animals. If there were no quantitative relationship between animal responses [and human responses], then the results obtained from animal data would be very limited. But there is a quantitative relationship which has been observed imperically (sic) and has been observed for carcinogenesis. (Tr. 143).

Although these issues may increase uncertainty in the final numerical risk estimates, they do not discount using animal studies for quantitative risk assessment purposes when epidemiologic data of sufficient quality are not available. Furthermore, there was little indication in the record to dispute the choice of the experimental animal data as the most appropriate data upon which to base the quantitative estimates of cancer risk from EtO exposure.

As Crump noted in his testimony (Tr. 142):

> The human studies available on Ethylene Oxide are limited in terms of size. They are also limited in terms of exposure. I believe that to be their principle (sic) limitations as far as quantitative risk assessment is concerned and quantification of risk assessment * * * I believe in the case of Ethylene Oxide, the animal data currently provides the strongest basis for doing quantitative risk assessment.

Therefore, OSHA concludes, as stated in the preamble to the proposal, that the Bushy Run study remains an appropriate data base on which to rely in making quantitative estimates of risk.

At the time of the proposal, the BRRC study reported that a statistically significant increased incidence over the control levels had been observed for two different neoplastic lesions: peritoneal mesothelioma in the male rats and mononuclear cell leukemia in the female rats. These lesions also showed significant dose-related trends (the p value for the one-sided Cochran-Armitage test was less than 0.00001 for both groups) (Ex. 34). As Crump testified, "For mesothelioma in male rats, and mononuclear cell leukemias in female rats, these tests are highly indicative of a dose-related carcinogenic effect of EtO" (Ex. 34).

The results of mathematical extrapolations based on these two tumor types formed the basis of OSHA's preliminary prediction of risk. As stated in the proposal, using the multistage model, OSHA predicted an excess lifetime risk for cancer from exposure to EtO at 50 ppm to be 634 to 1,093 per 10,000 workers, with 95% upper confidence limits on the excess risk of 1,008 to 1,524 deaths per 10,000 workers. The risk estimated at 1 ppm was approximately 12 to 23 excess deaths per 10,000, with 95% upper confidence limits of 21 to 33 excess deaths per 10,000.

As was noted in the preamble to the proposed standard, the increase in the incidence of mononuclear cell leukemia in male rats was not statistically significant at any level when a Bonferroni correction was applied to correct for multiple comparisons. Likewise, the Cochran-Armitage test for linear trend was not significant (the p value was 0.15) (Ex. 34). But, as Crump pointed out:

> * * * this lack of significance is chiefly due to a shortfall in response in the 100 ppm group. When this group is omitted from the analysis both the trend test and Fisher's exact test with the Bonferroni inequality are significant at the 0.05 level. The shortfall in the high dose group can be explained by the absence of these leukemias in the 100 ppm animals sarcificed at 18 months (10 and 33 ppm dose group animals sacrificed at 18 months were not examined for tumors). For cancers such as leukemia which can be detected for only a brief period before they are fatal, it is preferable to analyze fatal and incidental tumors separately (IARC, 1980). Such an analysis would probably detect a significant dose-related effect for mononuclear cell leukemia as suggested by the significant findings when the 100 ppm dose group is omitted.
>
> Considering these issues, in my judgement there is a dose-related increase in mononuclear cell leukemia in male rats and I have used these data as well to make risk estimates (Ex. 34).

Support for this analysis comes from several other commenters to the record. For example, the EOIC "Hazard Assessment for Ethylene Oxide" noted that "mortality-adjusted trend analysis revealed either an increased rate or an inceased incidence of MCL (mononuclear cell leukemia) in male rats ($p < 0.010$)" (Ex. 47) and employed these same data to calculate estimates of risk (Ex. 47).

OSHA has examined the impact of incorporating the male mononuclear cell leukemia data into the risk assessment. Crump presented the predictions of risk based on the male mononuclear cell leukemia data alone in Table 3 of his testimony (Ex. 34). This table shows that an excess risk of 284 deaths per 10,000 workers is predicted at 50 ppm, and 5.8 excess deaths per 10,000 are predicted at a PEL of 1 ppm. These estimates of risk are less than half the estimates of risk predicted from results at other tumor sites. However, it should be noted that the 95% upper confidence limits on these risk estimates are 717 and 14.9 excess deaths per 10,000, respectively, which fall within the range of OSHA's preliminary "best" estimates. (That is, this level of risk cannot be ruled out by the data.)

OSHA has considered the option of including the estimates of risk from the male MCL data in its overall estimates of risk. The tentative nature of the fit of all of the models to the female leukemia data was noted in the preliminary risk assessment (Ex. 6–18). The fit of the male MCL data is no better ($p=0.11$). In his testimony, Crump also noted that:

> * * * for both mononuclear cell leukemia in both males and females, the response at 100 ppm is below that suggested by the trend of the data at lower doses. This plateau effect suggests that uptake and distribution pathways for EtO may be saturated and the "effective internal dose" of EtO is less than 100 ppm. If this is the case, it would be reasonable to omit the 100 ppm data from the calculations. (Ex. 34).

OSHA refit the curves to the male mononuclear cell leukemia data excluding the responses at 100 ppm. This resulted in a much better fit to the one-hit model than when the 100 ppm data were included (p value for the chi-squared goodness-of-fit test rises from 0.11 to 0.53.) As anticipated, much higher predicted risks are given when the 100 ppm data are not included in the analysis. This approach gives an excess risk of 1,694 excess deaths per 10,000 at 50 ppm and 37 excess deaths per 10,000 at 1 ppm, with 95% upper confidence limits of 2,914 and 69 excess deaths per 10,000, respectively. This represents an almost 6-fold increase over the estimates predicted with the 100 ppm data points included in the curve-fitting, and approximately a 1.5-fold increase over the risk predicted by the female leukemia data, as reported in the proposal.

In its "Hazard Assessment of Ethylene Oxide," the EOIC also performed a quantitative evaluation of the risk posed by exposure to ethylene oxide. It based this assessment on the results of the BRRC study utilizing both the male and female mononuclear cell leukemia data and the male peritoneal mesothelioma data, as well as the mononulcear cell leukemia data from the NIOSH study, to be discussed below.

The EOIC calculated "continuous lifetime equivalent" doses based on parts per million (ppm) of ethylene oxide, rather that a body weight conversion (OSHA used the latter in its preliminary quantitative risk assessment), but it did not explain its objections to the use of a body weight conversion, nor did it offer a rationale for a preference for the ppm approach to dose. The EOIC did employ a scaling factor very similar to that used by OSHA to "normalize" exposure periods and noted that "Such a procedure is strictly a mathematical convenience to permit intercomparison of data * * *" (Ex. 47). The effect of different approaches to scaling factors for dose will be discussed below.

In making its estimates of risk, the EOIC employed a one hit model as the most appropriate mathematical dose-response function. The EOIC noted:

> Where more than one model fits the data, the basic criteria for selection and weighting results are the goodness of the fit and the reasonableness of the assumptions underlying the models in relation to the known data. * * * Numerous models have been proposed * * * However, the one-hit model provides an excellent fit to the four data sets for EO * * * Therefore, only the one-hit model will be used here initially (Ex. 47).

Based on the data described above, the EOIC predicted an excess risk of 18 to 79 deaths per 10,000 for on-the-job exposures of 1 ppm, approximately 1.5 to 3 times higher than OSHA's preliminary estimates of risk. The EOIC did not quote estimates of risk for exposure at 50 ppm.

*The NIOSH Study.* In addition to the BRRC study, at the time of the proposal there were preliminary results from a two-year chronic inhalation study on male rats conducted by NIOSH (Ex. 6–6). Since that time, more detailed results of the effects observed in this study have been reported (Exs. 11–146, 15, 40).

Though there were increases in the incidence of mononuclear cell leukemia in the rats, these increases were not statistically significant and the data were not employed in OSHA's preliminary quantitative risk assessment. The EOIC, however, did employ the leukemia data from the NIOSH study (using dose in ppm and a one hit model, the same methodology as it used for the BRRC data) to make predictions of risk. The estimates of risk based on the mononuclear cell leukemia data from this study produced risks comparable to those produced by the mononuclear cell leukemia data in the BRRC study that is, an approximate excess risk of 250 per 10,000 at 10 ppm.

Given the similarity with the BRRC data, the EOIC did not quote specific risks for this data set at all dose levels; however, based on the similarity of the BRRC and NIOSH data, OSHA has determined that the NIOSH MCL data will predict a risk of 35 excess deaths per 10,000 at 1 ppm.

Perhaps more important than the observation of leukemia in this study was the finding of a statistically significant increase in the incidence of peritoneal mesothelioma in the rats exposed to ethylene oxide. This finding also correlates directly with the finding of peritoneal mesothelioma in the BRRC study. As reported in NIOSH's testimony, the incidence of peritoneal mesothelioma was 3 out of 76, 9 out of 77 and 17 out of 77, for rats exposed at 0, 50 and 100 ppm, respectively (Ex. 40). (p values for Fisher's Exact test were 0.068 and 0.0007 when comparisons were made to the controls for the 50 and 100 ppm groups, respectively.) These data also showed a statistically significant linear trend (p value for linear trend test was 0.00048).

Using the same methodology as it employed for the BRRC data, OSHA fit a one-hit model to these data so that the results could be incorporated in the quantitative risk assessment. Based on these data, OSHA predicts an excess risk of 690 excess deaths per 10,000 workers from exposures at 50 ppm (95% upper confidence limit of 930 per 10,000). For exposures at 1 ppm, extrapolations based on these data show an excess risk of 14 deaths per 10,000, with a 95% upper confidence limit of 20 excess deaths per 10,000. These estimates of risk comport very closely with those predicted from the peritoneal mesothelioma data in the BRRC study and fall within the range predicted by OSHA in its preliminary quantitative risk assessment.

*Primary Brain Neoplasms.* In addition to the leukemia data from the NIOSH study, there was an increase in the incidence of primary brain neoplasms in the male rats. The BRRC researchers, after reexamining their data, have also reported a finding of primary brain neoplasms in their study. The incidence of this tumor in these two studies is given in Table 1. In the NIOSH study, the increase in primary brain neoplasms was not statistically significant when a Bonferroni correction was applied, but there was a statistically significant linear trend (P value 0.035). Since the increased incidence was not statistically significant, these data were not used for mathematical extrapolations when predicting risk.

For the BRRC data, there was a dose-related trend in primary brain neoplasms in both males and females; the linear trend was statistically significant when the Cochran-Armitage trend test was applied to the combined data from the rats sacrificed at 18 and 24 months and from animals dying spontaneously ($p=0.0003$ for males and $p=0.014$ for females) (Ex. 34). A statistically significant increase in gliomas were seen in the male rats exposed at 100 ppm (p equals 0.0024).

Crump combined the BRRC male and female data for risk assessment. Applying the multistage model (chi-squared goodness of fit test, $p=0.43$), the estimated lifetime excess cancer risk at 50 ppm is predicted as 185 excess cancers per 10,000 with a 95% upper confidence limit of 280 excess cancers per 10,000. At 1 ppm, the model predicts 3.7 excess cancers per 10,000, with a 95% upper confidence limit of 5.7 excess cancers per 10,000.

Sielken, a consultant to the EOIC, also performed an analysis on the brain tumors, analyzing two subsets of tumors: (1) Primary brain neoplasms, which include granular cell tumors, astrocytomas, and glial cell tumors, and (2) malignant reticuloses and glial cell tumors (which included all brain neoplasms except granular cell tumors). He fit the multistage model as well as the probit, logit, Weibull, and multihit models to these subsets of data using the mg/kg/day scale as defined in OSHA's preliminary quantitative risk assessment. Risk was quoted as additional risk (P(d)–P(O)) rather than excess risk (P(d)–P(O))/1–P(O)), but Sielken noted that in the case of brain tumors, these two measures of risk were "nearly identical" (Ex. 141–F). This seems likely due to the low spontaneous rate of brain neoplasms observed in this population. Using the multistage model, Sielken predicted estimates of risk at 1 ppm to be approximately 2 to 6 per 10,000 for all primary brain cell neoplasms in rats alive at 17 months, and approximately 1 to 5 per 10,000 for all rats. Sielken did not quote estimates of risk for exposure at 50 ppm. A comparison of these estimates with those made by Crump show that they are very similar; the estimate of 3.7 excess deaths per 10,000 made by Crump falls within the range suggested by Sielken.

The observation of primary brain tumors in these two studies has biological importance. Qualitatively, the occurrence of a tumor with low spontaneous incidence lends support to OSHA's finding that EtO is a carcinogen. As discussed in the section on Health Effects, some commenters have argued that ethylene oxide is only a promoter, not an initiator. If this were true, it would be inappropriate to use models which are linear at low doses (such as the onehit and multistage models) to make extrapolations, and applying these models to promoter data would greatly overstate the risk. OSHA concluded in the Health Effects section that there is sufficient evidence that EtO is indeed an initiating carcinogen. These findings were based on evidence of EtO's DNA alkylation and mutagenic properties, but in particular, on the observation of these very rare brain tumors. However, it should be noted that the same property that lends support to the finding of carcinogenicity (i.e., the rarity of the tumors) causes these data to yield low estimates of risk if they are used to predict human risk. Because these tumors occur so infrequently, the excess risk predicted on the basis of these data is low, approximately one-third the excess risk predicted using data from the other tumor sites.

In general, when making estimates of risk, OSHA makes no assumption of a direct correlation between the tumor sites observed in experimental animals and those expected to occur in man, although on occasion the tumor sites in several species (including humans) may coincide. (For example, there is some evidence that exposure to ethylene oxide gives rise to leukemia in both humans and rats.) The predictions of human risk made by OSHA are usually for "excess cancer," without regard to site. In other words, based upon the animal data, OSHA is not predicting that humans will contract brain cancer, leukemia, or mesothelioma, but only that humans will contract cancer. Thus, one way of incorporating the estimates of risk from the glioma data would be to include these estimates in the range of estimates over all sites, just as the mesothelioma data and leukemia data were combined in making OHSA's preliminary estimates of risk. This would change the lower limit of risk from 634 per 10,000 excess cancer deaths to 185 per 10,000. OSHA believes that it would be inappropriate to adopt the risks predicted on the basis of the brain tumor data as the lower end of the range of risk because there is some indication that OSHA's preliminary estimates of risk (634 to 1,093 per 10,000) may be, in fact, underestimates. (This is discussed further below.)

OSHA has considered other ways of incorporating the estimates of risk derived from the glioma data into estimates of the "total risk" of cancer. Crump noted in his testimony (Tr. 164) that in some sense, the estimates of risk from the glioma data should be *added* to the estimates of risk that were made from other sites. Although this is not

possible explicitly because of the possibility of double counting (the data for "total malignant tumors" did not include the gliomas), OSHA nevertheless believes that this position has important implications for the Agency's choice of a "best" estimate. In light of these data, OSHA does not feel it would be appropriate to *lower* its range of risk based on the inclusion of estimates of risk derived from the glioma data. In fact, considering these data in terms of the risk from all cancer, OSHA believes that its preliminary estimates of risk may have underestimated the total cancer risk to exposed workers.

*B. Time-to-Tumor Analysis*

Although most of the alternative risk assessments submitted to the record involved the use of quantal mortality data for the prediction of risk (Exs. 34, 44, 47, 141–F), Crump, OSHA's witness, and Sielken, testifying on behalf of the EOIC, both suggested a time-to-tumor analysis as an appropriate alternative approach. This approach was also recommended by the Union Carbide Corporation in its prehearing submission, which noted that:

> In view of the nature of the tumorigenic effects of ethylene oxide as learned from the Bushy Run study, i.e., that of a late-in-life enhancer of kinds of tumors to which the species under study is naturally prone, it would, in retrospect, have been more useful to conduct the animal studies with the "time-to-tumor" model, or a model to take into account the latency of the (presumed) cancers as part of the experimental design (Ex. 11–133).

Crump elaborated on the usefulness of a time-to-tumor analysis:

> When time-to-tumor data are used for risk assessment, there is a built-in method for correcting for differential mortality patterns in different dose groups, and consequently it is not necessary to resort to *ad hoc* methods such as deleting animals that die before the first tumor is discovered. Use of time-to-tumor also facilitates distinguishing between fatal tumors and incidental tumors (Ex. 34).

Further, Sielken noted that "Both (the OSHA and EOIC) quantitative hazard assessments can be strengthened by more fully including the role of time" (Ex. 53).

Crump conducted a time-to-tumor analysis of data from the BRRC study using the multistage-Weibull model (multistage in dose, Weibull in time). Based on leukemia mortality in both male and female rats, the excess risk of death from exposure at 50 ppm is predicted to be 484 to 546 excess deaths per 10,000, with 95% upper confidence limits of 866 to 1,135 excess deaths per 10,000. The estimates of risk made from the time-to-tumor analysis on the male leukemia data are approximately 1.8 times higher than the risks predicted by the analogous quantal data; the estimates of risk from the time-to-tumor analysis on the female leukemia data are approximately 2.2 times smaller than those estimated from the quantal data.

Crump also used the time-to-tumor approach to analyze the excess mortality from "all" cancers using the total number of (malignant) tumor-bearing animals provided in the BRRC data. (The primary brain tumors were not counted in this analysis.) Crump commented that "In terms of human risk, increased incidences of all malignancies are important rather than just increased numbers of cancers of a single type." * * * This is particularly true in view of the recent finding of Haseman (1982) that, in NTP studies involving rats, increases in tumors of one type are frequently associated with decreases in tumors of other types, with very little effect, if any, upon the total crop of tumors" (Ex. 34). The results of the time-to-tumor analysis of mortality due to "all malignant tumors" show an excess mortality of 637 to 727 deaths per 10,000 from exposure at 50 ppm, with 95% upper confidence limits of 1,070 to 1,600 excess deaths per 10,000. This estimate of risk is very similar to the excess risk predicted in the OSHA preliminary risk assessment.

In addition, Crump also conducted a time-to-tumor analysis on the incidence of cancer in the experimental animals for leukemia and separately for "all malignant tumors." Incidence refers to the occurrence of new tumors and does not refer to the mortality of the animals. The results of the analysis on the incidence of leukemia were 501 to 1,679 excess cancers per 10,000 from exposure to EtO at 50 ppm, with approximate 95% upper confidence limits of 1,032 to 2,233 per 10,000 respectively. The time-to-tumor analysis on the "all malignant tumors" incidence data produced an excess risk of 1,213 to 1,476 excess occurrences of cancer per 10,000 workers, with upper confidence limits of 1,941 to 2,210 excess cancers per 10,000. For three out of four analyses (males or females with leukemia or with "all malignant tumors"), the excess risk of occurrence (incidence) of cancer is substantially larger than the prediction of excess cancer mortality (approximately two to three times larger). Only the analysis of mononuclear cell leukemia in the male rats produces estimates of risk of the incidence of leukemia that are slightly smaller (546 versus 501 excess cases per 10,000) than the predicted estimates of mortality from leukemia.

Sielken took a different approach to the inclusion of time in the hazard assessment. In his pre- and posthearing submissions (Exs. 53, 141–F), he looked at several different measures of the effect of exposure to ethylene oxide on tumorigenesis: (1) The mean number of months until prescribed percentages of rats died from a particular tumor, (2) the mean number of months without a response during the entire 25-month experiment, (3) the mean number of months without a response for those rats surviving to 17 months. The overall trends seen in these different methods are similar and OSHA has only discussed the results of method (2) as a representative example. Measure (2) was chosen because of the comparability of these data and the data used by Crump in his time-to-tumor analysis.

Sielken calculated the average length of time, as a percentage of the experimental periods survived by rats in various dose groups in the BRRC study. He commented:

> * * * it seems reasonble to combine all undesirable responses and simply consider the time to death at the different dose levels. * * * These percentages include the impact of brain neoplasms as well as all other potential causes of death. * * * Of course, any effects of brain neoplasms on the time of death are a contributing factor to the time of death data (Ex. 141–F).

These percentages are given in Table 2.

TABLE 2.—AVERAGE LENGTH OF TIME, AS A PERCENTAGE OF THE EXPERIMENTAL PERIOD, SURVIVED BY RATS IN THE BRRC STUDY[1]

| EtO dose, ppm | Male rats (percent) | Female rats (percent) |
|---|---|---|
| 0 | 94.2 | 94.5 |
| 10 | 94.6 | 93.8 |
| 33 | 89.5 | 90.8 |
| 100 | 88.8 | 83.7 |

[1] Ex. 53, Table 1.3.

In his prehearing submission, Sielken examined the life-shortening effect of three tumors: Mononuclear cell leukemia in both male and female rats, peritoneal mesothelioma in male rats, and pituitary adenoma in both male and female rats. These tumors "were judged by the Bushy Run scientists to be 'nonincidental' " and it was noted that the pituitary adenomas were included because of their anatomical location. Sielken concluded, "The information in Table 1.2 (Ex. 53) clearly suggests that the mean time without a response is virtually the same at 0 and 10 ppm and hardly decreased even at 33 ppm." However, Sielken failed to note the decrease in the mean percentage of experimental period without response

observed in the 100 ppm groups, the experimental group in which the statistically significant increases in incidence generally occurred. Sielken also did not point to any statistical tests to determine if such decreases were or were not statistically significant. He merely stated that the decreases seemed small.

OSHA has calculated the statistical significance of the decrease in mean survival period for both male and female rats (Ex. 53, Table 1.3) and has determined that there is a statistically significant dose-related linear (downward) trend in survival times for both male and female rats (p values were 0.002 for female rats and 0.054 for male rats). After reviewing Sielken's discussion of the survival data, OSHA concludes that there is a definite dose-response relationship between exposure to ethylene oxide and survival time, that is, that exposure to EtO is associated with decreased survival in both male and female rats.

*C. Equivalent Doses*

Much material was submitted to the record on the subject of mathematical adjustments of dose in order to extrapolate from the animal carcinogenicity data in making risk predictions for humans. The EOIC noted that "such a procedure is strictly a mathematical convenience to permit intercomparison of data" between the exposures in experimental animals and workers (Ex. 47). As discussed in the proposal (48 FR 17293), OSHA employed a milligram per kilogram body weight per day adjustment to scale the animal doses to "equivalent human doses." These scaling factors were discussed in detail in the OSHA preliminary risk assessment (Ex. 6–18, Appendix B).[1]

A number of commenters suggested changes to these adjustment factors. Crump examined the impact of several changes in the assumptions on the OSHA estimates of risk (Ex. 34, Table 4). For example, both Crump and HIMA (Ex. 11–74, Appendix D) point out that when one averages dose over a complete lifespan rather than over the remaining livespan after first exposure (OSHA used the latter in its preliminary risk assessment), the estimates of risk computed under a linear model would be only 75% as large as those presently computed.

Crump and HIMA also raised some concerns about values that OSHA assumed were "standard" breathing rates. Crump pointed out that if different assumptions on the breathing rates of the animals had been used, the estimates of risk under a linear model would be 1.5 to 2.5 times higher. HIMA commented that OSHA had overestimated the total volume of air that a worker would be expected to breathe in a normal working day. HIMA estimated that the correct volume should be 7.2 $m^3$/workday, rather than the 9.3 $m^3$/workday, assumed by OSHA. Such a change would reduce the equivalent human dose by approximately 23%. As noted in the preliminary quantitative risk assessment, the value of 9.3 $m^3$/day, agrees with values from "Recommendations of the International Commission on Radiological Protection," 1977, and is a standard breathing rate employed by many regulatory agencies.

In addition, Crump examined the impact of different choices of scaling to achieve "equivalent human doses." As discussed in the proposal, OSHA relied on work by Crump and Howe (Ex. 6–17) in choosing mg/kg/day as the correct scaling procedure for ethylene oxide. As Crump reiterated in his testimony, "this work suggests that use of mg/kg/day body weight may be the most appropriate of the 4 dose measures for extrapolating from animals to humans, and that the other methods tend to overestimate human risk" (Ex. 34, p. 16). In its Hazard Assessment, the EOIC chose not to make such an adjustment based on body weight, but assumed dose in ppm to be an appropriate expression of equivalent dose. Crump had calculated that, had OSHA calculated risks on the basis of ppm in air (as the EDIC did), the estimates of risk would be less than 25% the magnitude of the risk presently predicted by OSHA. The EOIC did not elaborate on this choice of dose expression, but noted that "in establishing continuous lifetime equivalents, absorption dissemination elimination parameters between species (including man) are not taken into account" due to a lack of pertinent data (Ex. 57). After review of the record, and in light of Crump's testimony, OSHA believes that mg/kg/day is the most appropriate dose expression for assessing risks due to occupational exposure to ethylene oxide. Due to the systemic nature of the tumors used in the quantitative analysis (the tumors were not contact tumors), OSHA believes an expression of dose which in some way reflects the distribution of EtO tumors is more appropriate than expressing dose in terms of concentration at the site of contact (ppm). OSHA recognizes that much of the data on absorption and dissemination of EtO throughout the body is still lacking, but expressing the dose in mg/kg/day is a best attempt to incorporate this type of data.

Crump also calculated the effect on the estimates of risk if OSHA had used milligrams of intake per surface area per day, an expression of dose used routinely by the Environmental Protection Agency, instead of milligrams per kilogram of body weight per day. He calculated that this expression of dose would increase the estimates of risk approximately 5- to 6-fold. There was no other discussion of this expression of dose in the record, and as Crump noted above, dose measures other than mg/kg/day tend to overstate human risk. Hence, OSHA has not considered it appropriate to change its risk assessment in terms of dose measure and has calculated risk on the basis of milligram per kilogram of body weight per day.

In addition to using dose in ppm, the EOIC did mathematically adjust for differences in lifetimes and dosing regimens between the two animal studies and humans, adjusting for dose over a complete lifespan (72 years) rather than lifespan after first exposure (54 years, as was done by OSHA). In his testimony, Crump estimated that adjusting for complete lifespan would reduce estimates of risk by approximately 25%, when risk is computed under a linear model.

Another issue raised by several commenters was the use of 45 years of exposure as the basis upon which to make estimates of risk. HIMA (Ex. 11–74) expressed the views in many of the submissions:

> * * * OSHA's standard use of a 45-year exposure period is felt to be overly conservative; job changes occur, on the average, much more frequently than twice per lifetime and one should be willing to accept a 20-year period as a maximum time in any one position. This would lead to a 2.2-fold (20/74 vs. 45/74) reduction in risk.

HIMA has based its conclusion on the premise that by reducing the dose to which an individual is exposed (by decreasing the length of time he is exposed), one will lower the risk to that individual in a proportionate manner. While this may be the case for individual risks, it is not true when predicting population risks, as is pointed out by AFSCME (Ex. 44). In its prehearing submission, AFSCME noted that when there is a high turnover rate among workers in a particular industry (as there is in the health care industry),

[1] OSHA assumed a typical working lifetime of 8 hours per day, 5 days per week, 46 weeks per year, for 45 years out of a working lifespan of 54 years (assumes that a person begins work at age 20, retires at age 65, and lives 74 years).

an estimate of risk using, as OSHA did, a cumulative dose model may produce *lower* estimates of risk "than the estimate derived from evaluating successive independent periods of exposure to EtO" (Ex. 44). AFSCME noted that this approach may, in fact, be less protective in terms of overall health impact on a population of workers.

OSHA has recognized when discussing the disadvantages of worker rotation in earlier rulemakings that exposures of shorter duration may not necessarily have a lower total population risk than the risk produced by exposing a single population for the entire 45 years (49 FR 14125). Although HIMA notes that 20 years may be the maximum time spent in any one job position, a shorter job tenure implies that the population at risk will be more than doubled. The resulting risk experienced by the exposed population may consequently be the same, or even greater.

The submission by AFSCME offered an alternate interpretation of this problem. AFSCME presented the formulation by Day and Brown (1980), which is an extension of the Armitage-Doll multistage model of carcinogenesis. AFSCME pointed out that:

> This model assumes that there are one or more separate and distinct stages in the transformation of a normal cell into an observable tumor. Eariler stages involve permanent alteration in the genetic material. Later stages involve the replication of the altered cell into a detectable mass. Day-Brown provides a mathematical model for estimating excess risk of cancer to exposed human populations, taking into account the stage at which the substance acts, the age at which exposure starts and the duration of exposure.

AFSCME noted that because EtO acts directly on the DNA, at least with respect to the animal data, it appears to be an early stage carcinogen (Ex. 44). Consequently, under the formulation by Day and Brown (1980),

> Employee turnover, which leads to repeated exposures to different early stage carcinogens such as EtO may have a very important effect on the risk assessment. * * * Individual workers are unlikely to work for a full working lifetime of 45 years as sterilizer operators. In fact, workers may experience a period of exposure to EtO followed by subsequent periods of employment involving exposure to other early stage carcinogens. Such an employment profile would serve to increase that worker's lifetime probability of developing leukemia in excess of a profile involving no employee turnover (Ex. 44).

Thus, while HIMA may disagree with OSHA's choice of 45 years as a "working lifetime," OSHA feels confident that the level of risk assigned to a population of workers who are assumed to experience 45 years of exposure is reasonable, and may well represent an underestimate of the risk experienced by such a population if employee turnover rates are high.

Another type of mathematical adjustment to the estimates of risk was suggested by the American Federation of State, County and Municipal Employees (AFSCME) (Ex. 44). In its review of the OSHA preliminary risk assessment, AFSCME commented that the study was "flawed by its failure to take fully into account the difficulty in translating risk estimates obtained from experiments using genetically uniform laboratory animals to genetically varied human populations." AFSCME contended that test results from genetically uniform animals will yield "an underestimation of the human dose response curve at low exposure levels due to the relatively steeper slope of the test animal dose response curve" (Ex. 44).

AFSCME suggested that a safety factor of from 10 to 100 should be applied to such estimates from animal data to "generate prudent human risk" (Ex. 44). Employing such a safety factor would bring the estimates of risk from the animal data into approximate agreement with those that AFSCME computed from the epidemiological studies, as discussed below.

### *D. Epidemiologic Evidence Available for Risk Assessment*

OSHA's preliminary determination was that the BRRC data "provided the most appropriate data on which to base the risk assessment" (48 FR 17294). At the time, it was felt that the epidemiologic evidence of risk to workers exposed to EtO was not strong enough to support a quantitative determination of risk. AFSCME expressed concern about this, however, when it noted that: "OSHA by apparently relying completely on laboratory data (i.e. experimental animals) to estimate the risk of developing cancer from lifetime exposure to EtO has seriously underestimated the total number of excess cancers which can be anticipated from various levels of workplace exposure to EtO" (Ex. 44). Crump noted that "* * * these (epidemiologic) studies do contain some useful information to aid in quantifying risk" (Ex. 34). Upon review of the record, OSHA has determined that risk assessments based on the epidemiologic data, the Hogstedt studies in particular, may be useful in the determination of the level of risk which may be experienced by workers exposed to EtO.

Crump calculated risk based upon the hogstedt et al. study (Hogstedt I, Ex. 2–8) of a population of Swedish workers exposed to EtO in the sterilization of hospital equipment from 1968 to 1977 (approximately 10 years). Three deaths from leukemia were observed among 230 workers. Based on information in the study, Crump assumed that average exposures in the population were 20 ppm, and that the minimal latency for environmentally induced leukemia was three to four years, suggesting an "effective" exposure duration of 6.5 years (10–3.5).

Using a linear model to describe the relationship between relative risk for leukemia and exposure, Crump predicted that exposure to EtO at 50 ppm would lead to a lifetime probability of leukemia mortality of 0.300 (3,000 per 10,000), with an 80% confidence limit of 0.125 to 0.50 (1,250 to 5,000 per 10,000) (Ex. 34). Recognizing the uncertainty in these estimates, Dr. Crump nonetheless concluded that "it does not appear that the Hogstedt et al. study suggests that the extimates from the animal data are too large" (Ex. 34).

As discussed in the proposal, the Environmental Protection Agency-Carcinogen Assessment Group (EPA–CAG) performed a quantitative assessment of risk based on the same report of leukemia in 3 out of 230 workers (Hogstedt I, Ex. 2–8). Based on an occupational exposure of nine years, CAG predicted a lifetime probability of dying from leukemia from breathing 1 $mg/m^3$ (0.56 ppm) of EtO of 1.2 deaths per 10,000. In the preamble to the proposed standard, OSHA noted CAG's discussion of various uncertainties with estimates derived from the Hogstedt et al. study (48 FR 17294).

AFSCME (Ex. 44) commented that the CAG analysis "assumed continuous lifetime exposure to EtO," and thus it submitted an alternate analysis to correct "for EPA's clear overestimation of the risk of occupational exposure to EtO." First, AFSCME adjusted the exposure level reported in the Hogstedt study by a factor of 9/45 to account for the relatively short period of follow-up in the study and to obtain an "equivalent working daily dose." Using this method of adjustment, AFSCME predicted an excess lifetime risk of leukemia at 1 ppm of 0.033 (330 per 10,000).

AFSCME also submitted a risk assessment based on the apparent genotoxic nature of EtO and the methodology of Day and Brown (1980) discussed earlier.

> * * * Their (the Day and Brown) model predicts that 58% of the excess risk resulting

from exposure to an early state (sic, stage) substance like EtO will develop from an exposure duration of 10 years. (Ex. 44).

Using this formulation, and scaling for an exposure of nine years, AFSCME suggested that the 20 ppm exposure be adjusted to accommodate the fact that 53% of the relative risk expected in a working lifetime was expressed in nine years. Using this method, AFSCME predicted a lifetime probability of leukemia as 0.012 (120 per 10,000) at a 1 ppm exposure. Similarly, if it is assumed that not all of the members of the Hogstedt study cohort worked for a full nine years, but rather an average of 5 years, then the effective dose would be even lower, and the excess lifetime risk of leukemia at 1 ppm is predicted to be 0.019, or 190 excess deaths per 10,000.

AFSCME noted that "the EPA model, by assuming purely cumulative equivalence of dose and time, appears to have underestimated the effective EtO dose and thus overestimated the lifetime EtO risk" (Ex. 44). In addition, AFSCME pointed out that employee turnover "can have a significant impact on the overall risk assessment" in light of the Day and Brown formulation of risk.

*E. Risk Assessment by Rad-equivalence*

In the proposal, OSHA discussed another approach to risk assessment introduced by Calleman and colleagues (Ex. 6–19) wherein they compare the degree of alkylation of histidine in the hemoglobin in EtO-exposed workers and workers exposed to ionizing radiation. The authors calculated the "red-equivalence" for certain alkylating agents, that is, the number of rads of acute gamma radiation that gives the same effect as a unit dose of the chemical. Using this approach, and based on EtO exposure profiles, Calleman et al. estimated that exposure to 1 ppm per hour of ethylene oxide resulted in a risk of 10 mrad-equivalents of effects in a genetic mechanism.

Thus, in industrial work environments with an average exposure level in the range of 5 to 10 ppm of EtO, Calleman et al., estimated that the midpoint of the range would correspond to approximately 120 rad-equivalencel per hear. On this basis they predicted that a group of 100 workers exposed at the 5 to 10 ppm level for 10 years could expect 3.6 cases of leukemia, one of which would be expected to appear before the end of the 10 year period (48 17294).

There were mixed reviews of this approach to risk assessment. Commenters such as HIMA (Ex. 11–74, Appendix D) pointed out that "* * * there are simply too many differences between the mechanisms of mutation induction by radiation compared to that by chemicals" and that this method "assumes that cancer in man is initiated by forward mutations in somatic cells," an assumption HIMA felt oversimplified the mechanism of cancer initiation.

At this time OSHA is unable to determine the ultimate advantage or disadvantage of this approach to risk assessment. In OSHA's view, calculation of rad-equivalence does not yet represent a generally accepted method for quantifying risks. Moreover, in light of the quality of the bioassay data and their suitability for making quantitative estimates of risk, OSHA is confident that the methodology that was used in performing its quantitative risk assessment, as applied to the available experimental data, represents the best available means of quantifying the risk of EtO exposure.

*F. Conclusions*

In this preamble OSHA has attempted to address the major issues relating to risk assessment which were presented in the comments and testimony of the ethylene oxide rulemaking. The range of all estimates submitted to the record is very wide (16-fold), from a low estimate of 185 excess deaths per 10,000, to 3,000 excess deaths per 10,000. This range covers both the experimental and the epidemiology data, all tumor types, all models, and all endpoints of mortality as well as incidence.

OSHA has examined the individual estimates of risk offered by participants in the rulemaking. OSHA's preliminary estimates of the risk from exposure to EtO at 50 ppm ranged from 634 to 1,093 excess deaths per 10,000, based only on the mortality from peritoneal mesothelioma and mononuclear cell leukemia observed in the Bushy Run study. Since that time, the observation of primary brain neoplasms in the rats of the Bushy Run Study, as well as the observation of tumors in the subjects of the NIOSH study has broadened the data base upon which to rely in making estimates of risk. Several participants in the rulemaking have made predictions of risk from these data sets, as well.

In summary, using quantal models, Crump estimated a risk of from 185 to 1,093 excess deaths per 10,000 workers from exposure to 50 ppm, and from 284 to 1,093 excess deaths per 10,000 when the brain tumor data are not included as the basis for independent estimates of risk. Using time-to-tumor models, his predictions of risk at 50 ppm range from 484 to 727 excess deaths per 10,000 based on mortality data, and 501 to 1,679 excess cases per 10,000, based on incidence data. In addition, Crump made estimates of risk based on the epidemiology data and predicted that exposure to EtO at 50 ppm may result in 3,000 excess deaths per 10,000 workers. Crump noted that there was a wide band of uncertainty around this estimate and that the estimate of risk from these data may be as low as 1,250 excess deaths per 10,000 or as high as 5,000 per 10,000.

The other participants in the rulemaking did not present their estimates of risk in a form which made them easily comparable to the preliminary estimates of risk made by OSHA. Many of them did not estimate the risk that may be posed by exposure to the current PEL of 50 ppm, the level at which OSHA must make a threshold finding of significant risk. However, almost all participants made predictions of the risk from exposure to 1 ppm, the proposed 8-hour TWA.

OSHA's preliminary estimates of risk at 1 ppm ranged from 12 to 23 excess deaths per 10,000. Crump's predictions of risk ranged from 3.7 to 23 per 10,000, including estimates made from the primary brain tumors. The EOIC made predictions of risk based on both the Bushy Run study and the NIOSH data and calculated an excess risk of 18 to 79 deaths per 10,000 workers from exposure to EtO at 1 ppm. Sielken calculated estimates of risk based only on the gliomas and predicted an excess risk of approximately 1 to 6 per 10,000 at 1 ppm.

HIMA's estimates of risk, based only on 20-year exposures, predicted a risk of 1.5 excess deaths per 10,000 at 1 ppm. AFSCME presented estimates of risk using several different approaches to risk assessment, employing both the epidemiologic and experimental data. Based on the epidemiologic leukemia data, AFSCME predicted estimates of risk of approximately 120 to 330 per 10,000 as the lifetime probability of developing leukemia from exposure to EtO at 1 ppm. Based on the experimental data, AFSCME has predicted a risk of 10 per 10,000 for exposures in the range of 0.05 to 0.1 ppm (10 times lower than OSHA's preliminary estimates of risk). After reviewing the record as a whole, and the many estimates of risk offered by participants in the rulemaking, OSHA has concluded that its original estimates of risk, as presented in the proposal, still validly project the risks from exposure to ethylene oxide over a working lifetime. That is, OSHA's best estimate of risk is approximately 634 to 1,093 excess deaths per 10,000 workers exposed to EtO at 50 ppm, and the risk at 1 ppm is approximately 12 to 23 excess deaths per 10,000 exposed

workers. The Agency's confidence in these estimates was greatly increased when predictions made from the data in the NIOSH study were found to agree closely with these estimates of risk. Uncertainties in these estimates as well as estimates of risk derived from the human data indicate that the risk may be approximately five times larger.

Taken as a whole, OSHA believes that the assumptions made in the Agency's preliminary quantitative risk assessment are reasonable and appropriate. Crump concluded that overall "assumptions made by OSHA produce risks which fall near the mid-range of those produced by other plausible assumptions; that is, other reasonable assumptions could produce risk estimates which fall within an order of magnitude in either direction of those estimated by OSHA" (Ex. 34).

Crump's evaluation is borne out by a comparison of the various risk estimates submitted to the record. The estimates proffered by other participants in the rulemaking did not differ substantially from those given by OSHA in the preamble to the proposal. The EOIC noted that:

> It is apparent in these comparisons that the estimates of excess risk are essentially of the same magnitude or differ by up to circa three-fold (as those produced by OSHA). * * * In view of the uncertainties outlined elsewhere in this chapter regarding translation of observed animal effects to calculation of risks to man, in addition to the lack of information regarding comparative pharmacokinetics, it is surprising that the results of these different approaches are as similar as they are (Ex. 47).

In determining the appropriateness of its risk assessment for EtO, OSHA considered the relative merits of making predictions of risk from epidemiologic data versus chronic inhalation bioassays in rodents. The human data offer the advantage that there is no need to extrapolate from animals to humans, and thus estimates of risk derived from these data may be more appropriately applied to workers. Likewise, exposure conditions experienced by the study cohorts (problems of mixed exposure, intermittent exposures, etc.) may more accurately represent the industrial scenario under which risk should be assessed. These are important advantages. On the other hand, the animal bioassays allow exact determination of administered dose and careful control of extraneous environmental factors which may influence carcinogenicity. These properties enhance the ability to tie response directly to dose in a causal manner.

In the case of ethylene oxide, it should be noted that the epidemiological studies are very small (three deaths in one, two deaths in another) and that small sample size leads to a great deal of statistical uncertainty in the estimates of risk. This was demonstrated by Crump when he pointed out that the 80% confidence interval around the estimate of risk for the Hogstedt et al. study was 125 to 500 excess deaths per 10,000 (a four-fold range) (Ex. 34). In addition, there were other methodological problems with the epidemiologic studies that further increase the uncertainty. However, upon consideration of the predictions of risk from the epidemiologic studies, it can be stated with reasonable assurance that the estimates of risk derived from the animal data do not overstate the risk from lifetime exposure to ethylene oxide, and, in fact, may understate the risk.

In choosing its best estimate of risk, OSHA considered both the risks derived from quantal data and the risks computed from time-to-tumor models. In addition, OSHA examined the estimates of risk from site-specific data versus data on total numbers of tumor-bearing animals. In general, the ranges of risk computed from these data overlapped.

The inclusion of the glioma data in the data for the risk assessment had little quantitative impact on the overall estimates of risk. The estimates of risk derived from these data are lower (by approximately 3-fold) than the estimates of risk derived from the other sites or total tumor-bearing animals. (The tabulations based on "all malignant tumors" did not include the mortality caused by the gliomas, and thus, these tumors did not contribute to these overall estimates of risk.) Given the rarity of this type of tumor, the glioma risk should be added to the risks from other causes, though this could not be done directly because the data on other tumors in animals with gliomas were not available. OSHA believes that using the estimates of risk derived from the glioma data as the lower end of the range of risk would greatly underestimate the total expected cancer risk from exposure to ethylene oxide.

There were participants in the rulemaking who felt that OSHA had overstated the risk. For example, HIMA (Ex. 11–74) concluded that once the "necessary biological and workplace corrections to yield a more correct estimate of the risk involved" were incorporated, the prediction of risk at 1 ppm would be reduced approximately 8-fold, from 12 per 10,000 (1 ppm for 45 years of exposure) to 1.5 per 10,000 (1 ppm for 20 years of exposure). HIMA's objections to this conclusion were discussed in detail earlier. Given the other submissions to the record, and the weight of evidence concerning the preliminary estimates, OSHA cannot agree with this characterization. Most indications lead to the conclusion that the risk is not overstated. Although OSHA does not believe HIMA's approach to be valid for these purposes, it should be noted that even the lower level of risk proposed by HIMA would still constitute a "significant" risk, as discussed in the following section.

The importance of these risk estimates, and their implications for justifying the permanent standard will be discussed in the section on significance of risk.

## VI. Significance of Risk

OSHA's overall analytical approach to making a determination that workplace exposure to hazardous chemicals presents a significant risk of material health impairment takes into consideration a number of factors that are consistent with recent court interpretations of the OSH Act and rational, objective policy formulation. As prescribed by Section 6(b)(5) of the OSH Act, OSHA examines the body of "best available evidence" on the toxic effects of hazardous chemicals to determine the nature and extent of possible health consequences resulting from workplace exposure to the substance under consideration. Quantitative risk assessments are performed where possible and considered with other relevant information to determine whether the substance to be regulated poses a significant risk to workers at the current permissible exposure level. OSHA considers whether reduction of the permissible exposure level for the substance will substantially reduce the risk.

OSHA has reviewed the toxicologic and epidemiologic literature and the record evidence on EtO described in the Health Effects section of this preamble. The record, as summarized herein, clearly shows that EtO exposure is associated with a wide range of health effects; those effects include cancer, possibly of the blood as well as other organs; spontaneous abortions among exposed pregnant women; other reproductive effects among males and females; mutagenic and cytogenetic effects; neurotoxic effects; and sensitization reactions.

Of all the toxicologic evidence presented in the record, the evidence showing that EtO is carcinogenic is the most impressive. Three epidemiological

studies (Exs. 2–8, 2–22, 6–5) provide supportive evidence that EtO is carcinogenic in humans; although the groups of workers studied were small, two of these studies (Exs. 2–8, 2–22) described significant increases in deaths from leukemia among EtO-exposed workers. One described significant increases in deaths from stomach cancer (Ex. 6–5), another showed significant increases in pancreatic cancer and Hodgkin's disease.

In addition, a number of experimental studies provide evidence that EtO is carcinogenic. The Bushy Run study (Ex. 2–9) revealed both statistically significant and dose-related increases in peritoneal mesothelioma in male rats and mononuclear cell leukemia in female rats exposed to EtO by inhalation. In addition, an excess incidence of gliomas, a rare tumor in the Fischer 344 rat was detected. Although criticisms of this study were raised on specific methodological points, all interested rulemaking participants agreed that the study was conducted in accordance with good laboratory practices was well-suited for use as the basis for quantitative assessment of cancer risk related to EtO exposure. Because of these considerations and because the mode of exposure was by inhalation of EtO at concentrations both above and below the current PEL of 50 ppm, OSHA chose the Bushy Run bioassay as the basis for its quantitative risk assessment, as discussed in the previous section. The results of the Bushy Run study were supported by positive findings of EtO-induced cancer in four other bioassays (Exs. 2–18, 2–19, 6–16, 15, 19); furthermore NIOSH (Ex. 15), reported an increased incidence of gliomas among EtO-treated rats, further strengthening the findings of the Bushy Run study.

The first element established in the Supreme Court's Benzene decision (*IUD* v. *APA* 448 U.S.) for determining significant risk, that of demonstrating that exposure at the current PEL constitutes a significant risk of material health impairment, is clearly and definitively established by the rulemaking record for EtO. Based upon the quantitative risk assessment, OSHA has determined that the best estimate of excess risk of cancer at 50 ppm EtO (the current PEL) is between 634 and 1,093 cancer-related deaths per 10,000 employees. In making a determination that this risk is significant, OSHA relies, in part, upon the Supreme Court's indication of when a reasonable person might consider a risk significant and take steps to decrease that risk. The Court stated:

> It is the Agency's responsibility to determine in the first instance what it considers to be a "significant" risk. Some risks are plainly acceptable and others are plainly unacceptable. If, for example, the odds are one in a billion that a person will die from cancer by taking a drink of chlorinated water, the risk clearly could not be considered significant. On the other hand, if the odds are one in a thousand that regular inhalation of gasoline vapors that are 2 percent benzene will be fatal, a reasonable person might well consider the risk significant and take the appropriate steps to decrease or eliminate it. (*IUD* v. *API* 448 U.S. at 655).

The estimated cancer mortality attributed to EtO exposure at the current PEL must be considered significant using virtually any reasonable basis for such a determination.

It is also evident that the estimates of cancer risk for EtO at the current 50 ppm exposure limit are significant when compared to risk estimates judged significant by OSHA for other hazardous substances in previous rulemakings. For example, the risks from EtO exposure at the current PEL are a higher than those for coke oven workers (10 cancer cases per 1,000 workers) which OSHA determined were sufficient to justify lowering the coke oven emissions standard (41 FR 46755). The risk from EtO exposure are near those from arsenic exposure at the former PEL (148–425 cases per thousand, as reported in the supplemental statement of reasons for the final rule for occupational exposure to arsenic (43 FR 19584)). The excess risk of cancer from EtO exposure also approaches the level of risk of byssinosis (130 cases per thousand) resulting from exposure to cotton dust at the former PEL.

Further insight into the significance of the magnitude of the risk can be gained by reviewing occupational accident fatality statistics. Such an analysis was performed previously by OSHA for the arsenic standard (48 FR 1864–1903).

Accident fatality rates are not directly comparable to the estimated excess cancer deaths resulting from EtO exposure. Fatality statistics represent deaths from accidents reported by the employers. They are calculated on an annual basis, and reflect accidents that have occurred due to all causes combined. To increase the comparability, annual BLS fatality accident rates were adjusted to be equivalent to a 45 years working lifetime. The reported annual accident fatality rates are lower than the estimated lifetime fatality rates given below. If OSHA calculated the excess cancer risk associated with a single year exposure to EtO, the excess cancer risk would also be lower than the 45 year lifetime risk. Smaller numbers would result for all statistics if a shorter time period, such as one month, is used as the basis for the comparison. A common time basis using a lifetime exposure associated with the comparison appears to be a logical approach. (In addition, see the discussion below regarding use of a 20 year working lifetime).

OSHA believes that the accident fatality statistics gives a general view of the conditions in the work environment that can place in perspective, to some extent, the types of situations that are considered very risky, and some that are not. As such, it can be seen that the cancer risks associated with EtO exposure are significant. EtO risks at 50 ppm are higher than accident fatality risks from all types of accidents combined, in most industries. Typical lifetime fatality risks for all manufacturing was 27 per 10,000 and for service employment was 16 per 10,000. Typical fatality risks in electrical equipment industries was 4.8 per 10,000 and 0.7 per 10,000 in retail clothing (48 FR 1902).

Although OSHA ultimately relied upon the multistage and one-hit model to determine risk from exposure to EtO at the current and proposed permissible exposure limits, the Agency also examined the results from other mathematical models. At the current exposure limits, maximum likelihood estimates based on the other models varied between 63 to 173 cancer cases per 1,000 workers. The Agency points out that with regard to the estimates of risk based on the finding of leukemia in female rats, use of these models gave higher maximum likelihood estimates of risk than did use of the one-hit model. Results of risk estimation based on these models support OSHA's determination that significant risks exist from exposure to EtO at the current PEL.

In accordance with the second element of the Supreme Court's Benzene decision on determination of significant risk, OSHA has determined that lowering the PEL for EtO from 50 ppm to 1 ppm is reasonably necessary to reduce the cancer risk for EtO exposed workers. OSHA's risk assessment indicates that the reduction in risk resulting from lowering the 8-hour TWA to 1 ppm will be dramatic. The best estimate, as determined by the risk assessment, is that the risk at 1 ppm will be between 12 and 23 cases per 10,000. The upper confidence limits for this assessment are 21 to 33 deaths per 10,000 workers.

In developing estimates of risk for occupational exposure to EtO, OSHA had the benefit of numerous

independent risk assessments that were submitted to the record, in addition to its own assessment. Although the estimates of the risk varied from one assessment to another, all of the assessments indicated that the excess cancer risk from EtO exposure at 1 ppm over a working lifetime are significant. Based upon the discussion referred to above, OSHA has determined that significant risk is *not* eliminated by lowering the TWA to 1 ppm.

Some participants have suggested that OSHA calculate the cancer risks to individuals attributable to EtO exposure for 20 years of exposure rather than 45 years of exposure. For example, HIMA (Ex. 11–74) noted that OSHA had greatly overstated the risk by computing risks on 45 years of exposure. HIMA suggested that 20 years would produce a more plausible risk estimate because most exposures to EtO in the hospital sector are for far less than 20 years, and therefore HIMA suggested using 20 years, not 45 years, as a maximum length of exposure in risk calculations.

There was discussion of the reasons for selection of the 45-year working lifetime in the quantitative risk assessment section of this document, which concluded that calculations of population risk based on 20 years of exposure may not necessarily reduce the risk calculated for a population which is exposed for 45 years.

Another reason for using the 45-year exposure as the lifetime risk is the use of comparative risk analysis when evaluating the importance of the magnitude of the risk. To gain a perspective on the significance of the risk, OSHA has examined occupational risks relative to one another. The data on work-related illnesses are very scanty and often OSHA must resort to comparisons with the risks of occupational injuries. In doing these relative comparisons, OSHA has chosen a common unit of time used for determining "occupational lifetime" risks, that is, 45 years. The common time basis for comparison is necessary because risk to an individual from exposure to a hazard for 45 years will be greater than risks from exposure for only 20 years, and similarly, risks to an individual exposed to a hazard for twenty years will be greater than the risks of exposure for only one year. OSHA believes it is appropriate (and necessary) to compare lifetime risks from EtO to lifetime risks from other causes, as long as the periods of "exposure" are the same.

The use of the 45-year lifetime is based upon guidance given in the OSH Act. As found in section 6(b)(5): "The Secretary, in promulgating standards dealing with toxic materials or harmful physical agents under this subsection, shall set the standard which most adequately assures to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity even if such employee has regular exposure to the hazard dealt with by such standard for the period of his working life." It is reasonable to assume that a person will begin work at age 20 and work until the age of 65 years old, a 45-year working lifetime, although the person may not work at the same job or be exposed to the same toxic substance for the entire 45 years. Changing jobs may result in increased risk from worker turnover.

As OSHA noted in the quantitative risk assessment section of this preamble, although the use of a 20-year lifetime risk will be lower than the 45-year risk for any single individual, the overall risk to the population will increase. Though workers will be exposed for shorter periods of time, the population at risk will increase dramatically, because turnover causes the exposure to be spread among several individuals (that is, two workers exposed for 20 years each, compared to one worker exposed for 40 years). Worker turnover is believed to increase the risk for the population to a level greater than that associated with individual risks. (See discussion in quantitative risk assessment. AFSCME has stated that, due to turnover, risks should be increased by a factor of ten.

OSHA has not made the adjustments suggested either by HIMA or AFSCME. OSHA believes that adding more factors for analysis in the significant risk determination is not necessary. In addition, calculating 20-year risks rather than 45-year risks increases uncertainties. The risks of 45 years of human exposure are comparable to the lifetime dosing pattern in the Bushy Run and NIOSH studies that were used as the basis for the quantitative risk assessment. If a 20-year human exposure is taken as the lifetime at risk, adjustments would have to be made to take into account the period of nonexposure. Because information is not available on which to base those adjustments further assumptions would have to be made in order to obtain estimates of risk. Although these assumptions might be reasonable they would, nonetheless, add uncertainty to the 20-year estimate that does not exist for the 45-year estimate. Finally, with the exception of HIMA, OSHA's approach to determining significant risk has been virtually unchallenged. OSHA's approach is consistent with other risk assessments previously conducted.

In conclusion, OSHA believes its approach, using a 45-year exposure as an occupational lifetime is an appropriate method for analyzing the significance of risk. Although risk from a 20-year exposure for any individual appears to be smaller than a 45-year exposure risk, when using comparative risk analysis, the regulatory decision remains the same. That is, that risks are significant at the existing 50 ppm PEL, that the new standard reduces the risks, and that the new 1 ppm TWA limit does not eliminate significant risks. In addition, using a 20-year exposure as lifetime rather than a 45-year lifetime means that more workers will be exposed to EtO, which will have the effect of increasing the risk to the population as a whole. If a 20-year lifetime were used, this turnover factor would have to be included in the significant risk determination. Evidence has not been sufficient in this rulemaking to adopt this type of population analysis for the significance of risk. It seems, however, that such an approach would, if used, lead to greater estimates of risk, and thereby provide further justification for the standard.

In accordance with the Supreme Court's guidelines, OSHA has attempted to quantify the risk of exposure to EtO by determining which levels of exposure constitute a significant risk to employees. However, as acknowledged by the Court, significant risk determinations involve more than mere mathematical treatment of the available health data. The use of mathematical risk assessment models is only one tool, though an important one, in the overall risk evaluation performed by OSHA in developing health standards. The Agency must evaluate all of the health evidence, including those data which do not readily lend themselves to quantification of risk, to determine necessary and appropriate protective provisions for exposed employees.

OSHA believes that the record evidence describing EtO's carcinogenic effects, along with the findings of the quantitative risk assessment, provide overwhelming evidence that a significant excess risk of cancer mortality is associated with EtO exposure and supports the need to reduce the PEL for EtO. In addition to this evidence, the record evidence showing that EtO exposure is associated with reproductive and cytogenetic effects buttresses the need to lower the PEL, although the available data do not permit development of reliable quantitative risk assessments for these

health effects. Evidence on reproductive effects include a study by Hemminki and coworkers (Ex. 6–7), who reported an increased incidence of a spontaneous abortion among pregnant EtO-exposed women, as well as findings from animal bioassays (Ex. 2–23, 6–9, 4–60, 6–10, 6–16) describing increased incidences of fetotoxicity, decreased fertility, and effects on sperm count and motility. Despite criticisms of these studies, many commenters (Exs. 21–261, 141E–2, 40) agreed that the results of the Hemminki study, taken in combination with the animal data describing fetotoxic and genotoxic effects resulting from EtO exposure, indicate that EtO poses a reproductive hazard for both men and women.

The genotoxic effects of EtO exposure described in the record include mutation of cells in culture, dominant-lethal mutations, heritable translocations, (Exs. 2–37, 2–352, 2–36), unscheduled DNA snythesis in germ cells of rodents, and increased frequency of chromosomal aberrations and SCE's in monkeys, rabbits (Exs. 4–60, 6–16, 22), and in humans occupationally exposed to EtO below the current PEL of 50 ppm. (Exs. 2–38, 6–13, 6–12, 6–14, 2–39, 137, 6–15) These effects are not surprising given that EtO is a highly reactive chemical and is capable of alkylating DNA. Although it is clear that the findings of chromosomal aberrations and SCE's in exposed humans stem from EtO acting upon DNA in human cells it is not clear what clinical manifestations would result from these effects. Nonetheless, the fact that EtO acts to alter the basic structure of genetic material, and resulting in alternations in ways that are both rare and persistent, and for which the clinical outcome is uncertain, is serious cause for concern.

The wide spectrum of effect attributable to EtO exposure is striking both in the number of test systems for which positive effects were found and in the relatively low exposures associated with those effects. These findings, taken together with the evidence on cancer, suggest similarities in the mechanism by which EtO induces mutagenic, carcinogenic, and reproductive effects. It is well established in the scientific community that most carcinogens have also been found to be mutagens when tested in *in vitro* and *in vivo* systems. For example, Legator testified:

> * * * we can talk at great length about the correlation between compounds that cause chromosome abnormalities * * * (and) cancer and the correlation is extremely impressive * * *" (Tr. 68).

Similarily, NIOSH has stated that the evidence that EtO exposure is associated with spontaneous abortion is supported by EtO's genotoxic activity. (Ex. 40).

Although the mechanisms by which EtO induces cancer or spontaneous abortion have not been precisely determined, the mutagenic activity of EtO suggests a mechanism by which EtO may cause these other effects. In evaluating the need to regulate occupational EtO exposures, OSHA must consider these elements in addition to the finding that a significant excess cancer mortality risk exists at the current 50 ppm EtO PEL. OSHA agrees with Legator's testimony that EtO is unusual in the breadth of its related toxic effects.

> I think you've had all the information that one could possibly gather to make a decision here. We can do all the risk estimates we wish and the answer is going to be that this is an extremely toxic chemical, a uniquely toxic chemical, a chemical that represents, in the pure sense of the word, a mutagenic, carcinogenic substance that does all the things that one would anticipate and one that we very seldom see in terms of (the) entire spectrum of results. (Tr. 81).

OSHA therefore concludes that EtO presents a serious and significant risk of adverse health effects going well beyond those of an excess risk of cancer, and believes that these risks will be substantially reduced by promulgation of the 1 ppm TWA.

Congress passed the Occupational Safety and Health Act of 1970 because of a determination that occupational safety and health risks in the American workplace were too high. Based on this, it is clear that Congress gave OSHA the authority to reduce serious occupational risks when feasible. OSHA believes that the proposed standard for EtO will reduce risk of cancer from a hundred per thousand to nearly one per thousand workers, and therefore, the Agency is carrying out the Congressional intent within the limits of feasibility and is not attempting to reduce insignificant risks.

In accordance both with Congressional intent and the Supreme Court's rationale, OSHA must, if it is feasible, seek to reduce risks below those estimated by the risk assessment to persist at a PEL of 1 ppm. OSHA expects that the final rule will reduce the risk of cancer below that estimated using the mathematical model. The estimates of risk only consider the standard's exposure level and do not take into account the other protective provisions of the standard such as respirators and medical surveillance. The decrease in risk to be achieved by these additional provisions cannot be adequately quantified beyond a determination that they will add to the protection provided by the lower PEL alone. OSHA has determined that employers who fulfill all the provisions of the final rule will provide that protection for their employees from the hazards presented by occupational exposure to EtO beyond that which would be provided solely by reduction of the PEL.

## VII. Summary of Regulatory Impact and Regulatory Flexibility Analysis

*Introduction*

Executive Order (E.O.) 12291 (46 FR 13197, February 19, 1981) requires that regulatory agencies develop a regulatory analysis for any rule having major economic consequences on the national economy, individual industries, geographic regions, or levels of government. The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) similarly requires regulatory agencies, including OSHA, to consider the impact of regulatory actions on any small entities that will be affected by the regulation.

In accordance with these requirements, OSHA prepared a Preliminary Regulatory Impact and Regulatory Flexibility Analysis (Ex. 6–22) to accompany the proposed standard for EtO. The Agency has also developed a combined Regulatory Impact and Regulatory Flexibility Analysis for the final EtO standard. Rulemaking comments received on the Preliminary Regulatory Impact Analysis and on the economic and technological feasibility of the standard are addressed in the summary sections below. The principal findings of each of the chapters of the final Regulatory Impact Analysis, and any differences between the Agency's preliminary and final analyses, are also discussed in the following sections. The Regulatory Impact and Regulatory Flexibility Analysis is available in the rulemaking docket for inspection and copying.

The Secretary has determined that this regulation does not constitute a major regulatory action, as defined by the criteria of section 1(b) of E.O. 12291. The Secretary also certifies that this action will not have a significant impact on a substantial number of small entities.

In accordance with the Paperwork Reduction Act of 1980 (Pub. L. 96–511), the reporting or recordkeeping provisions that are included in this regulation will be submitted for approval to the Office of Management and Budget (OMB). They are not effective until OMB approval has been obtained and the public notified to that effect through a technical amendment to this regulation.

*Summary of Industry and Exposure Profiles*

Information received from the Health Industry Manufacturers Association (HIMA) (Ex. 89, Tr. 240) has caused OSHA to reevaluate its original estimates of the numbers of directly and incidentally exposed employees potentially affected by this standard. OSHA estimates that the EtO standard covers approximately 71,196 directly exposed employees and 69,175 incidentally exposed workers in five industry sectors. Directly exposed workers are defined as those exposed to EtO as part of their regular work assignments. Incidentally exposed employees are defined as those exposed on a non-routine basis, such as might occur if an employee walked through an area where EtO was present. For example, an incidental exposure occurs when an employee inhales airborne EtO that is off-gassing from a product previously sterilized with EtO, or when a poorly functioning ventilation system permits EtO to accumulate in an area normally free of EtO.

The majority of employees covered by the standard work in five industry sectors: EtO producers, ethoxylators (firms using EtO to manufacture other chemical products), health care providers (hospitals that use EtO as a sterilant), manufacturers and sterilizers of medical products (hereafter termed medical products manufacturers), and spice manufacturers. The producer industry is comprised of 13 large firms, only 3 of which had annual sales under $1 billion in 1979. OSHA has identified 38 of the 50 firms that were estimated by the Ethylene Oxide Industry Council (EOIC) to comprise the ethoxylator industry. The 38 ethoxylator firms and the 13 producers identified use approximately 98 percent of all EtO produced in the United States to synthesize other chemicals, such as the ethylene glycol used in antifreeze, and polyester resins and fibers. The smallest ethoxylator firm by revenue (of the firms that were identified) had annual sales of $15 million and employed 350 workers in 1981. A total of 3,676 employees are currently estimated to be directly exposed in the producer and ethoxylator sectors.

Three of the industries affected by the standard—hospitals, medical products manufacturers, and spice manufacturers—use EtO to sterilize other products. Although the sterilant uses of EtO consume only 2 percent of all EtO produced in the United States, these applications are responsible for most occupational exposures to EtO. OSHA estimates that EtO is used as a sterilant in 7,700 sterilizers in 6,237 hospitals. In all U.S. hospitals, approximately 62,370 employees are estimated to be directly exposed, and 25,000 are estimated to be incidentally exposed.

In addition, 5,000 and 41,750 employees are directly and incidentally exposed to EtO, respectively, in the 125 medical products manufacturing firms that are estimated to use EtO. In the Preliminary Regulatory Impact Analysis, OSHA estimated that 300–400 firms in this sector sterilized with EtO and that 14,000 and 116,900 employees were directly and incidentally exposed, respectively, in this sector. However, HIMA reported (Ex. 89, Tr. 240) that fewer firms in this sector are currently using EtO to sterilize medical products. Among the firms identified by OSHA in this industry were very large companies such as Johnson & Johnson (with sales of $4.8 billion and employment of 42,000) and relatively small firms such as Edward Weck and Company, Inc., with 400 employees and annual sales of $30 million.

An estimated 25 spice manufacturing firms use EtO to sterilize spices. These firms have a total of 150 directly exposed employees. OSHA revised its estimate of the number of EtO-using firms and exposed employees in this sector based on information submitted to OSHA's rulemaking docket by the American Spice Trade Association (ASTA) (Ex. 11–130). The Preliminary Regulatory Impact Assessment estimated that there were 27 EtO-using firms and 162 directly exposed employees in this sector. Fifty-seven percent of the firms identified in this industry sector have more than 1,000 employees. The two smallest firms identified have 28 and 95 employees and annual sales of $20 and $14 million, respectively.

*Summary of Costs*

OSHA examined both the annualized and present value costs (in 1982 dollars) of compliance with a 1 ppm TWA and a 10 ppm.

These costs were determined for each of the affected industry sectors and represent the annualized and present value costs that would be incurred assuming that the start-up dates of the engineering provisions in the standard are 1 year from the effective date of the rule. The present value of the costs was estimated using a 10 percent discount rate and a 50-year time period. Costs are presented in this regulatory analysis for the engineering controls necessary to achieve exposure levels of 1 ppm as an 8-hour TWA, and for other provisions of the standard, such as medical surveillance, exposure monitoring, training, and hazard communication.

OSHA estimates that total annualized costs, which include capital costs as well as annual operating costs, are $35.45 million for all affected sectors. The total annualized costs for the five industry sectors are: producers, $1.27 million; ethoxylators, $0.97 million; health care providers, $16.68 million; manufacturers of medical products, $16.38 million, and spice manufacturers, $0.15 million. The present value of the costs of the final standard over the next 50 years, assuming a 10-percent discount rate, is estimated to be $351.52 million for the five affected industry sectors.

OSHA's Preliminary Regulatory Impact Assessment reported higher costs than those presented here. OSHA estimated that the total annualized costs for all sectors for the proposed standard would be $72.4 million, distributed by industry sector as follows: producers, $1.56 million, ethoxylators, $1.03 million; health care providers, $23.65 million; manufacturers of medical products, $45.99 million; and spice manufacturers, $0.17 million. OSHA has revised the estimated compliance costs for the producers sector based on submissions suggesting that two companies had already achieved compliance with a 1.0 ppm TWA (Exs. 4–40, 11–68) and, therefore, would incur no costs for engineering controls. Costs in the health care providers sector were revised based on information submitted to OSHA by the American Hospital Association (AHA) (Ex. 11–115) showing that 40 percent of the hospitals participating in the AHA's survey reported that they had already achieved a 1.0 ppm TWA and, therefore, would incur no costs for engineering controls. Costs in the manufacturers of medical products and spice manufacturers industry sectors have also been changed based on revised estimates of the number of firms using EtO and the number of exposed employees (Exs. 11–130, 89).

*Summary of Economic Impacts*

In the EtO producer and ethoxylator sectors, OSHA estimates that the annualized compliance costs of the final standard are approximately 0.2 and 0.1 percent of total annual sales for these sectors, respectively. Costs of this size will not have a substantial impact on the firms in these two sectors, since these firms are large, multi-product, multi-facility, and financially sound companies.

In the sectors using EtO as a sterilant (medical equipment manufacturers, hospitals, and spice manufacturers), the

estimated annualized compliance costs per firm ranged from $1,475 to $131,040. The estimated cost of the standard per directly exposed employee in the spice manufacturing, hospital, and medical equipment manufacturing sectors is $1,000, $267, and $3,276, respectively. OSHA believes that, since the demand for the products produced by these sectors is relatively price inelastic, firms in these sectors will be able to pass these costs forward to their customers.

In the medical equipment manufacturing sector, where an additional 41,000 employees are believed to be incidentally exposed to EtO, firms will probably be able to pass a part of their costs forward to their customers in the hospital sector. As described above, OSHA believes that the hospitals, in turn, will pass these costs through to the consumers of hospital services.

In conclusion, OSHA has determined that the compliance costs associated with the final EtO standard will not have a significant impact on the market structure of any of the affected industries. In addition, the impact of the rule on inflation will be negligible, accounting only for approximately 0.001 percent of the GNP for 1982. Further, since OSHA has found that few if any firms will be forced to cease doing business because of the standard, no impacts on employment or regional concentration are anticipated. Finally, the permanent standard for EtO should not have a discernible impact on the balance of payments, since the U.S. producers of EtO who compete with foreign producers are clearly capable of absorbing the costs of the standard.

*Summary of Benefits*

The illnesses and premature deaths prevented by the implementation of the final EtO standard represent some of the expected benefits of this standard. Some aspects of these benefits can be quantified, such as the excess risk of cancer due to direct exposure to EtO. Other EtO-related health impacts, such as chromosome damage and neurotoxic effects, have not been quantified due to data limitations.

Among the non-quantifiable health effects attributable to EtO exposure are several types of chromosome damage including increased frequency of sister chromatid exchanges (faulty exchanges of genetic material among chromosomes), chemical alteration of the DNA, failure of the DNA repair mechanism, and quadriradials (a visually detectable, rare, and complex chromosome aberration). Mutagenic and reproductive effects of EtO exposure have been observed in experimental animal studies involving increases in the frequency of fetal resorption, teratogenic effects, and dominant-lethal effects. In addition, increases in the number of spontaneous abortions were observed in an epidemiological study of exposed hospital sterilizer technicians in Finland. Exposure to EtO can also have serious neurotoxic and sensitization effects. The neurotoxic effects of EtO can range from centrally mediated nausea and dizziness to peripheral paralysis. Employees who become sensitized to EtO often have to avoid all subsequent contact with the chemical.

Using a quantitative risk assessment based on the Bushy Run experiments, OSHA has estimated the number of excess cancer cases that are expected to occur among directly exposed workers during the next 50 years. The risk assessment model assumed that workers are exposed to EtO 8 hours per day, 5 days per week, 46 weeks per year, for 45 years. The 50-year time period represents the remaining life expectance of a worker whose first exposure occurs at the age of 25 years. The directly exposed population accounts for approximately 71,196 of the estimated 140,371 employees exposed to EtO. Based on current exposure levels, OSHA estimates that compliance with the 1 ppm TWA will reduce the number of excess EtO-related cancers over the next 50 years from a range of 532 to 1,017 to a range of 75 to 146, an 86 percent reduction.

*Summary of Technological Feasibility*

Several issues were raised and discussed at length as to the technological feasibility of certain provisions of the EtO standard. These included: the feasibility of achieving compliance with the 1 ppm 8-hour TWA and the ability of available monitoring methods to measure 8-hour TWA EtO concentrations accurately and reliably. The record evidence on each of these issues is summarized below.

Feasibility of the 1 ppm TWA

OSHA concludes that compliance with the 1 ppm TWA is technologically feasible for each of the five industry sectors principally affected. The methods that can be used to reduce employee exposure to EtO in the EtO producer and ethoxylator industry sectors involve conventional technology. Examples include the increased use of exhaust ventilation, double mechanical pump seals, leak detection and repair, and the supplemental use of respiratory protection for selected short-term operations and maintenance activities. This technology is commonly known and presently used by firms in these affected industry sectors. The following sections present evidence and testimony from the record that demonstrate the feasibility of compliance with the 1 ppm TWA, not only in the producer and ethoxylator sectors, but in the medical products manufacturers sector, the spice manufacturers sector, and the health care providers sector.

Processes in which EtO is manufactured or used as a chemical feedstock primarily involve closed systems. Emissions that are of concern from the viewpoint of occupational exposure arise from pump and compressor seals, valves, and flanged joints. According to the JRB, Associates (Ex. 6–22) study of the EtO industry, these exposures can be controlled by the increased use of mechanical seals on pumps and compressors; leak detection and repair; rupture disks for minimizing low-level leakage from pressure relief devices; closed sampling devices at process sampling locations; and vapor-tight unloading connections, magnetic level gauges, and nitrogen purge systems on tank car loading facilities. Based on visits to producer and ethoxylator sites where these controls were being used, JRB concluded that a 1 ppm TWA was technologically feasible if respiratory protection was used for short periods of time during hose-disconnect operations at tank car loading and unloading stations (Ex. 6–22).

Many producers and ethoxylators submitted information supporting JRB's conclusion. For example, Celanese Corporation (Ex. 4–40) adopted a 1 ppm internal 8-hour TWA exposure limit in 1980 and is currently achieving this level at all job locations. Texaco (Ex. 4–47) reported that it is currently "fairly close" to achieving a 1 ppm 8-hour TWA and is preparing to implement additional controls to achieve a 1 ppm standard. The controls used by Texaco include "* * * recovery systems, closed-loop sampling systems, and magnetic level gauges for loading EtO tank cars" (Ex. 4–47).

The EOIC surveyed its member companies on the issue of the feasibility of a 1 ppm TWA (Ex. 4–33). Although the EOIC agrees with OSHA that a TWA of 1 ppm is feasible for the EtO producers and non-producer ethoxylators, they expressed concern that certain non-producer ethoxylators would not be able to achieve the 1 ppm TWA:

> * * * With respect to the non-producer* * * [ethoxylators], * * * it must be emphasized that the EOIC survey response constitutes a relatively small sample of a diverse industry and that 1 ppm

may not be technologically feasible for some members of that industry. (Ex. 4–33)

However, a supplemental submission by the EOIC (Exs. 4–33A, 4–33B) noted that 19 of 26 non-producer ethoxylator firms contacted by EOIC had already achieved 8-hour TWA's of 1 ppm or below. Neither the EOIC nor individual non-producer ethoxylator firms presented evidence to the record to suggest why firms in this sub-sector might have difficulty achieving a 1 ppm PEL. OSHA believes that the processes involved in ethoxylation, the types of equipment used, and the engineering controls employed to reduce emissions from these processes are substantially similar for both EtO producers and producer and non-producer ethoxylators. OSHA concludes, therefore, that compliance with a 1 ppm TWA is feasible for producers and for ethoxylators.

Several commenters (Exs. 11–57, 11–133, 70, Tr. 828, 837) stated that, while a 1 ppm TWA is feasible, respirators might be required for some short-term operations. For example, the EIOC commented that:

> In order for industry to meet a PEL of 1 ppm (TWA), use of respirators in certain circumstances, in addition to maintenance and repair, will be necessary. Producers and * * * (ethoxylators) may need to use respirators during loading and unloading operations. (Ex. 11–57)

Howard L. Kusnetz, Manager of Safety and Industrial Hygiene, Shell Oil Company (Ex. 70, Tr 878), stated that workers in 14 of 16 job categories at Shell were exposed to 8-hour TWA EtO concentrations of less than 1 ppm; in the 2 categories where exposures exceeded 1 ppm, respirators were used for short-term operations. Donald E. Rapp, a Certified Industrial Hygienist with the Dow Chemical Company, also confirmed that 1 ppm can be achieved if respirators are used during tank car loading and unloading and during vessel cleaning (Tr. 837). A submittal by Union Carbide Corporation stated that a 1 ppm level "* * * may be feasible *only* with the extensive use of negative pressure respirators, supplied air equipment, and with a sufficient phased-in compliance period" (Ex. 11–133). Union Carbide goes on to comment that respirators would be required in operations such as "* * * breaking connections, changing filters, cleaning railcars and tank trucks, clearing lines and quality control sampling * * *" (Ex. 11–133).

OSHA agrees with Union Carbide's assessment that a 1 ppm TWA may require the use of respirators in some maintenance operations and tank car loading and unloading. Such operations will need to be evaluated by individual employers on a case-by-case basis to determine whether engineering and work practice controls are feasible. However, OSHA does not agree that respiratory protection will be necessary during process (quality control) sampling. As reported by JRB (Ex. 6–22), Texaco (Ex. 4–47), the EOIC (Ex. 4–33), and the Dow Chemical Company (Tr. 837), employee exposures during process sampling can be controlled effectively by enclosing and ventilating the sampling points.

There was general agreement in the record that a 1 ppm 8-hour TWA exposure limit is achievable for operators of large industrial sterilizers (Exs. 6–22, 11–74; 11–113; 91; 146; Tr. 213, 1068, 1042). In the feasibility study conducted by JRB (Ex. 6–22), a number of engineering controls and work practices were identified that are currently being used in the industry to reduce occupational exposure to EtO. These include chamber evacuation systems, liquid/gas separation units to prevent excessive EtO emissions during chamber evacuation, local exhaust hoods installed over the sterilizer door, local ventilation of aeration chambers, and allowing the sterilizer to aerate for a short period of time after opening the sterilizer door. Because the equipment described by JRB is readily available on new sterilizers or can be retrofitted onto old equipment, JRB concluded that a 1 ppm TWA is feasible for sterilizer operations (Ex. 6–22). Ronald H. Abrahams, Director of the Regulatory Compliance Division of the American Hospital Supply Corporation (Ex. 4–45), commented as follows:

> For us to achieve a 1 ppm or lower level by engineering means, it is our opinion that we would have to construct new facilities with remote material handling capabilities, sterilization cycle modifications, [and] conveyor systems to transport products from the sterilizer area to specially designed degassing areas * * *.

Abrahams also stated that in order to achieve a 5 ppm TWA, chamber purge systems and additional air ventilation would be required (Ex. 4–45). However, OSHA believes, based on the evidence submitted by several medical products manufacturers (discussed above), by Peter Roy (Ex. 36), and by Robert Kramer (Ex. 35), that chamber purge systems and ventilation systems, if properly designed, can reduce 8-hour TWA exposures to 1 ppm and that the extensive use of automation described by Abrahams will not be necessary to achieve a 1 ppm TWA in this sector.

In his written submission to the docket, Peter A. Roy, Assistant Professor of Industrial Hygiene at the University of Minnesota, commented as follows:

> In my opinion, the measures necessary for EtO exposure control * * * to * * * 1 ppm PEL * * * are in fact nothing more than the application of good industrial hygiene practices, which have been well established and proven * * * These control measures include both local exhaust and general ventilation, process isolation, work practice control, equipment modification, and personal protection. (Ex. 36).

Comments submitted by the 3M Company also indicate that a 1 ppm TWA is attainable using new equipment or by retrofitting older equipment. In this regard, 3M stated:

> We believe that both new STERI-VAC equipment and retrofit modifications available for older 3M sterilizers make it feasible for 3M customers to meet the proposed PEL of 1.0 ppm reliably. (Ex. 146).

In addition, in 1981 3M adopted an internal guideline of 1 ppm as an 8-hour TWA in for its own sterilization facilities (Ex. 146).

Like 3M, Johnson & Johnson has already adopted an internal standard of 1 ppm as an 8-hour TWA (Ex. 11–113). In their written submission, they commented as follows:

> Johnson & Johnson adopted internal EtO exposure guidelines of 1 ppm (8 hr. TWA) and 10 ppm (15 min. STEL) in May of 1980 and thus has three years experience in implementing this guideline for exposure. This experience indicates that a PEL of 1 ppm * * * is feasible when coupled with the limited use of respirators * * * (Ex. 11–113).

Frank P. Wilton, President of Ethox Corporation, commented in his written testimony that, after installing new ventilation equipment and constructing a dedicated aeration facility, Ethox "* * * achieved an operating environment with a TWA below 10 ppm" and believes that it "will be able to achieve a TWA of 1 ppm" after installing additional control measures (Ex. 91).

On the issue of when respirators were needed to meet the 1 ppm TWA, commenters generally agreed that limited use of respirators would be required during certain operations (Exs. 11–74, 11–113, Tr. 285, 302, 1042, 1068). For example, G. Briggs Phillips, Vice President of Scientific Affairs for HIMA, testified that:

> HIMA supports OSHA's proposal of the one part per million PEL and believes that compliance is feasible * * * [if] limited use of respirators [is permitted] for short periods. (Tr. 1041).

In its written submission HIMA described the areas in which respirators

may be required to achieve a 1 ppm TWA:

> In addition to chamber unloading, respirator protection is essential in degassing rooms, for example, removal of biological indicators from sterilized products, requires the employee to enter the degassing room, where ambient levels from the off-gassing product, even with ventilation, are likely to be above 1 ppm. (Ex. 11-74).

In his testimony, Roy agreed that respirator use may be necessary in the sterilizer chamber and aeration facility:

> Based upon my experience even with the engineering controls and ventilation and chamber aeration * * * unloading the pallets from a large sterilizer * * * would require respiratory protection.
>
> [T]ransferring into and entering the heated aeration tunnel or aeration room, depending on the size of the facility * * * would routinely require respiratory protection * * *
>
> [R]emoval of biological indicators in industrial settings, since the indicators were often buried in the pallets somewhere, * * * quality assurance technicians would put a gasmask on * * * (Tr. 302).

OSHA concludes, based on the evidence discussed above, that achievement of the 1 ppm TWA is technologically feasible during the sterilization of medical products, with the limited use of respirators. As is the case with EtO producers and ethoxylators, the employer who sterilizes medical products will have to evaluate his or her operation on a case-by-case basis to determine the feasibility of control technology and the need, if any, for respiratory protection.

The process for sterilizing spices is essentially the same as that for sterilizing medical products. Materials to be sterilized are placed in gas-permeable bags, bales, or containers before being loaded into the chamber. After sterilization,the product is removed from the chamber and stored in a holding area for at least 48 hours. Because the process and sterilization equipment and the available control equipment used in this sector are similar to those used for sterilizing medical products, the JRB study concluded that compliance with a 1 ppm TWA was feasible for spice manufacturers (Ex. 6-22).

Five spice manufacturers (Exs. 4-34, 11-47, 11-49, 11-101, 11-141) and the American Spice Trade Association (ASTA) (Ex. 11-130) submitted comments to OSHA. Only the ASTA submittal commented on the feasibility of a 1 ppm TWA.

> Only six [spice manufacturing] firms were contacted by JRB [in its feasibility study of the EtO industry], and only 20 percent of the six can meet a 1 part per million level. It would appear, therefore, that this is a totally unsound basis for judging the industry, as * * * to its ability to comply with the proposed regulation (Ex. 11-130).

However, the JRB study stated that:

> All 8-hour TWA levels reported by * * * (the six responding spice manufacturing firms) were below 5 ppm, and 20 percent (of the exposure samples) were less than 1 ppm (Ex. 6-22).

Thus, the information presented by ASTA (Ex. 11-130) from the JRB report does not refer to the ability of spice manufacturing firms to meet the 1 ppm TWA, but instead refers to current EtO exposure levels in spice manufacturing firms, as reported by the firms themselves to JRB. Two spice manufacturing firms submitted cost estimates to the docket for achieving a 1 ppm TWA (Exs. 11-49, 11-141). OSHA believes that a 1 ppm TWA PEL is feasible in the spice manufacturing industry sector since these firms were limiting exposure by using engineering and work practice controls. In addition, the similarity between the sterilizing processes in the spice manufacturing and the medical product manufacturing industry sectors, where evidence shows that 1 ppm is feasible, strongly suggests that 1 ppm is feasible in the spice manufacturing industry sector. OSHA therefore concludes that the 1 ppm TWA is technologically feasible in the spice manufacturing industry sector with the use of engineering controls and the limited use of respirators.

Although the EtO sterilizers used in hospitals are smaller than the industrial sterilizers used by medical products manufacturers and spice manufacturers, the control of EtO exposures in hospitals involves the same principles and types of equipment used for industrial sterilizers. However, as Roy testified, the smaller size of hospital sterilizers makes controlling EtO exposures in hospitals generally easier than in industries using large sterilizers:

> In my work [with] sterilizers, ranging from tabletop size to industrial size, I have found the process * * * [and] [t]he exposure patterns are basically the same.
>
> The size and scope of the problem, of course, varies with the size and scope of the operation—more gas, bigger sterilizers, bigger problems; less gas, smaller sterilizers, generally a smaller problem in terms of total exposure (Tr. 240).

In addition, Robert Kramer stated that "* * * [u]sing a continuous purge cycle or a post-vacuum continuous purge * * * [hospitals] can readily achieve a 1 ppm standard" (Tr. 201).

Several hospitals submitted exposure data indicating that they are currently achieving the 1 ppm TWA (Exs. 4-6, 11-5, 11-20, 11-35, 11-37, 11-38, 11-40, 11-60, 11-77, 11-85, 11-87, 11-97, 11-100, 11-132, 11-156, 99). A hospital survey report submitted by the Council Shared Services, Hospital Council of Southern California (HCSC) (Ex. 11-122), showed that 62.9 percent of 426 EtO site surveys conducted in 123 hospitals (August 1978 through March 1983) showed EtO exposure lower than an 8-hour TWA of 1 ppm. In a second set of surveys taken by the Council from March 1982 through March 1983, 75 percent of 148 site surveys taken in 86 hospitals showed EtO exposures below 1 ppm (Ex. 11-122). Malcolm Ridgeway, Director of HCSC, further testified that 50 site surveys conducted using passive dosimeters showed that "* * * 88 percent of sites that we now survey show levels below one part per million * * *" (Tr. 1336).

The results of a survey conducted by the American Hospital Association (AHA) (Ex. 11-115) indicated that 40 percent of 451 hospitals contacted to provide exposure data reported EtO exposures of 1 ppm or less as an 8-hour TWA.

Despite the fact that many hospitals report that they are currently meeting a 1 ppm TWA, some commenters state that extensive facility modifications would be required to achieve 1 ppm (Exs. 4-45, 11-111, 11-127). Gordon E. Whitaker and Collette Keyser, co-chairpersons of the Association for the Advancement of Medical Instrumentation (AAMI), commented that:

> Compliance will be difficult for most hospitals, but especially for the smaller, older and not-for-profit institutions. Older institutions may require major modifications in area ventilation and the installation of dedicated exhaust systems. Even the more modern institutions will need time to * * * formulate plans for needed ventilation changes and then to implement these plans to comply with a 1 ppm PEL. (Ex. 11-127).

Although the installation of new and retrofitted ventilation systems may be required to achieve the 1 ppm TWA in some older hospitals, OSHA believes that such modifications can be made without renovation or restructuring of existing facilities. On this point, Peter Roy testified as follows:

> * * * Those that argue against the feasibility or practicality of the installation of local exhaust systems in hospitals are * * * (thinking of) facilities where there are "remote" sterilizers * * * (e.g.) far from the roof or from an outside wall * * *.
>
> Although * * * so-called * * * remote locations may be inconvenient, they are certainly not impossible (for the purposes of EtO control). Sterilization equipment in a "remote" central service area is not in a concrete box all by itself * * *. Certainly,

you can drill a hole through a concrete wall and put in a duct. It's done all the time. (Tr. 223).

After reviewing the available evidence in the entire record OSHA believes that a TWA of 1 ppm is technologically feasible in the sectors that will be principally affected by the final rule for EtO. The technologies to achieve this level of control consist of conventional equipment, such as forced ventilation, closed-loop sampling systems, pump seals, local exhaust, and chamber purges, and widely accepted work practices, such as leak detection, delaying sterilizer unloading after opening the door to permit off-gassing of EtO, and training employees to stand upwind during tank car pulling, rather than pushing the cart loaded with sterilized goods. As discussed above, these technologies and work practices are already in use by firms in each of the sectors studied, and have permitted many facilities to achieve compliance with the 1 ppm TWA mandated by the final rule.

Feasibility of Monitoring a 1 ppm TWA and 0.5 ppm Action Level

Many commenters addressed the availability and accuracy of feasible methods to measure employee exposures to EtO (Exs. 4–20, 4–24, 4–28, 11–54, 11–65, 11–74, 11–76, 11–101, 11–127, 11–133, 11–141, 11–147, 37, 75, 109, 142, 146, 151). These commenters raised five issues regarding monitoring:

- Ability to measure concentrations of 1 ppm as an 8-hour TWA.
- Accuracy of monitoring methods.
- Field validation of monitoring methods.
- Inability to measure concentrations below 1.0 ppm accurately.
- Length of time to obtain monitoring results.

Each of these issues is discussed below.

Several commenters stated that the currently available methods for monitoring employee exposures to EtO were not capable of detecting concentrations of EtO at 1 ppm (Exs. 4–35, 11–18, 11–21). For example, Robert R. Everett, Executive Vice President of Louise Obici Memorial Hospital in Suffolk, Virginia (Ex. 11–21), stated:

> We know of no way of determining compliance at the 0.5 and 1 part per million standard. Our monitoring equipment will not detect that small an amount, nor will (other) equipment that we have been able to find on the market.

However, information submitted to the docket shows that there are at least six sampling and analytical methods that have limits of detection sufficiently low to measure 8-hour TWA exposure and action levels. Of the six methods listed below, three are reported to be able to detect 1 ppm as an 8-hour TWA within the ±25 percent and 0.5 ppm as an 8-hour TWA within the ±35 percent accuracy limits specified by the standard: the OSHA method, the Qazi/Ketcham method, and the DuPont Protek passive dosimeter.

OSHA's method 30 has a limit of detection of 0.01 ppm and a reliable detection limit of 0.05 ppm (Tr. 222).

The NIOSH method is a modification of the OSHA method and has a limit of detection of 0.027 ppm (Tr. 325).

The Qazi/Ketcham method has a limit of detection of 0.25 ppm, has been validated over the range of 0.5 ppm to 50 ppm (Ex. 11–133), and is used routinely to measure 1 ppm (Exs. 4–24, 4–28, 11–54, 11–76).

The Miran infrared spectrophotometer, a direct reading instrument, is capable of detecting 1 ppm (Exs. 11–73, 11–79).

The 3M model 3550 passive dosimeter has a limit of detection of 0.25 ppm (Exs. 4–20, 136).

The DuPont ProTek passive dosimeter has a limit of detection of 0.25 ppm (Exs. 11–65, 11–65A, 109).

Each of the above methods is capable of measuring the 1 ppm TWA. All of the methods except the Miran infrared spectrophotometer are capable of measuring the 0.5 ppm action level. The Qazi-Ketcham method, for example, is capable of detecting 0.25 ppm when used to measure an 8-hour TWA. This method has been validated at a flowrate of 20 cc per minute for 6 hours, 40 minutes samples and 500 cc per minute for 15 minute samples (Ex. 11–133).

Several commenters (Exs. 11–76, 11–127, 11–133) noted that the standard OSHA method is inconvenient to use because it requires frequent changing of charcoal tubes during an 8-hour sampling period. For example, William F. Kirchoff, senior attorney for Warner Lambert Company (Ex. 11–76), stated that:

> Since the recommended total air volume (that must be collected) is 1.0 liter at a flow rate of 0.05 liter per minute, sampling tubes would have to be changed every 20 minutes. This would greatly increase the number of samples taken per operator during the course of full shift sampling.

However, to overcome this problem, the NIOSH method uses a larger charcoal tube than the OSHA method, and the NIOSH method has also been validated to 1 ppm (Tr. 219, 325). In addition, the Qazi/Ketcham method, the DuPont ProTek badge, and the 3M passive dosimeter are reported to be able to measure concentrations at the 1 ppm TWA and 0.5 ppm action level (Exs. 4–20, 11–65, 11–65A, 11–113, 109, 146).

Several commenters (Exs. 4–28, 11–54, 11–65, 11–74, 75) questioned the ability of available monitoring methods to achieve the accuracy requirements specified by the standard (± 25 percent at the 95 percent confidence level for the 0.5 ppm action level). Referring to OSHA's proposed accuracy requirements, HIMA (Ex. 11–74) states that "Such levels of accuracy cannot be achieved in practice* * *." However, OSHA received much information showing that the required level of accuracy can be achieved with several of these monitoring methods (Exs. 11–65, 11–105, 11–133, 37, 109, Tr. 222). Information submitted by DuPont (Ex. 11–65) shows that the DuPont ProTek passive dosimeter had an overall system accuracy of ±13.5 percent. The OSHA method 30 has been validated at a concentration of 1 ppm and has been shown to be accurate to ±13 percent (Ex. 37, Tr. 222). Charles P. Blahaus, Vice President, of Environmental, Health and Safety for PPG Industries, states that "laboratory evaluations of charcoal tube samples have reported accuracies at 1 ppm of ±25% and 0.5 ppm ±35% under optimal conditions" (Ex. 11–105).

Union Carbide (11–133) has performed tests to determine the accuracy of the Qazi/Ketcham method and concluded: "OSHA has specified that the EtO sampling and analytical methods must meet the following accuracy requirements at the 95% confidence level: ±25% at the PEL and ±35% at the action level. Under controlled laboratory conditions, the Qazi/Ketcham method appears to meet (OSHA's) accuracy requirements". DuPont has also tested the Qazi/Ketcham method (Ex. 11–65, 109) and found an accuracy of ±25.9 percent for the method in one validation test and ±79.2 percent in another validation test. The first validation test included results of 21 samples of airborne concentrations ranging from 4 to 8 ppm. The second validation test involved results from unreplicated samples taken at each of six concentrations ranging from 0.25 ppm to 10.7 ppm. However, the results of the second validation test are likely to have been compromised by the inclusion of two samples that were at or near the lower limit of detection for the Qazi/Ketcham method. OSHA therefore believes that DuPont's estimate of an accuracy of 25.9 percent for the Qazi/Ketcham method is a more reasonable assessment of the method's performance.

Union Carbide's comments (Ex. 11–133) were typical of those of several commenters (Exs. 4–28, 11–49, 11–54, 11–

65, 11–74, 11–101, 11–130, 11–141, 11–147, 75) who expressed doubt that monitoring methods could achieve their rated accuracies under actual field conditions. Union Carbide (Ex. 11–133) stated that:

> * * *Considerable analytical experience and expertise is required to perform the (Qazi/Ketcham) method. Even within Union Carbide, only industrial hygiene laboratories with considerable experience have been able to duplicate the validation data* * *. Thus, while the method is the best we know of, it may be difficult to meet the accuracy requirements of OSHA under field conditions and in inexperienced laboratories.

However, evidence (Ex. 11–133) that some industrial laboratories within Union Carbide have been able to train their personnel to achieve the required accuracy indicates that the skills necessary for accurate determination of EtO concentrations can be learned. Although the method is difficult to use, OSHA is confident that with strict adherence to the published methods and adequate training of laboratory and industrial hygiene technicians, the skills enabling technicians to measure EtO concentrations accurately will be acquired following promulgation of the final standard.

Many commenters (Exs. 11–54, 11–74, 11–101, 11–133, 11–141, 74, 153) stated that none of the currently available sampling and analytical methods for measuring employee exposures to EtO have been field validated. In addition, specific questions regarding field validation of the OSHA and NIOSH methods were raised during the hearing (Tr. 216, 327). DuPont (Ex. 109) provided a definition of field validation procedures:

> A new analytical and sampling method* * * (is) field tested and validated against the most commonly used independent monitoring method once that method has been validated in the laboratory under expected field conditions and shown to be precise and accurate. Few methods have been tested in this manner.

Samuel Tucker, Research Chemist from NIOSH (Tr. 330) confirmed that "* * *for (field) validation, one must have an independent method of analysis." At the present time, OSHA knows of no independent EtO monitoring method that has been tested under field conditions that could be used as a reference method against which new sampling and analytical methods for EtO could be validated. Until a method is tested and accepted by an independent organization such as the American Society of Testing Materials (ASTM) Committee D22, new methods cannot be field validated.

However, as Ronald Freking, Director of the Organic Division of OSHA's Analytical Laboratory in Salt Lake City emphasized, the sampling and analytical methods used for most OSHA-regulated chemical substances have not been field validated (Tr. 229). Further, Mathew Gillen, Industrial Hygiene Consultant for the Workers Institute for Safety and Health, observed that "field validation is something that's desirable but isn't absolutely necessary for enforcement purposes" (Tr. 230).

Commenters (Exs. 11–49, 11–101, 11–130, 11–141, 11–147) from the spice manufacturing industry sector indicated that they believed field validation was especially necessary in their industry because of the number of chemicals in their workplaces that might interfere with the validity of monitoring results. For example, ASTA (Ex. 11–130) stated that:

> Since our primary reason for existence as an industry hinges on the presence of numerous volatile components and the very atmosphere of our production facilities can contain many of these chemicals, we submit that the possibility of interference by volatile chemicals in current measurement capabilities can be substantial.

However, OSHA has determined that the currently available and commonly used EtO sampling and analytical methods have been tested for interferences. For example, Union Carbide reported that a wide variety of chemical substances do not interfere with the (Qazi-Ketcham) analytical procedure (Ex. 11–133). These chemicals are different from EtO in terms of molecular weight, polarity, and other chemical characteristics, which means that they also have different residence times in the chromatographic columns used to analyze them. OSHA believes that the high molecular weight aromatic compounds that lend flavor and odor to spices are also likely to have residence times that are readily distinguishable from that of EtO.

Although several commenters (Exs. 11–65, 11–133, 37, 109, Tr. 222) provided laboratory validation data demonstrating the accuracy of some of these analytic methods at 1 ppm, no commenters provided data demonstrating the ability of these methods to measure the 0.5 ppm level with an accuracy of ±25 percent at the 95 percent confidence level. Therefore, OSHA cannot demonstrate the feasibility of monitoring alternative TWAs of 0.5 ppm or lower within an accuracy of ±25 percent. Howard Kusnetz, Manager of Safety and Industrial Hygiene for the Shell Oil Company (Ex. 4–28), stated:

> Standard analytical methods are available for monitoring EO concentrations in the 1- to 20-ppm range. Should OSHA consider reducing the permissible exposure level below 1.0 ppm, the analytical methods would require modification to provide the necessary sensitivity.

Based on a careful review of the evidence in the record of this rulemaking, OSHA has determined that it is feasible to measure airborne concentrations of EtO at the 8-hour TWA level with the accuracy required by the standard's 8-hour TWA provision. Further, the record indicates that it is possible to measure the 0.5 ppm action level within the accuracy range required by the standard. However, the evidence indicates, and OSHA finds, that it is not feasible to measure EtO concentrations under field conditions, within the limits of error specified in this standard, at levels below the 1 ppm TWA and the 0.5 ppm action level.

Notification of Monitoring Results

The proposals requirement to notify employees of monitoring results within 10 days from the employee's receipt of monitoring results was questioned by some commenters (Exs. 11–25, 11–74, 142). For example, John Kuchta, Vice President and General Counsel of the Kendall Company (Ex. 142) stated that:

> * * * the proposed regulation requires that employers provide employees with the results of all EtO personal monitoring within 10 days. This proposal is unreasonable and unrealistic in light of the fact, that in order to comply with other provisions of this standard requiring accurate testing, the samples must often be forwarded to outside laboratories for evaluation and analysis. Experience has shown that this testing requires, at a minimum, three to four weeks.

OSHA did not intend the 10-day period specified in the proposal's notification of monitoring results provision to apply to the interval between monitoring and notification, but to the period between the receipt of monitoring results by the employer and notification of the employee. As written, this requirement would permit employers to send their monitoring results to outside laboratories for analysis. OSHA believes that clarifying the intent of this provision will prevent misinterpretation of this provision in the future.

Another commenter objected that the 10-day interval between the employer's receipt of results and notification of employees was too short. For example, Charles P. Blahaus, of PPG Industries, Inc. (Ex. 11–105), stated that additional time for employee notification of monitoring results would be required to

"allow the employee's work shift to be rotated to where he could be contacted by day supervision and medical personnel * * *."

OSHA agrees with this argument, and has therefore extended the time for employee notification of monitoring results to 15 days after receipt of monitoring results. OSHA believes that 15 days will allow sufficient time for an employee who is monitored on the day shift to be rotated back to the day shift.

Based on the evidence in the entire record, OSHA has determined that a 1 ppm TWA is technologically feasible. The technologies, methods, and work practices are commonly known and presently used by firms in the affected industry sectors. OSHA has also determined that it is technologically feasible to accurately monitor a 1 ppm TWA and a 0.5 ppm action level within the parameters set forth in the standard.

Although the record in this rulemaking does demonstrate that most operations in most facilities can be expected to achieve 8-hour exposure levels of 1 ppm, OSHA cannot demonstrate that most facilities could reliably achieve compliance with an 8-hour TWA (and its accompanying action level) set at a level below 1 ppm.

*Environmental Assessment—Finding of No Significant Impact*

On April 21, 1983, OSHA published a notice of proposed rulemaking (NPRM) for occupational exposure to ethylene oxide (EtO) (45 FR 17284–17319). At that time, OSHA also published an environmental finding of no significant impact. OSHA has reviewed the docket and has received no additional information on any potential environmental effects of the standard as a result of the public hearing, or as part of the posthearing comments. In addition, OSHA has reviewed the final EtO standard in accordance with requirements of the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321 et seq.), the provisions of the Council on Environmental Quality (CEQ) (40 CFR Part 1500), and OSHA's DOL NEPA Compliance Procedures (29 CFR 11). As a result of the Agency's review, and based on the information contained in the preamble of this notice, the Assistant Secretary has determined that the promulgation of the rule will have no significant effect on the quality of the human environment external to the workplace in terms of air, water or soil quality, plant or animal life, or land or energy use.

**VIII. Summary and Explanation**

The following sections discuss the individual requirements of the EtO standard. The sections include an analysis of the record evidence and the reasons underlying the adoption of the various provisions of the standard. The final standard contains a permissible exposure limit for EtO of 1 ppm as an 8-hour TWA. Engineering controls, work practices, and respirators are required where necessary to reach the PEL's, and written compliance plans must be developed. Engineering controls must be completed within 12 months from the effective date of the standard. Several provisions of the standard, including those on exposure limits, respirators, emergencies, medical surveillance, labels and signs and recordkeeping have been revised and clarified as described in detail below.

The language of the standard and the order of the various provisions are consistent with the drafting in other recent OSHA health standards, such as the arsenic final standard (43 FR 19584), and the acrylonitrile final standard (43 FR 45762). OSHA believes that a similar style should be followed from standard to standard to facilitate uniformity of interpretation of similar provisions. Section 6(b)(5) of the Act states that health standards shall also be based on "experience gained under this and other health and safety laws."

*Paragraph (a) Scope and Application*

The standard applies generally to all occupational exposures to EtO. However, depending on the nature and the extent of the exposure, certain provisions of the final standard may become inapplicable or may have limited applicability.

The standard applies to any workplace where exposures to EtO may be found except those workplaces exempted by paragraph (a)(2). The applicability of several of the provisions of the standard is based on the results of the initial monitoring conducted by the employer or on the availability of other objective data concerning employee exposures or product characteristics.

The final standard contains the same exemption as proposed. Paragraph (a)(2) excludes workplaces that process, handle or use products containing EtO where objective data show that the product cannot release EtO at or above the action level. The criterion for exemption under paragraph (a)(2) requires objective data that show that the material is incapable of releasing airborne EtO at or above the action level under the expected conditions of processing, handling or use that would cause the greatest possible EtO release. OSHA anticipates that the primary producers and intermediate processors of EtO-containing products will be in the best position to test their products and to supply the necessary objective data on the levels of EtO likely to be released by the product to downstream users of the EtO containing material. The final standard does not require downstream employers to generate their own objective data on the EtO levels likely to be released from a product if they can obtain it from producers or other processors. However, as required by paragraph (k)(1) of the standard, the employer must document that this information appropriately supports the exemption, and the employer must maintain a record of this information.

In addition, employers may demonstrate that their employees' exposures are below the action level by using historical monitoring data, i.e., monitoring results for these employees obtained within a one-year period preceding publication of this final rule. When employee exposures can be demonstrated, by means of such objective data, to fall below the action level trigger for many provisions of the standard, employers can use these data to satisfy the initial monitoring requirements of paragraph (d)(2)(ii) of the standard. This alternative to initial monitoring is discussed in greater detail in the monitoring section below.

Some participants suggested specific exemptions for their industries. For example, representatives of an airline company (Ex. 11–117) performing infrequent fumigation of aircraft and representatives of the construction industry (Exs. 11–2, 11–7, 11–11) who claimed EtO is not found in construction operations asked for special exemption. OSHA believes, however, that employees should be protected even where EtO is used very infrequently, especially given the adverse health effects potentially associated with intermittent EtO exposure. For example, it is possible that construction workers could be exposed to EtO during construction activities in or around medical facilities.

Moreover, OSHA notes that the final rule has been structured so that any compliance burden imposed by the standard is related to the extent and duration of the employee exposures in an employer's workplace. One provision (medical surveillance) applies only to workplaces having EtO levels at or above the action level for more than 30 days per year, while other requirements, such as periodic monitoring, annual medical examinations, and labeling,

apply only to workplaces having exposures at or above the action level. OSHA therefore does not believe that any significant compliance burden is placed on employers who either do not use EtO or who have workplaces where employee exposures are below the action level. OSHA also notes that the Construction Advisory Committee on Occupational Safety and Health (CACOSH) voted at its meeting on May 23 and 24, 1983, to have the construction industry covered by the EtO standard.

*Paragraph (b) Definitions*

In the final standard, the definitions of "Director," "Authorized person," "Assistant Secretary," and "Ethylene oxide" remain unchanged from the proposal.

The definition of an "action level" as an airborne concentration of 0.5 ppm (8-hour time-weighted average) also remains unchanged from the proposal. An action level is an exposure limit above which some provisions, such as monitoring and medical surveillance, apply, and below which fewer provisions apply. The action level may have the effect of providing an incentive for employers voluntarily to reduce exposures to below the action level where possible. However, employers are not required to achieve this exposure level.

Many participants supported the action level concept and suggested that a 0.5 ppm action level would be an appropriate level, given a 1.0 ppm TWA (Exs. 11–25, 11–77, 11–90, 11–143, 129). For example, Vicki L. Martin, Environmental Attorney for Dow Corning Corporation, stated that:

> Dow Corning strongly supports the concept of an "action level" as a means to focus surveillance and monitoring efforts to those work situations where significant exposure is likely to occur; and to relieve those employers of these more burdensome obligations if actual monitoring data shows they are unnecessary. The 0.5 ppm actions level appears appropriate (Ex. 11–143).

As noted by Martin, one purpose of the action level is to lessen any burden on employers by providing a cut-off point for many of the compliance activities required by the standard. If, on the basis of initial monitoring results or other objective data, employee exposures are found to be below the action level, the employer would be permitted to discontinue monitoring (as specified by paragraph (d)). Periodic medical examinations would also not be required for these employees. The action level thus provides an objective means for an employer to determine what provisions of the standard apply.

Use of an action level also improves workers protection while increasing the cost-effectiveness and performance orientation of the standard. Employers able to achieve exposure conditions below the action level will be encouraged to maintain this status to reduce their monitoring and medical surveillance expenses. At the same time their employees will be further protected because their exposures will be less than half of the TWA. Where it is not feasible to reduce exposures below the action level, employees will continue to receive the protection afforded by regular exposure monitoring and periodic medical surveillance.

Some commenters (Exs. 11–5, 11–83, 11–125) argued that achieving the action level should not be reason for allowing employers to discontinue routine monitoring of employees. For example, Merry K. Holthof, Central Service Supervisor for the Grand Rapids Osteopathic Hospitals, observed:

> * * * [I]t is necessary for some type of periodic monitoring to be conducted to insure that the levels of Ethylene Oxide are remaining at the action level. There are variable factors * * * that may have an effect on the levels of Ethylene Oxide (including) equipment breakdown or new employees * * * OSHA (should) set down a recommendation for periodic monitoring to insure that the level of EtO remains at the action level (Ex. 11–125).

The rationale for setting an action level has been discussed in connection with several other OSHA health standards. (See, for example, inorganic arsenic, 1910.1018(b); vinyl chloride, 1910.1017(b); and acrylonitrile, 1910.1045(b)). In brief, although all employee exposure measurements on a given day may be below the TWA, it is possible that on days when no measurements are taken, an employee's actual exposure may unknowingly exceed the TWA. Similarly, where employee exposure measurements are above one-half of the TWA (i.e., the action level), the employer cannot be confident that his employees may not, at some time, be exposed above the TWA (Ex. 6–26). However, requiring periodic exposure monitoring when exposures are above the action level does permit the employer to have confidence that employee exposures are in fact below the TWA when monitoring data so indicate.

It is noted here, however, that even if the employer has controlled exposures to below the action level, paragraph (d)(5) of the final rule requires reinstitution of exposure monitoring "when there has been a change in the production process, control equipment, personnel or work practices that may result in new or additional exposures to EtO or when the employer has any reason to suspect that a change may result in new or additional exposures."

The definition of "employee exposure" incorporates the proposed language which specified that employee exposure means that exposure which would occur if the employee were not using a respirator and that employee exposure measurements are to be made without regard to the use of respiratory protection. Several commenters took issue with this definition, contending that breathing zone sampling does not reflect the actual exposure of an employee who is being protected by a respirator. Although this statement may apply in certain circumstances, it overlooks the fact that exposure monitoring is not a single-purpose activity. It is necessary to know employee exposure levels without the use of respiratory protection to evaluate the effectiveness of the required engineering and work practice controls and to determine whether additional controls must be instituted. In addition, monitoring is necessary to determine which respirator, if any, must be used by the employee, and it is also necessary for compliance purposes.

The potential health effects associated with high EtO exposures have necessitated the adoption of provisions dealing with emergency situations where unexpected significant releases of EtO may occur. The proposal defined "Emergency" as "* * * an unexpected massive release of EtO." However, the meaning of the term "massive" could be confusing and might be difficult to define for enforcement purposes, as pointed out by several commenters (Exs. 11–145, 44, 103, 142, Tr. 364). This is particularly true since EtO is a gas, which means that even "massive" releases would not cause visible leaks or spills. In addition, EtO's warning properties are poor, since levels as high as 700 ppm are required before it has a noticeable odor.

The industrial uses of EtO could give rise to several types of emergencies, but many of these are already covered by existing OSHA standards. For example, emergency situations that could result in an explosive mixture of EtO are addressed in 29 CFR 1910.106, and those that could result in skin burns are regulated under 29 CFR 1910.132. Situations that cause chronic health effects are covered by the PEL provision of the final EtO rule. The emergency situations that OSHA is concerned about preventing with this emergency situation provision are those having the potential to produce acute toxic effects

among inadvertently exposed employees. The acute toxic effects of concern are short-term and reversible effects such as eye or respiratory irritation, skin rashes, headache, nausea and dizziness.

To clarify that the intent of this provision is to protect employees from unexpected and substantial releases of EtO, OSHA has defined "Emergency Situations" as "an occurrence such as but not limited to equipment failure, rupture of containers, or failure of control equipment that may result in an unexpected significant release of EtO." Quantities of EtO sufficient to produce acute toxic effects in exposed employees would constitute such an emergency. Although individual variability among workers makes it difficult to quantify with precision what EtO levels may cause acute toxic effects, acute effects may be expected to occur from exposures resulting from the rupture of a flange, valve or pump seal, failure of a check valve on an EtO tank, or failure of a ventilation system over a sterilization chamber or liquid sampling station.

*Paragraph (c) Exposure Limits*

In the final rule for EtO, OSHA has revised the permissible exposure limit for EtO by amending the current 50 ppm standard contained in 29 CFR 1910.1000, Table Z-1, for all affected industry sectors. The final standard sets an 8-hour time-weighted average (TWA) limit of 1 ppm in paragraph (c) of § 1910.1047. The basis for promulgating this exposure limits is discussed below.

Permissible Exposure Limit

As discussed in the risk assessment section above, OSHA concludes that occupational exposure to EtO presents an excess cancer risk of 634 to 1,093 deaths per 10,000 employees exposed at the current OSHA limit of 50 ppm (TWA). The final rule, which sets an 8-hour TWA of 1 ppm, will achieve a 98 percent reduction in cancer mortality risk, for an excess of 12 to 23 deaths per 10,000 employees. OSHA believes that the remaining risk at the 1 ppm limit is still significant, but that the 1 ppm limit reduces the risk to the extent feasible. Most rulemaking participants commenting on the PEL agreed that revision of the current PEL was necessary, and many commenters agreed that a 1 ppm PEL was appropriate (Exs. 2-11, 4-21, 4-26, 4-41, 11-25, 11-38, 11-47, 11-57, 11-69, 11-71, 11-74, 11-77, 11-98, 36, 89). The significance of the risk associated with the existing EtO standard has been acknowledged by employers, who have reacted to information regarding the potential health effects of EtO by voluntarily reducing exposure among their employees, as noted above in the Summary of Technological Feasibility.

As discussed in other sections of this preamble, OSHA is confident that an 8-hour TWA of 1 ppm is technologically feasible in the sectors that will be principally affected by the final rule for EtO. The technologies necessary to achieve this level of control consist of conventional equipment and widely accepted work practices. These technologies and practices are already in use by firms in each of the affected sectors, and have permitted many facilities to achieve the 1 ppm level mandated by the final rule. In addition, OSHA has determined that sampling and analytical methods are available to detect an airborne concentration of 1 ppm EtO (8-hour TWA) within the ±25 percent accuracy requirement set forth by paragraph (d)(6) of the final rule.

The final rule also includes an action level of 0.5 ppm (8-hour TWA) with less stringent accuracy requirements for sampling and monitoring. Where it is feasible to do so, OSHA believes that many employers will choose to achieve the action level with engineering and work practice controls, in order to provide additional employee protection and to reduce their compliance expenditures.

OSHA is reserving decision today on the question of whether the standard should contain a STEL. OSHA takes this action largely in response to reservations expressed by the Office of Management and Budget (OMB) to STEL provisions in the draft final standard delivered by OSHA to OMB pursuant to Executive Order 12291. OSHA concurs that these matters are important and merit further consideration. OMB's comments have been entered into the docket of this rulemaking. Ex. 162 OMB has raised questions concerning:

—Quantification of the risk avoided by issuance of the STEL;
—The appropriateness of relying on studies by Hemminki, Yager, and Johnson & Johnson as partial support for the issuance of a STEL;
—A decision by ACGIH not to recommend a STEL for EtO; and
—The economic and technical feasibility of a STEL without the use of respirators.

To develop the fullest possible administrative record, both OSHA's draft final standard and OMB's comments will be submitted to a number of scientifically qualified peer reviewers for comment, analysis, and criticism. The peer reviewers will file statements to be placed in the public docket.

Public comment on the statements filed by the peer reviewers and the issues raised by OMB will be solicited in a **Federal Register** Notice to be published in approximately 30 days. A reasoned decision by OSHA on the STEL will be published by OSHA in the **Federal Register** in about six months.

OSHA notes that the standard does not require installation of engineering controls until one year from the effective date of this rule. A decision on these STEL issues will be made well in advance of that compliance deadline.

OSHA anticipates that, if the process described above results in adoption of a STEL with a feasible engineering control compliance requirement, the deadline for installation of the engineering controls required by the STEL will be a year from the effective date of this standard—the date by which feasible engineering controls must be installed to reduce exposure to 1 ppm 8 hour TWA.

The PEL for EtO has been set at 1 ppm because OSHA believes that this new exposure limit will substantially reduce the significant risk associated with current EtO exposures and that the 1 ppm level is feasible for most operations in most workplaces that use EtO.

*Paragraph (d) Exposure Monitoring*

Section 6(b)(7) of the Act (29 U.S.C. 665) madates that any standard promulgated under section 6(b) shall, where appropriate, "provide for monitoring or measuring of employee exposures at such locations and intervals, and in such a manner as may be necessary for the protection of employees." The primary purpose of monitoring is to determine the extent of employee exposures to EtO.

Exposure monitoring informs the employer whether the employer meets the obligation to keep employee exposures below the 8-hour TWA exposure limit. Exposure monitoring also permits the employer to evaluate the effectiveness of engineering and work practice controls and informs the employer whether additional controls need to be installed. In addition, Section 8(c)(3) of the Act (29 U.S.C. 657(c)(3)) requires employers to notify promptly any employee who has been or is being exposed to toxic materials or harmful physical agents at levels that exceed those prescribed by an applicable occupational safety or health standard. Finally, the results of exposure monitoring are part of the information that must be supplied to the physician, and these results may contribute information on the causes and prevention of occupational illness.

Paragraph (d) of the final rule contains the standard's requirements related to the monitoring of employee exposure. These provisions are essentially unchanged from the proposal, with one exception. The language of paragraph (d)(1)(ii) concerning the term "representative monitoring" has been simplified in response to comments received into the record.

The final rule contains an 8-hour TWA permissible exposure limit and an action level that acts to alert employers of cases where existing exposures are approaching the PEL. The interrelationship among these three exposure levels determines the frequency at which employers are obligated to monitor employee exposures. There are three possible exposure scenarios that will determine the frequency of monitoring required. The table below lists these three exposure scenarios, along with the monitoring frequency for each.

| Exposure scenario | Required monitoring activity |
|---|---|
| Below the action level | No monitoring required. |
| At or above the action level, but at or below the TWA. | Monitor exposures 2 times per year. |
| Above the TWA | Monitor exposures 4 times per year. |

As is shown by the table above, the action level trigger largely determines whether employers must monitor employee exposure to EtO.

Under the two possible scenarios where the action level is exceeded, the employer must monitor employee exposures. The frequency required for monitoring such exposures is determined by whether the action level or PEL is exceeded.

The monitoring provisions contained in the proposed standard were addressed by a large number of commenters; two major issues were discussed. First, many participants commented that sampling and analytical methods were not available for measuring EtO with the accuracy and precision required by the proposal (Exs. 4–20, 4–24, 4–28, 11–27, 11–54, 11–65, 11–74, 11–76, 11–133, 11–141, 11–142, 11–146, 11–147, 11–151, 37, 109). Second, commenters addressed the specifications for monitoring frequency contained in the proposed standard (Exs. 11–25, 11–38, 11–48, 11–57, 11–74, 11–125, 11–133).

The availability and feasibility of monitoring methods to measure exposures to EtO accurately and precisely were demonstrated by evidence in the record, which is discussed in the Summary of Economic Impact and Regulatory Flexibility Analysis section of the preamble. In that section, OSHA concluded that there are at least three currently available methods that have sufficiently low limits of detection to measure EtO with the accuracy specified by the standard (at the 95 percent confidence level, ±25 percent at the 1 ppm TWA, and ± 35 percent at the 0.5 ppm action level).

Several commenters requested that OSHA not specify a frequency for monitoring employee exposure levels (Exs. 11–25, 11–57, 11–74, 11–133, 11–141). For example, G.J. O'Rourke, Engineering and Technical Manager for SunOlin Chemical Company, stated:

> We believe there is no need to have a rigid schedule for monitoring. The schedule should merely require employers to monitor according to a plan, which [when] implemented, shows compliance (Exs. 11–25).

The EOIC also addressed this point:

> The EOIC believes that the precise frequency of monitoring should not be specified by OSHA. Instead, OSHA should leave the frequency of monitoring to the judgment of industrial hygiene experts and should only require that monitoring be done according to a written plan that, if implemented will adequately demonstrate that the employer is in compliance with the PEL (Ex. 11–57).

However, OSHA believes that the monitoring frequency specified in the final standard is a minimal requirement, and that many employers will wish to conduct more frequent monitoring to ensure employee protection and compliance with the standard. Clearly, the more frequent the measurements, the greater the reliability of the resulting employee exposure profile. In addition, periodic measurement is appropriate when employee exposures are at or above the action level, because relatively minor changes in the process, materials or environmental conditions might increase the airborne concentration of EtO to levels above the standard's PEL.

Several commenters who submitted information to the docket supported OSHA's requirement for monitoring every 6 months if EtO levels were at or below the TWA and every 3 months if the TWA was exceeded (Exs. 11–38, 11–125). For example, Brian J. Kuske and Deloa Pitt, of St. Mark's Hospital in Salt Lake City, stated:

> St. Mark's Hospital has concluded that * * * (m)onitoring of the environment can be accomplished on a regular basis and recommends a minimum of twice a year * * *. (Ex. 11–38).

Merry K. Holthof, Central Service Supervisor for the Grand Rapids Osteopathic Hospital, commented:

> I feel that OSHA needs to * * * set down a recommendation for periodic monitoring to ensure that the level of EtO remains at the action level. I personally feel that monitoring should take place every six months for this purpose. This would also help avoid employer complacency regarding this issue. It is unfortunate, but also realistic, that rules and regulations are necessary to keep standards high (Ex. 11–125).

The final rule does not require periodic monitoring and measurement for the TWA when initial monitoring data reveal exposures below the 0.5 ppm action level because exposures below the action level provide a margin that makes it unlikely that minor changes in processes, materials or environmental conditions will result in exposures above the PEL.

However, the standard requires that whenever there has been a production, process, or control change that may result in new or additional exposures to EtO, or whenever the employer has any other reason to suspect an increase in employee exposures, the employer shall again initiate the required monitoring for those employees affected by such a change or increase.

The final standard also provides that an employer may discontinue periodic monitoring for those employees for whom two consecutive measurements, taken at least 7 days apart, show exposures to be below the action level. Where employee exposure measurements are at or below the PEL but are at or above the action level, the employer may alter the monitoring schedule for those employees from quarterly to semiannually if two consecutive measurements, taken at least 7 days apart, confirm this reduction in levels.

As previously discussed, Section 8(c)(3) of the Act (29 U.S.C. 657(c)(3)) requires employers to notify promptly any employee who is exposed to levels in excess of the PEL. The final EtO standard requires the employer to notify each employee in writing of that employee's measurement within 15 working days after receipt of the results of any measurements required under paragraph (d) of the standard, whether exposure measurements were above or below the PEL.

The final standard, like the proposal, does not require a specific monitoring procedure to be used but does include a performance requirement for the method chosen. OSHA recognizes that the accuracy of monitoring and measurement will decrease as EtO concentration levels decrease below 1 ppm and that breathing zone (BZ) samples provide the most representative indication of an employee's exposure. The final standard, therefore, requires

BZ samples to be taken to determine exposures for comparison with the PEL. Additionally, the final standard requires an accuracy of plus or minus 35% for measurements of employee exposures at the action level, and plus or minus 25% for measurements of exposures at the 1 ppm TWA.

These accuracy requirements are feasible, as shown in the Summary of the Regulatory Impact and Regulatory Flexibility Analysis section of the preamble, and are intended to provide the employer with a degree of confidence in his or her sampling results. As noted earlier, monitoring is carried out for the purpose of determining what measures are necessary to ensure employee protection in a given operation. OSHA anticipates that the standard's flexible criteria for sampling methodology will enable employers to perform the required monitoring without difficulties. The monitoring requirements in this standard are similar to those found in other toxic substance standards promulgated by OSHA (see vinyl chloride, acrylonitrile, coke oven emissions, asbestos, arsenic) and the Agency believes that these standards have been met without difficulty, thus indicating that compliance with the EtO rule should also be feasible.

Finally, several commenters requested clarification of the meaning of the phrase "representative monitoring" as used in paragraph (d)(1)(ii) of the proposed standard (Exs. 11–57, 11–133, 11–137). For example, the EOIC stated:

> In the preamble * * * to the proposed regulation, OSHA makes clear that it intends to allow companies to use representative monitoring for groups of employees where their work exposures to EO are similar. The proposed regulation itself is somewhat ambiguous in this regard. OSHA should make clear in the text of the final regulation that representative monitoring is appropriate and that terms such as "each employee" or "each such employee" refer to each employee or to a representative of a group of employees (Ex. 11–57).

The exposure monitoring provisions require the employer to determine the exposure for each employee exposed to EtO. This does not require separate measurements for each employee. If a number of employees perform essentially the same job under the same conditions, it may be sufficient to monitor a fraction of such employees to obtain data that are representative of the remaining employees. Representative personal sampling for employees engaged in similar work and exposed to similar EtO levels can be achieved by measuring that member of the exposed group who can reasonably be expected to have the highest exposure. This result would then be attributed to the remaining employees of the group.

In many specific work situations, the representative monitoring approach can be more cost-effective in identifying the exposures of affected employees. However, employers may use any monitoring strategy that correctly identifies the extent to which their employees are exposed.

OSHA has rewritten paragraph (d)(1)(ii) of the proposal to clarify, as discussed above, the requirement for representative monitoring. However, the intent of the provision is identical to that of the proposal.

Paragraph (d)(2)(ii) contains a provision designed to eliminate unnecessary and redundant exposure monitoring. It permits employers who have monitored employee exposures to EtO within the one-year period immediately preceding publication of this final rule in the **Federal Register** to forego the initial monitoring required by paragraph (d)(2)(i) if the results of monitoring within this period have shown that their employees are not exposed to EtO levels at or above the action level. OSHA is aware that most workplaces in many EtO-using industries have already monitored employee exposures. For example, OSHA estimated that all facilities in the EtO producer sector had already performed initial monitoring, and that 87 percent of all hospitals had also done so (Ex. 6–22).

The (d)(2)(ii) provision simply makes clear that OSHA does not intend employers who have voluntarily performed employee monitoring to be required to repeat such monitoring if they have reliable and objective data showing that their employees are not exposed to EtO at the action level, which triggers several of the standard's provisions, e.g., medical surveillance, periodic monitoring, training. Thus, OSHA believes that paragraph (d)(2)(ii) will enhance the cost effectiveness of the standard's monitoring requirements without compromising employee protection.

*Paragraph (e) Regulated Areas*

This paragraph of the final standard requires employers to identify as regulated areas any locations in their workplaces where there may be occupational exposures to airborne concentrations of EtO above the PEL. In addition, only authorized persons may enter regulated areas, which are required to be clearly marked to ensure that employees are aware of these locations. Taken together, these provisions are intended to increase the standard's effectiveness by limiting the number of employees exposed above the PEL.

Rulemaking participants commented on two aspects of the regulated areas paragraph of the proposal: the language used to describe the conditions that would trigger designation of an area as regulated and the degree of specification versus performance language embodied in the requirements in this paragraph. These issues are discussed below.

Several representatives of industry objected to the wording of the proposal's regulated area requirement (Exs. 11–48, 11–74, 11–125, 142), which specified that employers must establish regulated areas "wherever the airborne concentration of EtO is above 1 ppm." They argued that, as written, the proposed language could be interpreted to mean that a regulated area was required to be established in "an area of a facility where the ambient level of EtO is greater than 1 ppm but which, if the employees were personally monitored, would result in an eight-hour TWA which is likely to be far below even the action level" (Ex. 142).

In a similar vein, the Health Industry Manufacturers Association stated:

> The proposal is ambiguous because it might be said to require regulated areas wherever [the] ambient EtO concentration exceeds 1 ppm (TWA) rather than where actual employee exposures are above 1 ppm (Ex. 11–74).

Some of these commenters (Exs. 11–48, 11–74) also inquired whether the standard would require area monitoring to establish the location of regulated areas.

In response to these commenters, OSHA has changed this provision to clarify its intent. The final rule requires employers to establish regulated areas "whenever there may be occupational exposures" in excess of the PEL. This language better communicates OSHA's purpose—to enhance employee protection by alerting employees about the location of workplace areas that might increase their exposures to levels above the PEL. The final standard therefore requires establishment of regulated areas only where potential occupational exposures above the PEL may occur, thus clarifying the link between employee exposures and regulated areas. This change will also eliminate any confusion about ara monitoring to establish the location of regulated areas. The final rule's identification of employee exposures rather than area EtO concentrations as the basis for establishing a regulated

area makes it clear that employee rather than area monitoring is required.

The second issue raised by commenters in relation to this paragraph of the proposal concerned the degree of specification that should be included in the requirements of the final standard's regulated areas provision. The proposal specifically stated that employers could demarcate regulated areas in any manner that would serve to limit the number of employees entering such areas. Permitting employers to choose how best to identify and limit access to regulated areas is consonant with OSHA's belief that employers are in the best position to make such a determination based on the physical configuration and other aspects of their particular workplaces.

Some rulemaking participants, however, commented that the standard should specifically identify the workplace locations to be designated as regulated areas (Exs. 4–25, 44). For example, the testimony of the American Federation of State, County and Municipal Employees (AFSCME) states

> Regulated areas should be established *wherever* EtO storage, EtO sterilization or aeration expose workers to any amount of EtO, or could expose them in the event of a malfunction, leak or other mishap (Ex. 44).

In contrast to AFSCME's views were those of several commenters who argued that the language of the proposed provision was too specification-oriented (Exs. 4–15, 4–47, 4–51, 4–55). For example, R. Parlante, Director of Lederle Laboratories' Safety and Environmental Services Division, stated

> It is not necessary to establish provisions * * * as part of the EtO standard for * * * regulated areas * * * Once an EtO performance standard is established, the methodology used [by the employer] to achieve compliance should be flexible * * * (Ex. 4–55).

OSHA believes that, as written, the requirements of paragraph (e) strike the right balance between specification and performance language. If, as AFSCME suggested, OSHA required employers to establish regulated areas wherever workers could be exposed to EtO in the event of a leak or malfunction, many areas of the plant that actually have low or non-existent EtO concentrations under normal operating conditions would have to be designated as regulated. OSHA believes that the final rule clearly sets forth the employer's obligation to maximize employee protection by informing employees of the location of workplace areas having EtO concentrations that will increase their exposures above the PEL. At the same time, this paragraph permits employers to determine where employees might be overexposed in any particular workplace.

At the same time, employers are free to choose whether to use, for example, ropes, markings, temporary barricades, gates, or more permanent enclosures to demarcate and limit access to these areas. Factors that employers might consider in determining the type of identification system used to demarcate regulated areas include the configuration of the area in question, whether the regulated area is permanent, the airborne EtO concentration, the number of employees in areas adjacent to the regulated area, and the period of time the area is expected to have exposure levels above the PEL.

*Paragraph (f) Methods of Compliance*

The final standard, like the proposed standard, requires employees to institute engineering and work practice controls to reduce the exposures of employees to or below the permissible exposure limit, to the extent feasible. If engineering and work practice controls have been implemented but have not been sufficient to reduce exposures to the permissible limit, respirators selected in accordance with paragraph (g) shall be used to suppplement the engineering and work practice controls.

OSHA has identified several operations where engineering controls generally are not feasible and has listed them in paragraph (f)(1)(iii). In addition, in situations where engineering controls and work practices are demonstrated as not being feasible, respirators appropriate for the airborne EtO concentration and selected in accordance with Table 1 of paragraph (g) must be used to reduce employee exposures.

These requirements are consistent with OSHA's traditional policy regarding the hierarchy of controls. This hierarchy specifies that engineering and work practice controls be used in preference to personal protective equipment; personal protective equipment may only be used in emergencies or where other methods are not feasible, not adequate, or have not yet been installed. Engineering controls involve the installation of equipment, such as forced ventilation, or the modification of a process, for example by enclosing it. Work practice controls reduce worker exposures by altering the manner in which a task is performed. An example of a work practice control would be to train a tank car loader to stand up-wind rather than down-wind of the tank car's hatch when loading a hazardous substance.

Respirators have traditionally been accorded the least preferred position in the hierarchy of controls because of the many problems associated with their use. For example, the effective use of respirators requires that they be individually selected and fitted, conscientiously worn, carefully maintained, and replaced when necessary; these conditions may be difficult to achieve and to maintain consistently in many workplace environments.

At present, the Agency is reviewing the health benefits, appropriateness, and cost-effectiveness of the hierarchy of controls concept, and has recently published two Advance Notices of Proposed Rulemaking relevant to this subject (47 FR 20803, May 14, 1982, Respirators; 48 FR 7473, February 22, 1983, Methods of Compliance). Because OSHA is interested in determining whether and in what situations greater reliance might be placed on the use of respirators, the EtO proposal requested comments on the use of respirators for EtO exposure. Many participants in the EtO rulemaking submitted information to the record on the general subject of control strategy and on the appropriate use of respirators in the handling, storage, and use of EtO in the workplace. The record evidence on these issues is summarized below.

Many commenters reported that they preferred to rely on engineering and work practice controls to reduce employee exposure to EtO (Exs. 11–38, 11–40, 11–45, 11–70, 11–87). For example, Donna Swenson, Central Service Supervisor and Chairman of the EtO Committee of Rockford Memorial Hospital (RMH), stated:

> At RMH we feel that it is possible with the use of appropriate engineering and workplace controls to comply with the proposed standard. Respirators should not be needed except during emergency situations, such as leakage of a tank or canister (Ex. 11–81).

Similarly, Brian J. Kuske, Assistant Administrator of St. Mark's Hospital in Salt Lake City, commented:

> After review of the exposure levels recommended by OSHA (in the proposal), St. Mark's Hospital has concluded that * * * respirators are not essential (to meet the 1 ppm requirement) (Ex. 11–38).

The views of these and other commenters generally provided support for the determination made by OSHA at the time of the proposal:

> The (control) methods that can be used to reduce employee exposure to EtO are conventional technology such as * * * exhaust ventilation, double mechanical seals, leak detection and use of respiratory

protection for intermittent exposures (48 FR 17298).

Evidence submitted at the hearing and in post-hearing comments has identified a number of intermittent exposure situations in EtO-using facilities where respiratory protection may be needed to protect workers from hazardous exposures. For example, in the EtO production sectors, several commenters stated that respirators would be needed for maintenance and repair activities and during the loading/unloading of tank cars (Exs. 11–110, 11–131, 11–133, Tr. 863).

Edward J. Kerfoot, Director, Toxicology and Industrial Hygiene for BASF Wyandotte Corporation, stated that, "Respirators should be allowed in other operations in addition to maintenance and repair. In industry, examples would be bulk loading and unloading operations" (Ex. 11–131). Two ethoxylator firms, Nalco Chemical Company and PPG Industries, Inc., also stated that in loading/unloading operations respirators would be required to achieve compliance with the standard (Exs. 11–69, 11–105).

The EOIC also indicated that the use of respirators would be necessary during maintenance, repair, and tank car loading/unloading activities (Ex. 11–57). In addition, the EOIC suggested that "* * * companies may need to use respirators during start-up and shut-down and during certain laboratory operations" (Ex. 11–57). OSHA also recognizes that unexpected release of EtO might occur during shut-down and start-up because processes are not operating in steady-state conditions, and the use of respirators may be appropriate in such situations.

OSHA agrees that some EtO operations do not lend themselves to control through engineering means. Respirators are permitted for the operations cited by commenters above, if other methods of control are demonstrated by the employer to be infeasible.

A number of commenters addressed the need for the limited use of respirators in the industry sectors that use EtO for sterilization (Exs. 11–47, 11–54, 11–57, 11–74, 11–94, 11–109, 11–112, 11–113, 11–136, 11–139, Tr. 873). Deborah M. Badger, Senior Counsel for the American Hospital Supply Corporation, proposed a list of activities where respirators might have to be worn during the sterilization of medical products:

> * * * employees using EtO as a sterilant are primarily exposed in an intermittent or episodic fashion. Thus, critical work tasks can be identified which, although short in duration, constitute the critical opportunity, for exposures to levels higher than a reasonable PEL. American [Hospital Supply Corporation] proposes that OSHA permit the limited use of respiratory protection equipment during the following work tasks:
>
> • Opening sterilization chamber doors.
> • Unloading sterilization chamber contents.
> • Delivering freshly sterilized goods to the outgassing area.
> • Entering outgassing areas to collect quality control samples.
> • Performing maintenance and repair work on sterilization equipment
> • Changing EtO cylinders (Ex. 11–47).

OSHA agrees that, depending on workplace conditions, respirators may be necessary when employees enter a sterilization chamber for unloading and when they enter heated off-gassing rooms to collect quality control samples. However, as discussed previously in the section dealing with feasibility, evidence indicates that most EtO sterilizing operations can be controlled by currently available engineering controls. Thus, OSHA does not feel that it is appropriate to provide a general allowance for the use of respirators for all short-term EtO operations.

Based upon evidence in the rulemaking record and the Regulatory Analyses, OSHA has found that the use of engineering and work practice controls will reduce employee exposure to or below the PEL for practically all situations. OSHA recognizes that there are some situations where engineering controls are not generally feasible. Rather than continuing to enforce the engineering control provisions in these cases, OSHA has indicated in the regulatory text, paragraph (f)(1)(iii), those operations where engineering controls are generally not feasible. For these situations, OSHA will have to bear the burden of proof, in the enforcement context, to show that engineering and work practice controls are feasible for that specific condition. In addition, OSHA recognizes that there will be other situations where engineering controls may not be feasible due to a unique feature or condition. For example, work involving repair of leaks may not lend itself to engineering controls. These situations are recognized in paragraph (f)(1) of the final rule, which permits the use of approved respiratory protection where employers can demonstrate that engineering and work practice controls are not feasible. In such situations, the burden of proof of infeasibility is appropriately placed on the employer, because the employer is familiar with operations in the workplace and is therefore in the best position to evaluate various types of controls as they apply to that particular workplace. It is noted here, however, that employers may raise the issue of feasibility in an enforcement action. As noted in a decision on OSHA's lead standard, the court in United Steelworkers of America v. Marshall, 647 F. 2d 1189 (D.C. Cir. 1980):

> * * * An employer who is cited for failing to meet the standard in a particular operation, and who believes the standard has proved technologically infeasible for that operation, can claim this "specific" infeasibility as a defense in an enforcement proceeding * * * Thus an OSHA standard remains subject to a * * * test of feasibility with respect to special difficulties in certain operations.

However, in the great majority of workplaces affected by the final standard, OSHA believes that engineering and work practice controls will limit worker exposures to levels below the PEL. The technology needed to control employee exposures to these levels represents generally available and traditional technology, such as general and local ventilation, pump seals, and aeration chambers. This technology is discussed in detail in the Technological Feasibility section of this preamble.

The requirements contained in paragraph (f)(2) of the permanent standard describe the employer's written compliance program. The requirement for a written compliance program to reduce exposure by means of engineering and work practice controls, contained in paragraph (f)(2)(i), applies where employee exposures are at or above the PEL.

Few commenters objected to the provisions of the proposed standard requiring employers to develop a written compliance program. One commenter, Thomas F. Evans, Director of Regulatory Management-OSHA for the Monsanto Company, objected to the inclusion of a schedule of leak detection in the required compliance program, as required by paragraph (f)(2)(ii) (Ex. 11–98). Mr. Evans objected that "Such a requirement is not performance oriented" (Ex. 11–98). Although the final rule does not mandate a frequency for leak detection, OSHA believes that leak detection should be included in any effective program for controlling employee exposures to EtO because early and prompt leak detection helps to eliminate emissions of EtO at their source. This is particularly true where fugitive emissions are a potential source of exposure.

Many commenters endorsed the idea of including a compliance program provision in the standard (Exs. 11–68, 21–8, 44). For example, Howard L.

Kusnetz, Manager of Safety and Industrial Hygiene for Shell Oil Company, stated:

> Shell Oil Company endorses the concept of written control programs prepared by the employer if employee exposure exceeds the PEL. A requirement for a written control program ensures affirmative action by the employer and communication with employees (Ex. 11-68).

Peter Roy described some of the reasons for and elements of a compliance program:

> I endorse the necessity for employers to develop written compliance plans * * *. Written programs and procedures should be established regardless of the number of exposed employees. The development of documented programs and procedures is already a well established and common practice in both hospitals and the medical device industry. These policies and procedures are important for the employee communication and training programs necessary to ensure the "human element" of the EtO exposure control system. Written plans should be reviewed annually, and might vary from fairly simple to quite complicated depending on the size and scope of the EtO process, and number of employees in a given facility (Ex. 21-8).

OSHA believes that the written plan is an essential element of the compliance program since it will encourage employers to implement the necessary controls to reduce employee exposure. It also provides the information to allow OSHA, the employer and employees to examine the control methods chosen and to evaluate the extent to which these planned controls are being implemented in the workplace. As with other OSHA rulemakings, the written compliance plan is to be accessible to the individuals designated in paragraph (f)(2)(iii) for inspection and copying. This implements section 8(c)(3) of the OSH Act, which provides for the employer to inform employees of correction actions being taken to lower exposure to the PEL.

Paragraph (f)(2)(iv) prohibits the use of employee rotation as a method of reducing exposure to EtO. On the other hand administrative controls, which utilize methods such as scheduling to reduce a particular employee's total exposure, is an acceptable compliance strategy. An example of acceptable use of scheduling is performing an operation where EtO exposure occurs on the work shift with the fewest employees present. Worker rotation, however, has been determined by OSHA to be inappropriate in workplaces involving exposures to potential human carcinogens. Although administrative controls may reduce the cumulative risk of cancer among a particular group of workers, their use places a larger total number of workers at risk. Paragraph (f)(2)(iv) specifically prohibits the use of worker rotation in situations involving exposure to EtO. As noted in the preamble to OSHA's proposed rule for ethylene dibromide (48 FR 45984):

> Administrative controls * * * are not permitted in lieu of engineering controls or limited respirator usage. The use of this control practice (worker rotation) increases the population of employees at risk from exposure * * *.

Industry representatives generally condemned the practice of employee rotation as a method of reducing exposure to EtO (Tr. 971, 1041). For example, G. Briggs Phillips, HIMA's Senior Vice President for Scientific Affairs, stated, "* * * HIMA does not support and our companies do not intend to use, worker rotation practices" (Tr. 1041). Although Duane Amato, the Corporate Manager of Occupational Health Services and Safety at Travenol Laboratories, testified that worker rotation is an acceptable method of reducing 8-hour TWA exposures (Ex. 75, Tr. 871), Lawrence Rampy, testifying on behalf of the EOIC, strongly disagreed:

> Structuring jobs simply to reduce exposure and to avoid other means of controlling exposure is simply not acceptable. In other words, the exposure of each job must be evaluated and structured to achieve acceptable exposure by a variety of means but not by rotation of different people through a high exposure task in order to achieve a net average exposure below some limit. (Tr. 971).

The prohibition against worker scheduling or rotation contained in the final standard for EtO is, therefore, consistent with OSHA's view that this control strategy is not appropriate in occupational environments involving exposure to potential carcinogens.

*Paragraph (g) Respiratory Protection*

The final standard provides that respirators be used to limit employee exposure to EtO in the following circumstances:

(i) During the interval necessary to install or implement feasible engineering and work practice controls;

(ii) In work operations such as maintenance and repair activities or vessel cleaning or other activities for which the employer establishes that engineering and work practice controls are not feasible;

(iii) In work situations where feasible engineering and work practice controls are not yet sufficient to reduce exposure to or below the TWA or STEL; and

(iv) In emergencies.

The final standard also requires that the employer provide respirators at no cost to employees and ensure that employees use them.

Comments regarding the appropriate use of respirators were addressed above in Section 6, Paragraph (f) *Method of Compliance*, and will not be discussed further in this section. However, numerous commenters addressed the issue of appropriate respirator selection (Exs. 4-15, 4-19, 4-22, 4-25, 2-40, 4-45, 4-55, 11-57, 11-74, 11-76, 11-94, 11-99, 11-111, 11-113, 11-133, 11-136, 11-152, Tr. 857, 893). These commenters provided information on two types of respirators that were specified in Table 1 of the proposed EtO standard:

- Full-facepiece respirators with organic vapor gas mask canisters.
- Positive-pressure, supplied-air respirators with full-facepieces.

Addressing OSHA's specification for organic vapor canister respirators for EtO concentrations of 50 ppm or less, most commenters argued that this type of respirator provided inadequate protection against EtO exposure (Exs. 4-25, 11-57, 11-74, 11-99, 11-111, 11-136, 11-152, Tr. 857). The inadequacies of chemical cartridge respirators were documented by Matthew Gillen, representing the Amalgamated Clothing and Textile Workers Union (ACTWU):

> * * * The chemical cartridge respirator has not been certified (for EtO) by NIOSH * * * because EtO lacks adequate warning properties and is not generally detectable by smell until levels of 250-700 ppm are reached * * *. The other major problem with chemical cartridge respirators is migration. In testing performed on the canister, it was demonstrated that the cartridge could withstand several hours of exposure without penetration. However, after setting several hours, the EtO "migrated" within the canister, so that penetration was observed upon re-use (Ex. 4-25).

Frederick G. Giel, Senior Attorney for Miles Laboratories, Inc., agreed:

> The standard specifies that NIOSH/MSHA full facepiece respirators approved for organic vapors can be used in certain instances where EtO vapors remain below 50 ppm. Miles (Laboratories) understands that studies exist which show that these respirators purify breathing air for only a matter of minutes before significant EtO breakthrough occurs (Ex. 11-111).

Anthony J. Vetrano, Attorney for Abbott Laboratories, stated:

> * * * Because various companies have tested full facepiece respirators with organic vapor gas mask canisters and found them unsuitable for use with EO, Abbott believes that Table 1 (of the EtO standard) should specify only canisters with specially impregnated charcoal that are designed for use with EO (Ex. 11-136).

A number of companies, including Dow Chemical Company (Ex. 4–31), A.E. Staley Manufacturing Company (Ex. 4–22), De Soto, Inc. (Ex. 4–15), and others (Exs. 4–45, 11–94, 11–113,), stated that they use air-supplied respirators rather than air-purifying respirators in operations that require respiratory protection.

Based on this evidence, OSHA has revised Table 1, referenced in paragraph (g)(2), to permit the use of NIOSH/MSHA-approved air-purifying respirators with canisters containing sorbents especially designed for EtO removal if such equipment is approved in the future. OSHA is aware that no air-purifying respirators for EtO have been approved by NIOSH or MSHA. However, one respirator manufacturer has applied to NIOSH for certification of an EtO-specific canister respirator (Exs. 6–27, 11–112, Tr. 891). This provision of the final rule is intended to allow the use of this or similar products when and if they are granted NIOSH/MSHA approval.

A number of commenters requested that half-mask respirators be allowed in lieu of the full-facepiece respirators that were proposed for airborne EtO levels of 2,000 ppm or lower (Exs. 11–57, 11–133, 11–98, 11–136, 76). The following comments were submitted by the EOIC:

> The EOIC industrial hygiene task force believes that the respiratory protection table contained in the proposed standard should be revised so as to allow the use of half-face supplied air respirators at or below 1,000 ppm. At those levels, a half-face positive pressure respirator will provide adequate protection. Contact with EO at that level would not cause eye irritation, so there is no reason to prohibit such respirators (Ex. 11–57).

However, these commenters provided no objective data to show that EtO is not an eye irritant at concentrations of 1,000 ppm or less. OSHA has identified two references that note that EtO is an eye irritant. For example, a 1977 publication by NIOSH, entitled *Occupational Diseases: A Guide to Their Recognition*, states: "Exposure to the (EtO) vapor in high concentrations leads to irritation of the eyes." An article in *Industrial Hygiene and Toxicology*, Volume 3, edited by Frank A. Patty (1981), states that:

> Vapors of ethylene oxide in high concentrations are known to be irritating to the eyes of animals and man * * * the eyes should therefore be protected from ethylene oxide and its solutions.

This reference also states that the "threshold for vapor irritation (to eyes) is 500 ppm" (Patty, 1981). The information in these references was confirmed by Peter Roy (Ex. 21–8, Tr. 215), who stated that he had observed irritation resulting from exposures to concentrations of EtO below the current PEL of 50 ppm.

James T. Marrinan, Director, Federal Agency Affairs for the American Hospital Association, stated:

> EtO acts as a tissue irritant, having effects similar to those of ammonia gas. Exposure can cause inflammation of mucous membranes, especially those of the eyes and respiratory passages, possibly resulting in conjunctivitis, scleritis, or bronchitis (Ex. 104).

The record reflects that high exposures to EtO have been shown to cause eye irritation and that such effects may occur at exposures that may be reached for short periods. Therefore, OSHA has chosen to retain the requirement for full-facepiece respirators in the final rule.

Some commenters (Exs. 11–131, 11–137) suggested that no respirator protection provision was needed because requirements for respirator use are contained in 29 CFR 1910.134, *Respiratory Protection.* For example, Edward J. Kerfoot, Director of Toxicology and Industrial Hygiene for BASF Wyandotte Corporation, stated:

> Regarding the selection of the type of respirator used, the requirement that companies provide adequate respiratory protection is already specified in 29 CFR 1910.134. Therefore, proposing detailed requirements in the EO standard is unnecessary. In keeping with the need for a performance based standard, 29 CFR 1910.134 should be referenced as the guide for respiratory protection, and companies should be allowed to choose the respirators that are adequate for individual circumstances, rather than be limited to the choices in Table 1, as referenced in 1910.1047 paragraph (g)(2)(i) (Ex. 11–131).

Table 1 is OSHA's application of the requirements for respirator selection contained in 29 CFR 1910.134, as they relate to EtO and its characteristics. In addition, these requirements are consistent with those in the American National Standards Institute's Z88.2–1969 standard.

From past experience, OSHA is aware of the problems of respirator use as the primary means of exposure control. Proper facial fit is essential, but variations in individual facial dimensions, as well as facial hair, scars or growths, make it difficult to maintain this facial fit. Fatigue and reduced efficiency may occur because of increased breathing resistance when negative-pressure respirators are used. Thus, a medical examination requirement that the physician's written opinion include recommended limitations on the employee's use of respirators was proposed and is maintained in the final standard. Additionally, heat stress, reduced vision, and other safety problems presented by respirators should be considered by the employer. Visual impairment could pose a significant problem where physical hazards exist and the ability to see is important. Speech is also limited by respirator use. Voice transmission through a respirator can be difficult, annoying, and fatiguing, and communication may make the difference between a safe and efficient operation and a hazardous operation, especially in dangerous jobs. Entanglement of air respirator hoses as well as limited mobility due to hose length is a problem in heavy industrial environments where airline respirators are used. Air hoses can also present serious safety hazards if used in restrictive work environments, such as a sterilization room in a health care facility. A self-contained breathing apparatus is burdensome and limits freedom of movement.

OSHA does not presently believe that respirators should be considered the primary means of employee health protection against exposure to EtO for activities where engineering controls are feasible. However, despite these problems OSHA has concluded that if the permissible exposure levels for EtO are exceeded, employers must provide respirators as a secondary means of protection. However, the goal of the standard is the control of emissions at the source, which will minimize the need for routine use of respirators.

The employee must be properly trained to wear the respirator, to know why the respirator is needed, and to understand the limitations of the respirator. An understanding of the hazards involved is necessary to enable the employee to take steps for his or her own protection. The respiratory protection program implemented by the employer must conform to that set forth in 29 CFR 1910.134. That section contains basic requirements for proper selection, fit, use, cleaning, and maintenance of respirators.

Emergencies are situations where respirators must be used to protect employees. Since it is unrealistic to expect accurate prediction of the expected contaminant concentrations to which an employee might be exposed in all emergencies, OSHA requires the use of respirators of the type approved for protection against unknown concentrations. If an employee is working in an area and using an approved respirator of the type appropriate for the existing concentration, and an emergency

occurs, the employee should continue using the respirator during his or her escape. Paragraph (g)(1)(iv) is designed to provide proper protection for emergency personnel assigned to enter vessels or workplaces containing an unknown concentration to rescue workers or to control the release of the contaminant or perform any necessary repairs. In addition, this paragraph will ensure that employers identify operations in which emergencies are apt to occur and make appropriate respirators available to employees in these operations.

Paragraph (g)(3) references § 1910.134 (b), (d), (e), and (f), which stipulate the minimum acceptable respirator program, the air quality required for air-supplied respirators, standard respirator use procedures, and maintenance and care procedures for respiratory protection, respectively. For example, paragraph (e)(5)(i) of § 1910.134 states: * * * "To assure proper protection, the facepiece fit shall be checked by the wearer each time he puts on the respirator * * *." Section 1910.134(e)(5) further requires that the respirator be worn in a "test atmosphere," i.e. an irritant smoke or isoamyl acetate atmosphere, as part of the training for respirator wearers. A requirement to comply with § 1910.134(e) is contained in paragraph (g)(3) of the final rule.

Several commenters requested that a requirement for quantitative fit testing be included in the final rule (Exs. 44, 100, 103). OSHA does not believe that such a requirement is warranted at this time, in part because the only approved respirators currently available for EtO are positive-pressure respirators. Such respirators do not allow contaminated air to leak into the respirator facepiece since it is pressurized when compared to the ambient environment. Thus, leakage is restricted to clean air escaping from the inside of the facepiece rather than contaminated air leaking into the respirator. Moreover, issues of quantitative fit testing will be dealt with generically in the respiratory protection standard revision discussion above.

Finally, the standard requires that respirators required for protection from exposure to EtO shall be provided at no cost to the employee. OSHA views this allocation of costs to control employee exposure to EtO as being necessary to effectuate the purposes of the Act. The requirement makes explicit an Agency position which has long been implicit in health standards proceedings under section 6(b) of the Act.

Protective Clothing

The final standard for EtO explicitly references general provisions in sections 1910.132 and 1910.133 pertaining to protective clothing and devices. This cross-reference highlights for the employer the need to comply with all applicable standards to prevent employee exposure through contact with liquid EtO.

In the proposal, OSHA made no reference to provisions for protective clothing for EtO workers. However, the following questions were raised for general discussion: "Is reliance on these two general provisions (sections 1910.132 and 1910.133) sufficient for protecting against potential dermal and eye hazards for liquid EtO? If not, explain and specify what additional provisions are necessary." Based on information submitted to the docket, OSHA now believes that these two sections do provide adequate regulation to prevent employees from having eye and skin contact with liquid EtO or EtO solutions, and separate provisions specific to EtO are unnecessary.

A number of commenters replied, either in written comment or testimony, to the proposal's questions about personal protective equipment and clothing. Several commenters agreed with OSHA's assessment that reliance on the requirements of sections 1910.132 and 1910.133 was adequate (Exs. 11–25, 11–47, 11–57, 11–67, 11–69, 11–74, 11–110, 11–133, 21–8).

For example, HIMA stated:

> The general provisions in 29 CFR 1910.132 and 1910.133 are adequate to provide employee protection for skin and eyes against contact with liquid EtO. The protective equipment and other provisions of these requirements would apply to EtO. Because they have proved satisfactory with other hazardous liquids, they will provide adequate protection in this case. HIMA is not aware of any specific provisions that would provide greater employee protection than is already required by OSHA's general regulations. (Ex. 11–74).

In contrast to these views, several commenters raised questions regarding the acute effects of skin and eye contact with liquid EtO and concluded that reliance on the general provisions contained in sections 1910.132 and 1910.133 would not provide adequate protection (Exs. 11–46, 11–88, 11–99, 42, 44, 100, 103, 152, Tr. 1200, 1253, 1589).

In explaining the Institute's position that general requirements for skin and eye protection will not provide the necessary protection to EtO-exposed workers, NIOSH commented that:

> The standards concerning protective equipment * * * and eye and face protection * * * provide only general guidelines and do not address substance specific issues particularly as they relate to the serious hazards presented by liquid ethylene oxide or EtO solutions. Therefore sections 132 and 133 cannot be viewed as prescribing "* * * suitable protective equipment * * *" because they do not consider the particular hazards presented by liquid ethylene oxide or EtO solutions, spills and splashes. Neither sections 132 nor 133 specify how the equipment is to be used nor how it is to be selected to protect the worker from exposure to (ethylene oxide) (Ex. 11–146).

Several respondents pointed out that EtO readily penetrates rubber where, as in leather, it is retained for long periods of time and cannot be washed out (Exs. 11–99, 11–146; Tr. 1200, 1253). This raised the issue, as expressed by William Borwegen of the Food and Beverage Trade Department, AFL–CIO (Tr. 1253), that some employers whose workplaces contain EtO would be unaware of the inadequacies of rubber and other common materials used for personal protective clothing (Tr. 1589).

To prevent the use of materials readily penetrated by EtO, several commenters felt that specific recommendations or statements on the types of materials that can be used were needed within the EtO standard (Exs. 11–88, 11–99, 11–146, 11–152, Tr. 1200). Several individuals or groups made specific material recommendations such as cloth or PVC coated materials (Tr. 1200) or polymer-coated cotton gloves (Tr. 391). However, of all the respondents, only NIOSH developed an in-depth assessment of the effectiveness of personal protective clothing in preventing contact with liquid EtO.

In a 1977 report, *Special Occupational Hazard Review with Control Recommendations for the Use of Ethylene Oxide as a Sterilant in Medical Facilities*, NIOSH stated that:

> Due to the extreme penetrating ability of EtO, and the consequent ineffectiveness of many types of clothing materials to prevent skin contact, the use of conventional 'impervious' clothing is not suggested. There are, however, certain special types of protective clothing which are effective when working with EtO. For example, one of the large manufacturers provides its workers with knitted gloves which have been coated with certain polymers, including polyvinyl chloride. (Ex. 2–4).

NIOSH went on to comment, however, that information now available indicates materials made of other substances will afford a greater measure of protection than that afforded by polyvinyl chloride.

> Permeation studies have shown that garments made of chlorinated polyethylene provide the greatest protection against pure, liquid EtO; breakthrough did not occur for at least one hour. Degradation studies have shown that garments made with nitrile and butyl rubber also have a lifetime of about 1 hour. (Guidelines for the Selection of

Chemical Protection Clothing, Vol. I Field Guide. U.S. EPA Contract No. C-87611, January 19, 1983. (Ex. 11-146).)

Even with proper selection of materials, NIOSH reported (Ex. 11-146), exposure can still occur "* * * by (1) bulk penetration through pinholes, rips, zippers, seams, etc., (2) material failure through chemical degradation, or (3) permeation through the material." Even where test data are available, NIOSH commented that the differences in use and manufacturing conditions are sufficiently great to necessitate actual field evaluations "under typical use conditions of mixtures, temperatures, and physical abuse." NIOSH recommended that methods such as those being summarized by the ASTM F23.20 Committee be used to determine suitable garment materials for use with EtO.

The NIOSH testimony provides OSHA with convincing evidence that it would be premature on the part of OSHA to mandate the use of only specific types of materials for personal protective clothing in the EtO standard. Too few materials have been tested for EtO breakthrough time or degradation, and even these results may have only partial applicability under actual field conditions. The alternative is to require a specific testing protocol within the standard before any clothing is considered "approved" for personal protection. This would trigger additional recordkeeping, and adequate permeation testing is likely to be well beyond the capabilities of the many EtO-using facilities where only a few employees are potentially exposed to EtO. In addition, the handling of materials for testing presents a hazard to a different group of employees.

After a thorough review of the expert testimony and other evidence in the record, OSHA has chosen not to add a specific requirement for protective clothing in the final standard for EtO. However, the final rule does contain, in paragraph (g), a cross-reference to §§ 1910.132 and 1910.133 that is intended to remind employers of their obligations under these provisions to provide appropriate clothing to protect against eye and dermal contact.

Showers and Changerooms

OSHA received three comments on the need for a provision requiring showers and changerooms. The American Federation of State, County, and Municipal Employees (AFSCME) stated:

> No provisions for chemical showers, eye wash stations, protective clothing, or lockers and change rooms have been incorporated into this [proposed] standard. These are all essential for a minimally effective standard, and as such should be incorporated into the EtO standard (Ex. 7-6)

In a post-hearing submittal, AFSCME reiterated:

> Because of the danger of any permeable clothing—including shoes—absorbing EtO and off-gassing, such clothing exposed to EtO must be removed upon cessation of exposure (Ex. 44)

In addition, William B. Dennis of Duke University Medical Center commented as follows:

> I think (emergency showers and eye wash stations) * * * should be in close proximity * * * in case there is a liquid spill (Tr. 1367).

OSHA shares the concern of these participants that employees should be protected from contact with EtO in liquid form. Hazardous exposures to liquid EtO or EtO-containing solutions will most likely occur only accidentally in the industry sectors covered by this final rule, because exposures in these sectors will usually be from the gaseous form of EtO. Section 1910.151(c) of the General Industry standards, however, specifically requires employers to provide changerooms and emergency showers "* * * where the eyes or body of any person may be exposed to injurious corrosive materials * * *." As discussed in the health effects section liquid EtO does pose a hazard to the skin upon contact. Therefore, employers who use EtO in liquid form that may come in contact with employees' eyes or bodies, must provide changerooms and emergency showers in accordance with § 1910.151(c).

*Paragraph (h) Emergency Situations*

Paragraph (h) of OSHA's final rule for EtO requires that employers develop written plans for emergency situations (see discussion of definition of "emergency") and that they develop methods of alerting employees of these situations and evacuating workers when necessary. The plan must contain a requirement that employees engaged in correcting an emergency situation be provided with appropriate respiratory protection. Employers must also be prepared to alert employees to evacuate the workplace in the event of an emergency. The performance language of the emergency situation paragraph of the final standard will give employers the flexibility to choose any effective method of alerting employees, including communications systems, voice communication, or a bell or other alarm.

These requirements are identical to the emergency situation requirements included in the EtO proposal (48 FR 17284, April 21, 1983). The purpose of this provision is to protect workers from unexpected significant releases of EtO that pose an acute or other health risk.

There is considerable evidence in the record that the use of written emergency plans is widespread throughout industry (Exs. 21-8, 6-22), and many commenters supported the inclusion of such a requirement in the final rule (Exs. 4-26, 11-81, 21-8, 104, Tr. 1349). In addition, other OSHA health standards (Vinyl Chloride, 43 FR 45762, October 3, 1978; DBCP, 43 FR 11514, March 17, 1978) contain such a provision.

Several commenters suggested specific procedures to be followed in the event of an emergency (Ex. 11-125, 104). For example, Merry K. Hollhof, Central Service Supervisor of the Grand Rapids Osteopathic Hospital, suggested that the emergency provision of the standard require: (1) That local fire departments be provided with a copy of the standard in order to better respond to EtO emergencies, and (2) that hospitals require a practice emergency drill (for EtO) at least once a year (Ex. 11-125). Although OSHA agrees that these are good suggestions, it believes that the measures necessary to control emergency situations should be specific to particular workplaces. The Agency is not convinced that local fire departments, in general, will be able to respond adequately to EtO emergencies in the majority of workplace settings. Further, although practice emergency drills might be an effective means of teaching employees how to respond to emergency situations in many hospitals, such drills might be unnecessary for some facilities, such as small hospitals with only one EtO sterilizer. The Agency will therefore not require such specific measures in the emergency situations paragraph of the final EtO standard.

The proposed rule required the development of a written plan for each workplace where there is a possibility of an emergency and required that employees be informed of the emergency procedures at the time of initial assignment (or upon institution of the program), and at least annually thereafter.

There was general agreement by participants that effective emergency plans are essential and being in a standard for EtO (Exs. 11-17, 11-45, 11-77, 11-125, 17, 18-17, 103, 104, 142, Tr. 357, 364, 1305, 1349). For example, William Dennis, Director of Sterile Processing at Duke University Medical Center, testified that:

> * * * a plan in the event of a leak or spill is of absolute importance. With any type of mechanical equipment * * *, accidents are going to occur. We need to make sure that if a spill does occur, that our employees * * *

know that they need to evaluate the area immediately. They need to notify the appropriate health and safety personnel (Tr. 1349).

Gerald McEntee, International President of the American Federation of State, County and Municipal Employees (AFSCME) stated that "because of the constant potential for leaks or high EtO exposure due to equipment failure, a clearly drawn requirement for emergency procedures will be an essential fact of a new EtO standard" (Tr. 364).

Few respondents specifically addressed the issue of whether the requirement should be limited in coverage. However, these respondents expressed clearly the opinion that a written plan should be required for all employers regardless of their firm's size or the number of their employees potentially exposed (Exs. 11–17, 11–45). One comment noted that OSHA has already adopted general language for emergency plans in section 29 CFR 1910.38(a). Employee emergency plans and fire prevention plans. A cross-reference to the general language has been added to paragraph (h)(1)(iii) to highlight the employer's obligation to comply with all applicable standards.

Several respondents observed that any emergency plan for EtO should be incorporated into the facility's overall disaster plan (Exs. 104, 125). There are considerable advantages to such an approach and, as suggested by the commenters, this practice would encourage periodic drills for EtO emergencies as well as inservice training programs. However, it should be noted that OSHA is not requiring employers to develop general disaster plan under this final EtO standard. One respondent (Ex. 125) commented that many health care facilities' emergency plans require notification of the local fire department, and that fire department personnel are often uninformed of the hazards of EtO. OSHA expects that employees will provide non-employees such as fire department staff with a copy of the written emergency plan as well as this standard (including Appendices A, B, and C) when arranging for such non-employees to assist in an emergency.

Several respondents felt that the term "emergency" was inadequately defined (Exs. 7–1, 11–145, 103, 142), and some proposed alternative definitions for "emergency." For example, McEntee of AFSCME and Hill of the International Union of Operating Engineers (IUOE) testified that an emergency should be defined as any situation that might result in worker exposure to concentrations of EtO that are immediately dangerous to life or health (IDLH) (Tr. 103, 364.) Although OSHA agrees that such situations would certainly constitute an emergency, the Agency does not believe that the information on human health effects is adequate to define a precise numerical IDLH (Hill recommends 800 ppm). In addition, the health effects data suggest that evacuation based on an IDLH level alone would not provide adequate employee protection against such effects as irritation and sensitization. McEntee and Hill also suggested evacuation of the work area immediately if employees smelled EtO (Tr. 364). Since EtO's odor warning the threshold is about 700 ppm. and since this level is substantially above levels identified as having adverse health impacts, OSHA has chosen not to use odor threshold to define an EtO-related emergency. In addition, as Hill points out, many employees may not be particularly sensitive to the smell of EtO (Tr. 103). As defined in the final rule (see definitions section of summary and explanation above), the term emergency covers those unexpected occurrences, such as a failure of control equipment, that might produce a release of EtO of sufficient size to produce significant acute effects, including eye or respiratory irritation.

*Paragraph (i) Medical Surveillance*

The final standard requires each employer to institute a medical surveillance program to be performed by or under the supervision of a licensed physician. Employees would be offered medical examinations upon initial assignment and annually thereafter where EtO exposure is known or is likely to be at or above the action level for a total of at least 30 days in a year. Medical surveillance is provided also to employees exposed in an emergency situation and to those who are terminating employment in the EtO area. Consultations and appropriate examinations are to be made available to employees who believe they are experiencing signs or symptoms of overexposure to EtO or who are concerned about the effects of EtO on their ability to conceive a healthy child.

The physician is given broad discretion in selecting appropriate tests for medical surveillance. This is necessary to provide flexibility to the physician should new procedures become available that would help to identify situations where an employee has been placed at risk of chronic EtO-related disease while the effects are still reversible. Certain elements of medical surveillance, including comprehensive medical and work histories, a comprehensive physical examination, and a complete blood count may be useful to detect otherwise unrecognized overexposure, and these procedures are therefore required under the standard. Additional elements of the medical surveillance section ensure adequate communication among the employer, the employee, and the physician. These elements and the rationale for their inclusions remain as stated in the proposal.

Two substantial changes in medical surveillance requirements were made as the result of OSHA's review of extensive public comment and testimony. First, the suggested test for chromosome damage, included in proposed Appendix C, was deleted because the results of such tests, as applied to an individual rather than a group, cannot be interpreted. Second, to ensure uniformity of medical surveillance for all EtO workers, the standard mandates certain elements for all examinations. In the proposal, OSHA had not specified the type of surveillance to be made available to EtO-exposed employees. Instead, the physician was referred to a nonmandatory appendix, Medical Surveillance Guidelines for Ethylene Oxide. OSHA's analysis of comments received on medical surveillance, including responses to the supplemental questions raised in the proposal, is given below.

Medical surveillance programs are considered by OSHA to be a proper means of monitoring the adequacy of the permissible exposure limits. To that end, OSHA requested specific comment from the public on the adequacy of the proposed medical surveillance requirements. Two important elements to be considered were whether a proper balance had been struck between requirements and nonmandatory guidelines and whether the tests specified were appropriate.

Among the respondents, there was little agreement on a proper medical surveillance program. A few concurred with the proposed plan (Exs. 11–45, 11–61, 11–73, 11–76, 85) and some felt that medical surveillance, as provided, was irrelevant to employee health concerns (Exs. 11–64, 11–90, 11–92, 11–123, Tr. 316, Tr. 1537). Many commenters stated that a specific medical surveillance plan should be mandatory and a part of the standard language (Exs. 11–34, 11–42, 11–50, 11–81, 11–91, 11–125, Tr. 1253, Tr. 1284, Tr. 1586). Those supporting this view generally felt that without mandatory tests, no uniformity of results could be ensured. They considered this to be a more important factor than the

current lack of knowledge about what constitutes adequate medical surveillance for EtO-exposed individuals. Others felt that medical surveillance requirements should be left to the discretion of the physician. These groups argued that test recommendations should not be mandatory (Exs. 11–56, 11–71, 11–74, 11–105, 11–110, 11–124, 11–133, 11–137, 11–138, 118, 141–H, 142, Tr. 993, Tr. 997). In general, larger companies with existing comprehensive surveillance plans favored a performance-oriented standard permitting broad latitude to the examining physician. Smaller facilities, with few affected workers and no existing program in occupational medicine, tended to prefer mandatory requirements.

The preamble to the proposed standard indicated that information then available to OSHA was insufficient to justify specification of the precise tests to be administered. The belief was expressed that the examining physician is best qualified to make this judgment. The advantage to this approach is that it permits the examining physician flexibility to modify the medical surveillance program as new methodology and new information on the toxic effects of EtO become available. The disadvantage to this approach is the potential for failure to provide meaningful surveillance to EtO-exposed workers. For example, one Regional Administrator for OSHA commented that "If the agency, with all these resources available, is unable to recommend a specific medical protocol, how is an ordinary practicing physician going to do any better? * * * If the employers provide unfocused medical examinations and have no guidance on interpreting or using the results, then the employees concerned will gain no health benefit" (Ex. 11–145).

In comments (Ex. 11–146) and testimony (Tr. 320), NIOSH stated its belief that the proposed medical surveillance would not provide additional protection to EtO-exposed workers. They commented that:

> * * * the phrase "protective medical monitoring of affected employees" implies that we understand the mechanism of the disease process and that as long as physiological changes are detected at an early stage they may possibly be reversed. Unfortunately, the mechanism of the disease process is not completely understood * * * Specifically, the medical history solicits information concerning symptoms related to the eyes, blood forming organs, lungs, nervous system, reproductive system and skin. Knowledge obtained by acquisition of this information will not contribute to an understanding of the long-term effects of EtO exposure, nor is such information likely to contribute to the protection of the individual worker.

In response to questioning at the OSHA hearings, Phillip Landrigan, a NIOSH physician, stated:

> * * * we are certainly not opposed in general to the principle that physical examinations are good for workers and probably convey general benefits to the improvement of worker health. However, in the case of specific examinations in order to protect against disease or against hazardous health effects which result from exposure to a particular toxic agent, it's our considered opinion that the tests that are done to screen for adverse effects have to be worthwhile to us or they shouldn't be here (Tr. 319–321).
>
> Now, we have reviewed the proposals that OSHA has put forth, including the latest revision by Dr. Yodaikan for the medical screening of workers exposed to EtO, and it's our opinion that none of those tests are worthwhile. None of those tests are likely to detect the presence of cancer. None of those tests are likely to detect the presence of adverse reproductive effects in workers at some early stage in which medical intervention would be worthwhile. And consequently, we cannot support the inclusion of hematological tests, tests of the immune function, tests of liver function in the proposed standard.

This testimony represents a shift from NIOSH's stated position in 1981. In a Current Intelligence Bulletin sent to OSHA by NIOSH as an attachment to the Institute's comments (Ex. 11–146), the following position was taken on medical surveillance for EtO workers.

> A medical surveillance program should * * * be made available that can evaluate both the acute and chronic effects of EtO exposure. Effects such as upper respiratory irritation, dermatitis, or other forms of sensitization and irritation should alert management that unacceptable acute exposure to EtO may be occurring. A careful history with emphasis on the reproductive history should be done initially and updated yearly. In addition, an evaluation of chronic effects would require that an examination give particular attention to the hematological, neurological, and reproductive systems. Unusual findings for a worker should prompt medical personnel to consider specific test (eg. cytogenetic analysis) for the individual.

Comments that specific medical tests now available are not adequate to identify potential long-term effects of exposure to EtO must be given serious consideration. For example, the increased incidence of cancer in animals exposed to EtO, coupled with several reports of cases of leukemia in workers exposed to EtO, is sufficient to conclude that humans exposed to excessive concentrations of EtO are at risk of developing cancer, in particular leukemia. This information alone is inadequate to give any assurance that humans are at risk only with respect to leukemia or even to leukemia plus the other types of cancer seen in animals. Even if all cancer sites were known, clinical tests now available would be inadequate screening tools for cancer. As NIOSH stated:

> * * * these findings (from medical monitoring) could not be used * * * to predict the likelihood of development of cancer or adverse reproductive effects or to protect the worker from the development of those effects. On the other hand, in the event of an exposure to a high concentration of EtO, the immediate exam might include the elements described by OSHA (Ex. 11–146).

However, based on the entire record, OSHA is convinced that, to the extent possible, medical surveillance requirements for EtO should be mandatory. This will ensure that EtO workers exposed for 30 or more days a year at or above the action level receive reasonably uniform protection. Thus, the medical surveillance requirements described below focus not on cancer, but on treatment of EtO emergencies and identification of persons who appear, medically, to have been overexposed to EtO.

Although views were divided on whether specific exams should be mandatory elements of the standard or be included in the appendices, several groups presented written testimony on what they considered appropriate testing for EtO workers. For example, the American Hospital Association, while in favor of nonmandatory tests (Ex. 154), stated that annual medical exams should be available and should include a complete physical, blood cell counts, and urinalysis. Chest X-rays every 5 years were recommended and the essential nature of a medical exam for EtO workers if they received accidential excess exposure was stressed (Ex. 104). John Venable, testifying for the Ethylene Oxide Industry Council, recommended biannual health histories and blood chemistries and annual hematology in establishing an EtO medical surveillance program (Tr. 997–998). The 3–M Corporation also stated a preference for a performance-oriented medical surveillance program, but felt that appropriate testing should include a general history, physical exam, and routine hematology and blood chemistry (Ex. 146).

In testimony for the Ethylene Oxide Industry Council, Lawayne Stromberg made recommendations based on a Canadian Task Force report (Ex. 85, Tr. 985–995). He concluded that annual exams would be inappropriate for monitoring illnesses with a long latent period in persons early in their work

history. For younger workers he recommended exams every 5 years. Exams for EtO workers would include a history oriented to the exposure situation, follow-up with appropriate tests if the physician discovered any problems, and a complete blood count (CBC) based on the risk of the particular occupation.

Several groups recommended that mandatory testing be made part of the standard. Among the several recommendations were those of the Amalgamated Clothing and Textile Workers Union (ACTWU) and the American Federation of State, County and Municipal Employees (AFSCME) which testified that hematologic exams should be patterned after those in the benzene standard and that employees exposed to EtO in the past should continue to be offered medical surveillance (Exs. 44, 101, Tr. 1285). Jeanne Stellman, a physician from the Women's Occupational Health Center, testified in favor of making a complete physical and blood cell counts mandatory and leaving additional clinical procedures to the discretion of the physician (Ex. 117).

The AFL–CIO requested that specific and uniform medical requirements include a complete medical and work history with specific emphasis directed to symptoms relating to the eyes, the blood-forming organs, the lungs, the neurological and reproductive systems, and the skin; a reproductive history; a physical exam emphasizing the same elements as the history; and a CBC with white cell count, differential, hemoglobin and hematocrit (Ex. 112). Although Dr. Landrigan of NIOSH opposed most testing for EtO on the grounds that it would not detect adverse effects at an early stage permitting medical intervention, he testified in favor of including examination of the neurological system on the basis that diseases of this system are only slowly progressive (Tr. 321). The AFSCME believed that Appendix C should include not only information on neurotoxicity but on delayed effects, sensitization, and cataractogenesis as well (Ex. 44).

OSHA's Office of Occupational Medicine also testified at the hearings in support of mandatory medical surveillance. Dr. Ralph Yodaiken, the physician who heads that office, stated that EtO-related exams should include a CBC, an annual comprehensive medical and occupational history, and an annual comprehensive physical examination. He also asked that other elements relating to respirator use be included (Tr. 801).

Although they did not provide testimony supporting mandatory testing for EtO workers in general, the American Hospital Supply Corporation conducts an extensive medical surveillance program for its employees who work with EtO (Ex. 145). Their recommendations involve medical evaluation, including elicitation of a careful family history, reproductive history and past medical events and laboratory assessment of possible documentable effects on health, including possible effects on the blood, liver, reproductive organs, respiratory tract and basic cellular structure. They have also considered conducting a cytogenetic monitoring program and have on occasion medically removed employees from further EtO exposure on the basis of such tests (Ex. 145).

Based on a review of the total record, OSHA concludes that specific tests should be mandated as part of the standard's medical surveillance program. These tests are designed to detect and consequently to prevent inadvertent or otherwise unrecognized excessive exposure to EtO. Alone, the tests will not prevent or even detect all potential adverse consequences of EtO overexposure. However, coupled with employer action to eliminate exposure situations identified through the medical examinations, they will, despite these limitations, greatly reduce the risk of chronic effects.

One basic element of any medical surveillance plan for EtO workers is a medical and work history. These histories should focus on the collection of information that would indicate the worker is being overexposed to EtO. Episodes of nausea, vomiting and headaches, or a "peculiar taste" may suggest that acute exposure has occurred. Delayed effects might include pulmonary edema, drowsiness, weakness and incoordination. A history of burns or blistering of the skin, brown pigmentation, or irritation of the eye may also be an indication of overexposure to EtO (Ex. 2–5). A thorough reproductive history for employees of childbearing age, updated regularly, is essential given the data on EtO's adverse effects on both male and female reproduction. This history should elicit information on stillbirths, miscarriages, past attempts at conception, and present reproductive status.

To complement the medical and work histories the attending physician must perform a comprehensive physical with special emphasis on the same organ systems. To accomplish this task, the physician must be knowledgeable of the signs and symptoms of EtO overexposure. In addition, the physician must be capable of counselling employees who wish to conceive on the risks of exposure to EtO. For reasons discussed in a later section, the physician must make available tests for fertility and pregnancy, as needed, if requested by a potentially affected employee. The advantages to offering these tests if the employee is sufficiently concerned far outweigh the criticisms of these tests received by OSHA.

Review of the record indicates several reasons for inclusion of a complete blood count (CBC) as a routine requirement for EtO-exposed workers. The study of Ehrenberg and Hallstrom (Ex. 2–38) shows a number of hematologic changes in active employees exposed to EtO. It also gives evidence to suggest that these effects may occur even when exposure is brief but intense. Inclusion of the CBC as a requirement is virtually noncontroversial. As stated by Stromberg of the Ethylene Oxide Industry Council, "a CBC is clearly justified by the risk of the particular occupation" (Ex. 85).

Some employees not ordinarily exposed to EtO may briefly encounter exposure to EtO unrelated to their assigned work. A cut-off point is needed for the required medical surveillance program, since it would not be practical to require medical surveillance for every employee regardless of duration of exposure. The surveillance period selected must be sufficiently inclusive but not administratively impractical. From OSHA's experience in the inorganic arsenic and coke oven proceedings and from testimony and public comment on the EtO proposal, the Agency has determined that 30 exposure days per year is an appropriate point for including employees in the medical surveillance program. However, worker rotation shall not be used as an administrative convenience to deprive workers of medical surveillance or of the protection afforded by any other provisions of the standard.

The standard requires the employer to provide examinations to any employee exposed to high EtO concentrations under emergency conditions. Although there is little uncertainty about the long-term effects of high short-term exposures, it appears prudent to monitor such affected employees in light of existing health data.

On the basis of OSHA's evaluation of public response to specific questions raised in the proposal, medical surveillance is also being made available to employees when they

terminate their employment or transfer to another job assignment not involving EtO exposure. The scope of this examination is determined by the physician. For the same reason, employees who believe they are suffering from signs or symptoms of overexposure to EtO may request an interim evaluation by a physician.

The final standard requires that a medical surveillance program provide each covered employee with an opportunity for a medical examination. All examinations and procedures are to be performed by or under the supervision of a licensed physician and be provided without cost to the employee. Clearly, a licensed physician is the appropriate person to be supervising and evaluating a medical examination. However, certain parts of the required examination do not necessarily require the physician's expertise and may be conducted by another person under the supervision of the physician.

Several commenters raised questions concerning the adequacy of the coverage of medical surveillance. AFSCME, in noting that medical surveillance ignores past exposure, recommended changes in the language to provide for continued medical surveillance if workers have been exposed in the past but become reassigned to other work by the same employer (Ex. 44). Cited as precedence were § 1910.1018(1)(i)(B) of the arsenic standard and § 1910.1029(j)(3)(iii) of the coke ovens emissions final rule. In arguing for extended coverage for medical surveillance, the ACTWU pointed out that at one plant only 24 of its members were currently exposed to EtO but that 84 union members and 24 management personnel had received previous EtO exposure (Ex. 101, Tr. 1284). The AFL–CIO also expressed the opinion that specific medical surveillance should be provided to all formerly exposed as well as presently exposed employees (Ex. 112).

Although the concerns expressed by these commenters are realistic, the present state of knowledge about EtO's long-term effects on humans is insufficient to warrant a requirement for medical surveillance of previously exposed employees. The evidence suggests that EtO may cause leukemia, as well as cancer in other organs. However, present knowledge is inadequate to identify an EtO-related preleukemic state in employees and former employees. Thus, medical intervention would occur at a late stage in the development of the disease. In addition, cancer in animals was not limited to leukemia, and available information at this time does not even begin to address whether other tumors seen in animals or even unrelated tumors are also likely outcomes of EtO exposure in humans. Thus, a meaningful medical surveillance program directed at detecting chronic effects, as would be needed for formerly exposed employees, cannot be devised at this time.

The employer is required, in paragraph (i)(3), to provide the physician with the following information: a copy of this standard and its appendices; a description of the affected employee's duties as they relate to the employee's exposure level; the employee's representative exposure level or anticipated exposure level; a description of any personal protective equipment and respiratory equipment used or to be used; and information from the employee's previous medical examinations which is not readily available to the examining physician. Making this information available to the physician will aid in the evaluation of the employee's health in relation to his or her assigned duties and fitness to wear personal protective equipment when required.

The employer is required to obtain a written opinion from the examining physician containing the results of the medical examinations; the physician's opinion as to whether the employee has any detected medical conditions which would place the employee at increased risk of material health impairment from exposure to EtO; any recommended restrictions upon the employee's exposure to EtO or upon the use of protective clothing or equipment such as respirators; and a statement that the employee has been informed by the physician of the results of the medical examination and of any medical conditions which require further explanation or treatment. This written opinion must not reveal specific findings or diagnoses unrelated to occupational exposure to EtO, and a copy of the opinion must be provided to the affected employee.

The purpose in requiring the examining physician to supply the employer with a written opinion is to provide the employer with a medical basis to aid in the initial placement of employees and to assess the employee's ability to use protective clothing and equipment. The requirement that an employee be provided with a copy of the physician's written opinion will ensure that the employee is informed of the results of the medical examination. The purpose in requiring that specific findings or diagnoses unrelated to occupational exposure to EtO not be included in the written opinion is to encourage employees to take the medical examination by removing any concern that the employer will obtain information about their physical condition that is unrelated to present occupational exposures.

In addition to raising the question about the adequacy of the medical surveillance requirements, OSHA requested public response on a number of related issues. Specifically, OSHA asked for comment on the appropriateness of the inclusion of genetic screening, chromosome analysis, male fertility testing and pregnancy testing for some employees. The possibility of providing medical removal protection for employees wishing to procreate was also raised. OSHA also sought public comment on whether the coverage of employees under medical surveillance should be expanded to include exams following emergencies, at termination of employment, and for employees who believe they are suffering from symptoms associated with EtO overexposure. In view of OSHA's uncertainty as to what constitutes an appropriate physical examination, the possibility of including a multiphysician review mechanism in the EtO standard was also addressed in the questions to the public.

As part of the proposed nonmandatory Appendix C—Medical Surveillance Guidelines for Ethylene Oxide, OSHA recommended screening for chromosomal damage. Almost all public comments including those from trade associations, unions, manufacturers, suppliers, users, and government agencies agreed that routine chromosome screening is inappropriate and should not be mandated by the standard (Exs. 11–19, 11–48, 11–54, 11–56, 11–64, 11–67, 11–68, 11–74, 11–76, 11–88, 11–93, 11–102, 11–105, 11–110, 11–111, 11–128, 11–131, 11–133, 11–136 to 11–139, 11–142, 11–143, 11–146, 11–157, 85, 90, 101, 112, 135, 152, Tr. 1285, 1049, 453, 464, 998, 1586). The Office of Occupational Medicine at OSHA also testified against the use of chromosomal screening in the medical surveillance programs for EtO (Tr. 801).

In a review of the EtO proposal submitted to OSHA, NIOSH stated:

Exposure to EtO can result in chromosomal abnormalities and increased frequencies of sister chromatid exchanges; however, as of yet NIOSH knows of no data that correlates these effects to the manifestation of cancer or adverse reproductive effects in an individual. The chromosome studies of an individual suggested by OSHA are not likely to provided this information. Ability to detect such damage is limited and the disease can be manifested in the absence of detectable

chromosomal damage. Conversely, the presence of detectable chormosomal damage does not appear to provide a firm basis for predicting the likelihood of an individual demonstrating a tumorigenic response. Despite this uncertainty we believe that the identification of such changes in groups of workers is cause for concern about their continued well being, but is not appropriate for inclusion in a standard for EtO (Ex. 11–146).

In a letter to R.C. Barnard of the Ethylene Oxide Industry Council (Ex. 49), J.W. Grisham of the University of North Carolina stated that:

> * * * information from chromosomal analysis on a population of workers exposed to ethylene oxide could not be used to predict future risk of chronic disease. Chromosomal aberrations are not now a scientifically valid, cost effective means to screen populations of workers for extent of exposure to EtO or for assessment of risk of future development of chronic disease. Evaluation of SCE technically is less demanding and cheaper to perform but not correlated with any disease outcome.

Patterson, in testimony for the Health Industry Manufacturers Association (Ex. 90) and Stromberg for the Ethylene Oxide Industry Council (Ex. 85, Tr. 993) stressed the still experimental nature of cytogenetic testing. Patterson stated, "Cytogenetic testing is a complex research tool. In its present state of development, it is not an accepted clinical test for evaluating individual EtO exposures" (Ex. 90). Stromberg stated that there is "no basis for assuming that cytogenetic testing could assist us in identifying workers who as individuals would have predilection for developing malignant disease. Cytologic testing would not allow us to classify or segregate workers in this way and therefore would serve no useful purpose" (Ex. 85).

Although the Health Industry Manufacturers Association stressed that the foremost reason for rejecting cytogenetic screening is that the findings cannot be used to predict individual risk of adverse health effects, the Association gave several other reasons to support its position (Ex. 152). These included the need carefully to control cytogenecity studies with large and well-matched populations, the expense of the test, and the limited number of laboratories presently capable of doing acceptable work.

The AFL–CIO concurred in not recommending chromosomal tests for routine surveillance. They commented that "from our understanding of genetic monitoring for chromosomal abnormalities, it does not appear that such test conditions and analyses on an individual basis provide any information on the effects of exposure that can be meaningfully interpreted" (Ex. 112). The United Steelworkers of America (USWA) without taking a direct position on chromosomal screening suggested that such testing might be used to screen out workers at preemployment and periodic surveillance examinations (Ex. 11–46).

On the basis of the complete record, OSHA finds that exposure to EtO has caused an increase in chromosome damage in groups of workers exposed to this substance. However, there is no quantitative basis to compare chromosome damage with exposure, so that such measurements would not provide an index of exposure for the individual worker. Furthermore, it is presently not possible to determine on the basis of preemployment examination of chromosomes those employees who will be at highest risk of subsequent health effects if exposed to EtO. Finally, it is not possible to determine in an individual the increased risk of developing cancer or reproductive problems on the basis of a series of test results of chromosomal screening taken over a period of time. Therefore, OSHA has imposed no requirement for cytogenetic testing and has deleted reference to testing for chromosomal damage from the nonmandatory Appendix C. The possible usefulness of this test as followup to an emergency exposure was not explored in the rulemaking and consequently no position is taken in the standard on this issue.

In the general questions supplementary to the proposed rule, OSHA asked for comments on whether medical removal protection (MRP) including maintenance of earnings, seniority, and other benefits and employment rights should be provided for employees removed from exposure to EtO because they wish to procreate and, if so, under what circumstances. This question received considerable public response, with employee representatives supporting MRP, generally in the broadest sense (Exs. 11–152, 44, 101, 112, Tr. 1254, 1588). With some exceptions (Exs. 11–34, 11–88, 11–102, 11–107), employers and industry associations were opposed to mandating any form of MRP (Exs. 11–25, 11–47, 11–57, 11–108, 11–110, 11–131, 11–133, 90, 142, 152, 154, Tr. 452).

The most far reaching position taken in support of MRP was that of AFSCME, which recommended up to 15 months of medical removal every three years for men and women wishing to procreate and additional removal benefits for pregnancy. AFSCME based its position on an evaluation of adverse effects, which caused this union to take the position that EtO levels as low as 0.5 ppm present a probable reproductive danger for both men and women. AFSCME also noted that emergency exposures would remain possible under any standard (Ex. 44). AFSCME did not address the potential economic consequences associated with implementation of its recommendations.

The AFL–CIO did not support a 1 ppm TWA, and consequently took the position that "there are situations when temporary removal of workers will be advisable to protect against reproductive risk, particularly if the final standard sets a 1 ppm PEL" (Ex. 112). However, the AFL–CIO also observed that at present no clear-cut determination can be made as to which situations warrant removal from exposure, and the union recommended that MRP be based on a medical determination. Although the AFL–CIO provided no detailed analyses, it stated that, based on experience with the much broader removal requirements under the lead standard, a limited voluntary removal program for EtO-exposed workers would be feasible (Ex. 112).

The public responses received do not provide OSHA with arguments sufficient either to support or refute the need for MRP in an EtO standard. There is no evidence in the EtO record that a wage guarantee requirement for EtO would be reasonably necessary for the achievement of a safe and healthful work environment. Furthermore, the effects of exposure to EtO are not highly reversible, as evidenced by the persistence of chromosomal aberrations after the cessation of exposure, and the record contains insufficient evidence to indicate that temporary removal would provide long-term employee health benefits. For these reasons, OSHA is not including mandatory MRP in the final standard.

In view of the uncertainty as to what constitutes an appropriate physical examination, OSHA requested public comment on whether a multiphysician review should be required. In the lead standard, where a three-stage review process is mandated, multiphysician review was justified on the basis of the increased probability that such a review would facilitate the correct diagnosis of lead-related disease. This was so because the inherent biological variability of lead disease meant that no one medical specialty was uniquely suited to diagnose it and that many company physicians had difficulty recognizing it.

OSHA received comment that multiphysician review is essential to ensure employee cooperation and

confidence, but evidence given to support this position was testimony from the record of the lead standard, where an extremely different picture emerged in the record as compared to that for EtO (Ex. 101, Tr. 285). In the EtO rulemaking, employers and their associations overwhelmingly considered multiphysician review inappropriate (Exs. 11–25, 11–47, 11–48, 11–57, 11–67, 11–68, 11–71, 11–88, 11–105, 11–110, 11–131, 11–133, 11–148, 152, 154). For example, the American Hospital Association stated that "there is no evidence to support a finding that company physicians lack medical sophistication to detect the subtle and illusive signs of diseases in health impairments associated with exposure to EtO" (Ex. 154). However, NIOSH presents the most convincing argument against mandatory multiphysician review: "NIOSH does not believe that the uncertainty described by OSHA can be resolved by a multiphysician review since the uncertainty arises from the interpretation and not the performance of such tests" (Ex. 11–146). OSHA agrees that multiphysician review cannot compensate for the underlying problem, i.e., the lack of medical tests that give an early warning of most EtO-related chronic diseases, and multiphysician review is not included in the final standard.

Two questions raised by OSHA proved to be noncontroversial. One question addressed the issue of offering interim medical examinations to employees who believe they are suffering from symptoms associated with EtO exposure. The other question asked if it would be appropriate for the standard to require that employers offer medical examinations at the termination of employment. Of the few responses received, support for the provision of exams at termination greatly outweighed any negative replies (Exs. 11–25, 11–28, 11–34, 11–47, 11–48, 11–68, 11–102, 85, Tr. 999). Several respondents affirmatively addressed the question of providing interim exams upon employee request (Exs. 11–34, 11–67, 11–68, 11–102, 11–146). NIOSH, however, also stated that:

> * * * the employee should be informed that such an examination cannot with any certainty predict the likelihood of a carcinogenic or adverse reproductive response and that workers should also be informed that the results will not provide a basis for medical intervention that will protect the worker's health (Ex. 11–146).

However, OSHA believes that the interim examination will serve purposes other than that noted by NIOSH. For example, an examination may be needed to assess and alleviate the acute effects of EtO exposure. This may, in turn, indicate that a leak or some other source of high transient EtO levels needs to be repaired or corrected.

In the final standard, OSHA has incorporated provisions for interim medical exams and for examinations at termination of employment. After the employee has terminated his or her job in an EtO exposure area, the employer has no further obligation under this standard to provide medical surveillance.

Interim exams are required to ensure that employees have access to a physician if a hazardous situation has been recognized. This obligation parallels the requirement that employers provide medical services for employees potentially overexposed in an emergency. Through training required in other sections of the standard, employees should become competent in recognizing the signs and symptoms associated with overexposure to EtO. Thus, medical intervention may be needed when the employee believes that a problem is occurring. The cost-effectiveness of the standard's approach is ensured because the physician performs only those tests he or she deems necessary based on the employee's complaints.

OSHA asked for public comment on whether fertility testing and pregnancy testing should be provided as a part of routine physical examination for employees exposed in emergency situations, and for persons wishing to procreate. Evidence available from both human and animal studies gave strong indication of both male and female reproductive effects. Despite this evidence, many commenters were opposed to providing fertility tests or pregnancy tests particularly as part of the routine physical examination (Exs. 11–25, 11–64, 11–71, 11–88, 11–110, 11–124, 11–128, 11–131, 11–133, 152). Reasons for rejecting these two tests generally fell into two categories. Some participants contended that evidence of EtO's effects on reproduction, at least at the proposed PEL, was inadequate, making medical surveillance meaningless. Others found the proposed tests i.e., for male fertility, to be too unreliable. In rejecting the inclusion of these tests in the standard, NIOSH stated "we do not believe that sperm or pregnancy test results obtained from individual workers will provide meaningful diagnostic information. As with genetic screening, we believe that sperm test results are currently only of value for interpreting effects of EtO exposure on an entire population" (Ex. 11–146).

Consideration of the interests of the individual employee leads OSHA to disagree with NIOSH's position, at least in part. Certainly, pregnancy test results are not unreliable. For a female employee, knowledge of her pregnancy can lead to careful medical maintenance and precautions on the part of the employee and management to minimize exposure throughout her pregnancy. For men and women, results of fertility tests may not be conclusive and even indication of a problem would not necessarily implicate EtO as the sole cause. However, repeated reproductive failure coupled, for example, with a low sperm count, sperm morphology and sperm motility in the male might serve as indicators to decrease exposure to EtO as much as possible, especially if other signs or symptoms of overexposure to EtO are evident. Thus, to be consistent with the Agency's position in the lead standard (§ 1910.1025), and in response to the record evidence in support of this option, OSHA is requiring that fertility tests and pregnancy tests be made available to potentially affected employees who specifically request them when the physician concurs in the need for the testing. Abusive of frivolous application of this section will be avoided by requiring the physician to approve requests for fertility and pregnancy tests.

*Paragraph (j) Communication of EtO Hazards to Employees*

OSHA has combined the requirements from several proposed paragraphs into a new paragraph (j) in the final rule entitled "Communication of EtO Hazards to Employees." These requirements ensure that information about the hazards of EtO will be transmitted to employees through the use of: (1) Signs and labels, (2) material safety data sheets, and (3) information and training. The proposed standard for EtO included requirements addressing signs and labels and information and training in two separate paragraphs.

Since OSHA's proposed rule for EtO was published on April 21, 1983, OSHA promulgated a final rule on Hazard Communication (48 FR 53280, November 25, 1983) (29 CFR 1910.1200). That standard requires that chemical manufacturers and importers assess the hazards of the chemicals they produce or import. Employers having workplaces in the manufacturing industry sectors (Standard Industrial Classification (SIC) codes 20 through 39) are required to provide information to their employees concerning the hazards of chemicals used in the workplace. Chemical hazard

information is to be transmitted to employees "* * * by means of comprehensive hazard communication programs, which are to include container labeling and other forms of warning, material safety data sheets and employee training" (§ 1910.1200(a)(1)).

The purpose of reformatting paragraph (j) in this final EtO standard is to avoid repeating the requirement in § 1910.1200 and to ensure consistency with that standard. OSHA wishes to point out, however, that the Hazard Communication standard only applies to employers with workplaces in the manufacturing industry sectors (SIC codes 20 through 39). For these and other sectors, however, paragraph (j) of OSHA's final rule for EtO provides that EtO labels must meet the criteria set forth in § 1910.1200 all facilities covered by the EtO standard.

*Signs and Labels.* The final rule for EtO requires that regulated areas be demarcated by posting legible signs that bear the following legend:

DANGER
ETHYLENE OXIDE
CANCER HAZARD AND REPRODUCTIVE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING MAY BE
REQUIRED TO BE WORN IN THIS AREA

OSHA intends the posting of these signs to serve as a warning to employees who may otherwise not know they are entering a regulated area. Such warning signs are required to be posted whenever a regulated area exists, that is, whenever occupational exposures are likely to exceed the PEL. For some work sites, regulated areas are permanent, for example, in areas where engineering controls cannot reduce exposures to or below the PEL. In such situations, signs are necessary to warn employees not to enter the area without adequate respiratory protection and unless authorized to do so.

Warning signs are also required to designate temporary regulated areas, e.g., when maintenance or repair activities create a situation where occupational exposures could exceed the PEL. Warning signs are important in this situation because they will help to prevent the unnecessary exposure of employees who may not be aware that an area temporarily contains high levels of EtO.

The standard also requires that containers of EtO be labeled with the legend:

CAUTION
CONTAINS ETHYLENE OXIDE
CANCER AND REPRODUCTIVE HAZARD

and with a statement warning against breathing airborne concentrations of EtO.

The signs and labels requirements discussed above are consistent both with Section 6(b)(7) of the OSH Act, which prescribes the use of labels or other appropriate forms of warning to apprise employees of the hazards to which they are exposed, and with the requirements of OSHA's Hazard Communication rule, 1910.1200(f).

Employee representatives supported the inclusion of a requirement in OSHA's final EtO rule mandating that signs and labels warn workers of the health hazards of EtO (Exs. 4–19, 4–26, 4–52). Although industry representatives generally agreed that employees should be warned about the hazards of EtO, several commenters objected to including information about the reproductive hazards of EtO exposure on the signs and labels (Exs. 11–25, 11–57, 11–74, 11–101, 11–136). These participants also believed that the words "cancer and reproductive hazard" were alarming and inaccurate (Exs. 11–25, 11–57, 11–74, 11–101, 11–136).

The EOIC contended that "there is no sufficient basis upon which to require that signs and labels bear a warning regarding reproductive hazards and only a warning of potential cancer hazard should be required" (Ex. 11–57). The EOIC explained that "the only human study * * * that has linked exposure to EO with reproductive effects is the Hemminki study * * * that study has methodological shortcomings and does not establish that EO is in fact a reproductive hazard. At best, it suggests that further research may be warranted" (Ex. 11–57). The EOIC stated also that the animal studies submitted to OSHA's rulemaking docket for EtO are "* * * insufficient (evidence) to support the requirement of a reproductive effects warning" (Ex. 11–57). On the subject of EtO's carcinogenicity, the EOIC concluded that the evidence in man is uncertain and therefore "* * * the use of the word 'potential' provides a more accurate description of the scientific knowledge regarding the possible carcinogenic hazard posed by EO" (Ex. 11–57).

The purpose of signs demarcating regulated areas and of labels on containers warning employees of the hazards of chemicals is to alert workers, in clear and concise language, to the possible adverse effects of exposure to chemicals. Signs and labels are not meant to be judgments on the quality of the scientific evidence pertaining to the health effects of hazardous chemicals. OSHA believes that the scientific evidence discussed above in the Health Effects section of the preamble is sufficient to warrant a clear and strong warning on signs and labels designed to alert workers to EtO's reproductive and carcinogenic effects. In addition, the language on the signs and labels required by this standard is consistent with that used by the Agency in several other rulemakings involving carcinogens (Acrylonitrile, 29 CFR 1910.1045; Inorganic Arsenic, 29 CFR 1910.1018; Coke Oven Emissions, 29 CFR 1910.1029; Ethylene Dibromide, 48 FR 45956, October 7, 1983).

The proposal's labeling requirement did not apply "where EtO is used as a pesticide, as such term is defined in the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) (7 U.S.C. 136 et seq.) when * * * (EtO) is labeled pursuant to that Act and regulations issued under that Act by the Environmental Protection Agency" (48 FR 17312, April 21, 1983). At the time the proposal was published, there was concern that OSHA's labels might conflict with information required on labels of pesticide products regulated by the Environmental Protection Agency under FIFRA. OSHA has since determined that the label required by the final EtO standard does not conflict with EPA labels under FIFRA. OSHA and EPA will continue to coordinate their activities when regulating hazardous chemicals in an effort to avoid conflicts.

The EOIC (Ex. 11–57) requested that OSHA clarify whether or not tank cars are exempt from the container labeling requirement. The EOIC suggested that "if the word 'container' is construed to include tank cars, the OSHA requirements may conflict with regulations imposed by Department of Transportation" (Ex. 1–57).

Tank cars are not exempt from the final standard's container labeling

requirement. OSHA believes it is important that employees involved in the loading and unloading of tank cars are aware of the health hazards associated with EtO exposure to ensure that they take precautionary and protective measures. OSHA has examined its labeling requirements for EtO and has determined that they do not conflict with Department of Transportation regulations under the Hazardous Materials Transportation Act, 49 U.S.C. 1801 *et seq.*

*Material Safety Data Sheets.* Paragraph (j) of the final rule for EtO also requires that manufacturers or importers of EtO obtain or develop material safety sheets (MSDS's) for EtO and make them available to their employees, in accordance with OSHA's Hazard Communication standard (29 CFR 1910.1200(g)). The Hazard Communication rule establishes "uniform requirements for hazard communication in one segment of industry, the manufacturing division" (48 FR 53281, Nov. 25, 1983). Paragraph (g) of the Hazard Communication rule specifies what information must be included in MSDS's.

Although the Hazard Communication standard applies to most facilities that will be affected by the EtO standard (SIC's 20–39), many EtO-using workplaces (e.g., hospitals, museums, libraries) are not included in the scope of the Hazard Communication standard as it applies to the MSDS. However, most of the information contained in a MSDS is also included in the appendices to the EtO standard. Since paragraph (j) of the final rule for EtO requires all affected employers to provide copies of the EtO standard and its appendices to their employees, OSHA believes that all employees potentially exposed to EtO will, in fact, be adequately apprised of the hazard associated with EtO. Thus, OSHA does not explicitly require manufacturers to send MSDS's to downstream users outside SIC's 20–39.

*Information and Training.* The final EtO standard requires affected employers to provide a training program for all employees expected to be exposed to airborne EtO at or above the action level of 0.5 ppm. The training requirement in the standard is patterned after OSHA's Hazard Communication standard (29 CFR 1910.1200(h) (1) and (2)).

Information and training are to be provided at least annually to employees when they are initially assigned to a work station where there is a potential for exposure to EtO to be at or above the action level. Information required to be provided to potentially exposed employees includes an explanation of the requirements of the EtO standard; identification of operations in the work area that contain EtO; and the location and availability the EtO final rule. The required elements of the training program, as specified in 29 CFR 1910.1200(h)(2), include: methods and observations that may be used to detect the presence or release of EtO; the physical and health hazards of EtO; the measures employers must take to protect employees from EtO hazards; and the details of the hazard communication program developed by the employer. Employers covered by the scope of the final EtO standard must also provide their EtO-exposed employees with an explanation of the contents of the EtO standard and its appendices. In addition, the medical surveillance program required by the EtO standard must be described to affected employees.

Training and information requirements are routine components of OSHA health standards and are required by section 6(b)(7) of the Act, and their inclusion reflects the Agency's conviction that informed employees are essential to the operation of any effective occupational health program. OSHA believes that informing and training employees about the chemical hazards to which they are exposed will contribute substantially to reducing the incidence of occupational diseases caused by current exposure conditions. In addition, training serves to reinforce information presented to employees through the written media of labels and material safety data sheets required by the other communication provisions of this paragraph.

Many commenters strongly endorsed the inclusion of information and training provisions in the final rule (Exs. 4–32, 4–33a, 4–52, 4–54, 11–33, 11–34, 11–36, 11–38, 11–77, 104). Commenters representing hospitals particularly stressed the importance of training for sterilizer operators (Exs. 4–32, 11–36, 11–33, 11–34, 11–38, 11–77, 104). For example, Neil Danielson, Central Service Manager of the Wesley Medical Center, stated that:

> Part of our * * * education programs includes informing our personnel that EO is a toxic substance and that it has mutagenic effects * * * Training requirements for operators of sterilization equipment * * * includes competency in performance evaluation and review by the supervisor with the operators prior to assignment * * * to sterilization procedures (Ex. 11–36).

The American Hospital Association (AHA), a trade association representing several hundred hospitals, also reported that it has conducted an extensive educational program on the hazards of EtO in the hospital setting (Ex. 4–32). For example, the AHA held three training seminars in 1982 and developed training manuals for EtO users entitled, *Ethylene Oxide Use in Hospitals: A Manual for Health Care Personnel* (Ex. 4–32).

One commenter expressed concern about confidential information being disseminated via the training program mandated by the standard (Ex. 11–48). Michele Malloy, Attorney for Conoco, Inc., stated:

> The proposed standard does not address the issue of confidential information contained in training materials. * * * Training material may include information that describes plant processes, information considered confidential and proprietary. The proposed rule should contain a mechanism to maintain the confidentiality of this information (Ex. 11–48).

OSHA shares Conoco's concern but does not believe that the final standard will create problems concerning confidentiality. Employees are routinely in a position to have access to information about materials in use in their workplace and to observe production processes at first hand in the course of their work assignments. OSHA believes that training information is not likely to be sufficiently detailed to divulge trade secrets. In addition, as discussed in the preamble to the Hazard Communication standard (48 FR 53280, November 25, 1983), employers may take steps to protect the specific chemical identities of materials used in their production processes (see the discussion at 48 FR 53312 *et seq.*).

Considerable evidence was submitted to the record demonstrating that training and information programs are also common in EtO-using facilities in the non-hospital sectors of industry. For example, the Ethylene Oxide Industry Council (EOIC) conducted a survey among 18 of its non-producer ethoxylator members (Ex. 4–33a). Fifteen of the 18 companies responding stated that they had already established "formal training program[s] for employees, * * * both supervisors and workers potentially exposed to ethylene oxide" (Ex. 4–33a). In addition, a study prepared under contract to OSHA by JRB Associates (Ex. 6–22) reported that the overwhelming majority of EtO-using firms in the EtO producer, ethoxylator, and medical equipment manufacturing sectors have training programs in place.

In sum, the record evidence in regard to information and training reinforces OSHA's own convictions as to the importance of informed employees to the successful implementation of occupational health programs, and provides strong support for the inclusion of these requirements in the final rule.

*Paragraph (k) Recordkeeping*

Section 8(c)(3) of the Act provides for the promulgation of regulations requiring employers to maintain accurate records of employee exposures to potentially toxic or harmful physical agents which are required to be monitored or measured.

As proposed, the final standard requires that employers who rely on objective data to be exempted from the standard (paragraph (a)(2) and (d)(2)(ii)) shall maintain records of such information to demonstrate that their employees are not exposed to airborne EtO concentrations at or above the action level. In this respect, the objective data substitute for the initial monitoring requirements.

The final rule provides that records be kept to identify the employee monitored and to reflect the employee's exposure accurately. Specifically, records must include the following information: (a) The names and social security numbers of the employees sampled; (b) the number, duration, and results of each of the samples taken, including a description of the representative sampling procedure and equipment used to determine employee exposure where applicable; (c) a description of the operation involving exposure to EtO which is being monitored and the date on which monitoring is performed; (d) the type of respiratory protective devices, if any, worn by the employee; and (e) a description of the sampling and analytical methods used, and evidence of their accuracy.

The final standard also requires that the employer keep an accurate medical record for each employee subject to medical surveillance. Section 8(c) of the Act authorizes the promulgation of regulations requiring any employer to keep such records regarding the employer's activities relating to the Act as are necessary or appropriate for the enforcement of the Act or for developing information regarding the causes and prevention of occupational illnesses. OSHA believes that medical records, like exposure monitoring records, are necessary and appropriate both to the enforcement of the standard and the development of information regarding the causes and prevention of illness. In addition, medical records are necessary for the proper evaluation of the employee's health.

The final standard requires that all records required to be kept shall be made available upon request to the Assistant Secretary and the Director of NIOSH for examination and copying. Access to these records is necessary for the agencies to monitor compliance with the standard. These records may also contain essential information which is necessary for the agencies to carry out their other statutory responsibilities.

The final rule provides for employees, former employees, and their designated representatives to have access to mandated records upon request. Section 8(c)(3) of the Act explicitly provides that "employees or their representatives shall be provided with an opportunity to observe monitoring and to have access to the records of monitoring and exposures to toxic substances"; and several other provisions of the Act contemplate that employees and their representatives are entitled to have an active role in the enforcement of the Act. Employees and their representatives need to know relevant information concerning employee exposures to toxic substances and their health consequences if they are to benefit fully from these statutorily created rights.

In addition, the final rule specifies that access to exposure and medical records by employees, designated representatives, and OSHA shall be provided in accordance with 29 CFR 1910.20. Section 1910.20 is OSHA's recently promulgated generic rule for access to employee exposure and medical records (45 FR 35212). By its terms, it applies to records required by specific standards, such as this EtO standard, as well as records which are voluntarily created by employers. In general, it provides for unrestricted employee and designated representative access to exposure records. Access to medical records is also provided for employees and, if the employee has given specific written consent, for the employee's designated representatives. OSHA retains unrestricted access to both kinds of records, but its access to personally identifiable records is subject to rules of Agency practice and procedure concerning OSHA access to employee medical records, which have been published at 29 CFR 1913.10. An extensive discussion of the provisions and the rationale for § 1920.20 may be found at 45 FR 35312; the discussion of § 1913.10 may be found at 45 FR 35384. It is noted that revisions to the access to records standard are being developed in an ongoing rulemaking proceeding. The EtO standard may be affected by any changes which result from that rulemaking effort.

It is necessary to keep records for extended periods because of the long latency periods commonly observed for the induction of cancer caused by exposure to carcinogens. Cancer often cannot be detected until 20 or more years after onset of exposure. The extended record retention period is therefore needed for two purposes. First, diagnosis of disease in employees is assisted by having present and past exposure data as well as the results of the medical exams. In addition, retaining records for extended periods also makes it possible at some future date to review effectiveness and the adequacy of the standard.

The time periods required for retention of exposure records and medical records are thirty years, and period of employment plus thirty years, respectively. These retention periods are consistent with those in the OSHA records access standard.

The final standard requires employers to notify the Director of NIOSH in writing at least 3 months prior to the disposal of the records. Section 1910.20(h) also contains requirements regarding the transfer of records. The employer is required to comply with that provision and any other applicable requirements set forth in that standard.

*Paragraph (l) Observation of Monitoring*

Section 8(c) of the Act requires that employers provide employees and their representatives with the opportunity to observe monitoring of employee exposures to toxic substances or harmful physical agents. In accordance with this section, as proposed, the final rule contains provisions for such observation of monitoring of EtO exposures.

The observer, whether an employee or a designated representative, must be provided with, and is required to use, any personal protective equipment required to be worn by employees working in the area that is being monitored, and must comply with all other applicable safety and health procedures.

The record contains little objection to the requirements addressing observation of monitoring. One commenter did object, however, as noted below:

> * * * It is necessary that OSHA define "designated representative", and second, there must be clarification as to when an employer must provide affected employees an opportunity to observe monitoring. Clearly, an employer should not be obligated to let employees observe monitoring at any time the employee desires. The disruption this would cause in a working environment could be substantial. (Ex. 142.)

Experience gained from previous health standards containing these same observation provisions has indicated that the concerns expressed above are not warranted and that compliance with

this requirement has not been unduly burdensome.

This commenter's concern over the potential "substantial" disruption in the working environment caused by employees' observation of monitoring is also unsubstantiated by the record or OSHA's experience. Therefore, OSHA has determined that the final requirements for employee observation of monitoring are appropriate.

**Paragraph (m) Dates**

Effective Date

In the NPRM, OSHA proposed an effective date of thirty (30) days following publication in the **Federal Register** and invited comment on whether additional time should be provided. In addition, the Agency solicited information and supporting data on delayed implementation dates for compliance with various provisions of the standard.

After careful review of comments in response to the proposal, the hearing testimony, and post-hearing comments, the final rule shall become effective sixty (60) days following publication in the **Federal Register.** Providing a 60 day rather than 30 day effective date is believed by OSHA to be necessary for affected parties to familiarize themselves with this rather comprehensive document. In addition, because of the considerable range of estimates for time to come into compliance with the PEL among the affected industries, the Agency has decided to establish startup dates for specific provisions of the standard based on the affected industry. This is based on the record and on OSHA's experience with other standards as to the time required for employers to complete air monitoring and medical surveillance, to obtain necessary equipment, respirators, and protective clothing, to produce written compliance plans, and to design, procure, and install engineering controls. OSHA believes that the dates set in this standard should be adequate in all but unusual circumstances. If the time period for meeting any of these startup dates cannot be met because of technical difficulties, any employer is entitled to petition the Assistant Secretary for a temporary variance under § 6(b)(6)(A) of the Act. Based on its evaluation of the feasibility of the standard, however, OSHA does not anticipate that many employers will need to use this variance mechanism.

Startup Dates

Among producers/ethoxylators, comments on the estimated time to institute any necessary engineering controls and/or work practice controls ranged from companies whose facilities were already reported to be in compliance to those who suggested that up to two years were needed to install engineering controls. For example, U.V. Henderson, Associate Director of Environmental Affairs at Texaco, stated that while his company's manufacturing plant is currently achieving fairly close to 1 ppm, additional engineering controls are now planned or being placed in service to permit consistent compliance with the PEL (Ex. 11–71). In responding to the question OSHA raised in the proposal regarding time to compliance, Mr. Henderson stated:

> At our manufacturing plant, compliance with a 1 ppm PEL is already achievable. At other locations where to EtO is used, a 12 month period would probably be adequate to institute any necessary engineering and/or work practice controls.

Similarly, Howard Kusnetz, Manager of Safety and Industrial Hygiene at Shell Oil Co., stated that Shell had successfully reduced employee exposures through a combination of engineering controls, work practices, and respiratory protection (TR. 815). Moreover, he stated that "with few exceptions, employee exposures today are below 1 ppm as a work-shift time-weighted average without regard to the use of respirators" (Tr. 815). During cross-examination at the hearings, he indicated that while two job categories in the production section required the use of air-supplied respirators, compliance with the proposed PEL of 1 ppm had already been achieved in the ethoxylator section without regard to the use of respirators (Tr. 816, 829).

Among producers/ethoxylators not already in compliance with the PEL, PPG Industries, Inc. estimated several months to two years to meet the PEL (Ex. 11–105). SunOlin Chemical Company, the smallest of the EtO producing companies, stated that it would need 18–24 months to meet the PEL through engineering and work practice controls (Ex. 11–25), as did A.E. Staley Manufacturing Company (Ex. 11–124), and Dow Chemical Company (Ex. 11–110). Union Carbide Corporation, the largest producer/consumer of EtO, recommended a biphasic compliance plan, Phase I requiring 6 months to develop and design engineering controls, and Phase II requiring an additional 18 to 24 months to implement those engineering controls defined in Phase I (Ex. 11–133). During the hearings, Donald E. Rapp of Dow indicated that his company would need 12 or 18 months to comply with 1 ppm (Tr. 839), thereby decreasing his company's earlier estimate of time to compliance (Ex. 11–110) by six months. Eastman Kodak requested a minimum of two years (Ex. 11–67). Finally, BASP Wyandotte Corporation requested 12–36 months to install engineering controls.

Arlin G. Voress, Chairman of the EOIC, and Geraldine V. Cox, Vice President and Technical Director of the Chemical Manufacturers Association, stated that the PEL is generally achievable by industry if the use of respirators is permitted in certain operations as part of an integrated control strategy and if appropriate phase-in periods are provided (Ex. 11–57). They estimated that producers and ethoxylators would neet up to two years to install engineering controls.

OSHA has determined that the record supports the adequacy of a twelve-month period for producers and ethoxylators to institute any necessary engineering and/or work practice controls. In this regard it is particularly notable that Shell Oil Company already has achieved compliance with the TWA in its ethoxylator section without regard to respirator usage, that only two job categories in Shell's producer section required periodic use of respirators, and that at Texaco, compliance with the PEL is already achievable. Therefore, producers and ethoxylators have one year from the effective date to achieve compliance with the PEL by means of engineering and work practice controls.

Among medical products manufacturers, including sterilizers, the estimated time to compliance using engineering and/or work practice controls ranged from 7 to 24 months. For example, in response to the proposed effective date, Harold O. Buzzell of HIMA stated that since nearly 60 percent of HIMA members using EtO are small entities, a 1 ppm TWA could not be widely met in any reasonable length of time using only engineering and work practice controls. He indicated that "allowing respiratory protective devices for limited specific and defined work tasks would result in compliance in approximately 7 months at significant savings" (Ex. 11–74). Testimony by G. Briggs Phillips, Senior Vice President for Scientific Affairs of HIMA, indicated his organization's support of a 1 ppm TWA and that compliance in 7 to 12 months would be possible with the limited use of respirators for short periods (Ex. 89). Frank P. Wilton, President of Ethox Corporation, testified on behalf of HIMA that his Corporation will need 7 to 12 months to achieve the PEL with respirator usage. Post-hearing comments by Phillips reiterated HIMA's

recommended time to compliance of 7 to 12 months (Ex. 135). Futhermore, in a post-hearing brief (Ex. 152), Phillips and Wilton indicated that Lawrence Hecker's statement at the hearings was representative of the position of HIMA members on the time needed for compliance.

> Sterilant user members of the EOIC believe that it will take about 7 months to achieve compliance with the PEL if respirators can be used as part of an integrated program (Tr. 451).

In summary, HIMA, a trade organization representing 285 medical device and diagnostic product manufacturers, proposed a phase-in time of 7 to 12 months with considerable respirator usage thereafter.

However, OSHA witness Peter A. Roy testified that in the vast majority of cases in health care facilities and industrial sterilizers of medical devices, a 12-month period would provide sufficient time for compliance by means of engineering and work practice controls (Ex. 21–8). More specifically, he stated:

> I base this opinion on the following facts: many industrial and hospital users of EtO have already taken significant steps in work practice and engineering controls to reduce exposures; the ACGIH TLV Committee has already adopted a 5 ppm TWA and has proposed 1 ppm to be effective in 1984; many industrial sterilization facilities and medical device manufacturers have gone on record as adopting in house levels at 10 or less ppm TWA and the feasibility and effectiveness of control measures has been proven.
>
> * * * * *
>
> In instances where individual facilities or institutions may be unable to comply within the 12 month period, I believe that employees may be adequtely protected in the interim through the use of proper respiratory protection. A 12 month lead time should be sufficient for the development or application of ventilation equipment work process controls for hospital and industrial sterilization facilities. Again, EtO control is merely the application, in most cases, of well established control technology and does not require the development of any new technology or new methods of control. Nevertheless, new methods of control, if proven effective, may of course be used. These could include new sterilizer designs, combination sterilizer aerators, and other technological advancements in equipment design and function. However even where existing equipment and facilities must be modified, a 12 month lead time should provide an ample period for the planning, development, design, implementation and testing of control measures.

Other comments regarding time to compliance in medical products firms and sterilizers ranged from 1 to 4 years. Sterile Products Technology conducted a survey of four small medical products manufacturers and indicated that one would use an alternate sterilization process, two would need 12 months to implement engineering controls, and the fourth would need two years (Ex. 11–126). Howmedica, Inc. (Ex. 11–54) and American Hospital Supply Corp. (Ex. 11–47) indicated that compliance could be achieved within 12–18 months allowing respiratory protection for limited specific and defined work tasks. In posthearing comments, John Kuchta, Vice President and General Counsel for Kendall Co., advocated a 24-month phase-in period to implement the PEL (Ex. 142) as did AAMI (Ex. 11–127) and Warner-Lambert Co. (Ex. 11–76). S. Richard Nusbaum felt that both hospital and industrial sterilizers needed 3 years to meet a 1 ppm TWA (Ex. 11–64). Midwest Sterilizing Corp., a small contract sterilizer, contended that 3 to 4 years were needed to implement the PEL.

In summary, there is a considerable range of estimates of the necessary time to compliance among medical products manufacturers and sterilizers. Based on the Agency's feasibility analysis and expert testimony, OSHA believes that one year after the effective date will provide sufficient time for the vast majority of medical products manufacturers and sterilizers to implement engineering controls and work practices which will meet the PEL. As mentioned above, if because of technical difficulties the startup date cannot be met, any employer may request a temporary variance under § 6(b)(6)(A) of the Act.

Among spice manufacturers, McCormick and Co. and R.T. French Co. submitted comments on the time frame needed to meet the PEL. Richard L. Hall, Vice President of Science and Technology at McCormick, stated that the use of respirators was necessary to achieve the 1 ppm TWA during maintenance and emergency operations as well as during re-engineering of facilities. Hall believes that a phase-in is needed and recommended a minimum of 18 months to compliance (Ex. 11–138). A.R. Hatfield, Vice President and Secretary at R.T. French, was in favor of a two-year evaluation and modification period. The first year would be spent developing analytical methodology and validation for monitoring, the second for emplementing engineering controls (Ex. 11–141). The above commenters provided no substantive evidence on engineering or economic problems which would support the need to extend the date of compliance to 2 years. In addition, as noted in the monitoring section of the preamble, OSHA believes that adequate exposure monitoring methods are presently available to all segments of the industry, including spice manufacturers. Because the equipment and methods for spice sterilization are very similar to those used for the sterilization of other items with EtO, OSHA is confident that spice manufacturers can comply with the EtO standard within the same time period as the other industry segments. Consequently, the spice manufacturing industry has one year to meet the PEL through engineering and work practice controls.

The great majority of comments regarding the effective date to compliance with the PEL were received from the health care industry. Estimated effective dates ranged from compliance within 24 hours to within 4 to 5 years. For example, Sara Beddow, Central Supply Supervisor at Memorial Hospital (Colorado Springs) stated that 24 hours were needed to reduce exposure to the PEL through engineering and work practice controls (Ex. 11–34). Brian J. Kuske, Assistant Administrator, and DeLoa Pitt, Central Processing, of St. Mark's Hospital (Salt Lake City) stated that while their present equipment can meet the 1 ppm TWA, a one year maximum compliance date for other hospitals was recommended (Ex. 11–38). Donna Swenson, Central Service Supervisor at Rockford Memorial Hospital (Illinois), stated that a relatively short period of time was needed to reduce employee exposures to the PEL, and that engineering controls for her facility would be completed by June 1, 1984 (Ex. 11–81).

Malcolm G. Ridgway *et al.* of Council Shared Services, an engineering consulting firm serving 230 hospitals in six Southern California counties, stated that engineering controls were usually installed within three months after that company's recommendations (Ex. 11–122). Ridgway reported the results of 148 EtO environmental safety site surveys performed during March 1982 through March 1983 at 95 sites in 86 member hospitals in which 95.3% of the surveys indicated EtO levels less than 5.0 ppm.

Mesa Luthern Hospital (Arizona) requested a minimum of 6 months for implementation of engineering controls (Ex. 11–31), as did St. Joseph Hospital Health Center (Syracuse) (Ex. 11–119). St. John's Regional Medical Center (Joplin, Missouri) and Petaluma Valley Hospital (California) requested 6 to 12 months to reduce exposures to the PEL (Exs. 11–17, 11–43). Michael L. Schneier, Director of Research, Development and Engineering of Castle Co., a manufacturer of EtO sterilizers used in hospitals, indicated that it would take

more than 30 days for sites not in compliance to obtain and install equipment. Schneier stated that 9 to 12 months is a more realistic time to compliance (Ex. 11–53).

A majority of hospitals and health care facilities indicated that one year was needed to reduce exposure to the PEL by means of engineering controls. Commenters included the Missouri Association for Hospital Central Service Personnel, Sid Peterson Memorial Hospital (Kerrville, Texas), Michigan Hospital Association, International Association for Hospital Central Service Management, Samaritan Health Service (Phoenix), University of Washington Hospital (Seattle), Missouri Hospital Association, Arizona Hospital Association Service Corporation, St. Mary's Hospital (Rochester, Minnesota), Grand Rapids Osteopathic Hospital, and University of Virginia Hospitals (Charlottesville) (Exs. 11–12, 11–16, 11–26, 11–44, 11–70, 11–85, 11–86, 11–103, 11–116, 125, 129).

In addition, there appeared to be a consensus among unions representing health care employees (AFGE, AFSCME, and SEIU) that while engineering controls should be installed as soon as possible, installation should occur no later than one year following the effective date (Exs. 11–99, 11–152, 44, Tr. 357, 365, 1201). For example, AFSCME recognized that a PEL that requires extensive retrofit of equipment to comply will necessarily require time to procure needed equipment from manufacturers.

> In the health care industry, we believe that a reasonable end point can be established that is less than one year from the effective date of this standard. (Ex. 44)

Furthermore, Neil Davis of AFGE testified:

> In terms of deadlines, we believe that adequate engineering controls should be installed as soon as possible. But no later than one year. (Tr. 1201).

Other estimates of time to compliance were for longer periods. For example, Harrison Memorial Hospital (Washington) and Great Plains Society Hospital Central Services personnel recommended one to two years depending upon the type of modifications needed. South Community Hospital (Oklahoma City) recommended an effective date for compliance within two years, Health Central System (Minneapolis) one to three years, Munson Medical Center (Traverse City, Michigan) one and one-half to three years, Methodist Hospital (Houston) two years, Department of the Army two to five years, and Henrietta D. Hoodall Hospital (Maine) and University of Minnesota Hospitals and Clinics (Minneapolis) three years (Exs. 11–107, 11–128, 29, 45, 51, 88, 90, 92, 143). Tacoma General Hospital (Washington) was in favor of the longest time to implement engineering controls, requesting four to five years (Ex. 11–73).

The remaining commenters among health care facilities were in favor of a realistic phased compliance schedule to afford hospitals time to implement the standard in a way that will protect both patients and employees. In response to OSHA's request for an estimate of time to compliance through engineering and work practice controls, the AHA recommended adoption of the following schedule for full implementation of the standard's provisions:

> Where needed—
>
> Major construction must be initiated within 23 months, and completed within 30 months of publication of the final standard.
>
> Within 18 months of publication—
>
> Other engineering controls and departmental modifications must be completed.
>
> Respirator training, fit testing, and maintenance programs must be developed and implemented.
>
> Within 12 months of publication—
>
> New equipment must be purchased.
>
> Within 6 months of publication—
>
> Work practice modifications must be made.
>
> Employee training programs must be in place.
>
> Medical surveillance programs (exclusive of cytogenetic testing) must be initiated.
>
> Within 3 months of publication—
>
> Monitoring protocols must be developed and implemented. Emergency procedures must be developed and disseminated within sterilizer areas.
>
> Recordkeeping, signs, and regulated area requirements must be implemented. [Ex. 11–115].

Other recommending "phase-in" periods of varying lengths included the Association of Operating Room Nurses, Wesley Medical Center (Wichita, Kansas), Harper Grace Hospitals (Detroit), and Medical Instrumentation Systems-Hospital Shared Services (Exs. 11–32, 11–36, 11–106, 77).

The information provided to OSHA clearly indicates that, with few exceptions, affected employers can be reasonably expected to be able to install engineering controls that would bring their workplaces into compliance with the final standard's PELs within one year from the effective date of this standard. Available engineering controls combined with good work practices, such as simply vacating the sterilizer area for 10–15 minutes after opening the sterilizer door after cycle completion, provide a readily available means for employers to comply with this standard in the time-frame specified.

Compliance with the other requirements of the standard within one-hundred and eighty (180) days of the effective date also is believed by OSHA to be appropriate. As discussed elsewhere in this document, many EtO employers have already instituted or are developing programs regarding training, compliance plans, respirators, medical surveillance, exposure monitoring and work practice. In addition, commenters specifically indicated that work practice modifications, training and medical surveillance programs, monitoring protocols, emergency procedures, recordkeeping, signs, and regulated areas requirements should be implemented within 6 months of the effective date of the final standard (Exs. 11–33, 11–115).

*Paragraph (n) Appendices*

Four appendices have been included in this final standard. These appendices have been included primarily for purposes of information. None of the statements contained herein should be construed as establishing a mandatory requirement not otherwise imposed by the standards or as detracting from an obligation which the standard does impose.

The information contained in Appendices A and B is designed to aid the employer in complying with requirements of the standard. Appendix A also contains workplace design and work practice recommended by EPA for hospital and health care facilities using EtO as a sterilant. The material in Appendix C primarily provides information needed by the physician to evaluate the results of the medical examination. It should be noted that paragraph (i) of the standard specifically requires that the information obtained in Appendix A and B be provided to employees as part of their information and training program.

Appendix D gives details of the OSHA sampling method for use in monitoring employee exposures to EtO, as well as information on other available methods.

Minor changes have been made in the Appendices in the final standard to reflect changes from the proposed rule, and in response to suggestions from commenters.

## IX. State Plan Applicability

Twenty-four states and U.S. territories have their own OSHA-approved occupational safety and health plans. These states and territories are: Alaska, Arizona, California, Connecticut (for

state and local government employees only), Hawaii, Indiana, Iowa, Kentucky, Maryland, Michigan, Minnesota, Nevada, New Mexico, North Carolina, Oregon, Puerto Rico, South Carolina, Tennessee, Utah, Vermont, Virginia, Virgin Islands, Washington, and Wyoming. These states and territories are to adopt a standard comparable to that of OSHA's within 6 months of the effective date of the Federal rule.

### X. Authority

This document was prepared under the direction of Patrick R. Tyson, Deputy Assistant Secretary of Labor for Occupational Safety and Health, 200 Constitution Ave., N.W., Washington, D.C. 20210.

Accordingly, pursuant to sections 4(b), 6(b) and 8(c) of the Occupational Safety and Health Act of 1970 (84 Stat. 1592, 1593, 1599; 29 U.S.C. 653, 655, 657), Secretary of Labor's Order No. 8–76 (41 FR 25059) and 29 CFR Part 1911, Part 1910 of Title 29, Code of Federal Regulations is hereby amended as set forth below.

### List of Subjects in 29 CFR Part 1910

Ethylene oxide, Occupational safety and health, Chemicals, Cancer, Health, Risk assessment.

(Secs. 4, 6, and 8 of the Occupational Safety and Health Act of 1970, 84 Stat. 1593, 1597, 1599 (29 U.S.C. 653, 655, 657); Secretary of Labor's Order 9–83 (48 FR 35736); 29 CFR Part 1911)

Signed at Washington, D.C., this 15th day of June 1984.

**Patrick R. Tyson,**

*Deputy Assistant Secretary of Labor.*

## PART 1910—[AMENDED]

Part 1910 of Title 29 of the Code of Federal Regulations is amended as follows:

1. By adding a new paragraph (h) to § 1910.19 to read as follows:

**§ 1910.19 Special provisions for air contaminants.**

* * * * *

(h) *Ethylene oxide.* Section 1910.1047 shall apply to the exposure of every employee to ethylene oxide in every employment and place of employment covered by section 1910.12, 1910.13, 1910.14, 1910.15, or 1910.16, in lieu of any different standard on exposure to ethylene oxide which would otherwise be applicable by virtue of those sections.

**§ 1910.1000 [Amended]**

2. By deleting the entry "Ethylene oxide * * * 50 ppm * * * 90 mg/m³" from Table Z–1 of Section 1910.1000.

3. By adding a new section 1910.1047 to read as follows:

**§ 1910.1047 Ethylene oxide.**

(a) *Scope and application.* (1) This section applies to all occupational exposures to ethylene oxide (EtO), Chemical Abstracts Service Registry No. 75–21–8, except as provided in paragraph (a)(2) of this section.

(2) This section does not apply to the processing, use, or handling of products containing EtO where objective data are reasonably relied upon that demonstrate that the product is not capable of releasing EtO in airborne concentrations at or above the action level under the expected conditions of processing, use, or handling that will cause the greatest possible release.

(3) Where products containing EtO are exempted under paragraph (a)(2) of this section, the employer shall maintain records of the objective data supporting that exemption and the basis for the employer's reliance on the data, as provided in paragraph (k)(1) of this section.

(b) *Definitions:* For the purpose of this section, the following definitions shall apply:

*"Action level"* means a concentration of airborne EtO of 0.5 ppm calculated as an eight (8)-hour time-weighted average.

*"Assistant Secretary"* means the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, or designee.

*"Authorized person"* means any person specifically authorized by the employer whose duties require the person to enter a regulated area, or any person entering such an area as a designated representative of employees for the purpose of exercising the right to observe monitoring and measuring procedures under paragraph (l) of this section, or any other person authorized by the Act or regulations issued under the Act.

*"Director"* means the Director of the National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services, or designee.

*"Emergency"* means any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment that is likely to or does result in an unexpected significant release of EtO.

*"Employee exposure"* means exposure to airborne EtO which would occur if the employee were not using respiratory protective equipment.

*"Ethylene oxide"* or *"EtO"* means the three-membered ring organic compound with chemical formula $C_2H_4O$.

(c) *Permissible exposure limits (PEL). 8-hour time-weighted average (TWA).* The employer shall ensure that no employee is exposed to an airborne concentration of EtO in excess of one (1) part EtO per million parts of air (1 ppm) as an eight (8)-hour time-weighted average (8-hour TWA).

(d) *Exposure monitoring.* (1) *General.* (i) Determinations of employee exposure shall be made from breathing zone air samples that are representative of the 8-hour TWA of each employee.

(ii) Representative 8-hour TWA employee exposure shall be determined on the basis of one or more samples representing full-shift exposure for each shift for each job classification in each work area.

(iii) Where the employer can document that exposure levels are equivalent for similar operations in different work shifts, the employer need only determine representative employee exposure for that operation during one shift.

(2) *Initial monitoring.* (i) Each employer who has a workplace or work operation covered by this standard, except as provided for in paragraph (a)(2) or (d)(2)(ii) of this section, shall perform initial monitoring to determine accurately the airborne concentrations of EtO to which employees may be exposed.

(ii) Where the employer has monitored after June 15, 1983 and the monitoring satisfies all other requirements of this section, the employer may rely on such earlier monitoring results to satisfy the requirements of paragraph (d)(2)(i) of this section.

(3) *Monitoring frequency (periodic monitoring).* (i) If the monitoring required by paragraph (d)(2) of this section reveals employee exposure at or above the action level but at or below the 8-hour TWA, the employer shall repeat such monitoring for each such employee at least every 6 months.

(ii) If the monitoring required by paragraph (d)(2)(i) of this section reveals employee exposure above the 8-hour TWA, the employer shall repeat such monitoring for each such employee at least every 3 months.

(iii) The employer may alter the monitoring schedule from quarterly to semiannually for any employee for whom two consecutive measurements taken at least 7 days apart indicate that the employee's exposure has decreased to or below the 8-hour TWA.

(4) *Termination of monitoring.* (i) If the initial monitoring required by paragraph (d)(2)(i) of this section reveals employee exposure to be below the

action level, the employer may discontinue the monitoring for those employees whose exposures are represented by the initial monitoring.

(ii) If the periodic monitoring required by paragraph (d)(3) of this section reveals that employee exposures, as indicated by at least two consecutive measurements taken at least 7 days apart, are below the action level, the employer may discontinue the monitoring for those employees whose exposures are represented by such monitoring.

(5) *Additional monitoring.* Notwithstanding the provisions of paragraph (d)(4) of this section, the employer shall institute the exposure monitoring required under paragraphs (d)(2)(i) and (d)(3) of this section whenever there has been a change in the production, process, control equipment, personnel or work practices that may result in new or additional exposures to EtO or when the employer has any reason to suspect that a change may result in new or additional exposures.

(6) *Accuracy of monitoring.* Monitoring shall be accurate, to a confidence level of 95 percent, to within plus or minus 25 percent for airborne concentrations of EtO at the 1 ppm TWA and to within plus or minus 35 percent for airborne concentrations of EtO at the action level of 0.5 ppm.

(7) *Employee notification of monitoring results.* (i) The employer shall, within 15 working days after the receipt of the results of any monitoring performed under this standard, notify the affected employee of these results in writing either individually or by posting of results in an appropriate location that is accessible to affected employees.

(ii) The written notification required by paragraph (d)(7)(i) of this section shall contain the corrective action being taken by the employer to reduce employee exposure to or below the PEL, wherever monitoring results indicated that the PEL has been exceeded.

(e) *Regulated Areas.* (1) The employer shall establish a regulated area wherever occupational exposures to airborne concentrations of EtO may exceed the TWA.

(2) Access to regulated areas shall be limited to authorized persons.

(3) Regulated areas shall be demarcated in any manner that minimizes the number of employees within the regulated area.

(f) *Methods of compliance.* (1) *Engineering controls and work practices.* (i) The employer shall institute engineering controls and work practices to reduce and maintain employee exposure to or below the TWA, except to the extent that such controls are not feasible.

(ii) Wherever the feasible engineering controls and work practices that can be instituted are not sufficient to reduce employee exposure to or below the TWA, the employer shall use them to reduce employee exposure to the lowest levels achievable by these controls and shall supplement them by the use of respiratory protection that complies with the requirements of paragraph (g) of this section.

(iii) Engineering controls are generally infeasible for the following operations: collection of quality assurance sampling from sterilized materials removal of biological indicators from sterilized materials: loading and unloading of tank cars; changing of ethylene oxide tanks on sterilizers; and vessel cleaning. For these operations, engineering controls are required only where the Assistant Secretary demonstrates that such controls are feasible.

(2) *Compliance program.* (i) Where the TWA is exceeded, the employer shall establish and implement a written program to reduce employee exposure to or below the TWA by means of engineering and work practice controls, as required by paragraph (f)(1) of this section, and by the use of respiratory protection where required or permitted under this section.

(ii) The compliance program shall include a schedule for periodic leak detection surveys and a written plan for emergency situations, as specified in paragraph (h)(i) of this section.

(iii) Written plans for a program required in paragraph (f)(2) shall be developed and furnished upon request for examination and copying to the Assistant Secretary, the Director, affected employees and designated employee representatives. Such plans shall be reviewed at least every 12 months, and shall be updated as necessary to reflect significant changes in the status of the employer's compliance program.

(iv) The employer shall not implement a schedule of employee rotation as a means of compliance with the TWA.

(g) *Respiratory protection and personal protective equipment.* (1) *General.* The employer shall provide respirators, and ensure that they are used, where required by this section. Respirators shall be used in the following circumstances.

(i) During the interval necessary to install or implement feasible engineering and work practice controls;

(ii) In work operations, such as maintenance and repair activities, vessel cleaning, or other activities for which engineering and work practice controls are not feasible;

(iii) In work situations where feasible engineering and work practice controls are not yet sufficient to reduce exposure to or below the TWA; and

(iv) In emergencies.

(2) *Respirator selection.* (i) Where respirators are required under this section, the employer shall select and provide, at no cost to the employee, the appropriate respirator as specified in Table 1, and shall ensure that the employee uses the respirator provided.

(ii) The employer shall select respirators from among those jointly approved as being acceptable for protection against EtO by the Mine Safety and Health Administration (MSHA) and by the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 30 CFR Part 11.

(3) *Respirator program.* Where respiratory protection is required by this section, the employer shall institute a respirator program in accordance with 29 CFR 1910.134 (b), (d), (e), and (f).

(4) *Protective clothing and equipment.* Where eye or skin contact with liquid EtO or EtO solutions may occur, the employer shall select and provide, at no cost to the employee, appropriate protective clothing or other equipment in accordance with 29 CFR 1901.132 and 1910.133 to protect any area of the body that may come in contact with liquid EtO or EtO in solution, and shall ensure that the employee wears the protective clothing and equipment provided.

(h) *Emergency situations.* (1) *Written plan.* (i) A written plan for emergency situations shall be developed for each workplace where there is a possibility of an emergency. Appropriate portions of the plan shall be implemented in the event of an emergency.

(ii) The plan shall specifically provide that employees engaged in correcting emergency conditions shall be equipped with respiratory protection as required by paragraph (g) of this section until the emergency is abated.

(iii) The plan shall include the elements prescribed in 29 CFR 1910.38, "Employee emergency plans and fire prevention plans."

(2) *Alerting employees.* Where there is the possibility of employee exposure to EtO due to an emergency, means shall be developed to alert potentially affected employees of such occurrences promptly. Affected employees shall be immediately evacuated from the area in the event that an emergency occurs.

TABLE 1.—MINIMUM REQUIREMENTS FOR RESPIRATORY PROTECTION FOR AIRBORNE EtO

| Condition of use or concentration of airborne EtO (ppm) | Minimum required respirator |
|---|---|
| Equal to or less than 50. | (a) Full facepiece respirator with EtO approved canister, front-or back-mounted. |
| Equal to or less than 2,000. | (a) Positive-pressure supplied air respirator, equipped with full facepiece, hood, or helmet, or<br>(b) Continuous-flow supplied air respirator (positive pressure) equipped with hood, helmet or suit. |
| Concentration above 2,000 or unknown concentration (such as in emergencies). | (a) Positive-pressure self-contained breathing apparatus (SCBA), equipped with full facepiece, or<br>(b) Positive-pressure full facepiece supplied air respirator equipped with an auxiliary positive-pressure self-contained breathing apparatus. |
| Firefighting | (a) Positive pressure self-contained breathing apparatus equipped with full facepiece. |
| Escape | (a) Any respirator described above. |

Note.—Respirators approved for use in higher concentrations are permitted to be used in lower concentrations.

(i) *Medical Surveillance.* (1) *General.* (i) *Employees covered.* (A) The employer shall institute a medical surveillance program for all employees who are or may be exposed to EtO at or above the action level, without regard to the use of respirators, for at least 30 days a year.

(B) The employer shall make available medical examinations and consultations to all employees who have been exposed to EtO in an emergency situation.

(ii) *Examination by a physician.* The employer shall ensure that all medical examinations and procedures are performed by or under the supervision of a licensed physician, and are provided without cost to the employee, without loss of pay, and at a reasonable time and place.

(2) *Medical examinations and consultations.* (i) Frequency. The employer shall make available medical examinations and consultations to each employee covered under paragraph (i)(1)(i) of this section on the following schedules:

(A) Prior to assignment of the employee to an area where exposure may be at or above the action level for at least 30 days a year.

(B) At least annually each employee exposed at or above the action level for at least 30 days in the past year.

(C) At termination of employment or reassignment to an area where exposure to EtO is not at or above the action level for at least 30 days a year.

(D) As medically appropriate for any employee exposed during an emergency.

(E) As soon as possible, upon notification by an employee either (1) that the employee has developed signs or symptoms indicating possible overexposure to EtO, or (2) that the employee desires medical advice concerning the effects of current or past exposure to EtO on the employee's ability to produce a healthy child.

(F) If the examining physician determines that any of the examinations should be provided more frequently than specified, the employer shall provide such examinations to affected employees at the frequencies recommended by the physician.

(ii) *Content.* (A) Medical examinations made available pursuant to paragraphs (i)(2)(i)(A)–(D) of this section shall include:

(*1*) A medical and work history with special emphasis directed to symptoms related to the pulmonary, hematologic, neurologic, and reproductive systems and to the eyes and skin.

(*2*) A physical examination with particular emphasis given to the pulmonary, hematologic, neurologic, and reproductive systems and to the eyes and skin.

(*3*) A complete blood count to include at least a white cell count (including differential cell count), red cell count, hematocrit, and hemoglobin.

(*4*) Any laboratory or other test which the examining physician deems necessary by sound medical practice.

(B) The content of medical examinations or consultation made available pursuant to paragraph (i)(2)(i)(E) of this section shall be determined by the examining physician, and shall include pregnancy testing or laboratory evaluation of fertility, if requested by the employee and deemed appropriate by the physician.

(3) *Information provided to the physician.* The employer shall provide the following information to the examining physician:

(i) A copy of this standard and Appendices A, B, and C.

(ii) A description of the affected employee's duties as they relate to the employee's exposure.

(iii) The employee's representative exposure level or anticipated exposure level.

(iv) A description of any personal protective and respiratory equipment used or to be used.

(v) Information from previous medical examinations of the affected employee that is not otherwise available to the examining physician.

(4) *Physician's written opinion.* (i) The employer shall obtain a written opinion from the examining physician. This written opinion shall contain the results of the medical examination and shall include:

(A) The physician's opinion as to whether the employee has any detected medical conditions that would place the employee at an increased risk of material health impairment from exposure to EtO;

(B) Any recommended limitations on the employee or upon the use of personal protective equipment such as clothing or respirators; and

(C) A statement that the employee has been informed by the physician of the results of the medical examination and of any medical conditions resulting from EtO exposure that require further explanation or treatment.

(ii) The employer shall instruct the physician not to reveal in the written opinion given to the employer specific findings or diagnoses unrelated to occupational exposure to EtO.

(iii) The employer shall provide a copy of the physician's written opinion to the affected employee within 15 days from its receipt.

(j) *Communication of EtO hazards to employees.* (1) *Signs and labels.* (i) The employer shall post and maintain legible signs demarcating regulated areas and entrances or accessways to regulated areas that bear the following legend:

DANGER
ETHYLENE OXIDE
CANCER HAZARD AND REPRODUCTIVE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING MAY BE REQUIRED TO BE WORN IN THIS AREA

(ii) The employer shall ensure that precautionary labels are affixed to all containers of EtO whose contents are capable of causing employee exposure at or above the action level, and that the labels remain affixed when the containers of EtO leave the workplace. For the purposes of this paragraph, reaction vessels, storage tanks, and pipes or piping systems are not considered to be containers. The labels shall comply with the requirements of 29 CFR 1910.1200(f) of OSHA's Hazard Communication standard, and shall include the following legend:

(A) CAUTION
CONTAINS ETHYLENE OXIDE
CANCER AND REPRODUCTIVE HAZARD;

and

(B) A warning statement against breathing airborne concentrations of EtO.

(2) *Material safety data sheets.* Employers who are manufacturers or importers of EtO shall comply with the requirements regarding development of material safety data sheets as specified in 29 CFR 1910.1200(g) of OSHA's Hazard Communication standard.

(3) *Information and training.* (i) The employer shall provide employees who are potentially exposed to EtO at or above the action level with information and training on EtO at the time of initial assignment and at least annually thereafter.

(ii) Employees shall be informed of the following:

(A) The requirements of this section with an explanation of its contents, including Appendices A and B;

(B) Any operations in their work area where EtO is present;

(C) The location and availability of the written EtO final rule; and

(D) The medical surveillance program required by paragraph (i) of this section with an explanation of the information in Appendix C.

(iii) Employee training shall include at least:

(A) Methods and observations that may be used to detect the presence or release of EtO in the work area (such as monitoring conducted by the employer, continuous monitoring devices, etc.);

(B) The physical and health hazards of EtO;

(C) The measures employees can take to protect themselves from hazards associated with EtO exposure, including specific procedures the employer has implemented to protect employees from exposure to EtO, such as work practices, emergency procedures, and personal protective equipment to be used; and

(D) The details of the hazard communication program developed by the employer, including an explanation of the labeling system and how employees can obtain and use the appropriate hazard information.

(k) *Recordkeeping.* (1) *Objective data for exempted operations.*

(i) Where the processing, use, or handling of products made from or containing EtO are exempted from other requirements of this section under paragraph (a)(2) of this section, or where objective data have been relied on in lieu of initial monitoring under paragraph (d)(2)(ii) of this section, the employer shall establish and maintain an accurate record of objective data reasonably relied upon in support of the exemption.

(ii) This record shall include at least the following information:

(A) The product qualifying for exemption;

(B) The source of the objective data;

(C) The testing protocol, results of testing, and/or analysis of the material for the release of EtO;

(D) A description of the operation exempted and how the data support the exemption; and

(E) Other data relevant to the operations, materials, processing, or employee exposures covered by the exemption.

(iii) The employer shall maintain this record for the duration of the employer's reliance upon such objective data.

(2) *Exposure measurements.* (i) The employer shall keep an accurate record of all measurements taken to monitor employee exposure to EtO as prescribed in paragraph (d) of this section.

(ii) This record shall include at least the following information:

(A) The date of measurement;

(B) The operation involving exposure to EtO which is being monitored;

(C) Sampling and analytical methods used and evidence of their accuracy;

(D) Number, duration, and results of samples taken;

(E) Type of protective devices worn, if any; and

(F) Name, social security number and exposure of the employees whose exposures are represented.

(iii) The employer shall maintain this record for at least thirty (30) years, in accordance with 29 CFR 1910.20.

(3) *Medical surveillance.* (i) The employer shall establish and maintain an accurate record for each employee subject to medical surveillance by paragraph (i)(1)(i) of this section, in accordance with 29 CFR 1910.20.

(ii) The record shall include at least the following information:

(A) The name and social security number of the employee;

(B) Physicians' written opinions;

(C) Any employee medical complaints related to exposure to EtO; and

(D) A copy of the information provided to the physician as required by paragraph (i)(3) of this section.

(iii) The employer shall ensure that this record is maintained for the duration of employment plus thirty (30) years, in accordance with 29 CFR 1910.20.

(4) *Availability.* (i) The employer, upon written request, shall make all records required to be maintained by this section available to the Assistant Secretary and the Director for examination and copying.

(ii) The employer, upon request, shall make any exemption and exposure records required by paragraphs (1)(1) and (1)(2) of this section available for examination and copying to affected employees, former employees, designated representatives and the Assistant Secretary, in accordance with 29 CFR 1910.20 (a)–(e) and (g)–(i).

(iii) The employer, upon request, shall make employee medical records required by paragraph (k)(3) of this section available for examination and copying to the subject employee, anyone having the specific written consent of the subject employee, and the Assistant Secretary, in accordance with 29 CFR 1910.20.

(5) *Transfer of records.* (i) The employer shall comply with the requirements concerning transfer of records set forth in 29 CFR 1910.20(h).

(ii) Whenever the employer ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, the employer shall notify the Director at least 90 days prior to disposal and transmit them to the Director.

(l) *Observation of monitoring.* (1) *Employee observation.*

The employer shall provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to EtO conducted in accordance with paragraph (d) of this section.

(2) *Observation procedures.* When observation of the monitoring of employee exposure to EtO requires entry into an area where the use of protective clothing or equipment is required, the observer shall be provided with and be required to use such clothing and equipment and shall comply with all other applicable safety and health procedures.

(m) *Dates* (1) *Effective date.* This section shall become effective August 21, 1984.

(2) *Start-up dates.* (i) The requirements of paragraphs (c) through (l) of this section, including feasible work practice controls but not including engineering controls specified in paragraph (f)(1), shall be complied with within one-hundred and eighty (180) days after the effective date of this section.

(ii) Engineering controls specified by paragraph (f)(1) of this section shall be implemented within one (1) year after the effective date of this section.

(n) *Appendices.* The information contained in the appendices is not intended by itself to create any additional obligations not otherwise imposed or to detract from any existing obligation.

**Appendix A—Substance Safety Data Sheet for Ethylene Oxide**

**I. Substance Identification**

A. Substance: Ethylene oxide ($C_2H_4O$).

B. Synonyms: dihydrooxirene, dimethylene oxide, EO, 1,2-epoxyethane, EtO, ETO, oxacyclopropane, oxane, oxidoethane, alpha/beta-oxidoethane, oxiran, oxirane.

C. Ethylene oxide can be found as a liquid or vapor.

D. EtO is used in the manufacture of ethylene glycol, surfactants, ethanolamines, glycol ethers, and other organic chemicals. EtO is also used as a sterilant and fumigant.

E. Appearance and odor: Colorless liquid below 10.7 °C (51.3 °F) or colorless gas with ether-like odor detected at approximately 700 parts EtO per million parts of air (700 ppm).

F. Permissible exposure: Exposure may not exceed 1 part EtO per million parts of air averaged over the 8-hour work day, nor may short-term exposure exceed 10 parts of EtO per million parts of air averaged over a 15 minute period.

**II. Health Hazard Data**

A. Ethylene oxide can cause bodily harm if you inhale the vapor, if it comes into contact with your eyes or skin, or if you swallow it.

B. Effects of overexposure:

1. Ethylene oxide in liquid form can cause eye irritation and injury to the cornea, frostbite, and severe irritation and blistering of the skin upon prolonged or confined contact. Ingestion of EtO can cause gastric irritation and liver injury. Acute effects from inhalation of EtO vapors include respiratory irritation and lung injury, headache, nausea, vomiting, diarrhea, shortness of breath, and cyaonosis (blue or purple coloring of skin). Exposure has also been associated with the occurrence of cancer, reproductive effects, mutagenic changes, neurotoxicity, and sensitization.

1. EtO has been shown to cause cancer in laboratory animals and has been associated with higher incidences of cancer in humans. Adverse reproductive effects and chromosome damage may also occur from EtO exposure.

a. Reporting signs and symptoms: You should inform your employer if you develop any signs or symptoms and suspect that they are caused by exposure to EtO.

**III. Emergency First Aid Procedures**

A. Eye exposure: If EtO gets into your eyes, wash your eyes immediately with large amounts of water, lifting the lower and upper eyelids. Get medical attention immediately. Contact lenses should not be worn when working with this chemical.

B. Skin exposure: If EtO gets on your skin, immediately wash the contaminated skin with water. If EtO soaks through your clothing, especially your shoes, remove the clothing immediately and wash the skin with water using an emergency deluge shower. Get medical attention immediately. Thoroughly wash contaminated clothing before reusing. Contaminated leather shoes or other leather articles should not be reused and should be discarded.

C. Inhalation: If large amounts of EtO are inhaled, the exposed person must be moved to fresh air at once. If breathing has stopped, perform cardiopulmonary resuscitation. Keep the affected person warm and at rest. Get medical attention immediately.

D. Swallowing: When EtO has been swallowed, give the person large quantities of water immediately. After the water has been swallowed, try to get the person to vomit by having him or her touch the back of the throat with his or her finger. Do not make an unconscious person vomit. Get medical attention immediately.

E. Rescue: Move the affected person from the hazardous exposure. If the exposed person has been overcome, attempt rescue only after notifying at least one other person of the emergency and putting into effect established emergency procedures. Do not become a casualty yourself. Understand your emergency rescue procedures and know the location of the emergency equipment before the need arises.

**IV. Respirators and Protective Clothing**

A. Respirators: You may be required to wear a respirator for nonroutine activities, in emergencies, while your employer is in the process of reducing EtO exposures through engineering controls, and where engineering controls are not feasible. As of the effective date of the standard, only air supplied positive-pressure, full-facepiece respirators are approved for protection against EtO. If air-purifying respirators are worn in the future, they must have a joint Mine Safety and Health Administration (MSHA) and National Institute for Occupational Safety and Health (NIOSH) label of approval for use with ethylene oxide. For effective protection, respirators must fit your face and head snugly. Respirators should not be loosened or removed in work situations where their use is required.

EtO does not have a detectable odor except at levels well above the permissible exposure limits. If you can smell EtO while wearing a respirator, proceed immediately to fresh air. If you experience difficulty breathing while wearing a respirator, tell your employer.

B. Protective clothing: You may be required to wear impermeable clothing, gloves, a face shield, or other appropriate protective clothing to prevent skin contact with liquid EtO or EtO-containing solutions. Where protective clothing is required, your employer must provide clean garments to you as necessary to assure that the clothing protects you adequately.

Replace or repair protective clothing that has become torn or otherwise damaged.

EtO must never be allowed to remain on the skin. Clothing and shoes which are not impermeable to EtO should not be allowed to become contaminated with EtO, and if they do, the clothing should be promptly removed and decontaminated. Contaminated leather shoes should be discarded. Once EtO penetrates shoes or other leather articles, they should not be worn again.

C. Eye protection: You must wear splashproof safety goggles in areas where liquid EtO or EtO-containing solutions may contact your eyes. In addition, contact lenses should not be worn in areas where eye contact with EtO can occur.

**V. Precautions for Safe Use, Handling, and Storage**

A. EtO is a flammable liquid, and its vapors can easily form explosive mixtures in air.

B. EtO must be stored in tighly closed containers in a cool, well-ventilated area, away from heat, sparks, flames, strong oxidizers, alkalines, and acids, strong bases, acetylide-forming metals such as cooper, silver, mercury and their alloys.

C. Sources of ignition such as smoking material, open flames and some electrical devices are prohibited wherever EtO is handled, used, or stored in a manner that could create a potential fire or explosion hazard.

D. You should use non-sparking tools when opening or closing metal containers of EtO, and containers must be bonded and grounded in the rare

instances in which liquid EtO is poured or transferred.

E. Impermeable clothing wet with liquid EtO or EtO-containing solutions may be easily ignited. If your are wearing impermeable clothing and are splashed with liquid EtO or EtO-containing solution, you should immediately remove the clothing while under an emergency deluge shower.

F. If your skin comes into contact with liquid EtO or EtO-containing solutions, you should immediately remove the EtO using an emergency deluge shower.

G. You should not keep food, beverages, or smoking materials in regulated areas where employee exposures are above the permissible exposure limits.

H. Fire extinguishers and emergency deluge showers for quick drenching should be readily available, and you should know where they are and how to operate them.

I. Ask your supervisor where EtO is used in your work area and for any additional plant safety and health rules.

**VI. Access to Information**

A. Each year, your employer is required to inform you of the information contained in this standard and appendices for EtO. In addition, your employer must instruct you in the proper work practices for using EtO emergency procedures, and the correct use of protective equipment.

B. Your employer is required to determine whether you are being exposed to EtO. You or your representative has the right to observe employee measurements and to record the results obtained. Your employer is required to inform you of your exposure. If your employer determine that you are being overexposed, he or she is required to inform you of the actions which are being taken to reduce your exposure to within permissible exposure limits.

C. Your employer is required to keep records of your exposures and medical examinations. These exposure records must be kept by the employer for at least thirty (30) years. Medical records must be kept for the period of your employment plus thirty (30) years.

D. Your employer is required to release your exposure and medical records to your physician or designated representative upon your written request.

**VII. Sterilant Use of EtO in Hospitals and Health Care Facilities**

This section of Appendix A, for informational purposes, sets forth EPA's recommendations for modifications in workplace design and practice in hospitals and health care facilities for which the Environmental Protection Agency has registered EtO for uses as a sterilant or fumigant under the Federal Insecticide, Funigicide, and Rodenticide Act, 7 U.S.C. 136 *et seq.* These new recommendations, published in the **Federal Register** by EPA at 49 FR 15268, as modified in today's **Register**, are intended to help reduce the exposure of hospital and health care workers to EtO to 1 ppm. EPA's recommended workplace design and workplace practice are as follows:

*1. Workplace Design*

a. *Installation of gas line hand valves.* Hand valves must be installed on the gas supply line at the connection to the supply cylinders to minimize leakage during cylinder change.

b. *Installation of capture boxes.* Sterilizer operations result in a gas/water discharge at the completion of the process. This discharge is routinely piped to a floor drain which is generally located in an equipment or an adjacent room. When the floor drain is not in the same room as the sterilizer and workers are not normally present, all that is necessary is that the room be well ventilated.

The installation of a "capture box" will be required for those work place layouts where the floor drain is located in the same room as the sterilizer or in a room where workers are normally present. A "capture box" is a piece of equipment that totally encloses the floor drain where the discharge from the sterilizer is pumped. The "capture box" is to be vented directly to a non-recirculating or dedicated ventilation system. Sufficient air intake should be allowed at the bottom of the box to handle the volume of air that is ventilated from the top of the box. The "capture box" can be made of metal, plastic, wood or other equivalent material. The box is intended to reduce levels of EtO discharged into the work room atmosphere. The use of a "capture box" is not required if: (1) The vacuum pump discharge floor drain is located in a well ventilated equipment or other room where workers are not normally present or (2) the water sealed vacuum pump discharges directly to a closed sealed sewer line (check local plumbing codes).

If it is impractical to install a vented "capture box" and a well ventilated equipment or other room is not feasible, a box that can be sealed over the floor drain may be used if: (1) The floor drain is located in a room where workers are not normally present and EtO cannot leak into an occupied area, and (2) the sterilizer in use is less than 12 cubic feet in capacity (check local plumbing codes).

c. *Ventilation of aeration units* i. *Existing aeration units.* Existing units must be vented to a non-recirculating or dedicated system or vented to an equipment or other room where workers are not normally present and which is well ventilated. Aerator units must be positioned as close as possible to the sterilizer to minimize the exposure from the off-gassing of sterilized items.

ii. *Installation of new aerator units (where none exist).* New aerator units must be vented as described above for existing aerators. Aerators must be in place by July 1, 1986.

d. *Ventilation during cylinder change.* Workers may be exposed to short but relatively high levels of EtO during the change of gas cylinders. To reduce exposure from this route, users must select one of three alternatives designed to draw off gas that may be released when the line from the sterilizer to the cylinder is disconnected:

i. Location of cylinders in a well ventilated equipment room or other room where workers are not normally present.

ii. Installation of a flexible hose (at least 4" in diameter) to a non-recirculating or dedicated ventilation system and located in the area of cylinder change in such a way that the hose can be positioned at the point where the sterilizer gas line is disconnected from the cylinder.

iii. Installation of a hood that is part of a non-recirculating or dedicated system and positioned no more than one foot above the point where the change of cylinders takes place.

e. *Ventilation of sterilizer door area.* One of the major sources of exposure to EtO occurs when the sterilizer door is opened following the completion of the sterilization process. In order to reduce this avenue of exposure, a hood or metal canopy closed on each end must be installed over the sterilizer door. The hood or metal canopy must be connected to a non-recirculating or dedicated ventilation system or one that exhausts gases to a well ventilated equipment or other room where workers are not normally present. A hood or canopy over the sterilizer door is required for use even with those sterilizers that have a purge cycle and must be in place by July 1, 1986.

f. *Ventilation of sterilizer relief valve.* Sterilizers are typically equipped with a safety relief device to release gas in case of increased pressure in the sterilizer. Generally, such relief devices are used on pressure vessels. Although these pressure relief devices are rarely

opened for hospital and health care sterilizers, it is suggested that they be designed to exhaust vapor from the sterilizer by one of the following methods:

i. Through a pipe connected to the outlet of the relief valve ventilated directly outdoors at a point high enough to be away from passers by, and not near any windows that open, or near any air conditioning or ventilation air intakes.

ii. Through a connection to an existing or new non-recirculating or dedicated ventilation system.

iii. Through a connection to a well ventilated equipment or other room where workers are not normally present.

g. *Ventilation systems.* Each hospital and health care facility affected by this notice that uses EtO for the sterilization of equipment and supplies must have a ventilation system which enables compliance with the requirements of section (b) through (f) in the manner described in these sections and within the timeframes allowed. Thus, each affected hospital and health care facility must have or install a non-recirculating or dedicated ventilation equipment or other room where workers are not normally present in which to vent EtO.

h. *Installation of alarm systems.* An audible and visual indicator alarm system must be installed to alert personnel of ventilation system failures, i.e., when the ventilation fan motor is not working.

*2. Workplace Practices*

All the workplace practices discussed in this unit must be permanently posted near the door of each sterilizer prior to use by any operator.

a. *Changing of supply line filters.* Filters in the sterilizer liquid line must be changed when necessary, by the following procedure:

i. Close the cylinder valve and the hose valve.

ii. Disconnect the cylinder hose (piping) from the cylinder.

iii. Open the hose valve and bleed slowly into a proper ventilating system at or near the in-use supply cylinders.

iv. Vacate the area until the line is empty.

v. Change the filter.

vi. Reconnect the lines and reverse the value position.

vii. Check hoses, filters, and valves for leaks with a fluorocarbon leak detector (for those sterilizers using the 88 percent chlorofluorocarbon, 12 percent ethylene oxide mixture (12/88)).

b. *Restricted access area.* i. Areas involving use of EtO must be designated as restricted access areas. They must be identified with signs or floor marks near the sterilizer door, aerator, vacuum pump floor drain discharge, and in-use cylinder storage.

ii. All personnel must be excluded from the restricted area when certain operations are in progress, such as discharging a vacuum pump, emptying a sterilizer liquid line, or venting a non-purge sterilizer with the door ajar or other operations where EtO might be released directly into the face of workers.

c. *Door opening procedures.* i. *Sterilizers with purge cycles.* A load treated in a sterilizer equipped with a purge cycle should be removed immediately upon completion of the cycle (provided no time is lost opening the door after cycle is completed). If this is not done, the purge cycle should be repeated before opening door.

ii. *Sterilizers without purge cycles.* For a load treated in a sterilizer not equipped with a purge cycle, the sterilizer door must be ajar 6" for 15 minutes, and then fully opened for at least another 15 minutes before removing the treated load. The length of time of the second period should be established by peak monitoring for one hour after the two 15-minute periods suggested. If the level is above 10 ppm time-weighted average for 8 hours, more time should be added to the second waiting period (door wide open). However, in no case may the second period be shortened to less than 15 minutes.

d. *Chamber unloading procedures.* i. Procedures for unloading the chamber must include the use of baskets or rolling carts, or baskets and rolling tables to transfer treated loads quickly, thus avoiding excessive contact with treated articles, and reducing the duration of exposures.

ii. If rolling carts are used, they should be pulled not pushed by the sterilizer operators to avoid offgassing exposure.

e. *Maintenance.* A written log should be instituted and maintained documenting the date of each leak detection and any maintenance procedures undertaken. This is a suggested use practice and is not required.

i. *Leak detection.* Sterilizer door gaskets, cylinder and vacuum piping, hoses, filters, and valves must be checked for leaks under full pressure with a Fluorocarbon leak detector (for 12/88 systems only) every two weeks by maintenance personnel. Also, the cylinder piping connections must be checked after changing cylinders. Particular attention in leak detection should be given to the automatic solenoid valves that control the flow of EtO to the sterilizer. Specifically, a check should be made at the EtO gasline entrance port to the sterilizer, while the sterilizer door is open and the solenoid valves are in a closed position.

ii. *Maintenance procedures.* Sterilizer/areator door gaskets, valves, and fittings must be replaced when necessary as determined by maintenance personnel in their bi-weekly checks; in addition, visual inspection of the door gaskets for cracks, debris, and other foreign substances should be conducted daily by the operator.

## Appendix B—Substance Technical Guidelines for Ethylene Oxide

### I. Physical and Chemical Data

A. Substance identification:

1. Synonyms: dihydrooxirene, dimethylene oxide, EO, 1,2-epoxyethane, EtO ETO oxacyclopropane, oxane, oxidoethane, alpha/beta-oxidoethane, oxiran, oxirane.

2. Formula: ($C_2H_4O$).

3. Molecular weight: 44.06

B. Physical data:

1. Boiling point (760 mm Hg): 10.70°C (51.3°F);

2. Specific gravity (water = 1): 0.87 (at 20°C or 68°F)

3. Vapor density (air = 1): 1.49;

4. Vapor pressure (at 20°C): 1,095 mm Hg;

5. Solubility in water: complete;

6. Appearance and odor: colorless liquid; gas at temperature above 10.7°F or 51.3°C with ether-like odor above 700 ppm.

### II. Fire, Explosion, and Reactivity Hazard Data

A. Fire:

1. Flash point: less than O°F (open cup);

2. Stability: decomposes violently at temperatures above 800°F;

3. Flammable limits in air, percent by volume: Lower: 3, Upper: 100;

4. Extinguishing media: Carbon dioxide for small fires, polymer or alcohol foams for large fires;

5. Special fire fighting procedures: Dilution of ethylene oxide with 23 volumes of water renders it non-flammable;

6. Unusual fire and explosion hazards: Vapors of EtO will burn without the presence of air or other oxidizers. EtO vapors are heavier than air and may travel along the ground and be ignited by open flames or sparks at locations remote from the site at which EtO is being used.

7. For purposes of compliance with the requirements of 29 CFR 1910.106, EtO is classified as a flammable gas. For

example, 7,500 ppm, approximately one-fourth of the lower flammable limit, would be considered to pose a potential fire and explosion hazard.

8. For purposes of compliance with 29 CFR 1910.155, EtO is classified as a Class B fire hazard.

9. For purpose of compliance with 29 CFR 1919.307, locations classified as hazardous due to the presence of EtO shall be Class I.

B. Reactivity:

1. Conditions contributing to instability: EtO will polymerize violently if contaminated with aqueous alkalies, amines, mineral acids, metal chlorides, or metal oxides. Violent decomposition will also occur at temperatures above 800 °F;

2. Incompatabilities: Alkalines and acids;

3. Hazardous decomposition products: Carbon monoxide and carbon dioxide.

### III. Spill, Leak, and Disposal Procedures

A. If EtO is spilled or leaked, the following steps should be taken:

1. Remove all ignition sources.

2. The area should be evacuated at once and re-entered only after the area has been thoroughly ventilated and washed down with water.

B. Persons not wearing appropriate protective equipment must be restricted from areas of spills or leaks until cleanup has been completed.

C. Waste disposal methods: Waste material shall be disposed of in a manner that is not hazardous to employees or to the general population. In selecting the method of waste disposal, applicable local, State, and Federal regulations should be consulted.

### IV. Monitoring and Measurement Procedures

A. Exposure above the Permissible Exposure Limit:

1. Eight-hour exposure evaluation: Measurements taken for the purpose of determining employee exposure under this section are best taken with consecutive samples covering the full shift. Air samples must be taken in the employee's breathing zone (air that would most nearly represent that inhaled by the employee.)

2. Monitoring techniques: The sampling and analysis under this section may be performed by collection of the EtO vapor on charcoal adsorption tubes or other composition adsorption tubes, with subsequent chemical analysis. Sampling and analysis may also be performed by instruments such as real-time continuous monitoring systems, portable direct reading instruments, or passive dosimeters as long as measurements taken using these methods accurately evaluate the concentration of EtO in employees' breathing zones.

Appendix D describes the validated method of sampling and analysis which has been tested by OSHA for use with EtO. Other available methods are also described in Appendix D. The employer has the obligation of selecting a monitoring method which meets the accuracy and precision requirements of the standard under his unique field conditions. The standard requires that the method of monitoring must be accurate, to a 95 percent confidence level, to plus or minus 25 percent for concentrations of EtO at 1 ppm, and to plus or minus 35 percent for concentrations at 0.5 ppm. In addition to the method described in Appendix D, there are numerous other methods available for monitoring for EtO in the workplace. Details on these other methods have been submitted by various companies to the rulemaking record, and are available at the OSHA Docket Office.

B. Since many of the duties relating to employee exposure are dependent on the results of measurement procedures, employers must assure that the evaluation of employee exposures is performed by a technically qualified person.

### V. Protective Clothing and Equipment

Employees shall be provided with and be required to wear appropriate protective clothing wherever there is significant potential for skin contact with liquid EtO or EtO-containing solutions. Protective clothing shall include impermeable coveralls or similar full-body work clothing, gloves, and head coverings, as appropriate to protect areas of the body which may come in contact with liquid EtO or EtO-containing solutions.

Employers must ascertain that the protective garments are impermeable to EtO. Permeable clothing, including items made of rubber, and leather shoes should not be allowed to become contaminated with liquid EtO. If permeable clothing does become contaminated, it should be immediately removed, while the employer is under an emergency deluge shower. If leather footwear or other leather garments become wet from EtO they should be discarded and not be worn again, because leather absorbs EtO and holds it against the skin.

Any protective clothing that has been damaged or is otherwise found to be defective should be repaired or replaced. Clean protective clothing should be provided to the employee as necessary to assure employee protection. Whenever impermeable clothing becomes wet with liquid EtO, it should be washed down with water before being removed by the employee. Employees are also required to wear splash-proof safety goggles where there is any possibility of EtO contacting the eyes.

### VI. Miscellaneous Precautions

A. Store EtO in tightly closed containers in a cool, well-ventilated area and take all necessary precautions to avoid any explosion hazard.

B. Non-sparking tools must be used to open and close metal containers. These containers must be effectively grounded and bonded.

C. Do not incinerate EtO cartridges, tanks or other containers.

D. Employers shall advise employees of all areas and operations where exposure to EtO occur.

### VII. Common Operations

Common operations in which exposure to EtO is likely to occur include the following: Manufacture of EtO, surfactants, ethanolamines, glycol ethers, and specialty chemicals, and use as a sterilant in the hospital, health product and spice industries.

## Appendix C-Medical Surveillance Guidelines for Ethylene Oxide

### I. Route of Entry

Inhalation.

### II. Toxicology

Clinical evidence of adverse effects associated with the exposure to EtO is present in the form of increased incidence of cancer in laboratory animals (leukemia, stomach, brain), mutation in offspring in animals, and resorptions and spontaneous abortions in animals and human populations respectively. Findings in humans and experimental animals exposed to airborne concentrations of EtO also indicate damage to the genetic material (DNA). These include hemoglobin alkylation, unsecheduled DNA synthesis, sister chromatid exchange chromosomal aberration, and functional sperm abnormalities.

Ethylene oxide in liquid form can cause eye irritation and injury to the cornea, frostbite, severe irritation, and blistering of the skin upon prolonged or confined contact. Ingestion of EtO can cause gastric irritation and liver injury. Other effects from inhalation of EtO vapors include respiratory irritation and lung injury, headache, nausea, vomiting, diarrhea, dyspnea and cyanosis.

### III. Signs and Symptoms of Acute Overexposure

The early effects of acute overexposure to EtO are nausea and vomiting, headache, and irritation of the eyes and respiratory passages. The patient may notice a "peculiar taste" in the mouth. Delayed effects can include pulmonary edema, drowsiness, weakness, and incoordination. Studies suggest that blood cell changes, an increase in chromosomal aberrations, and spontaneous abortion may also be causally related to acute overexposure to EtO.

Skin contact with liquid or gaseous EtO causes characteristic burns and possibly even an allergic-type sensitization. The edema and erythema occurring from skin contact with EtO progress to vesiculation with a tendency to coalesce into blebs with desquamation. Healing occurs within three weeks, but there may be a residual brown pigmentation. A 40–80% solution is extremely dangerous, causing extensive blistering after only brief contact. Pure liquid EtO causes frostbite because of rapid evaporation. In contrast, the eye is relatively insensitive to EtO, but there may be some irritation of the cornea.

Most reported acute effects of occupational exposure to EtO are due to contact with EtO in liquid phase. The liquid readily penetrates rubber and leather, and will produce blistering if clothing or footwear contaminated with EtO are not removed.

### IV. Surveillance and Preventive Considerations

As noted above, exposure to EtO has been linked to an increased risk of cancer and reproductive effects including decreased male fertility, fetotoxicity, and spontaneous abortion. EtO workers are more likely to have chromosomal damage than similar groups not exposed to EtO. At the present, limited studies of chronic effects in humans resulting from exposure to EtO suggest a causal association with leukemia. Animal studies indicate leukemia and cancers at other sites (brain, stomach) as well. The physician should be aware of the findings of these studies in evaluating the health of employees exposed to EtO.

Adequate screening tests to determine an employee's potential for developing serious chronic diseases, such as cancer, from exposure to EtO do not presently exist. Laboratory tests may, however, give evidence to suggest that an employee is potentially overexposed to EtO. It is important for the physician to become familiar with the operating conditions in which exposure to EtO is likely to occur. The physician also must become familiar with the signs and symptoms that indicate a worker is receiving otherwise unrecognized and unacceptable exposure to EtO. These elements are especially important in evaluating the medical and work histories and in conducting the physical exam. When an unacceptable exposure in an active employee is identified by the physician, measures taken by the employer to lower exposure should also lower the risk of serious long-term consequences.

The employer is required to institute a medical surveillance program for all employees who are or will be exposed to EtO at or above the action level (0.5 ppm) for at least 30 days per year, without regard to respirator use. All examinations and procedures must be performed by or under the supervision of a licensed physician at a reasonable time and place for the employee and at no cost to the employee.

Although broad latitude in prescribing specific tests to be included in the medical surveillance program is extended to the examining physician, OSHA requires inclusion of the following elements in the routine examination:

(i) Medical and work histories with special emphasis directed to symptoms related to the pulmonary, hematologic, neurologic, and reproductive systems and to the eyes and skin.

(ii) Physical examination with particular emphasis given to the pulmonary, hematologic, neurologic, and reproductive systems and to the eyes and skin.

(iii) Complete blood count to include at least a white cell count (including differential cell count), red cell count, hematocrit, and hemoglobin.

(iv) Any laboratory or other test which the examining physician deems necessary by sound medical practice.

If requested by the employee, the medical examinations shall include pregnancy testing or laboratory evaluation of fertility as deemed appropriate by the physician.

In certain cases, to provide sound medical advice to the employer and the employee, the physician must evaluate situations not directly related to EtO. For example, employees with skin diseases may be unable to tolerate wearing protective clothing. In addition those with chronic respiratory diseases may not tolerate the wearing of negative pressure (air purifying) respirators. Additional tests and procedures that will help the physician determine which employees are medically unable to wear such respirators should include: An evaluation of cardiovascular function, a baseline chest x-ray to be repeated at five year intervals, and a pulmonary function test to be repeated every three years. The pulmonary function test should include measurement of the employee's forced vital capacity (FVC), forced expiratory volume at one second (FEV1), as well as calculation of the ratios of FEV1 to FVC, and measured FVC and measured FEV1 to expected values corrected for variation due to age, sex, race, and height.

The employer is required to make the prescribed tests available at least annually to employees who are or will be exposed at or above the action level, for 30 or more days per year; more often than specified if recommended by the examining physician; and upon the employee's termination of employment or reassignment to another work area. While little is known about the long term consequences of high short-term exposures, it appears prudent to monitor such affected employees closely in light of existing health data. The employer shall provide physician recommended examinations to any employee exposed to EtO in emergency conditions. Likewise, the employer shall make available medical consultations including physician recommended exams to employees who believe they are suffering signs or symptoms of exposure to EtO.

The employer is required to provide the physician with the following informatin: a copy of this standard and its appendices; a description of the affected employee's duties as they relate to the employee exposure level; and information from the employee's previous medical examinations which is not readily available to the examining physician. Making this information available to the physician will aid in the evaluation of the employee's health in relation to assigned duties and fitness to wear personal protective equipment, when required.

The employer is required to obtain a written opinion from the examining physician containing the results of the medical examinations; the physician's opinion as to whether the employee has any detected medical conditions which would place the employee at increased risk of material impairment of his or her health from exposure to EtO; any recommended restrictions upon the employee's exposure to EtO, or upon the use of protective clothing or equipment such as respirators; and a statement that the employee has been informed by the physician of the results of the medical examination and of any medical conditions which require further

explanation or treatment. This written opinion must not reveal specific findings or diagnoses unrelated to occupational exposure to EtO, and a copy of the opinion must be provided to the affected employee.

The purpose in requiring the examining physician to supply the employer with a written opinion is to provide the employer with a medical basis to aid in the determination of initial placement of employees and to assess the employee's ability to use protective clothing and equipment.

## Appendix D—Sampling and Analytical Methods for Ethylene Oxide

A number of methods are available for monitoring employee exposures to EtO. Most of these involve the use of charcoal tubes and sampling pumps, followed by analysis of the samples by gas chromatograph. The essential differences between the charcoal tube methods include, among others, the use of different desorbing solvents, the use of different lots of charcoal, and the use of different equipment for analysis of the samples.

Besides charcoal, methods using passive dosimeters, gas sampling bags, impingers, and detector tubes have been utilized for determination of EtO exposure. In addition, there are several commercially available portable gas analyzers and monitoring units.

This appendix contains details for the method which has been tested at the OSHA Analytical Laboratory in Salt Lake City. Inclusion of this method in the appendix does not mean that this method is the only one which will be satisfactory. Copies of descriptions of other methods available are available in the rulemaking record, and may be obtained from the OSHA Docket Office. These include the Union Carbide, Dow Chemical, 3M, and DuPont methods, as well as NIOSH Method S–286. These methods are briefly described at the end of this appendix.

Employers who note problems with sample breakthrough using the OSHA or other charcoal methods should try larger charcoal tubes. Tubes of larger capacity are available. In addition, lower flow rates and shorter sampling times should be beneficial in minimizing breakthrough problems. Whatever method the employer chooses, he must assure himself of the method's accuracy and precision under the unique conditions present in his workplace.

### Ethylene Oxide

Method No.: 30.

Matrix: Air.

Target Concentration: 1.0 ppm (1.8 $mg/m^3$).

Procedure: Samples are collected on two charcoal tubes in series and desorbed with 1% $CS_2$ in benzene. The samples are derivatized with HBr and treated with sodium carbonate. Analysis is done by gas chromatography with an electron capture detector.

Recommended Air Volume and Sampling Rate: 1 liter and 0.05 Lpm.

Detection Limit of the Overall Procedure: 13.3 ppb (0.024 $mg/m^3$) (Based on 1.0 liter air sample).

Reliable Quantitation Limit: 52.2 ppb (0.094 $mg/m^3$) (Based on 1.0 liter air sample).

Standard Error of Estimate: 6.59% (See Backup Section 4.6).

Special Requirements: Samples must be analyzed within 15 days of sampling date.

Status of Method: The sampling and analytical method has been subjected to the established evaluation procedures of the Organic Method Evaluations Branch.

Date: August 1981.

Chemist: Wayne D. Potter.

### Organic Solvents Branch, OSHA Analytical Laboratory, Salt Lake City, Utah

1. General Discussion.

1.1 Background.

1.1.1 History of Procedure.

Ethylene oxide samples analyzed at the OSHA Laboratory have normally been collected on activated charcoal and desorbed with carbon disulfide. The analysis is performed with a gas chromatograph equipped with a FID (Flame ionization detector) as described in NIOSH Method S286 (Ref. 5.1). This method is based on a PEL of 50 ppm and has a detection limit of about 1 ppm.

Recent studies have prompted the need for a method to analyze and detect ethylene oxide at very low concentrations.

Several attempts were made to form an ultraviolet (UV) sensitive derivative with ethylene oxide for analysis with HPLC. Among those tested that gave no detectable product were: p-anisidine, methylimidazole, aniline, and 2,3,6-trichlorobenzoic acid. Each was tested with catalysts such as triethylamine, aluminum chloride, methylene chloride and sulfuric acid but no detectable derivative was produced.

The next derivatization attempt was to react ethylene oxide with HBr to form 2-bromoethanol. This reaction was successful. An ECD (electron capture detector) gave a very good response for 2-bromoethanol due to the presence of bromine. The use of carbon disulfide as the desorbing solvent gave too large a response and masked the 2-bromoethanol. Several other solvents were tested for both their response on the ECD and their ability to desorb ethylene oxide from the charcoal. Among those tested were toluene, xylene, ethyl benzene, hexane, cyclohexane and benzene. Benzene was the only solvent tested that gave a suitable response on the ECD and a high desorption. It was found that the desorption efficiency was improved by using 1% $CS_2$ with the benzene. The carbon disulfide did not significantly improve the recovery with the other solvents. SKC Lot 120 was used in all tests done with activated charcoal.

1.1.2 Physical Properties (Ref. 5.2–5.4).

Synonyms: Oxirane; dimethylene oxide, 1,2-epoxy-ethane; oxane; $C_2H_4O$; ETO;

Molecular Weight: 44.06

Boiling Point: 10.7 °C (51.3°)

Melting Point: −111 °C

Description: Colorless, flammable gas

Vapor Pressure: 1095 mm. at 20 °C

Odor: Ether-like odor

Lower Explosive Limits: 3.0% (by volume)

Flash Point (TOC): Below 0 °F

Molecular Structure: $CH_2—CH_2$

1.2 Limit Defining Parameters.

1.2.1 Detection Limit of the Analytical Procedure.

The detection limit of the analytical procedure is 12.0 picograms of ethylene oxide per injection. This is the amount of analyte which will give a peak whose height is five times the height of the baseline noise. (See Backup Data Section 4.1).

1.2.2 Detection Limit of the Overall Procedure.

The detection limit of the overall procedure is 24.0 ng of ethylene oxide per sample.

This is the amount of analyte spiked on the sampling device which allows recovery of an amount of analyte equivalent to the detection limit of the analytical procedure. (See Backup Data Section 4.2).

1.2.3 Reliable Quantitation Limit.

The reliable quantitation limit is 94.0 nanograms of ethylene oxide per sample. This is the smallest amount of analyte which can be quantitated within the requirements of 75% recovery and 95% confidence limits. (See Backup Data Section 4.2).

It must be recognized that the reliable quantitation limit and detection limits reported in the method are based upon optimization of the instrument for the smallest possible amount of analyte. When the target concentration of an

analyte is exceptionally higher than these limits, they may not be attainable at the routine operating parameters. In this case, the limits reported on analysis reports will be based on the operating parameters used during the analysis of the samples.

1.2.4 Sensitivity.

The sensitivity of the analytical procedure over a concentration range representing 0.5 to 2 times the target concentration based on the recommended air volume is 34105 area units per μg/mL. The sensitivity is determined by the slope of the calibration curve (See Backup Data Section 4.3).

The sensitivity will vary somewhat with the particular instrument used in the analysis.

1.2.5 Recovery.

The recovery of analyte from the collection medium must be 75% or greater. The average recovery from spiked samples over the range of 0.5 to 2 times the target concentration is 88.0% (See Backup Section 4.4). At lower concentrations the recovery appears to be non-linear.

1.2.6 Precision (Analytical Method Only).

The pooled coefficient of variation obtained from replicate determination of analytical standards at 0.5X, 1X and 2X the target concentration is 0.036 (See Backup Data Section 4.5).

1.2.7 Precision (Overall Procedure).

The overall procedure must provide results at the target concentration that are 25% of better at the 95% confidence level. The precision at the 95% confidence level for the 15 day storage test is plus or minus 12.9% (See Backup Data Section 4.6).

This includes an additional plus or minus 5% for sampling error.

1.3 Advantages.

1.3.1 The sampling procedure is convenient.

1.3.2 The analytical procedure is very sensitive and reproducible.

1.3.3 Reanalysis of samples is possible.

1.3.4 Samples are stable for at least 15 days at room temperature.

1.3.5 Interferences are reduced by the longer GC retention time of the new derivative.

1.4 Disadvantages.

1.4.1 Two tubes in series must be used because of possible breakthrough and migration.

1.4.2 The precision of the sampling rate may be limited by the reproducibility of the pressure drop across the tubes. The pumps are usually calibrated for one tube only.

1.4.3 The use of benzene as the desorption solvent increases the hazards of analysis because of the potential carcinogenic effects of benzene.

1.4.4 After repeated injections there can be a buildup of residue formed on the electron capture detector which decreases sensitivity.

1.4.5 Recovery from the charcoal tubes appears to be nonlinear at low concentrations.

2. Sampling Procedure.

2.1 Apparatus.

2.1.1 A calibrated personal sampling pump whose flow can be determined within plus or minus 5% of the recommended flow.

2.1.2 SKC Lot 120 Charcoal tubes: glass tube with both ends flame sealed, 7 cm long with a 6 mm O.D. and a 4-mm I.D., containing 2 sections of coconut shell charcoal separated by a 2-mm portion of urethane foam. The adsorbing section contains 100 mg of charcoal, the backup section 50 mg. A 3-mm portion of urethane foam is placed between the outlet end of the tube and the backup section. A plug of silylated glass wool is placed in front of the adsorbing section.

2.2 Reagents.

2.2.1 None required.

2.3 Sampling Technique.

2.3.1 Immediately before sampling, break the ends of the charcoal tubes. All tubes must be from the same lot.

2.3.2 Connect two tubes in series to the sampling pump with a short section of flexible tubing. A minimum amount of tubing is used to connect the two sampling tubes together. The tube closer to the pump is used as a backup. This tube should be identified as the backup tube.

2.3.3 The tubes should be placed in a vertical position during sampling to minimize channeling.

2.3.4 Air being sampled should not pass through any hose or tubing before entering the charcoal tubes.

2.3.5 Seal the charcoal tubes with plastic caps immediately after sampling. Also, seal each sample with OSHA seals lengthwise.

2.3.6 With each batch of samples, submit at least one blank tube from the same lot used for samples. This tube should be subjected to exactly the same handling as the samples (break, seal, transport) except that no air is drawn through it.

2.3.7 Transport the samples (and corresponding paperwork) to the lab for analysis.

2.3.8 If bulk samples are submitted for analysis, they shoud be transported in glass containers with Teflon-lined caps. These samples must be mailed separately from the container used for the charcoal tubes.

2.4 Breakthrough.

2.4.1 The breakthrough (5% breakthrough) volume for a 3.0 mg/m ethylene oxide sample stream at approximately 85% relative humidity, 22°C and 633 mm is 2.6 liters sampled at 0.05 liters per minute. This is equivalent to 7.8 μg of ethylene oxide. Upon saturation of the tube it appeared that the water may be displacing ethylene oxide during sampling.

2.5 Desorption Efficiency.

2.5.1 The desorption efficiency, from liquid injection onto charcoal tubes, averaged 88.0% from 0.5 to 2.0 x the target concentration for a 1.0 liter air sample. At lower ranges it appears that the desorption efficiency is non-linear (See Backup Data Section 4.2).

2.5.2 The desorption efficiency may vary from one laboratory to another and also from one lot of charcoal to another. Thus, it is necessary to determine the desorption efficiency for a particular lot of charcoal.

2.6 Recommended Air Volume and Sampling Rate.

2.6.1 The recommended air volume is 1.0 liter.

2.6.2 The recommended maximum sampling rate is 0.05 Lpm.

2.7 Interferences.

2.7.1 Ethylene glycol and Freon 12 at target concentration levels did not interfere with the collection of ethylene oxide.

2.7.2 Suspected interferences should be listed on the sample data sheets.

2.7.3 The relative humidity may affect the sampling procedure.

2.8 Safety Precautions.

2.8.1 Attach the sampling equipment to the employee so that it does not interfere with work performance.

2.8.2 Wear safety glasses when breaking the ends of the sampling tubes.

2.8.3 If possible, place the sampling tubes in a holder so the sharp end is not exposed while sampling.

3. Analytical Method.

3.1 Apparatus.

3.1.1 Gas chromatograph equipped with a linearized electron capture detector.

3.1.2 GC column capable of separating the derivative of ethylene oxide (2-bromoethanol) from any interferences and the 1% $CS_2$ in benzene solvent. The column used for validation studies was: 10 ft x ⅛ inch stainless steel 20% SP–2100, .1% Carbowax 1500 on 100/120 Supelcoport.

3.1.3 An electronic integrator or some other suitable method of measuring peak areas.

3.1.4 Two milliliter vials with Teflon-lined caps.

3.1.5 Gas tight syringe—500 μL or other convenient sizes for preparing standards.

3.1.6 Microliter syringes—10 μL or other convenient sizes for diluting standards and 1 μL for sample injections.

3.1.7 Pipets for dispensing the 1% $CS_2$ in benzene solvent. The Glenco 1 mL dispenser is adequate and convenient.

3.1.8 Volumetric flasks—5 mL and other convenient sizes for preparing standards.

3.1.9 Disposable Pasteur pipets.

3.2 Reagents.

3.2.1 Benzene, reagent grade.

3.2.2 Carbon Disulfide, reagent grade.

3.2.3 Ethylene oxide, 99.7% pure.

3.2.4 Hydrobromic Acid, 48% reagent grade.

3.2.5 Sodium Carbonate, anhydrous, reagent grade.

3.2.6 Desorbing reagent, 99% Benzene/1% $CS_2$.

3.3 Sample Preparation.

3.3.1 The front and back sections of each sample are transferred to separate 2-mL vials.

3.3.2 Each sample is desorbed with 1.0 mL of desorbing reagent.

3.3.3 The vials are sealed immediately and allowed to desorb for one hour with occasional shaking.

3.3.4 Desorbing reagent is drawn off the charcoal with a disposable pipet and put into clean 2-mL vials.

3.3.5 One drop of HBr is added to each vial. Vials are resealed and HBr is mixed well with the desorbing reagent.

3.3.6 About 0.15 gram of sodium carbonate is carefully added to each vial. Vials are again resealed and mixed well.

3.4 Standard Preparation.

3.4.1 Standards are prepared by injecting the pure ethylene oxide gas into the desorbing reagent.

3.4.2 A range of standards are prepared to make a calibration curve. A concentration of 1.0 μL of ethylene oxide gas per 1 mL desorbing reagent is equivalent to 1.0 ppm air concentration (all gas volumes at 25°C and 760 mm) for the recommended 1 liter air sample. This amount is uncorrected for desorption efficiency (See Backup Data Section 4.2. for desorption efficiency corrections).

3.4.3 One drop of HBr per mL of standard is added and mixed well.

3.4.4 About 0.15 grams of sodium carbonate is carefully added for each drop of HBr (A small reaction will occur).

3.5 Analysis.

3.5.1 GC Conditions.

Nitrogen flow rate—10mL/min.
Injector Temperature—250°C
Detector Temperature—300°C
Column Temperature—100°C
Injection size—0.8 μL
Elution time—3.9 minutes

3.5.2 Peak areas are measured by an integrator or other suitable means.

3.5.3 The integrator results are in area units and a calibration curve is set up with concentration vs. area units.

3.6 Interferences.

3.6.1 Any compound having the same retention time of 2-bromoethanol is a potential interference. Possible interferences should be listed on the sample data sheets.

3.6.2 GC parameters may be changed to circumvent interferences.

3.6.3 There are usually trace contaminants in benzene. These contaminants, however, posed no problem of interference.

3.6.4 Retention time data on a single column is not considered proof of chemical identity. Samples over the 1.0 ppm target level should be confirmed by GC/Mass Spec or other suitable means.

3.7 Calculations

3.7.1 The concentration in μg/mL for a sample is determined by comparing the area of a particular sample to the calibration curve, which has been prepared from analytical standards.

3.7.2 The amount of analyte in each sample is corrected for desorption efficiency by use of a desorption curve.

3.7.3 Analytical results (A) from the two tubes that compose a particular air sample are added together.

3.7.4 The concentration for a sample is calculated by the following equation:

$$\text{ETO, mg/ m}^3 = \frac{AXB}{C}$$

where:
A = μg/mL
B = desorption volume in milliliters
C = air volume in liters.

3.7.5 To convert $mg/m^3$ to parts per million (ppm) the following relationship is used:

$$\text{ETO, ppm} = \frac{\text{mg/ m}^3 \times 24.45}{44.05}$$

where:
$mg/m^3$ = results from 3.7.4
24.45 = molar volume at 25 °C and 760mm Hg
44.05 = molecular weight of ETO.

3.8 Safety Precautions

3.8.1 Ethylene oxide and benzene are potential carcinogens and care must be exercised when working with these compounds.

3.8.2 All work done with the solvents (preparation of standards, desorption of samples, etc.) should be done in a hood.

3.8.3 Avoid any skin contact with all of the solvents.

3.8.4 Wear safety glasses at all times.

3.8.5 Avoid skin contact with HBr because it is highly toxic and a strong irritant to eyes and skin.

4. Backup Data.

4.1 Detection Limit Data.

The detection limit was determined by injecting 0.8 μL of a 0.015 μg/mL standard of ethylene oxide into 1% $CS_2$ in benzene. The detection limit of the analytical procedure is taken to be $1.20 \times 10^{-5}$ μg per injection. This is equivalent to 8.3 ppb (0.015 $mg/m^3$) for the recommended air volume.

4.2 Desorption Efficiency.

Ethylene oxide was spiked onto charcoal tubes and the following recovery data was obtained.

| Amount spiked (μg) | Amount recovered (μg) | Percent recovery |
|---|---|---|
| 4.5 | 4.32 | 96.0 |
| 3.0 | 2.61 | 87.0 |
| 2.25 | 2.025 | 90.0 |
| 1.5 | 1.365 | 91.0 |
| 1.5 | 1.38 | 92.0 |
| .75 | .6525 | 87.0 |
| .375 | .315 | 84.0 |
| .375 | .312 | 83.2 |
| .1875 | .151 | 80.5 |
| .094 | .070 | 74.5 |

At lower amounts the recovery appears to be non-linear.

4.3 Sensitivity Data.

The following data was used to determine the calibration curve.

| Injection | 0.5×.75 μg/mL | 1×1.5 μg/mL | 2×3.0 μg/mL |
|---|---|---|---|
| 1 | 30904 | 59567 | 111778 |
| 2 | 30987 | 62914 | 106016 |
| 3 | 32555 | 58578 | 106122 |
| 4 | 32242 | 57173 | 109716 |
| X | 31672 | 59558 | 108408 |

Slope = 34.105.

4.4 Recovery.

The recovery was determined by spiking ethylene oxide onto lot 120 charcoal tubes and desorbing with 1% $CS_2$ in Benzene. Recoveries were done at 0.5, 1.0, and 2.0 X the target concentration (1 ppm) for the recommended air volume.

PERCENT RECOVERY

| Sample | 0.5x | 1.0x | 2.0x |
|---|---|---|---|
| 1 | 88.7 | 95.0 | 91.7 |
| 2 | 83.8 | 95.0 | 87.3 |
| 3 | 84.2 | 91.0 | 86.0 |
| 4 | 88.0 | 91.0 | 83.0 |
| 5 | 88.0 | 86.0 | 85.0 |
| X | 86.5 | 90.5 | 87.0 |

Weighted Average = 88.2.

4.5 Precision of the Analytical Procedure.

The following data was used to determine the precision of the analytical method:

| Concentration | 0.5x.75 µg/mL | 1X1.5 µg/mL | 2X3.0 µg/mL |
|---|---|---|---|
| Injection | .7421 | 1.4899 | 3.1184 |
| | .7441 | 1.5826 | 3.0447 |
| | .7831 | 1.4628 | 2.9149 |
| | .7753 | 1.4244 | 2.9185 |
| Average | .7612 | 1.4899 | 2.9991 |
| Standard Deviation | .0211 | .0674 | .0998 |
| CV | .0277 | .0452 | .0333 |

$$CV = \frac{3(.0277)^2 + 3(.0452)^2 + 3(.0333)^2}{3+3+3}$$

CV = 0.036

4.6 Storage Data.

Samples were generated at 1.5 mg/m³ ethylene oxide at 85% relative humidity, 22°C and 633 mm. All samples were taken for 20 minutes at 0.05 Lpm. Six samples were analyzed as soon as possible and fifteen samples were stored at refrigerated temperature (5°C) and fifteen samples were stored at ambient temperature (23°C). These stored samples were analyzed over a period of nineteen days.

PERCENT RECOVERY

| Day analyzed | Refrigerated | Ambient |
|---|---|---|
| 1 | 87.0 | 87.0 |
| 1 | 93.0 | 93.0 |
| 1 | 94.0 | 94.0 |
| 1 | 92.0 | 92.0 |
| 4 | 92.0 | 91.0 |
| 4 | 93.0 | 88.0 |
| 4 | 91.0 | 89.0 |
| 6 | 92.0 | |
| 6 | 92.0 | |
| 8 | | 92.0 |
| 8 | | 86.0 |
| 10 | 91.7 | |
| 10 | 95.5 | |
| 10 | 95.7 | |
| 11 | | 90.0 |
| 11 | | 82.0 |
| 13 | 78.0 | |
| 13 | 81.4 | |
| 13 | 82.4 | |
| 14 | | 78.5 |
| 14 | | 72.1 |
| 18 | 66.0 | |
| 18 | 68.0 | |
| 19 | | 64.0 |
| 19 | | 77.0 |

4.7 Breakthrough Data.

Breakthrough studies were done at 2 ppm (3.6 mg/m³) at approximately 85% relative humidity at 22°C (ambient temperature). Two charcoal tubes were used in series. The backup tube was changed every 10 minutes and analyzed for breakthrough. The flow rate was 0.050 Lpm.

| Tube No. | Time (minutes) | Percent breakthrough |
|---|---|---|
| 1 | 10 | (1) |
| 2 | 20 | (1) |
| 3 | 30 | (1) |
| 4 | 40 | 1.23 |
| 5 | 50 | 3.46 |
| 6 | 60 | 18.71 |
| 7 | 70 | 39.2 |
| 8 | 80 | 53.3 |
| 9 | 90 | 72.0 |
| 10 | 100 | 96.0 |
| 11 | 110 | 113.0 |
| 12 | 120 | 133.9 |

[1] None.

The 5% breakthrough volume was reached when 2.6 liters of test atmosphere were drawn through the charcoal tubes.

5. References.

5.1 "NIOSH Manual of Analytical Methods," 2nd ed. NIOSH: Cincinnati, 1977; Method S286.

5.2 "IARC Monographs on the Evaluation of Carcinogenic Risk of Chemicals to Man," International Agency for Research on Cancer: Lyon, 1976; Vol. II, p. 157.

5.3 Sax., N.I. "Dangerous Properties of Industrial Materials," 4th ed.; Van Nostrand Reinhold Company. New York, 1975; p. 741.

5.4 "The Condensed Chemical Dictionary", 9th ed.; Hawley, G.G., ed.; Van Nostrand Reinhold Company, New York, 1977; p. 361.

*Summary of Other Sampling Procedures*

OSHA believes that served other types of monitoring equipment and techniques exist for monitoring time-weighted averages. Considerable research and method development is currently being performed, which will lead to improvements and a wider variety of monitoring techniques. A combination of monitoring procedures can be used. There probably is no one best method for monitoring personal exposure to ethylene oxide in all cases. There are advantages, disadvantages, and limitations to each method. The method of choice will depend on the need and requirements. Some commonly used methods include the use of charcoal tubes, passive dosimeters, Tedler gas sampling bags, detector tubes, photoionization detection units, infrared detection units and gas chromatographs. A number of these methods are described below.

A. Charcoal Tube Sampling Procedures

*Qazi-Ketcham method* (Ex. 11–133)—This method consists of collecting EtO on Columbia JXC activated carbon, desorbing the EtO with carbon disulfide and analyzing by gas chromatography with flame ionization detection. Union Carbide has recently updated and revalidated this monitoring procedures. This method is capable of determining both eight-hour time-weighted average exposures and short-term exposures. The method was validated to 0.5 ppm. Like other charcoal collecting procedures, the method requires considerable analytical expertise.

*ASTM-proposed method*—The Ethylene Oxide Industry Council (EOIC) has contracted with Clayton Environmental Consultants, Inc. to conduct a collaborative study for the proposed method. The ASTM-Proposed method is similar to the method published by Qazi and Ketcham is the November 1977 American Industrial Hygiene Association Journal, and to the method of Pilney and Coyne, presented at the 1979 American Industrial Hygiene Conference. After the air to be sampled is drawn through an activated charcoal tube, the ethylene oxide is desorbed from the tube using carbon disulfide and is quantitated by gas chromatography utilizing a flame ionization detector. The ASTM-proposed method specifies a large two-section charcoal tube, shipment in dry ice, storage at less than −5°C, and analysis within three weeks to prevent migration and sample loss. Two types of charcoal tubes are being tested—Pittsburgh Coconut-Based (PCB) and Columbia JXC charcoal. This collaborative study will give an indication of the inter- and intralaboratory precision and accuracy of the ASTM-proposed method. Several laboratories have considerable expertise using the Qazi-Ketcham and Dow methods.

B. Passive Monitors—Ethylene oxide diffuses into the monitor and is collected in the sampling media. The DuPont Pro-Tek badge collects EtO in an absorbing solution, which is analyzed colorimetrically to determine the amount of EtO present. The 3M 350 badge collects the EtO on chemically treated charcoal. Other passive monitors are currently being developed and tested. Both 3M and DuPont have submitted data indicating their dosimeters meet the precision and accuracy requirements of the proposed ethylene oxide standard. Both presented laboratory validation data to 0.2 ppm (Exs. 11–65, 4–20, 108, 109, 130).

C. Tedlar Gas Sampling Bags-Samples are collected by drawing a known volume of air into a Tedlar gas sampling bag. The ethylene oxide concentration is often determined on-site using a portable gas chromatograph or portable infrared spectometer.

D. Detector tubes—A known volume of air is drawn through a detector tube using a small hand pump. The concentration of EtO is related to the length of stain developed in the tube. Detector tubes are economical, easy to use, and give an immediate readout. Unfortunately, partly because they are nonspecific, their accuracy is often questionable. Since the sample is taken over a short period of time, they may be useful for determining the source of leaks.

E. Direct Reading Instruments—There are numerous types of direct reading instruments, each having its own strengths and weaknesses (Exs. 135B, 135C, 107, 11–78, 11–153). Many are relatively new, offering greater sensitivity and specificity. Popular ethylene oxide direct reading instruments include infrared detection units, photoionization detection units, and gas chromatographs.

Portable infrared analyzers provide an immediate, continuous indication of a concentration value; making them particularly useful for locating high concentration pockets, in leak detection and in ambient air monitoring. In infrared detection units, the amount of infrared light absorbed by the gas being analyzed at selected infrared wavelengths is related to the concentration of a particular component. Various models have either fixed or variable infrared filters, differing cell pathlengths, and microcomputer controls for greater sensitivity, automation, and interference elimination.

A fairly recent detection system is photoionization detection. The molecules are ionized by high energy ultraviolet light. The resulting current is measured. Since different substances have different ionization potentials, other organic compounds may be ionized. The lower the lamp energy, the better the selectivity. As a continuous monitor, photoionization detection can be useful for locating high concentration pockets, in leak detection, and continuous ambient air monitoring. Both portable and stationary gas chromatographs are available with various types of detectors, including photoionization detectors. A gas chromatograph with a photoionization detector retains the photionization sensitivity, but minimizes or eliminates interferences. For several GC/PID units, the sensitivity is in the 0.1–0.2 ppm EtO range. The GC/PID with microprocessors can sample up to 20 sample points sequentially, calculate and record data, and activate alarms or ventilation systems. Many are quite flexible and can be configured to meet the specific analysis needs for the workplace.

DuPont presented their laboratory validation data of the accuracy of the Qazi-Ketcham charcoal tube, the PCB charcoal tube, Miran 103 IR analyzer, 3M #3550 monitor and the Du Pont C–70 badge. Quoting Elbert V. Kring:

> We also beleive that OSHA's proposed accuracy in this standard is appropriate. At plus or minus 25 percent at one part per million, and plus or minus 35 percent below that. And, our data indicates there's only one monitoring method, right now, that we've tested thoroughly, that meets that accuracy requirements. That is the Du Pont Pro-Tek badge* * *. We also believe that this kind of data should be confirmed by another independent laboratory, using the same type dynamic chamber testing (Tr. 1470)

Additional data by an independent laboratory following their exact protocol was not submitted. However, information was submitted on comparisons and precision and accuracy of those monitoring procedures which indicate far better precision and accuracy of those monitoring procedures than that obtained by Du Pont (Ex. 4–20, 130, 11–68, 11–133, 130, 135A).

The accuracy of any method depends to a large degree upon the skills and experience of those who not only collect the samples but also those who analyze the samples. Even for methods that are collaboratively tested, some laboratories are closer to the true values than others. Some laboratories may meet the precision and accuracy requirements of the method; others may consistently far exceed them for the same method.

[FR Doc. 84–16511 Filed 6–18–84; 12:02 pm]
BILLING CODE 4510–26–M

federal register

Friday
June 22, 1984

Part III

# Department of Labor

**Employment Standards Administration, Wage and Hour Division**

**Minimum Wages for Federal and Federally-Assisted Construction; General Wage Determination Decisions; Notice**

## DEPARTMENT OF LABOR

### Employment Standards Administration, Wage and Hour Division

### Minimum Wages for Federal and Federally Assisted Construction; General Wage Determination Decisions

General wage determination decisions of the Secretary of Labor specify, in accordance with applicable law and on the basis of information available to the Department of Labor from its study of local wage conditions and from other sources, the basic hourly wage rates and fringe benefit payments which are determined to be prevailing for the described classes of laborers and mechanics employed on construction projects of the character and in the localities specified therein.

The determinations in these decisions of such prevailing rates and fringe benefits have been made by authority of the Secretary of Labor pursuant to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Stat. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in 29 CFR 1.1 (including the statutes listed at 36 FR 306 following Secretary of Labor's Order No. 24–70) containing provisions for the payment of wages which are dependent upon determination by the Secretary of Labor under the Davis-Bacon Act; and pursuant to the provisions of part 1 of subtitle A of title 29 of Code of Federal Regulations, Procedure for Predetermination of Wage Rates (37 FR 21138) and of Secretary of Labor's Orders 12–71 and 15–71 (36 FR 8755, 8756). The prevailing rates and fringe benefits determined in these decisions shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described therein.

Good cause is hereby found for not utilizing notice and public procedure thereon prior to the issuance of these determinations as prescribed in 5 U.S.C. 553 and not providing for delay in effective date as prescribed in that section, because the necessity to issue construction industry wage determination frequently and in large volume causes procedures to be impractical and contrary to the public interest.

General wage determination decisions are effective from their date of publication in the **Federal Register** without limitation as to time and are to be used in accordance with the provisions of 29 CFR Parts 1 and 5. Accordingly, the applicable decision together with any modifications issued subsequent to its publication date shall be made a part of every contract for performance of the described work within the geographic area indicated as required by an applicable Federal prevailing wage law and 29 CFR, Part 5. The wage rates contained therein shall be the minimum paid under such contract by contractors and subcontractors on the work.

#### Modifications and Supersedeas Decisions to General Wage Determination Decisions

Modifications and supersedeas decisions to general wage determination decisions are based upon information obtained concerning changes in prevailing hourly wage rates and fringe benefit payments since the decisions were issued.

The determinations of prevailing rates and fringe benefits made in the modifications and supersedeas decisions have been made by authority of the Secretary of Labor pursuant to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Stat. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in 29 CFR 1.1 (including the statutes listed at 36 FR 306 following Secretary of Labor's Order No. 24–70) containing provisions for the payment of wages which are dependent upon determination by the Secretary of Labor under the Davis-Bacon Act; and pursuant to the provisions of part 1 of subtitle A of title 29 of Code of Federal Regulations, Procedure for Predetermination of Wage Rates (37 FR 21138) and of Secretary of Labor's orders 13–71 and 15–71 (36 FR 8755, 8756). The prevailing rates and fringe benefits determined in foregoing general wage determination decisions, as hereby modified, and/or superseded shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged in contract work of the character and in the localities described therein.

Modifications and supersedeas decisions are effective from their date of publication in the **Federal Register** without limitation as to time and are to be used in accordance with the provisions of 29 CFR Parts 1 and 5.

Any person, organization, or governmental agency having an interest in the wages determined as prevailing is encouraged to submit wage rate information for consideration by the Department. Further information and self-explanatory forms for the purpose of submitting this data may be obtained by writing to the U.S. Department of Labor, Employment Standards Administration, Wage and Hour Division, Office of Government Contract Wage Standards, Division of Government Contract Wage Determinations, Washington, D.C. 20210. The cause for not utilizing the rulemaking procedures prescribed in 5 U.S.C. 553 has been set forth in the original General Determination Decision.

#### New General Wage Determination Decisions

The numbers of the decisions being modified and their dates of publication in the **Federal Register** are listed with each State.

| | |
|---|---|
| Arkansas: AR84–4092 | Jan. 13, 1984. |
| California: CA84–5007 | May 18, 1984. |
| Iowa: IA84–4043 | June 15, 1984. |
| Kansas: KS83–4065 | Sept. 2, 1983. |
| Massachusetts: | |
| MA84–3007 | Apr. 6, 1984. |
| MA84–3008 | Mar. 30, 1984. |
| MA84–3010 | Apr. 6, 1984. |
| Maryland: MD84–3047 | Aug. 29, 1980. |
| Mississippi: | |
| MS83–1014 | Mar. 3, 1983. |
| MS84–1015 | Apr. 1, 1983. |
| Montana: MT83–5101 | Feb. 18, 1983. |
| New York: | |
| NY84–3030 | May 1, 1983. |
| NY81–3039 | Apr 4, 1981. |
| Oklahoma: | |
| OK84–4033 | May 18, 1984. |
| OK84–4034 | Do. |
| Pennsylvania: PA84–3000 | Jan. 13, 1984. |
| Texas: | |
| TX82–4045 | Sept. 24, 1982. |
| TX84–4015 | Mar. 16, 1984. |
| TX84–4020 | Apr. 13, 1984. |
| Virginia: | |
| VA82–3034 | Dec. 3, 1982. |
| VA82–3035 | Do. |

#### Supersedeas Decisions to General Wage Determination Decisions

The numbers of the decisions being superseded and their dates of publication in the **Federal Register** are listed with each State. Supersedeas decision numbers are in parentheses following the number of the decisions being superseded.

| | |
|---|---|
| Alabama: | |
| AL82–1023 (AL84–1016) | Apr. 2, 1982. |
| AL82–1022 (AL84–1015) | Do. |
| Florida: FL82–1015 (FL84–1020) | Mar. 5 1982. |
| Kentucky: KY81–1274 (KY84–1017) | July 31, 1981. |
| Mississippi: MS81–1261 (MS84–1014) | July 6, 1981. |
| Oregon: OR83–5100 (OR84–5020) | Feb. 18, 1983. |
| South Carolina: SC83–1089 (SC84–1018) | Nov. 25, 1983. |
| Wisconsin: WI83–2012 (WI84–5016) | Feb. 18, 1983. |

Signed at Washington, D.C. this 15th day of June 1984.

**James L. Valin,**

*Assistant Administrator.*

BILLING CODE 4510–27–M

| DECISION #AR84-4092-MOD.#3 (49 FR 1846-Jan. 13, 1984) | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| Sebastian, Crawford, and Washington Cos., Arkansas | | |
| CHANGE: | | |
| Sebastian & Crawford Cos., Arkansas | | |
| Bricklayers, Stonemasons | $12.50 | $ .70 |
| Marble Masons, Tile Layers and Terrazzo Workers | 12.50 | .70 |
| Asbestos Workers | 17.76 | 2.33 |

| DECISION #KS83-4065-MOD.#5 (48 FR 40089-Sept. 2, 1983) | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| Leavenworth County, Kansas | | |
| CHANGE: | | |
| Sheet Metal Workers | $16.75 | $2.78 |
| Soft Floor Layers | 12.44 | 1% + 3.34 |

| DECISION NO. IA84-4043 - MOD. #1 (49 FR - 6/15/84) | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| Black Hawk, Cerro Gordo, Clinton, Des Moines, Dubuque, Johnson, Linn & Polk Cos., Iowa | | |
| CHANGE: | | |
| Carpenters: | | |
| All other construction: | | |
| Zone 4: | | |
| Carpenters | $14.00 | 1.08 |
| Millwrights & pile-drivermen | 14.70 | 1.08 |

| DECISION #OK84-4033-MOD.#2 (49 FR 21257-May 18, 1984) | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| Adair, Atoka, Bryan, Coal, Cherokee, Craig, Creek, Delaware, Haskell, Hughes, Leflore, Latimer, McIntosh, Mayes, Muskogee, Nowata, Okfuskee, Okmulgee, Osage, Ottawa, Pawnee, Pittsburg, Pushmataha, Rogers, Tulsa, Sequoyah, Wagoner, and Washington Cos., Oklahoma | | |
| CHANGE: | | |
| Tile Layers, Terrazzo Workers, and Marble Masons | $15.09 | $3.10 |
| Asbestos Workers: | | |
| Area 2 | 17.76 | 2.33 |
| Electricians: | | |
| Area 2 | 14.90 | 3.5% + 2.20 |
| Cable Splicers: | | |
| Area 2 | 15.15 | 3.5% + 2.20 |
| Ironworkers: | | |
| Area 2 | 14.60 | 2.67 |
| Cement Masons: | | |
| Area 2 | 13.83 | .85 |
| Power Tool Operators: | | |
| Area 2 | 14.08 | .85 |



DECISION NO. CA84-5007 - Mod. #3
(49 FR 21245 - May 18, 1984)
Imperial, Inyo, Kern, etc.,... Counties, California

Add:
Truck Drivers:
Group 6: Dump, or less than 16 yds.
Group 7: Transit-mix, under 3 yds.; Dumpcrete, less than 6½ yds.
Group 8: Truck repairman helper
Group 9: Water truck, 3 or more axles
Group 10: PB and similar type truck when performing within the Teamsters' jurisdiction; Pipeline and utility working truck including winch, but limited to truck applicable to pipeline and utility work, where a composite crew is used; Slurry driver; Truck greaser and tireman (50¢ per hour addition for tireman)
Group 11: Transit-mix, 3 yds. or more; Dumpcrete, 6½ yds. and over
Group 12-A: Driver or vehicle or combination of vehicles of 4 or more axles
Group 12-B: Driver of oil spreader truck
Group 13: Dump, 16 yds. but less than 25 yds.
Group 14: A-frame or Swedish crane, or similar type of equipment driver; Fork lift driver; Ross carrier, highway
Group 15: All off-highway equipment within Teamsters' jurisdiction (off-highway combination of vehicles or equipment with multiple power source, $1.00 per hour additional); Dump, 25 yds. or more; Truck repairman
Group 16: Truck repairman welder
Group 17: Low bed driver, 9 axle or over
Group 18: Water pull, single engine with attachments
Group 19: Water pull, twin engine with attachments

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR, 5.5 (a) (1) (ii)).

MODIFICATIONS P. 3

| DECISION NO. MA84-3007 - MOD. #1 (49 FR 13804 - April 6, 1984) Berkshire, Franklin, Hampden, and Hampshire Counties, Massachusetts | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| CHANGE: | | |
| BRICKLAYERS; CEMENT MASONS; PLASTERERS; STONE MASONS; MARBLE, TILE & TERRAZZO WORKERS; POINTERS; CLEANERS; CAULKERS: | | |
| Area 1 | 14.25 | 4.34 |
| Area 2 | 18.38 | |
| Area 3 | 15.23 | 2.92 |
| CARPENTERS; SOFT FLOOR LAYERS; DRYWALL CARPENTERS; | | |
| Area 1 | 15.40 | 3.07 |
| Area 2 | 15.86 | 4.07 |
| Area 3 | 15.40 | 3.02 |
| Area 4 | 15.23 | 2.97 |
| ELECTRICIANS: | | |
| Area 2 | | |
| Electrical Contracts $125,000 and over | 15.41 | 3.92+ 3% |
| Electrical Contracts under $125,000 | 13.41 | 3.92+ 3% |
| Area 3 | 16.33 | 3.78+3% |
| LABORERS (BUILDING) | | |
| Group 1 | 12.90 | 2.80 |
| Group 2 | 13.15 | 2.80 |
| Group 3 | 13.65 | 2.80 |
| Group 4 | 13.65 | 2.80 |
| Group 5 | 13.90 | 2.80 |
| HEAVY & HIGHWAY | | |
| Area 1: | | |
| Class I | 12.90 | 2.80 |
| Class II | 13.15 | 2.80 |
| Class III | 13.65 | 2.80 |
| Class IV | 13.90 | 2.80 |
| Area 2: | | |
| Class I | 13.75 | 2.80 |
| Class II | 14.00 | 2.80 |
| Class III | 14.50 | 2.80 |
| Class IV | 14.75 | 2.80 |
| MILLWRIGHTS | 17.10 | 4.85 |
| PILEDRIVERMEN | 17.40 | 3.20 |

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| POWER EQUIPMENT OPERATORS | | |
| BUILDING CONSTRUCTION | | |
| Class I | 15.83 | 2.40+d |
| Class II | 15.63 | 2.40+d |
| Class III | 15.43 | 2.40+d |
| Class IIIA | 15.06 | 2.40+d |
| Class IV | 13.53 | 2.40+d |
| Class V | 12.83 | 2.40+d |
| Class VI | 11.68 | 2.40+d |
| Class VII | 16.58 | 2.40+d |
| Class VIII | 12.85 | 2.40+d |
| Class IX | 16.41 | 2.40+d |
| Class X | 16.33 | 2.40+d |
| Class XI | 16.83 | 2.40+d |
| POWER EQUIPMENT OPERATORS | | |
| HEAVY AND HIGHWAY CONSTRUCTION: | | |
| Class I | 15.98 | 2.40+e |
| Class II | 15.78 | 2.40+e |
| Class III | 15.58 | 2.40+e |
| Class IIIA | 15.21 | 2.40+e |
| Class IV | 13.68 | 2.40+e |
| Class V | 12.98 | 2.40+e |
| Class VI | 11.83 | 2.40+e |
| Class VII | 16.73 | 2.40+e |
| Class VIII | 13.05 | 2.40+e |
| Class IX | 16.56 | 2.40+e |
| Class X | 16.48 | 2.40+e |
| Class XI | 16.98 | 2.40+e |

MODIFICATIONS P. 4

| DECISION NO. MA84-3008 - MOD. #1 (49 FR 12889 - March 30, 1984) Worcester County, Massachusetts | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| CHANGE: | | |
| BRICKLAYERS; CEMENT MASONS; PLASTERERS; and STONE-MASONS: | | |
| Area 1 | 14.25 | 4.34 |
| CARPENTERS, LATHERS; SOFT FLOOR LAYERS: | | |
| Area 1 | 15.40 | 3.07 |
| Area 2 | 15.86 | 4.07 |
| ELECTRICIANS: | | |
| Area 1 | 16.33 | 3.78+ 3% |
| LABORERS: | | |
| BUILDING CONSTRUCTION: | | |
| Group 1 | 13.75 | 2.80 |
| Group 2 | 14.00 | 2.80 |
| Group 3 | 14.25 | 2.80 |
| Group 4 | 14.50 | 2.80 |
| Group 5 | 15.00 | 2.80 |
| HEAVY & HIGHWAY CONSTRUCTION | | |
| Group 1 | 13.75 | 2.80 |
| Group 2 | 14.00 | 2.80 |
| Group 3 | 14.50 | 2.80 |
| Group 4 | 14.75 | 2.80 |
| Tunnels, Caisson and Cylinder Work in Compressed Air: | | |
| Group 5-A | 19.43 | 2.80 |
| Group 5-B | 20.93 | 2.80 |
| Group 5-C | 21.10 | 2.80 |
| Group 5-D | 21.17 | 2.80 |
| Group 5-E | 21.67 | 2.80 |
| Free Air Operation: Shield driven and Liner Plate in Free Air; | | |
| Group 6-A | 15.05 | 2.80 |
| Group 6-B | 14.20 | 2.80 |
| Cleaning Concrete and Caulking Tunnel (both new and existing); | | |
| Group 6-C | 14.20 | 2.80 |
| Group 6-D | 14.525 | 2.80 |
| Rock shaft, Concrete Lining of same and Tunnel in Free Air: | | |
| Group 6-E | 13.95 | 2.80 |
| Group 6-F | 14.10 | 2.80 |
| Group 6-G | 14.20 | 2.80 |
| Group 6-H | 15.05 | 2.80 |

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| OPEN AIR CAISSON UNDERPINNING and TEST BORING INDUSTRIES | | |
| Open Air Caisson, Underpinning and Test Boring Crew: | | |
| Group 1-A | 13.75 | 2.80 |
| Group 1-B | 14.50 | 2.80 |
| Test Boring: | | |
| Group 2-A | 13.75 | 2.80 |
| Group 2-B | 14.62 | 2.80 |
| MARBLE, TILE & TERRAZZO WORKERS | | |
| Area 1 | 17.15 | 3.45 |
| MILLWRIGHTS | 17.10 | 4.85 |
| PILEDRIVERMEN | 17.40 | 3.20 |
| PLUMBERS | | |
| Area 3 | 17.63 | 3.55 |
| ROOFERS | 17.26 | 4.75 |
| POWER EQUIPMENT OPERATORS: | | |
| Area 1: | | |
| BUILDING CONSTRUCTION: | | |
| Group 1 | 15.83 | 2.40+e |
| Group 2 | 15.63 | 2.40+e |
| Group 3 | 15.43 | 2.40+e |
| Group 3-A | 15.06 | 2.40+e |
| Group 4 | 13.53 | 2.40+e |
| Group 5 | 12.83 | 2.40+e |
| Group 6 | 11.68 | 2.40+e |
| Group 7 | 16.58 | 2.40+e |
| Group 8 | 12.85 | 2.40+e |
| Group 9 | 16.41 | 2.40+e |
| Group 10 | 16.33 | 2.40+e |
| Group 11 | 16.83 | 2.40+e |
| HEAVY & HIGHWAY CONSTRUCTION: | | |
| Group 1 | 15.98 | 2.40+e |
| Group 2 | 15.78 | 2.40+e |
| Group 3 | 15.58 | 2.40+e |
| Group 3-A | 15.21 | 2.40+e |
| Group 4 | 13.68 | 2.40+e |
| Group 5 | 12.98 | 2.40+e |
| Group 6 | 11.83 | 2.40+e |
| Group 7 | 16.73 | 2.40+e |
| Group 8 | 13.005 | 2.40+e |
| Group 9 | 16.56 | 2.40+e |
| Group 10 | 16.48 | 2.40+e |
| Group 11 | 16.98 | 2.40+e |
| Area 2: | | |
| BUILDING, HEAVY, HIGHWAY and MARINE CONSTRUCTION | | |
| Group 1: | 18.41 | 3.68+e |
| Hourly Premium for boom lengths including jib: | | |
| Over 150 ft.: + 0.64 | | |
| Over 185 ft.: + 1.14 | | |

| DECISION NO. MA84-3008 | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| POWER EQUIPMENT OPERATORS | | |
| BUILDING, HEAVY, HIGHWAY and MARINE CONSTRUCTION: (CONT'D) | | |
| Over 210 ft.: + 1.59 | | |
| Over 250 ft.: + 2.41 | | |
| Over 295 ft.: + 3.35 | | |
| Group 2 | 18.29 | 3.68+f |
| Group 3 | 15.35 | 3.68+f |
| Group 4 | 16.75 | 3.68+f |
| Group 5 | 13.58 | 3.68+f |
| Group 6 | 14.43 | 3.68+f |



| DECISION NO. MA84-3010 - MOD. #1 (49 FR 13809 - April 6, 1984) Essex, Suffolk, Middlesex, Norfolk, Bristol, Plymouth, Barnstable, Dukes, Nantucket Counties Massachussetts | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| CHANGE: | | |
| CARPENTERS | | |
| Area 1 | 15.38 | 4.07 |
| Area 2 | 15.86 | 3.85 |
| Area 3 | 15.86 | 4.07 |
| Area 5 | 15.73 | 2.97 |
| Area 5-A | 15.43 | 3.27 |
| CEMENT MASONS | | |
| Area 2 | 17.85 | 3.53 |
| ELECTRICIANS: | | |
| Area 10 | 16.05 | 28%+10 |
| LABORERS (BUILDING): | | |
| Class I | 13.75 | 2.80 |
| Class II | 14.00 | 2.80 |
| Class III | 14.25 | 2.80 |
| Class IV | 14.50 | 2.80 |
| Class V | 15.00 | 2.80 |
| LABORERS (HEAVY & HIGHWAY): | | |
| Class I | 13.75 | 2.80 |
| Class II | 14.00 | 2.80 |
| Class III | 14.50 | 2.80 |
| Class IV | 14.75 | 2.80 |
| Tunnels, caisson and Cylinder Work in Compressed Air: | | |
| Class V-A | 19.43 | 2.80 |
| Class V-B | 20.93 | 2.80 |
| Class V-C | 21.10 | 2.80 |
| Class V-D | 21.17 | 2.80 |
| Class V-E | 21.67 | 2.80 |
| Free Air Operation: | | |
| Shield driven and liner plate in free air: | | |
| Class VI-A | 15.05 | 2.80 |
| Class VI-B | 14.20 | 2.80 |
| Cleaning concrete and caulking tunnel (both new and existing); | | |
| Class VI-C | 14.20 | 2.80 |
| Class VI-D | 14.525 | 2.80 |
| Rock shaft, concrete lining of same and tunnel in free air: | | |
| Class VI-E | 13.95 | 2.80 |
| Class VI-F | 14.10 | 2.80 |
| Class VI-G | 14.20 | 2.80 |
| Class VI-H | 15.05 | 2.80 |
| Laborers (Open Air Caissons, Underpinning & Test Boring Industries): | | |
| Open Air Caisson, Underpinning Work and Boring Crew: | | |
| Class I-A | 13.75 | 2.80 |
| Class I-B | 14.50 | 2.80 |
| Test Boring: | | |
| Class II-A | 13.75 | 2.80 |
| Class II-B | 14.62 | 2.80 |
| MARBLE, TILE & TERRAZZO WORKERS | 17.15 | 3.45 |
| MILLWRIGHTS | 17.10 | 4.85 |
| PAINTERS: | | |
| Area 1: | | |
| New Construction: | | |
| Brush; Taper | 17.45 | 4.77 |
| Spray; Sandblast | 18.45 | 4.77 |
| Steel | 20.50 | 4.77 |
| Repaint: | | |
| Brush; Taper | 15.72 | 4.77 |
| Spray; Sandblast | 16.72 | 4.77 |
| Steel | 20.50 | 4.77 |
| Area 2: | | |
| Brush; Taper; Paperhanging | 17.31 | 4.28 |
| Sandblasting; swing stage | 18.31 | 4.28 |
| Spray; Steel | 18.81 | 4.28 |
| Repaint up to 3 stories (including basements and sub-basements) and new housing 2 stories and less: | | |
| Brush; Taper; Paperhanging | 14.71 | 4.28 |
| Sandblasting; Swing stage | 15.56 | 4.28 |
| Spray; Sandblast; Steel | 15.99 | 4.28 |
| Area 5: | | |
| Brush; Roller | 14.13 | 3.33 |
| Taping | 14.23 | 3.33 |
| Paperhangers; Vinyl installers | 14.63 | 3.33 |
| Spray | 15.63 | 3.33 |
| Sandblast; chipping; hammer; power brush | 15.88 | 3.33 |

MODIFICATIONS P. 7

| DECISION NO. MA84-3010 | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| LABORERS (CONT'D) | | |
| Steel | 17.38 | 3.33 |
| Steel spray | 18.88 | 3.33 |
| Steel: sandblast; chipping; hammers; power tools | 19.38 | 3.33 |
| Interior repaint (except power plants): | | |
| Brush; Roller | 12.72 | 3.33 |
| Sprayers | 14.07 | 3.33 |
| Sandblasters; chipping hammers; power tools | 14.27 | 3.33 |
| PILEDRIVERMEN | 17.40 | 3.20 |
| PLASTERERS TENDERS Area 1 | 14.00 | 2.90 |
| PIPEFITTERS Area 7 | 18.95 | 4.50 |
| PLUMBERS & PIPEFITTERS | 19.03 | 2.97 |
| POWER EQUIPMENT OPERATORS (BUILDING, HEAVY & HIGHWAY, & MARINE CONSTRUCTION) | | |
| Class I | 18.41 | 3.68+e |
| Hourly premium for boom lengths including jib: | | |
| Over 150 ft. + .64 | | |
| Over 185 ft. + 1.14 | | |
| Over 210 ft. + 1.59 | | |
| Over 250 ft. + 2.41 | | |
| Over 295 ft. + 3.35 | | |
| Class II | 18.29 | 3.68+e |
| Class III | 15.35 | 3.68+e |
| Class IV | 16.75 | 3.68+e |
| Class V | 13.58 | 3.68+e |
| Class VI | 14.43 | 3.68+e |
| ROOFERS: | | |
| Area 1: | | |
| Roofers | 17.26 | 4.75 |
| Slaters | 17.51 | 4.75 |
| Hot pitch | 18.26 | 4.75 |
| SPRINKLER FITTERS Area 2 | 16.37 | 3.23 |
| ADD: | | |
| ELECTRICIANS: | | |
| Area | | |
| Residential (Single-Family Housing) | 12.00 | 3%+ 2.50 |

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| | | |

MODIFICATIONS P. 8

| DECISION No. MS83-1015 Mod # 4 (48 FR 14312 - April 1, 1983) Hinds County, Mississippi | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| CHANGE: | | |
| ASBESTOS WORKERS | $14.19 | 1.80 |
| BOILERMAKERS | 16.20 | 3.375 |
| ELECTRICIANS: | | |
| Electricians | 12.00 | 3% + 1.39 |
| Cable Splicers | 12.25 | 3% + 1.39 |
| SHEET METAL WORKERS: | | |
| Light Commercial*(See definition below) | 9.43 | 3% + 1.32 |
| All other bldg construction | 13.54 | 3% + 1.32 |

DEFINITION:
SHEET METAL WORKERS:
LIGHT COMMERCIAL :
Defined as any commercial building single or two story with a total of 10,000 sq. ft. or less. Work under this category is as follows:
1) Any heating, air conditioning, or ventilation systems
2) All work on service stations, convenience stores, & nursing homes
3) Erection of solar panels
4) Erection of any kitchen equip. or hoods on new construction only
5) Any metal roof decking or metal singles not to exceed 100 squares on bldgs not exceeding 10,000 sq. ft.
6) Any metal ceilings on bldgs of less than 10,000 sq. ft.

| DECISION No. MS83-1014 Mod # 2 (48 FR 12646 - March 3, 1983) Warren County, Mississippi | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| CHANGE: | | |
| ASBESTOS WORKERS | $14.19 | 1.80 |
| BOILERMAKERS | 16.20 | 3.375 |
| ELECTRICIANS: | | |
| Electricians | 12.00 | 3% + 1.39 |
| Cable Splicers | 12.25 | 3% + 1.39 |
| SHEET METAL WORKERS: | | |
| Light Commercial *(See definition below) | 9.43 | 3% + 1.32 |
| All other building construction | 13.54 | 3% + 1.32 |

DEFINITION:
SHEET METAL WORKERS:
LIGHT COMMERCIAL :
Defined as any commercial building single or two story with a total of 10,000 sq. ft. or less. Work under this category is as follows:
1) Any heating, air conditioning, or ventilation systems
2) All work on service stations, convenience stores, & nursing homes
3) Erection of solar panels
4) Erection of any kitchen equip. or hoods on new construction only
5) Any metal roof decking or metal singles not to exceed 100 squares on bldgs not exceeding 10,000 sq. ft.
6) Any metal ceilings on bldgs of less than 10,000 sq. ft.

DECISION NO. MD80-3047-MOD. #16
(45 FR 57922-August 29, 1980)
ALLEGANY & GARRETT CTYS, MD

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| DELETE: | | |
| TRUCK DRIVERS | | |
| GROUP 1-Flagmen | | |

Decision No. MT83-5101 - Mod. #6
(48 FR 7370 - February 18, 1983)
Statewide, Montana

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| Change: | | |
| Modification No. 4 published in Vol. 49 page 3565, January 27, 1984, to read modification No. 5 | | |
| Laborers: | | |
| In modification No. 4 to read Laborers, Area 8 only. | | |

DECISION NO. NY84-3030 - MOD. #14
(46 FR 24850 - May 1, 1981)
Cattaraugus, Chautauqua; Erie Counties, New York

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| CHANGE: | | |
| BOILERMAKERS | 18.75 | 4.54 |

DECISION NO. NY81-3039 - MOD. #10
(45 FR 23265 - April 4, 1981)
Monroe County, New York

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| CHANGE: | | |
| CARPENTERS & PILEDRIVERMEN (Heavy & Highway) | | |
| Piledrivermen | 12.74 | 4.405 +a |

DECISION NO. TX82-4045 - MOD. #3
(47 FR 42257 - 9/24/82)
Taylor County, Texas

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| CHANGE: | | |
| Carpenters | $12.39 | 2.13 |

DECISION NO. TX84-4015 - MOD. #2
(49 FR 10008 - 3/16/84)
Wichita County, Texas

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| CHANGE: | | |
| Carpenters: | | |
| Carpenters | 13.45 | 2.28 |
| Millwrights | 13.95 | 2.28 |

DECISION NO. TX84-4020 - MOD. #4
(49 FR 14839 - 4/13/84)
Galveston & Harris Cos., Texas

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| CHANGE: | | |
| Cement masons: | | |
| Galveston County | 13.47 | 2.05 |



DECISION #OK84-4034-MOD.#2
(49 FR 21257-May 18, 1984)

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| Alfalfa, Beckham, Blaine, Caddo, Canadian, Carter, Cleveland, Comanche, Cotton, Custer, Dewey, Ellis, Garfield, Garvin, Grady, Grant, Greer, Harmon, Harper, Jackson, Jefferson, Johnston, Kay, Kingfisher, Kiowa, Lincoln, Logan, Love, McClain, Major, Marshall, Murray, Noble, Oklahoma, Payne, Pontotoc, Roger Mills, Pottawatomie, Seminole, Stephens, Tillman, Washita, Woods, and Woodward Cos., Oklahoma | | |
| CHANGE: | | |
| Asbestos Workers | $17.76 | $2.33 |
| Electricians: | | |
| Area 2 | 14.90 | 3.5% + 2.20 |
| Cable Splicers: | | |
| Area 2 | 15.15 | 3.5% + 2.20 |
| Ironworkers: | | |
| Area 1 | 14.60 | 2.67 |
| Cement Masons: Area 3 | | |
| Cement Masons | 13.83 | .85 |
| Power Tool Operator | 14.08 | .85 |

DECISION NO. PA84-3000
MOD. NO. 4
(49 FR 1851 - January 13, 1984)
Allegheny, Armstrong, Beaver, Bedford, Blair, Butler, Cambria, Cameron, Centre, Clarion, Clearfield, Clinton, Crawford, Elk, Erie, Fayette, Forest, Franklin, Fulton, Greene, Huntingdon, Indiana, Jefferson, Mercer, Lawrence, McKean, Mifflin, Potter, Somerset, Venango, Warren, Washington, & Westmoreland Counties, Pennsylvania

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| CHANGE: | | |
| IRONWORKERS: | | |
| Reinforcing | | |
| Zone 1 | | |
| To read (Highway and bridge only) | $11.31 | 3.19 |
| Zone 3 | 16.37 | 6.50 |
| ADD: | | |
| IRONWORKERS: | | |
| Zone 4 | | |
| Structural, Ornamental & Reinforcing | 14.59 | 5.38 |
| AREA COVERED BY IRONWORKERS | | |
| Zone - 4 - Clearfield, Blair, Cameron, Centre, Elk, Jefferson, McKean, Clinton & Potter | | |

| DECISION NO. VA82-3034-MOD. #5 | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| (47 FR 54746-December 3, 1982) | | |
| The Cities of CHESAPEAKE, PORTSMOUTH, & VIRGINIA BEACH | | |
| CHANGE: | | |
| IRONWORKERS: | | |
| Reinforcing, Ornamental, Structural, Riggers, Fence Erectors, Machinery Mover | $11.25 | 2.40 |
| ELEVATOR CONSTRUCTORS | 11.74 | 3.00+ a+b |
| ELEVATOR CONSTRUCTORS HELPERS | 8.22 | 3.00+ a+b |
| ELEVATOR CONSTRUCTORS HELPERS PROBATIONARY | 5.87 | |

| DECISION NO. VA82-3035-MOD. #6 | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| (47 FR 54747-December 3, 1982) | | |
| YORK COUNTY, & THE CITIES OF HAMPTON & NEWPORT NEWS (INCLUDING LANGLEY AFB, FORT EUSTIS & FORT MONROE) | | |
| CHANGE: | | |
| ELEVATOR CONSTRUCTORS | 11.74 | 3.00+ a+b |
| ELEVATOR CONSTRUCTORS HELPERS | 8.22 | 3.00+ a+b |
| VA82-3035 (Con't) ELEVATOR CONSTRUCTORS HELPERS PROBATIONARY | 5.87 | |

PAID HOLIDAYS:

A-New Year's Day; B-Memorial Day; C-Independence Day; D-Labor Day; E-Thanksgiving; F-Christmas Day.

FOOTNOTES:

a. Holidays: A through F, Day after Thanksgiving.

b. Employer contributes 8% of basic hourly rate for 5 years or more of service or 6% basic hourly rate for 6 months to 5 years of service as vacatoin pay credit.

NEW DECISION

STATE: ALABAMA

COUNTIES: CHAMBERS, CLAY, LEE, MACON, RANDOLPH, RUSSELL & TALLAPOOSA

DECISION NUMBER: AL84-1019

DATE: Date of Publication

DESCRIPTION OF WORK: RESIDENTIAL CONSTRUCTION PROJECTS consisting of single family homes and apartments up to and including four (4) stories.

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| AIR CONDITIONING MECHANICS | $6.74 | |
| BRICKLAYERS | 8.00 | |
| CARPENTERS | 6.17 | |
| CEMENT MASONS/CONCRETE FINISHERS | 6.05 | |
| DRYWALL FINISHERS | 6.66 | |
| DRYWALL HANGERS | 6.59 | |
| ELECTRICIANS | 7.46 | |
| GLAZIERS | 7.50 | |
| INSULATORS | 4.83 | |
| LABORERS: | | |
| Unskilled | 4.06 | |
| Mason Tenders | 4.84 | |
| Asphalt Rakers | 5.00 | |
| PAINTERS | 6.01 | |
| PLASTERERS | 6.00 | |
| PLUMBERS & PIPEFITTERS | 7.10 | |
| ROOFERS | 6.14 | |

| DECISION No. AL84-1019 (Cont'd) | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| SHEET METAL WORKERS | $6.48 | |
| SOFT FLOOR LAYERS | 7.65 | |
| TILE SETTERS | 8.88 | |
| TRUCK DRIVERS | 5.00 | |
| POWER EQUIPMENT OPERATORS: | | |
| Backhoe | 7.50 | |
| Bulldozer | 6.00 | |
| Grader | 6.48 | |
| Loader Operator | 6.53 | |
| Roller | 5.74 | |
| Spreader | 6.27 | |
| WELDERS - Receive rate for craft performing operation to which welding is incidental. | | |

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5 (a)(1)(ii)(A)).

SUPERSEDEAS DECISION

STATE: ALABAMA

COUNTIES: CULLMAN, JACKSON, LIMESTONE, MADISON, MARSHALL & MORGAN

DECISION NUMBER: AL84-1016

DATE: Date of Publication

Supersedes Decision No. AL82-1023 dated April 2, 1982 in 47 FR 14340.

DESCRIPTION OF WORK: Residential Construction consisting of single family homes and apartments up to and including four (4) stories

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| AIR CONDITIONING MECHANICS | $7.40 | |
| BRICKLAYERS | 7.20 | |
| CARPENTERS | 6.58 | |
| CEMENT MASONS/CONCRETE FINISHERS | 6.86 | |
| DRYWALL FINISHERS | 7.00 | |
| DRYWALL HANGERS | 6.41 | |
| ELECTRICIANS | 6.62 | |
| ELEVATOR MECHANICS | 13.84 | |
| GLAZIERS | 7.00 | |
| INSULATORS | 5.18 | |
| IRONWORKERS | 5.57 | |
| LABORERS: | | |
| Unskilled | 4.57 | |
| Pipelayers | 7.50 | |
| PAINTERS | 6.43 | |

DECISION No. AL84-1016 (Cont'd)

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| POWER EQUIPMENT OPERATORS: | | |
| Asphalt Spreader Op. | $6.09 | |
| Backhoe | 7.19 | |
| Bulldozer | 8.00 | |
| Front End Loader | 8.00 | |
| Motor Patrol | 8.00 | |
| Roller | 6.17 | |
| Tractor Operator | 6.64 | |
| PLUMBERS & PIPEFITTERS | 6.50 | |
| ROOFERS | 5.00 | |
| SHEET METAL WORKERS | 5.81 | |
| TRUCK DRIVERS | 4.78 | |
| WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental. | | |

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5 (a)(1)(ii)(A)).

SUPERSEDEAS DECISION

STATE: ALABAMA

COUNTIES: Blount, Jefferson, Shelby, Talladega, St. Clair, & Walker

DECISION NUMBER: AL84-1015

DATE: Date of Publication

Supersedes Decision No.: AL82-1022, dated April 2, 1982 in 47 FR 14340.

DESCRIPTION OF WORK: Residential construction projects consisting of single family homes and apartments up to and including 4 stories

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| AIR CONDITIONING & HEATING MECHANIC | $ 7.10 | |
| BRICKLAYER | 8.80 | |
| CARPENTER | 6.66 | |
| CEMENT MASON/CONCRETE FINISHER | 8.53 | |
| DRYWALL FINISHER | 6.42 | |
| DRYWALL HANGER | 6.00 | |
| ELECTRICIAN | 7.15 | |
| LABORERS: | | |
| Asphalt Raker | 6.12 | |
| Unskilled | 4.51 | |
| PAINTER | 6.59 | |
| PLUMBER & PIPEFITTER | 8.20 | |
| ROOFER | 6.50 | |
| SHEET METAL WORKER | 6.18 | |
| SOFT FLOOR LAYER | $ 6.61 | |
| TILE SETTER | 7.43 | |
| TRUCK DRIVER | 5.59 | |
| POWER EQUIPMENT OPERATORS: | | |
| Asphalt Spreader Op. | 7.50 | |
| Backhoe | 7.19 | |
| Bulldozer | 6.63 | |
| Front End Loader | 6.91 | |
| Motor Grader | 8.00 | |
| Roller | 6.00 | |
| Tractor | 6.13 | |

WELDERS: Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR, 5.5(a)(1)(ii)).

SUPERSEDEAS DECISION

STATE: Florida
COUNTY: Orange
DECISION NUMBER: FL84-1020
DATE: Date of Publication
Supersedes Decision Number FL82-1015, dated March 5, 1982 in 47 FR 9654
DESCRIPTION OF WORK: BUILDING CONSTRUCTION PROJECTS (Does not include single family homes and apartments up to and including four (4) stories).

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| AIR CONDITIONING AND HEATING MECHANICS | $ 7.65 | |
| BRICK AND BLOCK LAYERS | 9.74 | |
| CARPENTERS | 9.83 | 1.50 |
| CEMENT MASONS | 9.52 | 1.00 |
| ELECTRICIANS | 12.12 | 1.28 |
| ELEVATOR MECHANICS | 10.02 | |
| GLAZIERS | 9.52 | |
| IRONWORKERS | 11.97 | 3.10 |
| LABORERS | 6.21 | |
| LATHERS | 11.60 | 1.00 |
| MECHANICAL INSUALTORS | 11.61 | |
| PAINTERS, Paperhangers, and Tapers | 9.77 | 1.18 |
| PLASTERERS | 10.12 | |
| PLUMBERS, PIPEFITTERS, AND STEAMFITTERS | 12.43 | 1.49 |
| ROOFERS | 10.19 | .90 |
| SHEET METAL WORKERS | 8.74 | |
| SOFT FLOOR LAYERS | 8.88 | |
| SPRINKLER FITTERS | 8.88 | |
| TILE SETTERS | 9.72 | |
| TRUCK DRIVERS | 6.35 | |
| WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental. | | |
| POWER EQUIPMENT OPERATORS: | | |
| Backhoe | 10.26 | 1.10 |
| Bulldozer | 10.69 | 1.10 |
| Crane | 11.69 | 1.10 |
| Grader | 7.31 | |
| Loader | 7.91 | |
| Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR, 5.5 (a)(1)(ii)). | | |

SUPERSEDEAS DECISION

STATE: KENTUCKY
COUNTIES: BELL, CASEY, CLAY, HARLAN, KNOX, LAUREL, LESLIE, McCREARY, PULASKI, ROCKCASTLE, RUSSEL, WAYNE & WHITLEY
DECISION NUMBER: KY84-1017
DATE: Date of Publication
Supersedes Decision No. KY81-1274 dated July 31, 1981 in 46 FR 39385.
DESCRIPTION OF WORK: RESIDENTIAL CONSTRUCTION PROJECTS - includes single family homes and apartments up to and including four (4) stories.

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| A/C & HEATING MECHANICS | $6.00 | |
| BRICKLAYERS | 7.90 | |
| CARPENTERS | 6.60 | |
| CEMENT MASONS | 7.22 | |
| DRYWALL HANGERS | 8.65 | |
| DRYWALL FINISHERS | 6.25 | |
| ELECTRICIANS | 7.05 | |
| INSULATION INSTALLERS | 5.30 | |
| IRONWORKERS | 5.53 | |
| LABORERS: | | |
| Unskilled | 4.77 | |
| Mason Tenders, Mortar Mixers & Pipelayers | 6.05 | |
| Asphalt Rakers | 6.98 | |
| PAINTERS | 6.22 | |

DECISION NO. KY84-1017 (Cont'd)

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| PLUMBERS & PIPEFITTERS | $8.21 | |
| ROOFERS | 6.32 | |
| SHEET METAL WORKERS | 7.07 | |
| SOFT FLOOR/CARPET LAYERS | 7.40 | |
| TRUCK DRIVERS | 5.64 | |
| TILE SETTERS | 8.00 | |
| POWER EQUIPMENT OPERATORS: | | |
| Backhoe | 8.14 | |
| Bulldozer | 8.27 | |
| Front End Loader | 7.62 | |
| Grader | 8.52 | |
| Paver | 8.01 | |
| Roller | 7.55 | |
| WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental. | | |

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5 (a)(1)(ii)(A)).

SUPERSEDEAS DECISION

STATE: MISSISSIPPI

COUNTIES: Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren & Yazoo

DECISION NUMBER: MS84-1014

DATE: Date of Publication

Supersedes Decison No. MS81-1262 dated July 6, 1981 in 46 FR 35004

DESCRIPTION OF WORK: Residential Construction consisting of single family homes and apartments up to and including four (4) stories.

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| AIR CONDITIONING MECHANICS | $6.78 | |
| BRICKLAYERS | 9.40 | |
| CARPENTERS | 7.09 | |
| DRYWALL FINISHERS | 7.86 | |
| DRYWALL HANGERS | 9.22 | |
| CEMENT MASONS | 9.07 | |
| ELECTRICIANS | 7.89 | |
| ELEVATOR MECHANIC | 11.41 | |
| ELEVATOR MECHANIC HELPER | 6.82 | |
| INSULATORS | 5.50 | |
| LABORERS: | | |
| General | 4.95 | |
| Mason Tenders | 5.30 | |
| Mortar Mixers | 5.43 | |
| PAINTERS | 7.73 | |
| PLASTERERS | 9.25 | |
| PLUMBERS & PIPEFITTERS | 8.03 | |

DECISION NO. MS84-1014 (Cont'd)

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| POWER EQUIPMENT OPERATORS: | | |
| Asphalt Spreader | $5.68 | |
| Backhoe | 7.40 | |
| Bulldozer | 7.12 | |
| Front End Loader | 7.13 | |
| Concrete Pump | 9.73 | |
| Motor Grader | 6.75 | |
| Roller | 5.69 | |
| Trenching Machine | 8.08 | |
| ROOFERS | 6.35 | |
| SHEET METAL WORKERS | 6.49 | |
| SOFT FLOOR LAYERS | 6.05 | |
| TILE SETTERS | 8.88 | |
| TRUCK DRIVERS | 6.80 | |
| WELDERS - Receive rate for craft performing operation to which welding is incidental. | | |

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses 29 CFR 5.5 (a)(1)(ii)(A)).

SUPERSEDEAS DECISION

STATE: Oregon

COUNTIES: Statewide

DECISION NUMBER OR84-5020

DATE: Date of Publication

Supersedes Decision No. OR83-5100 dated February 18, 1983, in 48 FR 7379

DESCRIPTION OF WORK: Building Projects (does not include single family homes and apartments up to and including 4 stories), Heavy and Highway Projects and Dredging.

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| ASBESTOS WORKERS | 19.52 | 3.52 |
| BOILERMAKERS: | | |
| Work on Storage Tanks: | | |
| Erection | 17.25 | 4.00 |
| Repair | 16.05 | 4.00 |
| All other work | 19.67 | 4.00 |
| BRICKLAYERS; STONEMASONS: | | |
| Area 1 | 17.29 | 3.80 |
| Area 2: | | |
| Projects under $1 million | 13.63 | 3.02 |
| Projects over $1 million | 16.35 | 3.27 |
| CARPENTERS: | | |
| All projects involving the construction, alteration, or repair of buildings, bridges, or other structures under $1.5 million not including the cost of utilities; and all projects other than the above, under $1 million excluding the cost of utilities | | |
| Group 1 | 12.95 | 4.02 |
| Group 2 | 13.07 | 4.02 |
| Group 3 | 13.15 | 4.02 |
| Group 4 | 13.27 | 4.02 |
| Group 5 | 13.03 | 4.02 |
| Group 6 | 13.11 | 4.02 |
| All projects over the amounts stated above: | | |
| Group 1 | 16.31 | 4.02 |
| Group 2 | 16.46 | 4.02 |
| Group 3 | 16.56 | 4.02 |
| Group 4 | 16.71 | 4.02 |
| Group 5 | 16.41 | 4.02 |
| Group 6 | 16.51 | 4.02 |
| CEMENT MASONS: | | |
| Cement Masons | 15.49 | 3.72 |
| Composition Workers and Power Machinery Operators | 15.80 | 3.72 |
| ELECTRICIANS: | | |
| Area 1: | | |
| Electricians | 15.05 | 2.00+ 4% |
| Cable Splicers | 16.56 | 2.00+ 4% |
| Area 2: | | |
| Electricians | 20.87 | 4.80+ 3% |
| Cable Splicers | 21.91 | 4.80+ 3% |
| Area 3: | | |
| Electricians | 19.05 | 4.35+ 3% |
| Cable Splicers | 20.95 | 4.35+ 3% |
| Area 4: | | |
| Electrical contracts under $100,000: | | |
| Electricians | 15.00 | 2.42+ 3% |
| Cable Splicers | 110%JR | 2.42+ 3% |
| Electrical contracts over $100,000: | | |
| Electricians | 18.00 | 2.42+ 3% |
| Cable Splicers | 110%JR | 2.42+ 3% |
| Area 5: | | |
| Electricians | 18.80 | 3.50+ 3% |
| Cable Splicers | 19.55 | 3.50+ 3% |
| Area 6: | | |
| Electricians | 15.00 | 3.75+ 3% |
| Cable Splicers | 16.50 | 3.75+ 3% |
| ELEVATOR CONSTRUCTORS | | |
| Mechanics | 19.445 | 3.00+a |
| Helpers | 70%JR | 3.00+a |
| Probationary Helpers | 50%JR | |
| GLAZIERS | 16.34 | 2.09 |
| IRONWORKERS: | | |
| Structural; Reinforcing; Ornamental; Riggers; Fence Erectors; Signal Men | 18.04 | 4.15 |
| LATHERS: | | |
| Area 1 | 15.87 | 3.16 |

| DECISION NO. OR84-5 020 | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| MARBLE SETTERS: | | |
| Area 1 | 17.11 | 2.85 |
| MASON TENDERS: (including tenders or Plasterers, Bricklayers, Tile Setters, Marble Setters and Terrazzo Worker; Topping for Cement Finishers and Mortar Mixer) | 14.31 | 3.75 |
| PAINTERS: | | |
| Area 1: | | |
| Painters and tapers | 12.25 | 1.71 |
| Area 2: | | |
| Brush | 15.59 | 3.09 |
| Spray | 16.24 | 3.09 |
| Bridges, High work over 50' (brush) | 17.14 | 3.09 |
| Bridges, High Work over 50' (spray) | 17.79 | 3.09 |
| Drywall Tapers | 15.48 | 2.11 |
| Area 3: | | |
| Highway & Parking Lot painter | 17.64 | 1.05 |
| PLASTERERS: | | |
| Area 1 | 14.63 | 3.82 |
| Area 2 | 15.23 | 3.31 |
| PLUMBERS: | | |
| Area 1 | 16.30 | 4.01 |
| Area 2 | 19.43 | 6.98 |
| Area 3 | 15.50 | 6.22 |
| Area 4 | 20.48 | 3.70 |
| Area 5 | 20.26 | 3.65 |
| Area 6 | 19.58 | 4.15 |
| Area 7 | 21.19 | 3.10 |
| Area 8 | 16.51 | 4.05 |
| ROOFERS: | | |
| Area 1: | | |
| Roofers | 14.90 | 2.60 |
| Handling coal tar pitch | 16.39 | 2.60 |
| Area 2: | | |
| Roofers | 14.75 | 1.72 |
| Spray and/or application of irritating materials in a confined area | 15.75 | 1.72 |
| Area 3 | 13.46 | 2.05 |
| Area 4 | 14.56 | 4.10 |
| SHEET METAL WORKERS: | | |
| Area 1 | 17.89 | 4.54 |
| Area 2 | 16.72 | 2.21+ 3% |
| Area 3 | 18.76 | 3.10+ 3% |
| Area 4 | 15.50 | 2.58 |
| SOFT FLOOR LAYERS: | | |
| Area 1 | 14.022 | 2.38+b |
| Area 2 | 13.66 | 1.19 |
| SPRINKLER FITTERS | 17.92 | 3.23 |
| STEAMFITTERS: | | |
| Area 1 | 21.27 | 3.60 |
| TILE SETTERS: | | |
| Area 1 | 17.01 | 3.57 |
| Area 2 | 15.43 | 2.15 |
| TILE & TERRAZZO HELPERS: | | |
| Area 1 | 13.27 | 2.20 |
| LINE CONSTRUCTION: | | |
| Area 1: | | |
| Zone 1 - (Base Rate): | | |
| Group 1 | 20.03 | 3.00+ 3 1/2% |
| Group 2 | 18.11 | 3.00+ 3 1/2% |
| Group 3* | 16.35 | 3.00+ 3 1/2% |
| Group 4 | 15.61 | 2.30+ 3 1/2% |
| Group 5 | 13.66 | 2.30+ 3 1/2% |
| Group 6* | 13.66 | 2.30+ 3 1/2% |
| Group 7 | 12.84 | 2.30+ 3 1/2% |
| Zone Differential - (Add to Zone 1 Rate): | | |
| Zone 2 - 2.40 | | |
| Zone 3 - 3.15 | | |
| Zone 4 - 3.90 | | |
| Zone 5 - 5.15 | | |
| *Groups 3 and 6 receive Zone 1 Rates ONLY (No Zone Differential) | | |
| Area 2: | | |
| Cable Splicers | 17.56 | 1.20+ 3 1/2% |
| Journeyman Lineman | 15.92 | 1.20+ 3 1/2% |
| Line Equipment Mechanic (right-of-way) | 15.05 | 1.20+ 3 1/2% |
| Line Equipment Mechanic (base shop) | 14.07 | 1.20+ 3 1/2% |
| Line Equipment Serviceman | 14.07 | 1.20+ 3 1/2% |
| Line Equipment Operator | 14.31 | 1.20+ 3 1/2% |
| Groundman | 11.40 | 1.20+ 3 1/2% |



| DECISION NO. OR84-5.020 | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| DREDGING: | | |
| Leverman, Hydraulic | 16.97 | 3.87 |
| Leverman, Dipper | 17.68 | 3.87 |
| Assistant Engineer (including Watch Engineer, Welder, Mechanic and Machinist); Mate | 16.43 | 3.87 |
| Tenderman (Boatman, attending Dredge Plant); Fireman | 16.02 | 3.87 |
| Assistant Mate (Deckhand); Oiler | 15.67 | 3.87 |
| TIMBER SALES ROADS: | | |
| Operating Engineer | 10.37 | 4.15 |
| Teamster | 9.74 | 3.74 |
| Laborer | 8.35 | 4.30 |
| Power Saw, Driller, Powderman | 9.12 | 4.30 |
| LABORERS: | | |
| All projects involving the construction, alteration, or repair of buildings, bridges, or other structures under $1.5 million not including the cost of utilities; and all projects other than the above, under $1 million excluding the cost of utilities | | |
| Zone 1 - (Base Rate): | | |
| Group 1 | 10.27 | 5.01 |
| Group 2 | 10.55 | 5.01 |
| Group 3 | 10.79 | 5.01 |
| Group 4 | 10.99 | 5.01 |
| Group 5 | 8.00 | 5.01 |
| Zone Differential (Add to Base Rate) | | |
| Zone 2 - $0.65 | | |
| Zone 3 - 1.15 | | |
| Zone 4 - 1.70 | | |
| Zone 5 - 2.75 | | |
| All other projects: | | |
| Zone 1 - (Base Rate): | | |
| Group 1 | 12.84 | 5.01 |
| Group 2 | 13.19 | 5.01 |
| Group 3 | 13.49 | 5.01 |
| Group 4 | 13.74 | 5.01 |
| Group 5 | 8.00 | 5.01 |
| Zone Differential - (Add to Base Rate): | | |
| Zone 2 - $0.65 | | |
| Zone 3 - 1.15 | | |
| Zone 4 - 1.70 | | |
| Zone 5 - 2.75 | | |

| POWER EQUIPMENT OPERATORS: | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| All projects involving the construction, alteration, or repair of buildings, bridges, or other structures under $1.5 million not including the cost of utilities; and all projects other than the above, under $1 million excluding the cost of utilities | | |
| Zone 1 - (Base Rate) | | |
| Group 1 | 12.00 | 4.60 |
| Group 2 | 12.14 | 4.60 |
| Group 3 | 12.26 | 4.60 |
| Group 4 | 12.42 | 4.60 |
| Group 5 | 12.45 | 4.60 |
| Group 6 | 12.54 | 4.60 |
| Group 7 | 12.59 | 4.60 |
| Group 8 | 12.70 | 4.60 |
| Group 9 | 12.77 | 4.60 |
| Group 10 | 12.83 | 4.60 |
| Group 11 | 12.85 | 4.60 |
| Group 12 | 12.92 | 4.60 |
| Group 13 | 13.00 | 4.60 |
| Group 14 | 13.18 | 4.60 |
| Group 15 | 13.34 | 4.60 |
| Group 16 | 13.53 | 4.60 |
| Group 17 | 13.68 | 4.60 |
| Group 18 | 13.87 | 4.60 |
| Group 19 | 14.02 | 4.60 |
| Zone Differential - (Add to Base Rate): | | |
| Zone 2 - $0.65 | | |
| Zone 3 - 1.15 | | |
| Zone 4 - 1.70 | | |
| Zone 5 - 2.75 | | |
| All Other Projects | | |
| Zone 1 - (Base Rate): | | |
| Group 1 | 15.00 | 4.60 |
| Group 2 | 15.18 | 4.60 |
| Group 3 | 15.33 | 4.60 |
| Group 4 | 15.53 | 4.60 |
| Group 5 | 15.56 | 4.60 |
| Group 6 | 15.67 | 4.60 |
| Group 7 | 15.74 | 4.60 |
| Group 8 | 15.87 | 4.60 |
| Group 9 | 15.96 | 4.60 |
| Group 10 | 16.04 | 4.60 |
| Group 11 | 16.06 | 4.60 |
| Group 12 | 16.15 | 4.60 |
| Group 13 | 16.25 | 4.60 |

DECISION NO. OR84-5020

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| POWER EQUIPMENT OPERATORS (CONTINUED) | | |
| Group 14 | 16.48 | 4.60 |
| Group 15 | 16.67 | 4.60 |
| Group 16 | 16.91 | 4.60 |
| Group 17 | 17.10 | 4.60 |
| Group 18 | 17.34 | 4.60 |
| Group 19 | 17.52 | 4.60 |
| Zone Differential - (Add to Base Rate): | | |
| Zone 2 - $0.65 | | |
| Zone 3 - 1.15 | | |
| Zone 4 - 1.70 | | |
| Zone 5 - 2.75 | | |
| TRUCK DRIVERS: | | |
| All projects involving the construction, alteration, or repair of buildings, bridges, or other structures under $1.5 million not including the cost of utilities; and all projects other than the above, under $1 million excluding the cost of utilities | | |
| Group 1 | 11.75 | 4.19 |
| Group 2 | 11.79 | 4.19 |
| Group 3 | 11.83 | 4.19 |
| Group 4 | 11.87 | 4.19 |
| Group 5 | 11.91 | 4.19 |
| Group 6 | 11.99 | 4.19 |
| Group 7 | 12.07 | 4.19 |
| Group 8 | 12.15 | 4.19 |
| Group 9 | 12.23 | 4.19 |
| Group 10 | 12.37 | 4.19 |
| Group 11 | 12.45 | 4.19 |
| Group 12 | 12.53 | 4.19 |
| Group 13 | 12.61 | 4.19 |
| Group 14 | 12.69 | 4.19 |
| Zone Differential - (Add to Base Rate): | | |
| Zone 2 - $0.65 | | |
| Zone 3 - 1.15 | | |
| Zone 4 - 1.70 | | |
| Zone 5 - 2.70 | | |

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| All Other Projects | | |
| Zone 1 - (Base Rate): | | |
| Group 1 | 14.69 | 4.19 |
| Group 2 | 14.74 | 4.19 |
| Group 3 | 14.79 | 4.19 |
| Group 4 | 14.84 | 4.19 |
| Group 5 | 14.89 | 4.19 |
| Group 6 | 14.99 | 4.19 |
| Group 7 | 15.09 | 4.19 |
| Group 8 | 15.19 | 4.19 |
| Group 9 | 15.29 | 4.19 |
| Group 10 | 15.46 | 4.19 |
| Group 11 | 15.56 | 4.19 |
| Group 12 | 15.66 | 4.19 |
| Group 13 | 15.76 | 4.19 |
| Group 14 | 15.86 | 4.19 |
| Zone Differential - (Add to Base Rate): | | |
| Zone 2 - $0.65 | | |
| Zone 3 - 1.15 | | |
| Zone 4 - 1.70 | | |
| Zone 5 - 2.70 | | |



DECISION NO. OR84-5020

FOOTNOTE:

a. Employer credits 8% of basic hourly rate for employees with more than 5 years' service; 6% basic hourly rate for 6 months' to 5 years' service to Vacation Plant. Seven Paid Holidays: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; Friday after Thanksgiving Day; and Christmas Day

b. 4% of all gross wages to be credited to employees with less than one year of service, 6% witH more than one year of service. Seven paid holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Friday after, and Christmas Day.

AREA and GROUP DESCRIPTIONS

BRICKLAYERS; Stonemasons:
Area 1: Baker, Clackamas, Clatsop, Columbia, Gilliam, and Hood River; Malheur County (north half); Marion, Morrow, Multnomah, Polk, Sherman, and Tillamook Counties; Umatilla, Union, Wallowa, and Wasco Counties (north of the City of Maupin); Washington and Yamhill Counties
Area 2: Benton, Crook, Coos, Curry, Deschutes, Douglas, Grant, Harney, Jackson, Jefferson, Josephine, Klamath, Lake, Lane, Lincoln, and Linn Counties; Malheur County (south half); Wasco County (including the City of Maupin and south thereof); Wheeler County

CARPENTERS:
Group 1: Acoustical and Drywall Applicator; Automatic Nailing Machine; Carpenters; Form Strippers; Manhole Builders
Group 2: Floor Layers and Finishers; Stationary Power Saw Operators
Group 3: Millwrights and Machine Erectors
Group 4: Certified Welders
Group 5: Piledrivermen; Bridge, Dock and Wharf Builders
Group 6: Boom Men

ELECTRICIANS:
Area 1: Malheur County
Area 2: Baker, Gilliam, Grant, Morrow, Umatilla, Union, Wallowa, and Wheeler Counties
Area 3: Coos, Curry, and Lincoln Counties; Douglas and Lane Counties (those portions lying west of a line north and south from the NW corner or Coos County to the SE corner of Lincoln County)
Area 4: Benton, Crook, Deschutes, and Jefferson Counties; Lane County (eastern portion); Linn, Marion, and Polk Counties; Yamhill County (south half)
Area 5: Clackamas, Clatsop, Columbia, Hood River, Multnomah, Sherman, Tillamook, Wasco, and Washington Counties; Yamhill County (north half)
Area 6: Harney, Jackson, Josephine, Klamath, and Lake Counties; Douglas County (that portion lying east of a line running north and south from the NE corner of Coos County to the SE corner of Lincoln County)

AREA DESCRIPTIONS (Cont'd)

LATHERS:
Area 1: Clackamas, Clatsop, Columbia, Gilliam, Harney, Hood River, Morrow, Multnomah, Sherman, and Yamhill Counties

MARBLE SETTERS:
Area 1: Baker, Clackamas, Clatsop, Columbia, Gilliam, and Hood River Counties; Malheur County (north half); Multnomah, Morrow, Sherman, and Tillamook Counties; Union, Umatilla, and Wallowa Counties; Wasco County (north of the City of Maupin); Washington County; Yamhill County (north half)

PAINTERS:
Area 1: Malheur County
Area 2: Remaining Counties
Area 3: Statewide

PLASTERERS:
Area 1: Benton, Coos, Crook, Curry, Douglas, Deschutes, Harney, and Jefferson Counties; Klamath County (northern one-third); Lane County; Lincoln, Linn, Wasco, and Wheeler Counties (south half)
Area 2: Remaining Counties

PLUMBERS:
Area 1: Baker County; Harney (except NW portion); Malheur County
Area 2: Grant County (except SW corner); Morrow, Umatilla, Wallowa, and Union Counties
Area 3: Benton, Lincoln, and Linn Counties (north half); Marion and Polk Counties; Tillamook and Yamhill Counties (south half)
Area 4: Clackamas, Clatsop, Columbia, Gilliam, Hood River, Jefferson, Multnomah, Sherman, Wasco, Wheeler, and Washington Counties; Tillamook and Yamhill Counties (north half)
Area 5: Coos and Curry Counties; Douglas County (West Coast portion); Lann County (including the City of Florence)
Area 6: Benton County (south half); Crook and Deschutes Counties; Douglas County (except Coast portion); Grant County (SW corner); Harney County (NW portion); Jefferson County (south half); Klamath and Lake Counties (northern portion); Lane County (except the City of Florence); Lincoln and Linn Counties (south half)
Area 7: Remainder of Klamath and Lake Counties
Area 8: Jackson and Josephine Counties

ROOFERS:
Area 1: Baker, Clackamas, Clatsop, Columbia, Grant, Gillian, Hood River, Morrow, Multnomah, Sherman, Tillamook, Wasco, Washington, and Wheeler Counties
Area 2: Benton, Coos, Crook, Curry, Deschutes, Douglas, Harney, Jackson, Josephine, Klamath, Lake, Lane, Lincoln, Linn, Marion, Polk, and Yamhill Counties
Area 3: Malheur County
Area 4: Umatilla, Union, and Wallowa Counties





AREA AND GROUP DESCRIPTIONS (CONT'D)

SHEET METAL WORKERS:
Area 1: Benton, Clackamas, Clatsop, Columbia, Crook, Deschutes, Gilliam, Grant, Harney, Hood River, Jefferson, Lincoln, Linn, Marion, Multnomah, Polk, Sherman, Tillamook, Wasco, Washington, Wheeler, and Yamhill Counties
Area 2: Baker and Malheur Counties
Area 3: Morrow, Umatilla, Union, and Wallowa Counties
Area 4: Coos, Curry, Douglas, Jackson, Josephine, Klamath, Lake, Line

SOFT FLOOR LAYERS:
Area 1: All Counties except Malheur County
Area 2: Malheur County

STEAMFITTERS
Area 1: Clackamas, Clatsop, Columbia, Gilliam, Hood River, Jefferson Multnomah, Sherman, Wasco, Wheeler, and Washington Counties; Tillamook and Yamhill Counties (north half)

TILE SETTERS:
Area 1: Baker, Clackamas, Clatsop, Columbia, Gilliam, and Hood River Counties, Malheur County (north half); Morrow, Multnomach, Sherman, Tillamook, Umatilla, Union, and Wallow Counties; Wasco County (north of Maupin); Washington County; Yamhill County (north half)
Area 2: Benton, Coos, Crook, Curry, Deschutes, Douglas, Grant, Harney, Jackson, Josephine, Klamath, Lake, Lane, Lincoln, and Linn Counties; Malheur County (south half); Wasco County (Maupin and south thereof); Wheeler County (south half)

TILE and TERRAZZO HELPERS:
Area 1: Baker, Clackamas, Clatsop, Columbia, Gilliam, and Hood River Counties; Malheur County (north half); Marrow, Multnomach, Sherman, Tillamook, Umatilla, Union, and Wallow Counties; Wasco County (north of Maupin); Washington County; Yamhill County (north half)

LINE CONSTRUCTION:
Area 1: All Counties Except Malheur County
Group 1: Cable Splicer, Leadman Pole Sprayer
Group 2: Lineman, Pole Sprayer, Heavy Line equipment Man, Certified Lineman Welder
Group 3: Tree Trimmer
Group 4: Line Equipment Man
Group 5: Head Groundman, Powderman, Jackhammer Man
Group 6: Head Groundman (Clipper)
Group 7: Groundman

ZONE DEFINITIONS - LINE CONSTRUCTION ONLY

Zone 1 - 0 to 3 miles radius from the geographical center of Seattle, Tacoma, Portland, Medford.
Zone 2 - 3 to 20 miles radius from Seattle, Tacoma, Portland, Medford; and 0 to 20 miles radius from the Cities listed below

ZONE DEFINITIONS - LINE CONSTRUCTION ONLY (CONT'D)

Zone 3 - 20 to 35 miles radius from all Cities
Zone 4 - 35 to 50 miles radius from all Cities
Zone 5 - More than 50 miles radius from all Cities

BASE POINTS

| Washington | Oregon | Idaho |
|---|---|---|
| Bellingham | Astoria | Coeur D'Alene |
| Ellensburg | Baker | Kellogg |
| Ephrata | Burns | Lewiston |
| Everett | Bend | Oro Fino |
| Kennewick | Corvallis | Sandpoint |
| Longview | Eugene | |
| Olympia | Klamath Falls | |
| Spokane | Lakeview | |
| Walla Walla | Pendleton | |
| Wenatchee | Salem | |
| Wilbur | Roseburg | |
| Yakima | The Dalles | |
| | Umtilla | |

ZONE DESCRIPTIONS FOR LABORERS, POWER EQUIPMENT OPERATORS AND TRUCK DRIVERS

| CITIES | | |
|---|---|---|
| Albany | Grants Pass | Oregon City |
| Astoria | Hermiston | Newport |
| Baker | Hood River | Ontario |
| Bend | Klamath Falls | Pendleton |
| Bingen | La Grande | Portland |
| Brookings | Lakeview | Port Orford |
| Burns | Longview | Reedsport |
| Coos Bay | Madras | Roseburg |
| Corvallis | Medford | Salem |
| Eugene | McMinnville | The Dalles |
| Goldendale | Vancouver | Tillamook |

Zone 1 - All jobs or projects located within 30 miles of the respective City Hall
Zone 2 - More than 30 miles but less than 40 miles from the respective City Hall
Zone 3 - More than 40 miles but less than 50 miles from the respective City Hall
Zone 4 - More than 50 miles but less than 80 miles from the respective City Hall
Zone 5 - More than 80 miles from the respective City Hall



LABORERS

Group 1: Asphalt Plant Laborers; Asphalt Spreaders; Batch Weighman; Broomers; Brush Burners and Cutters; Car and Truck Loaders; Carpenter Tender; Change-house Man or Dry Shack Man; Choke Setter; Clean-up Laborers; Concrete Laborers; Culvert hand labor; Curing concrete; Demplition, wrecking, and moving laborers; Driller Tenders; Dumpers, road oiling crew; Dumpmen (for grading crew); Elevator Feeders; Guard Rail, Median Rail, Reference Post, Right-of-way Marker); Fine Graders; Form Strippers (not swinging stages); General Laborers; Leverman or Aggregate Spreader (Flaherty and Loading Spotters and similar types); Material Yard Man (including electrical); Powderman Tender; Pittsburgh Chipper Operator of similar types; Ribbon Setters (including Steel Forms); Rip Rap Man (hand placed); Road Pump Tender; Sewer Labor; Signalman; Skipman; Slopers; Spraymen; Stake Chaser; Stockpile; Timber Faller and Bucker (hand labor); Tool-room Man (at job site); Tunnel Bullgang (above ground); Weightman, Crusher (aggregate when used); Railroad Track Laborers

Group 2: Applicator (including Pot Tender for same), applying protective material by hand or nozzle on utility lines or storage tanks on project; Brush Cutters (power saw); Burners; Choker Splicer; Clary Power Spreader and similar types; Clean-up Nozzleman; Green Cutter (concrete, rock, etc.); Concrete Power Buggyman; Crusher Feeder; Demolition and wrecking charred materials; Grade Checker; Granite Nozzleman Tender; Gunite or Pot Tender; Handlers or Mixers of all materials of an irritating nature (including cement and lime); Power Tool Operators, includes but not limited to: Dry Pack Machine; Jackhammer; Chipping Guns; Paving Breakers; Vibrators (less than 4" in diameter); Post Hole Digger, air, gas or electric; Vibrating Screed; Tampers; Sand Blasting (wet); Stake-setter; Tunnel - Muckers, Brakemen, Concrete Crew, Bull Gang (underground)

Group 3: Asphalt Rakers; Bit Grinder; Drill Doctor; Drill Operators, Air Tracks, Cat Drills, Wagon Drills, Rubber-mounted Drills, and other similar types; Concrete Saw Operator; Gunite Nozzleman; High Scalers, Strippers and Drillers (covers work in Swinging Stages, chairs or belts, under extreme conditions unusual to normal drilling, blasting, barring-down, or sloping and stripping); Laser Beam (pipe laying)(applicable when employee assigned to move, set up, align Laser Beam); Manhole Builder; Powdermen; Power Saw Operators (bucking and falling); Pumpcrete Nozzlemen; Sand Blasting (dry); Sewer Pipe Layers; Sewer Timberman; Track Liners, Anchor Machines, Ballast Regulators, Multiple Tampers, Power Jacks; Tugger Operator; Tunnel - Chuck Tenders, Nippers, and Timbermen; Vibrator (4" and larger); Water Blaster; Welder

Group 4: Laser Beam (tunnel) - applicable when employee assigned to move, set up, align Laser Beam; Tunnel Miners; Tunnel Powderman

Group 5: Landscaping or Planting Laborer; fence builders

POWER EQUIPMENT OPERATORS

Group 1: Oiler, including Plant, Crane, Crusher, Guardrail equipment, and Trenching Machine; Assistant Conveyor Operator; Crusher Feederman; Deckhand; Self-propelled Scaffolding Operator; Guardrail Punch Oiler; Pump Operator, under 4"; Brakeman; Switchman; Parts Man (tool room)

Group 2: Blade Operator, pulled type; Truck Crane Oiler - Driver, 25 ton capacity or over; Crane Fireman (all equipment except floating); A-Frame Truck Operator, single drum; Tugger or Coffin type Hoist Operator; Driller Tender; Auger; Oiler; Boatman; Fork Lift or Lumber Stacker Operator (on job site); Oiler, combination Guardrail Machines; Temporary Heating Plant Operator; Grade Oiler, required to check grade; Grade Checker; Tar Pot Fireman; Tar Pot Fireman (power agitated); H.D. Repairman Tender; Welder's Tender; Helicopter Radioman (ground); Roller Operator, grading of base rock (not asphalt)

Group 3: Aspahlt Plant Fireman; Pugmill Operator (any type); Truck mounted Asphalt Spreader, with Screed; Compressor Operator (any power), under 1,250 cu. ft. total capacity; Conveyor Operator; Mixer Box Operator (C.T.B., Dry Batch, etc.); Cement Hog; Concrete Saw; Concrete Curing Machine (riding type); Wire Mat or Brooming Machine; Ross Carrier Operator (on job site); Bucket Elevator Loader, Barber Greene and similar types; Hydraulic Pipe Press; Pump Operator (any power), 4" and over; Hydrostatic Pump; Motorman; Ballast Jack Tamper; Bell Boy, phones, etc; Tamping Machine, mechanical self-propelled; Hydrographic Seeder Machine, straw, pulp or seed; Broom Operator, self-propelled (on job site); Air Filtration Equipment; Welding Machine Operator

Group 4: Screed Operator; Compactor, including Vibratory; Compressor (any power) over 1,250 cu. ft. total capacity; Combination Mixer and Compressor, Gunnite Work; Concrete Mixer Operator, single drum, under five bag capacity; Helicopter Hoist Operator; Floating Equipment Fireman; Lull Hi-lift Operator or similar type; Fork Lift, over 5 ton; Service Oiler (Greaser); Hydra Hammer or similar types; Pavement Breaker; Pump Operator, more than 5 (any size); Locomotive, under 40 tons; Roller Operator, Oiling, C.T.B.

Group 5: Extrusion Machine; Wagner Pactor or similar type (without blade); Concrete Batch Plant Quality Control Operator; Power Jumbo, Setting Slip Forms, etc. in tunnels; Slip Form Pumps, Power driven Hydraulic Lifting Device for concrete forms; Hoist, single drum; Elevator Operator; Pulva-mixer or similar types; Chip Spreading Machine Operator; Lime Spreading (on job site); Sweeper (Wayne type) Self-propelled (on job site); Tractor, rubber-tired 50 H.P. flywheel and under; Trenching Machine, maximum digging capacity 3 ft. depth



POWER EQUIPMENT OPERATORS (Cont'd)

Group 6: Asphalt Burner and Reconditioner; Pavement Grinder and/or Grooving Machine (riding type); Cast-in-place Pipe Laying Machine; Maginnis Internal Full Slab Vibrator; Concrete Finishing Machine, Clary, Johnson, Bidwell, Burgess Bridge Deck or similar type; Curb Machine, Mechanical Berm, Curb and/or Curb and Gutter; Concrete Joint Machine; Concrete Planer; Concete Paving Machine; Concrete Spreader; Loaders, rubber-tired type, 2½ cu. yds. and under; Rock Spreaders, self-propelled

Group 7: Roller (any asphalt mix); Beltcrete; Pumpcrete Operator (any type); Fuller-Kenyon and similar; Concrete Pump; Grouting machine; Concrete Mixer, single drum, five bag capacity and over; Tower Mobile Operator; A-Frame Truck, double drum; Boom Truck; Churn Drill and Earth Boring Machine; Hydraulic Backhoe, wheel type 3/8 cu. yds. and under with or without Front End attachments 2½ cu. yds. and under (Ford, John Deer, Case type); Elevating Grader, Tractor towed requiring Operator or Grader; Pot Rammer; Ballast Regulator; Ballast Tamper, Multiple-purpose; Track Liner; Tie Spacer; Shuttle Car; Locomotive, 40 tons and over

Group 8: Diesel-electric Engineer, Plant, Crusher, Generator, Floating; Batch Plant and/or wet mix, one and two drum; Generator Operator; Belt Loader, Kolman and Ko Cal types; Asphalt Paver Operator

Group 9: Bulldozer; Drill Cat Operator; Side-boom Cat; Compactor, with blade; Concrete Cooling Machine; Chicago Boom and similar types; Lift Slab Machine; Boom type lifting device, 5 ton capacity or less; Cherry Picker or similar type Crane-hoist, 5 ton capacity or less; Grizzley Crusher; Crusher Plant; Drill Doctor; Boring Machine; Guardrail Punch and Auger (all types); Surface Heater and Planer; Hydraulic Backhoe, track type 3/8 cu. yds.; Loader, Front End and Overhead, 2½ cu. yds. and under 4 cu. yds.; Hammer Operator; Pipe Cleaning, Doping, Bending and Wrapping Machines; Bolt-threading Machine; Drill Doctor (Bit Grinder); H.D. Mechanic and Welder; Machine Tool Operator; Stationary Drag Scraper; Tractor, rubber-tired over 50 H.P. flywheel; Tractor with boom attachment; Trench Machine, maximum digging capacity over 3 ft. depth; Asphalt Plant Operator

Group 10: Bulldozer, twin engine (TC 12 and similar); Cable Plow (any type); Compactor, multi-engine; Jack Operator, Elevating Barges; Barge Operator, self-unloading; Combination H.D. Mechanic - Welder, with dispatcher and/or when required to do both; Rubber-tired Dozers and Pushers (Michigan, Cat, Hough type); Driller - Percussion, Diamond, Core, Cable, Rotary and similar type

Group 11: Mixer Mobile; Concrete Breaker; Crane Operator, 25 tons and under; Combination Guardrail Machines, i.e., Punch, Auger, etc.; Shovel; Dragline; Clamshell, Hoe, etc., under 1 cu. yd.; Grade-alls, under 1 cu. yd.; Mucking Machine (tunnel)

POWER EQUIPMENT OPERATORS (Cont'd)

Group 12: Blade Operator; Batch Plant and/or Wet Mix, 3 units or more; Reinforced Tank Banding Machine (K-17 or similar); Hoist, two or more drums; Elevating Loader, Athey and similar; Piledriver (not crane type); Rubber-tired Scraper, single and twin engine; Single Scraper, with Push-pull attachments, self-loader; Paddle Wheel, auger type; Blade mounted Spreaders, Ulrich and similar types; Shield Operator

Group 13: Blade Operator, finish; Blade, externally controlled by electronic, mechanical hydraulic means; Blade, multi-engine; Concrete Paving Road Mixer; Derrick, under 100 tons; Hoist, Stiff Leg, Guy Derrick or similar, 50 tons and over; Cableway Operator 25 ton and over; Crane, over 25 ton and including 40 tons; Piledriver Operator; Floating Clamshell, etc., under 3 cu .yds.; Floating Crane (Derrick Barge), less than 30 ton; Elevating Grader, operated by Tractor Operator, Sierra, Euclid, or similar; Back Filling Machine; Shovel, etc. 1 cu. yd. and less than 3 cu. yds.; Grade-all, 1 cu. yd. and over; Bridge Crane Operator, Locomotive Crane, Gantry and Overhead

Group 14: Tower Crane Operator; Rubber-tired Scraper, with Tandem Scrapers, self-loading, Paddle Wheel, auger type, finish and/or 2 or more units

Group 15: Rock Hound Operator; Loader, 4 cu. yds., but less than 6 cu. yds.

Group 16: Autograder or "Trimmer"; Tandem Bulldozer, Quad-nine and similar; Automatic Concrete Slip Form Paver; Concrete Canal Line; Cableway, 25 ton and over; Crane, over 40 ton and including 100 ton; Whirley, 80 ton and under; Floating Clamshell, etc., 3 cu. yds. and over; Floating Crane (Derrick Barge) 30 ton but less than 80 ton; Loader, 6 cu. yds., but less than 12 cu. yds.; Rubber-tired Scraper, with Tandem Scrapers, multi-engine; Shovel, etc., 3 cu. yds. but less than 5 cu. yds.; Wheel Excavator, under 750 cu. yds. per hour

Group 17: Crane over 100 ton and including 200 ton; Whirley, over 80 ton and including 150 ton; Floating Crane (Derrick Barge), 80 ton, but less than 150 ton; Loader, 12 cu. yds. and over; Shovel, etc., 5 cu. yds. and over; Canal Trimmer

Group 18: Crane, over 200 ton; Whirley, 150 ton and over; Floating Crane, 150 ton but less than 250 ton; Wheel Excavator, over 750 cu. yds. per hour; Band Wagons, in conjunction with Wheel Excavator

Group 19: Helicopter, when used in erecting work; Floating Crane, 250 ton and over; Remote controlled earth moving equipment; Underwater equipment, remote or otherwise



TRUCK DRIVERS

Group 1: Battery Rebuilders; Bus or Manhaul Driver; Concrete Buggies (power operated); Dump Trucks, side, end and bottom dumps, including Semi Trucks and Trains or combinations thereof: 6 cu. yds. and under; Lift Jitneys, Fork Lifts (all sizes in loading, unloading and transporting material on job site); Loader and/or Leverman on Concrete Dry Batch Plant (manually operated); Pilot Car; Solo Flat Bed and misc. Body Trucks, 0-10 tons; Truck Tender; Truck Mechanic Tender; Water Wagons (rated capacity) - up to 1,600 gallons

Group 2: "A" Frame or Hydra-lift Truck with load bearing surface; Lubrication Man, Fuel Truck Driver, Tireman, Wash Rack, Steam Cleaner or combinations; Team Drivers

Group 3: Dump Trucks, side, end and bottom dumps, including Semi Trucks and Trains or combinations thereof: over 6 cu. yds. and including 10 cu. yds.; Slurry Truck Driver or Leverman; Transit Mix, and Wet or Dry Mix Trucks: 5 cu. yds. and under; Tireman Water Wagons (rated capacity) - 1,600 to 3,000 gallons

Group 4: Flaherty Spreader Driver or Leverman; Lowbed Equipment, Flat Bed Semi-trailer, Truck and Trailers or doubles transporting equipment or wet or dry materials; Lumber Carrier Driver - Stadddle Carrier (used in loading, unloading and transporting of materials on job site); Oil Distributor Driver or Leverman; Water Wagons (rated capacity) - 3,000 to 5,000 gallons

Group 5: Dumpsters or similar equipment, all sizes; Transit Mix and Wet or Dry Trucks, over 5 cu. yds. and including 7 cu. yds.

Group 6: Dump Trucks, side, end and bottom dumps, including Semi Trucks and Trains or combinations thereof: over 10 cu. yds. and including 20 cu. yds.; Transit Mix and Wet or Dry Mix Truck, over 7 cu. yds. and including 9 cu. yds.; Truck Mechanic - Welder - Body Repairman; Water Wagons (rated capacity) -5,000 to 7,000 gallons

Group 7: Dump Trucks, side, end and bottom dumps, including Semi Trucks and Trains of combinations thereof: over 20 cu. yds. and including 30 cu. yds.; Transit Mix and Wet or Dry Mix Trucks, over 9 cu. yds. and including 11 cu. yds.; Water Wagons (rated capacity) over 7,000 gallons to 10,000 gallons

TRUCK DRIVERS (Cont'd)

Group 8: Dump Trucks, side, end and bottom cumps, including Semi Trucks and Trains or combinations thereof: over 30 cu. yds. and including 40 cu. yds.; Transit Mix and Wet or Dry Mix Trucks, over 11 cu. yds. and including 15 cu. yds.; Water Wagon (rated capacity) over 10,000 gallons to 15,000 gallons

Group 9: Dump Trucks, side, end and bottom dumps, including Semi Trucks and Trains or combinations thereof: Over 40 cu. yds. and including 50 cu. yds.; Transit Mix and Wet or Dry Mix Trucks, over 13 cu. yds. and including 15 cu. yds.

Group 10: Dump Trucks, side, end and bottom dumps, including Semi Trucks and Trains or combinations thereof: over 50 cu. yds. and including 60 cu. yds.

Group 11: Dump Trucks, side, end and bottom dumps, including Semi Trucks and Trians or combinations thereof: over 60 cu. yds. and including 70 cu. yds.

Group 12: Dump Trucks, side, end and bottom dumps, including Semi Trucks and Trains or combinations thereof: over 70 cu. yds. and including 80 cu. yds.

Group 13: Dump Trucks, side, end and bottom dumps, including Semi Trucks and Trains or combinations thereof: over 80 cu. yds. and including 90 cu. yds.

Group 14: Dump Trucks, side, end and bottom dumps, including Semi Trucks and Trains or combinations thereof: over 90 cu. yds. and including 100 cu. yds.

Drivers and Tenders (handling Sacked cement - add $0.15 per hour)

Winch Truck - takes classification of Truck on which Winch is mounted.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses 29 CFR, 5.5 (a)(1)(ii))

WELDERS; RIGGERS: Rate for craft to which welding and rigging are incidental.

SUPERSEDEAS DECISION

STATE: South Carolina COUNTIES: Statewide
DECISION NUMBER: SC84-1018 DATE: Date of Publication
Supersedes Decision Number SC83-1089, dated November 25, 1983 in 48 FR 53268.
DESCRIPTION OF WORK: HEAVY AND SEWER & WATER LINES CONSTRUCTION PROJECTS (excluding Dam Construction Projects).

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| BOILERMAKERS (TANK WORK) | $16.20 | 3.375 |
| BRICKLAYERS | 6.40 | |
| CARPENTERS | 7.42 | |
| CEMENT MASONS/CONCRETE FINISHERS | 6.93 | |
| ELECTRICIANS/LINEMEN | 10.08 | |
| IRONWORKERS | 10.98 | |
| LABORERS: | | |
| Unskilled | 4.25 | |
| Pipelayer | 4.94 | |
| Chain saw | 4.63 | |
| MANHOLE BUILDERS | 4.75 | |
| PIPEFITTERS: | | |
| Berkeley County | 12.40 | 1.73 |
| Remaining Counties | 9.09 | |
| POWER EQUIPMENT OPERATORS: | | |
| Backhoe | $ 6.40 | |
| Bulldozer | 5.90 | |
| Crane | 7.98 | |
| Dragline | 6.06 | |
| Front End Loader | 5.79 | |
| Mechanic | 7.09 | |
| Motor Grader | 7.15 | |
| Scraper-Pan | 5.48 | |
| TRUCK DRIVERS | 4.80 | |

WELDERS: RECEIVE RATE PRESCRIBED FOR CRAFT PERFORMING OPERATION TO WHICH WELDING IS INCIDENTAL.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR, 5.5(a)(1)(ii)).

STATE: Wisconsin COUNTIES: Statewide
DECISION NUMBER: WI84-5016 DATE: Date of Publication
Supersedes Decision Number WI83-2012 dated February 18, 1983 in 48 FR 7386
DESCRIPTION OF WORK: Highway and Airport Runway and Taxiway Construction (does not include bridges over navigable waters; tunnels; buildings in highway rest areas; and railroad construction)

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| BRICKLAYERS: STONEMASONS: | | |
| Zone 1 | $15.35 | 2.05 |
| Zone 2 | 12.87 | 2.40 |
| Zone 3 | 12.70 | 2.42 |
| Zone 4 | 13.73 | 2.50 |
| Zone 5 | 14.30 | 2.35 |
| Zone 6 | 13.87 | 3.50 |
| Zone 7 | 13.39 | 3.10 |
| Zone 8 | 15.18 | 3.95 |
| Zone 9 | 13.89 | 2.60 |
| Zone 10 | 14.88 | 2.30 |
| Zone 11 | 13.00 | 2.70 |
| CARPENTERS; PILEDRIVERMEN: | | |
| Zone 1: | | |
| Carpenters | 12.90 | 2.65 |
| Piledrivermen | 13.16 | 2.65 |
| Zone 2: | | |
| Carpenters | 13.61 | 2.21 |
| Piledrivermen | 14.01 | 2.21 |
| Zone 3: | | |
| Carpenters | 13.61 | 2.21 |
| Piledrivermen | 14.01 | 2.21 |
| Zone 4: | | |
| Carpenters | 15.29 | 2.51 |
| Piledrivermen | 15.44 | 2.51 |
| Zone 5: | | |
| Carpenters | 14.41 | 2.26 |
| Piledrivermen | 14.50 | 2.26 |
| Zone 6: | | |
| Carpenters | 13.61 | 2.21 |
| Piledrivermen | 14.01 | 2.21 |
| Zone 7: | | |
| Carpenters | 13.61 | 2.21 |
| Piledrivermen | 14.01 | 2.21 |
| Zone 8: | | |
| Carpenters; Piledrivermen | 14.09 | 2.20 |
| Zone 9: | | |
| Carpenters | 14.65 | 4.03 |
| Piledrivermen | 15.82 | 4.16 |
| Zone 10: | | |
| Carpenters | 14.71 | 1.96 |
| Piledrivermen | 14.80 | 1.96 |

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| CARPENTERS; PILEDRIVERMEN (Cont'd) | | |
| Zone 11: | | |
| Carpenters | 13.75 | 3.05 |
| Piledrivermen | 13.75 | 3.05 |
| Zone 12: | | |
| Carpenters | 13.61 | 2.21 |
| Piledrivermen | 14.01 | 2.21 |
| CEMENT MASONS: | | |
| Zone 1 | 17.58 | .70 |
| Zone 2 | 13.65 | 2.20 |
| Zone 3 | 13.35 | 2.50 |
| Zone 4 | 13.65 | 2.20 |
| Zone 5 | 12.68 | 2.42 |
| Zone 6 | 14.18 | 2.20 |
| Zone 7 | 12.95 | 2.90 |
| Zone 8 | 13.65 | 2.20 |
| Zone 9 | 13.65 | 2.20 |
| Zone 10 | 12.78 | 4.36 |
| Zone 11 | 14.35 | 2.85 |
| Zone 12 | 15.85 | |
| Zone 13 | 12.70 | 3.15 |
| Zone 14 | 13.65 | 2.20 |
| Zone 15 | 13.00 | .75 |
| Zone 16 | 13.65 | .75 |
| ELECTRICIANS: | | |
| Zone 1 | 15.78 | 1.55 +6% |
| Zone 2 | 15.48 | 15% |
| Zone 3 | 15.85 | .90 +9½% |
| Zone 4 | 15.13 | .75+ 11½% |
| Zone 5 | 17.50 | .71+ 3 3/4% |
| Zone 6 | 15.79 | 1.55 + 3% |
| Zone 7 | 15.92 | .87+ 13 ½% |
| Zone 8 | 15.54 | 1.54+ 12-3/4% |
| Zone 9 | 15.02 | 2.04+ 14% |
| Zone 10 | 15.75 | 27½% |
| Zone 11 | 17.50 | .85+ 3½% |
| Zone 12 | 16.67 | 2.04 + 14% |
| Zone 13 | 14.68 | 2.10 + 4% |



| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| IRONWORKERS: | | |
| Zone 1 | 12.83 | 1.90 |
| Zone 2 | 15.22 | 3.85 |
| Zone 3 | 14.08 | 3.00 |
| Zone 4 | 14.81 | 7.01 |
| Zone 5 | 17.10 | 3.64 |
| LINE CONSTRUCTION: | | |
| Statewide: | | |
| Linemen | 15.47 | 1.00+ 9 ½% |
| Heavy Equipment Operators | 13.92 | 1.00+ 9 ½% |
| Light Equipment Operators | 12.38 | 1.00+ 9 ½% |
| Heavy Truck Drivers and Groundman | 10.83 | 1.00+ 9 ½% |
| Light Truck Drivers and Groundman | 10.06 | 1.00+ 9 ½% |
| Groundman | 8.51 | 1.00+ 9 ½% |
| PAINTERS: | | |
| Zone 1: | | |
| Brush | 14.85 | .50 |
| Spray and Sandblasting | 15.60 | .50 |
| Zone 2: | | |
| Brush | 14.00 | 5%+.15 |
| Spray and Sandblasting | 13.50 | 5%+.15 |
| Zone 3: | | |
| Brush; Spray and Sandblasting | 14.43 | 1.00 |
| Zone 4: | | |
| Brush | 12.325 | 2.45 |
| Spray and Sandblasting | 12.925 | 2.45 |
| Zone 5: | | |
| Brush | 13.95 | 1.00 |
| Spray and Sandblasting | 14.37 | 1.00 |
| Zone 6: | | |
| Brush; Spray and Sandblasting | 15.21 | 1.78 |
| Zone 7: | | |
| Brush | 13.08 | 1.77 |
| Spray | 14.08 | 1.77 |
| Sandblasting | 13.33 | 1.77 |
| Zone 8: | | |
| Brush and Spray | 13.75 | |
| Sandblasting | 13.75 | |
| Zone 9: | | |
| Brush | 14.00 | |
| Spray and Sandblasting | 14.00 | |

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| PAINTERS (CONT'D): | | |
| Zone 10: | | |
| Brush | 13.45 | 3.76 |
| Spray | 13.60 | 3.76 |
| Sandblasting | 13.85 | 3.76 |
| Zone 11: | | |
| Brush | 13.35 | 1.55 |
| Spray and Sandblasting | 14.85 | 1.55 |
| Zone 12: | | |
| Brush | 13.75 | 2.15 |
| Spray and Sandblasting | 14.35 | 2.15 |
| Zone 13: | | |
| Brush and Sandblasting | 10.40 | 1.60 |
| Spray | 10.90 | 1.60 |
| LABORERS: | | |
| Zone 1: | | |
| Group 1 | 11.18 | 3.59 |
| Group 2 | 11.28 | 3.59 |
| Group 3 | 11.33 | 3.59 |
| Group 4 | 11.38 | 3.59 |
| Group 5 | 11.43 | 3.59 |
| Group 6 | 11.53 | 3.59 |
| Group 7 | 11.58 | 3.59 |
| Group 8 | 11.83 | 3.59 |
| Zone 2: | | |
| Group 1 | 11.20 | 2.63 |
| Group 2 | 11.30 | 2.63 |
| Group 3 | 11.35 | 2.63 |
| Group 4 | 11.40 | 2.63 |
| Group 5 | 11.45 | 2.63 |
| Group 6 | 11.55 | 2.63 |
| Group 7 | 11.60 | 2.63 |
| Group 8 | 11.85 | 2.63 |
| Zone 3: | | |
| Group 1 | 10.25 | 3.58 |
| Group 2 | 10.35 | 3.58 |
| Group 3 | 10.40 | 3.58 |
| Group 4 | 10.45 | 3.58 |
| Group 5 | 10.50 | 3.58 |
| Group 6 | 10.60 | 3.58 |
| Group 7 | 10.65 | 3.58 |
| Group 8 | 10.90 | 3.58 |
| Zone 4: | | |
| Group 1 | 11.35 | 1.88 |
| Group 2 | 11.40 | 1.88 |
| Group 3 | 11.45 | 1.88 |
| Group 4 | 11.50 | 1.88 |
| Group 5 | 11.55 | 1.88 |
| Group 6 | 11.60 | 1.88 |

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| LABORERS (CONT'D) | | |
| Zone 5: | | |
| Group 1 | 10.43 | 3.59 |
| Group 2 | 10.48 | 3.59 |
| Group 3 | 10.53 | 3.59 |
| Group 4 | 10.58 | 3.59 |
| Group 5 | 10.63 | 3.59 |
| Group 6 | 10.68 | 3.59 |
| Zone 6: | | |
| Group 1 | 11.07 | 1.88 |
| Group 2 | 11.12 | 1.88 |
| Group 3 | 11.17 | 1.88 |
| Group 4 | 11.22 | 1.88 |
| Group 5 | 11.27 | 1.88 |
| Group 6 | 11.32 | 1.88 |
| POWER EQUIPMENT OPERATORS: | | |
| Group 1 | 15.65 | 3.42 |
| Group 2 | 15.39 | 3.42 |
| Group 3 | 15.30 | 3.42 |
| Group 4 | 15.22 | 3.42 |
| Group 5 | 15.14 | 3.42 |
| Group 6 | 15.10 | 3.42 |
| Group 7 | 15.01 | 3.42 |
| Group 8 | 14.89 | 3.42 |
| LABORERS (Sewer & Water ) | | |
| Zones 1 and 5: | | |
| Bottomman | 13.03 | 3.69 |
| Pipelayer | 13.52 | 3.69 |
| Topman | 12.61 | 3.69 |
| Zone 2: | | |
| Bottomman | 11.55 | 2.63 |
| Pipelayer | 11.95 | 2.63 |
| Topman | 11.35 | 2.63 |
| Zone 3: | | |
| Bottomman | 10.60 | 3.58 |
| Pipelayer | 11.00 | 3.58 |
| Topman | 10.40 | 3.58 |
| Zone 4: | | |
| Bottomman | 11.60 | 1.88 |
| Pipelayer | 11.80 | 1.88 |
| Topman | 11.45 | 1.88 |
| Zone 6: | | |
| Bottomman | 11.32 | 1.88 |
| Pipelayer | 11.52 | 1.88 |
| Topman | 11.17 | 1.88 |

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| TRUCK DRIVERS: | | |
| Zone 1: | | |
| Group 1 | 12.35 | .35+a |
| Group 2 | 12.50 | .35+a |
| Zone 2: | | |
| Group 1 | 12.35 | .35+b |
| Group 2 | 12.50 | .35+b |
| Zone 3: | | |
| Group 1 | 12.35 | .35+c |
| Group 2 | 12.50 | .35+c |
| WELL DRILLERS | 13.47 | 2.45 |
| Well Drillers Helpers | 10.50 | 2.45 |

WELDERS - receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR, 5.5 (a)(1)(ii)).



FOOTNOTES:

a. Per week per employee on payroll 30 days or longer, $95.87 Per week - Health, Welfare and Pension

b. Per week per employee on payroll 30 days or longer, $105.12 per week - Health, Welfare and Pension

c. Per week per employee on payroll 30 days or longer, $97.30 per week - Health, Welfare and Pension

ZONE DESCRIPTIONS

BRICKLAYERS; STONEMASONS:
Zone 1: Barron, Burnett, Chippewa, Dunn, Eau Claire, Pepin, Pierce, Polk, Rusk, St. Croix, Sawyer, and Washburn Counties
Zone 2: Adams, Clark, Forest, Langlade, Lincoln, Marathon, Menominee, Oneida, Portage, Price, Taylor, Vilas, and Wood Counties
Zone 3: Brown, Calumet, Door, Florence, Fond Du Lac, Green Lake, Kewaunee, Manitowoc, Marinette, Marquette, Oconto, Outagamie, Shawano, Sheboygan, Waupaca, Washara, and Winnebago Counties
Zone 4: Green, Lafayette, and Rock Counties
Zone 5: Buffalo, Crawford, Jackson, Juneau, La Crosse, Monroe, Trempealeau, and Vernon Counties
Zone 6: Kenosha, Racine, and Walworth Counties
Zone 7: Dane, Grant, Iowa, and Richland Counties
Zone 8: Milwaukee, Ozaukee, Washington, and Waukesha Counties
Zone 9: Columbia and Sauk Counties
Zone 10: Ashland, Bayfield, Douglas, and Iron Counties
Zone 11: Dodge and Jefferson Counties

CARPENTERS; PILEDRIVERMEN:
Zone 1: Ashland, Bayfield, and Iron Counties
Zone 2: Barron, Burnett, Buffalo, Chippewa, Clark, Dunn, Eau Claire, Pepin, Pierce, Polk, Rusk, St. Croix, Sawyer, Taylor, and Washburn Counties
Zone 3: Brown, Calumet, Door, Fond Du Lac, Green Lake, Kewaunee, Manitowoc, Marinette, Marquette, Menominee, Oconto, Outagamie, Shawano, Sheboygan, Waupaca, Waushara, and Winnebago Counties
Zone 4: Green, Rock, and Walworth Counties
Zone 5: Kenosha County
Zone 6: Jackson, La Crosse, Monroe, Trempealeau, and Vernon Counties
Zone 7: Adams, Columbia, Crawford, Dane, Dodge, Grant, Iowa, Jefferson, Juneau, Lafayette, Richland, and Sauk Counties
Zone 8: Florence County
Zone 9: Milwaukee, Ozaukee, Washington, and Waukesha Counties
Zone 10: Racine County
Zone 11: Douglas County
Zone 12: Forest, Langlade, Lincoln, Marathon, Oneida, Portage, Price, Vilas, and Wood Counties

ZONE DESCRIPTIONS (Cont'd)

CEMENT MASONS:
Zone 1: Bayfield, Douglas, Price, Sawyer, and Washburn Counties
Zone 2: Barron, Burnett, Chippewa, Dunn, Polk, Rusk, and St. Croix Counties
Zone 3: Adams, Clark, Forest, Langlade, Lincoln, Marathon, Menominee, Oneida, Portage, Taylor, Vilas, and Wood Counties
Zone 4: Eau Claire, Pepin, and Pierce Counties
Zone 5: Brown, Calumet, Door, Florence, Fond Du Lac, Green Lake, Kewaunee, Manitowoc, Marinette, Marquette, Oconto, Outagamie, Shawano, Sheboygan, Waupaca, Waushara, and Winnebago Counties
Zone 6: La Crosse County
Zone 7: Racine and Kenosha Counties
Zone 8: Dodge and Jefferson Counties
Zone 9: Columbia and Sauk Counties
Zone 10: Milwaukee, Ozaukee, Washington, and Waukesha Counties
Zone 11: Dane, and Rock Counties
Zone 12: Grant County
Zone 13: Walworth County
Zone 14: Ashland and Iron Counties
Zone 15: Green, Iowa, and Lafayette Counties
Zone 16: Buffalo, Crawford, Jackson, Juneau, Monroe, Richland, Trempealeau, & Vernon Counties

ELECTRICIANS:
Zone 1: Calumet, Green Lake, Marquette, Outagamie, Waupaca, Waushara, and Winnebago Counties
Zone 2: Barron, Buffalo, Burnett, Chippewa, Clark, Dunn, Eau Claire, Jackson, Pepin, Pierce, Polk, Price, Rusk, St. Croix, Sawyer, Taylor, Trempealeau, and Washburn Counties
Zone 3: Brown, Door, Kewaunee, Manitowoc, and Oconto Counties
Zone 4: Adams, Florence, Forest, Juneau, Langlade, Lincoln, Marathon, Marinette, Menominee, Oneida, Portage, Shawano, Vilas, and Wood Counties
Zone 5: Kenosha County
Zone 6: Crawford, Grant, La Crosse, Monroe, Richland, and Vernon Counties
Zone 7: Green, Jefferson, Lafayette, Rock, and Walworth Counties
zone 8: Columbia, Dane, Dodge, Iowa, and Sauk Counties
Zone 9: Fond Du Lac and Sheboygan Counties
Zone 10: Ashland, Bayfield, Douglas, and Iron Counties
Zone 11: Racine County
Zone 12: Milwaukee, Ozaukee, Washington, and Waukesha Counties

IRONWORKERS:
Zone 1: Grant County
Zone 2: Ashland, Barron, Bayfield, Burnett, Douglas, Iron, Price, Rusk, Sawyer, Vilas, and Washburn Counties
Zone 3: Adams, Clark, Columbia, Crawford, Dane, Dodge, Florence, Fond Du Lac, Forest, Green, Green Lake, Iowa, Jackson, Jefferson, Juneau, La Crosse, Lafayette, Langlade, Lincoln, Marquette, Marathon, Menominee, Monroe, Oconto, Oneida, Outagamie, Portage, Richland, Rock, Sauk, Shawano, Taylor, Vernon, Walworth, Waupaca, Waushara, Winnebago, and Wood Counties
Zone 4: Brown, Calumet, Door, Kenosha, Kewanee, Marinette, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, and Waukesha Counties
Zone 5: Buffalo, Chippewa, Dunn, Eau Claire, Pepin, Pierce, Polk, St. Croix, and Trempealeau Counties



ZONE DESCRIPTIONS (Cont'd)

PAINTERS:
Zone 1: Florence, Forest, Iron, Langlade, Lincoln, Marathon, Menominee, Oneida, and Vilas Counties
Zone 2: Barron, Buffalo, Chippewa, Dunn, Eau Claire, Pepin, Pierce, Polk, Price, Rusk, St. Croix, Sawyer, Trempealeau, and Washburn Counties
Zone 3: Brown, Door, Kewaunee, and Oconto Counties
Zone 4: Kenosha and Walworth Counties
Zone 5: Adams, Clark, Crawford, Jackson, Juneau, La Crosse, Monroe, Portage, Vernon, Taylor, and Wood Counties
Zone 6: Ashland, Bayfield, Burnett, and Douglas Counties
Zone 7: Columbia, Dane, Dodge, Grant, Green, Iowa, Layafette, Richland, Rock, and Sauk Counties
Zone 8: Calumet and Manitowoc Counties
Zone 9: Marinette County
Zone 10: Jefferson, Milwaukee, Ozaukee, Washington, and Waukesha Counties
Zone 11: Fond Du Lac, Green Lake, Marquette, Outagamie, Shawano, Waushara, Waupaca, and Winnebago Counties
Zone 12: Racine County
Zone 13: Sheboygan County

LABORERS:
Zone 1: Milwaukee and Waukesha Counties
Zone 2: Racine County
Zone 3: Kenosha County
Zone 4: Dane County
Zone 5: Washington and Ozaukee Counties
Zone 6: Remainder of State

TRUCK DRIVERS:
Zone 1: Entire State except those Counties in Zones 2 and 3
Zone 2: Milwaukee, Ozaukee, Washington, and Waukesha Counties
Zone 3: Racine and Kenosha Counties

LABORERS CLASSIFICATIONS
ZONES 1, 2, and 3

Group 1: Bituminous Workers (Shoveler, Loader, Utility Man); Demolition and Wrecking Laborer; Guard Rail Builder; Reinforcing Steel Setter (pavement); Stone Handler; Tree Trimmer; Landscaper; Multiplate Culvert Assembler; Conduit Layer; Unskilled Laborer

Group 2: Bituminous Workers (Dumper, Ironer, Smoother, Tamper); Batch Truck Dumper or Cement Handler; Concrete Handler

Group 3: Chain Saw Operator; Demolition Burning Torch Laborer; Joint Sawer and Filler (pavement); Vibrator or Tamper Operator (mechanical, hand operated)

LABORERS CLASSIFICATIONS - ZONES 1, 2, and 3 (Cont'd)

Group 4: Air Tool Operator (hand operated)

Group 5: Strike Off Man

Group 6: Form Setter (curb, walk and pavement)

Group 7: Bituminous Worker (Raker and Luteman)

Group 8: Powderman, Blaster

ZONES 4 and 6

Group 1: Bituminous Workers (Dumper, Ironer, Smoother, Tamper, Shoveler, Loader, Utility Man); Strike Off Man; Joint Sawer and Filler (pavement); Concrete Handler; Demolition and Wrecking Laborer; Guard Rail Builder; Reinforcing Steel Setter (pavement); Stone Handler; Landscaper; Multiplate Culvert Assembler; Conduit Layer; Unskilled Laborer

Group 2: Tree Trimmer

Group 3: Air Tool Operator (Hand Operated); Vibrator or Tamper Operator, Mechanical (hand Operated); Batch Truck Dumper or Cement Handler

Group 4: Chain Saw Operator; Demolition Burning Torch Laborer; Form Setter (curb, walk and pavement)

Group 5: Powderman, Blaster

Group 6: Bituminous Worker (Raker, Luteman)

ZONE 5

Group 1: Bituminous Workers (Dumper, Ironer, Smoother, Tamper, Shoveler, Loader, Utility Man); Concrete Handler; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail Builder; Joint Sawer and Filler (pavement); Landscaper; Multiplate Culvert Assembler; Reinforcing Steel Setter (pavement); Stone Handler; Strike Off Man; Unskilled Laborer

Group 2: Tree Trimmer

Group 3: Air Tool Operator (hand operated); Batch Truck Dumper or Cement Handler; Vibrator or Tamper Operator, mechanical (hand operated)

Group 4: Chain Saw Operator; Demolition Burning Torch Laborer; Formsetter (curb, walk and pavement)

Group 5: Blaster, Powderman

Group 6: Bituminous Workers (Raker, Luteman)



POWER EQUIPMENT OPERATORS

Group 1: Automatic Subgrader; Bituminous Paver or Plant; Central Concrete Plant; Concrete Breaker (heavy); Concrete Mixer-Paver; Crane; Derrick; Dragline; Dredge; Excavator (Side Boom); Grader; Loading Machine (Conveyor); Mechanic or Welder (heavy duty equipment); Milling Machine; Percussion or Rotary Drilling Machine; Pile Driver; Placer-Spreader; Power Shovel; Screed (Bituminous Paver); Slipform Paver; Stabilizing Mixer (self-propelled); Steel Roller (over 5 tons); Tractor (Scraper, Dozer, Pusher, Loader, Endloader, Backhoe); Trench Machine Tube Finisher

Group 2: Concrete Mixer (less than 21 C.F.); Concrete Pump; Steel Roller (5 tons or less)

Group 3: Shouldering Machine

Group 4: Concrete Breaker (light); Concrete Spreader; Curing Machine; Finishing Machine; Launch; Mechanical Float; Roller (Pneumatic tired self-propelled); Subgrader (Form Paving); Tractor (light equipment); Tractor (towing Compactors and light equipment)

Group 5: Fireman; Environmental Burner

Group 6: Air Compressor; Curb Machine; Drilling or Boring Machine (heavy); Generator; Greaser (heavy equipment); Stump Chipper; Tank Car Heater

Group 7: Crusher or Screening Plant; Screed (Milling Machine)

Group 8: Oiler; Percussion or Rotary Drilling Machine Helper; Pump (over 3 inches)

TRUCK DRIVERS

Group 1: Truck Drivers, 2 axle; Mechanics Helper, Truck

Group 2: Truck Drivers 3 or more axles; Euclids or Dumptor units; Mechanics

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR, 5.5 (a)(1)(ii))

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## INFORMATION AND ASSISTANCE

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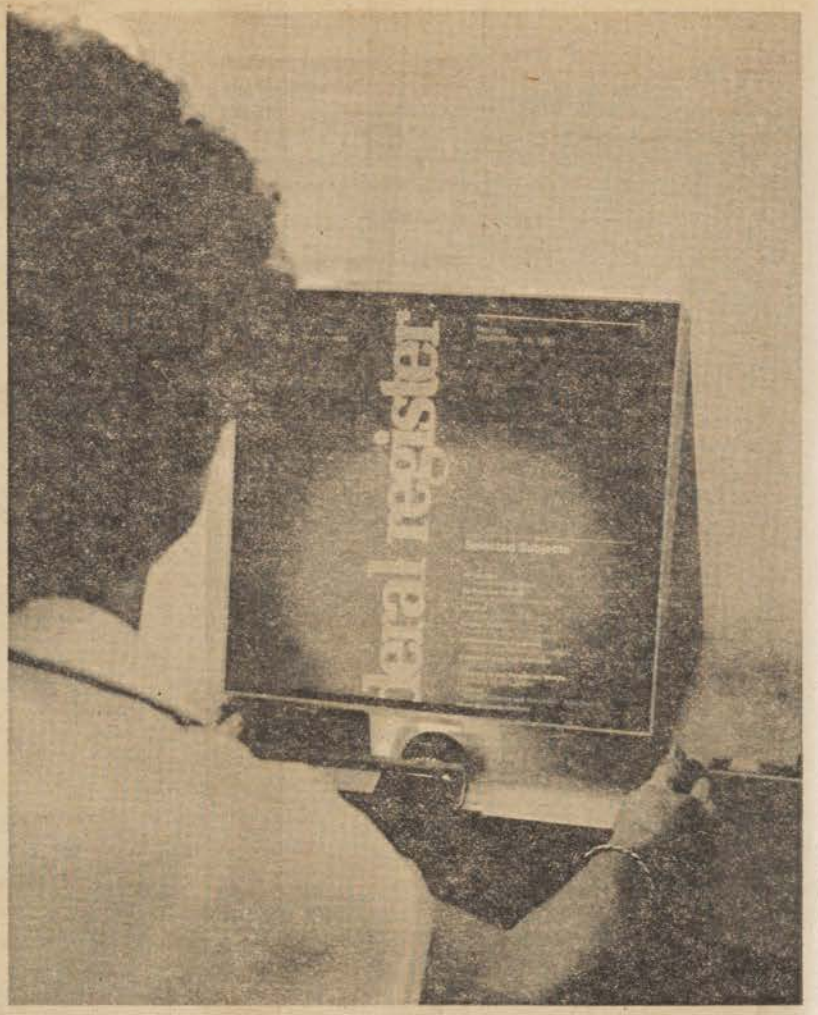


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