State of California
AIR RESOURCES BOARD

Response to Significant Environmental Issues and Statement of Overriding Considerations

Item: Public Hearing to Consider the Adoption of an Airborne Toxic Control Measure for Ethylene Oxide Emissions from Sterilizers and Aerators

Agenda Item No.: 90-5-1

Public Hearing Date: May 10, 1990

Issuing Authority: Air Resources Board

Comment: Chlorofluorocarbon-12 (CFC-12) is a commonly used diluent for ethylene oxide mixtures and is emitted from some sterilizers and aerators as a part of the mixture; chlorofluorocarbons have been implicated in the destruction of the ozone layer.

Response: Adoption of the proposed ATCM is not expected to result in any increase in CFC-12 emissions, and may bring about a decrease in CFC-12 emissions by encouraging more efficient use of EtO-CFC mixtures, or the use of alternative sterlization methods.

Comment: Adoption of the proposed ATCM may result in significant adverse environmental impacts by resulting in increased generation of liquid ethylene glycol (about 900,000 lbs/year) and airborne carbon dioxide (about 300,000 lbs/year), reaction products of common ethylene oxide control technologies.

Response: Mitigation of the impacts caused by increased generation of liquid ethylene glycol are governed by regulations adopted by the Department of Health Services in Title 22, California Code of Regulations. Thus, ethylene glycol is considered a hazardous waste as defined in Title 22, Section 66696 (a)(6), California Code of Regulations; if discharged untreated, it could pose a hazard to human health and the environment due to its toxicity. Mitigation measures to avoid the potential hazard include recycling, treatment and discharge to a sanitary sewer if permitted by the local sanitation district, and disposal as a hazardous waste. The California Department of Health Services is required by law to regulate these disposal activities under Title 22, California Code of Regulations; local sanitation districts are permitted to accept hazardous waste at publicly owned treatment works pursuant to Title 22, Sections 66371 (2) and 66392 (a), California Code of Regulations.

Response: Carbon dioxide has been identified as a greenhouse gas which contributes to global warming; there are no feasible mitigation measures which could be imposed by the Board or any other public agency and no feasible alternatives which would substantially reduce the potential adverse impact of increased carbon dioxide emissions while at the same time providing the substantial overall health benefit realized by the reduction in emissions of ethylene oxide through the application of control technology. In consideration of public health, the increase in emissions of carbon dioxide has been balanced against the decrease in emissions of ethylene oxide. Abandonment of the ETO control measure (the "no-project" alternative) or control of ETO to a lesser degree were considered and rejected because of the desireability of limiting emissions of ETO, a carcinogen, to the greatest degree practicable. Thus, the proposed ATCM will result in significant public health benefits due to the 99 percent overall reduction in both ethylene oxide emissions and associated potential cancer risks; this consideration overrides any potential adverse environmental impact that may occur as a result of any slight increase in carbondioxide emissions.

Certified: Judith M. Lounsbury
Judith M. Lounsbury
Board Secretary

Date: 5/20/91

RECEIVED BY
Office of the Secretary
MAY 7 1991
RESOURCES AGENCY OF CALIFORNIA

State of California
AIR RESOURCES BOARD

Resolution 90-34

May 10, 1990

WHEREAS, on November 12, 1987, pursuant to Section 39662 of the Health and Safety Code, the Air Resources Board (Board) identified ethylene oxide as a toxic air contaminant for which there is not sufficient available scientific evidence to support identification of a threshold exposure level below which no carcinogenic health effects are anticipated (see Title 17, California Code of Regulations, Section 93000);

WHEREAS, following identification of ethylene oxide as a toxic air contaminant, the Executive Officer, with the participation of local air pollution control districts, is required by Health and Safety Code Section 39655 to prepare a report on the need for, and appropriate degree of, control of ethylene oxide emissions;

WHEREAS, the staff has worked closely with the districts through the statewide Technical Review Group (TRG), the TRG Committee on Ethylene Oxide, and with affected sources and other parties to develop as expeditiously as practical an airborne toxic control measure for emissions of ethylene oxide from sterilizers (which include fumigators) and aerators;

WHEREAS, Health and Safety Code Section 39655 provides that toxic air contaminants which are pesticides shall be regulated in their pesticidal use by the California Department of Food and Agriculture;

WHEREAS, districts have primary jurisdiction to regulate air pollutants for which there is no ambient air quality standard and which have not been identified by the Board as toxic air contaminants pursuant to Health and Safety Code Section 39662;

WHEREAS, the staff has proposed an airborne toxic control measure (ATCM) for ethylene oxide emissions which would significantly reduce the quantity of ethylene oxide emitted to the atmosphere by requiring emission controls on most sterilizers and aerators;

WHEREAS, the staff has prepared the document titled "Proposed Ethylene Oxide Control Measure for Sterilizers and Aerators" (Staff Report and Technical Support Document), which constitutes the report required by Health and Safety Code Section 39655 and includes: estimates of ethylene oxide emissions, public exposure, and potential cancer risk; a discussion of the technical feasibility of control and of existing emission control devices; an estimate of the costs to comply with the ATCM; a discussion of the anticipated effect of the ATCM on public exposure to ethylene oxide from sterilizers and aerators and the associated risk; a discussion of alternatives to the ATCM; and identification of any potential adverse environmental effects of the ATCM and possible mitigation measures;

WHEREAS, the California Environmental Quality Act and Board regulations require that no project having significant adverse environmental impacts be adopted as proposed if feasible alternatives or mitigation measures are available to eliminate or substantially reduce such impacts;

WHEREAS, the proposed ATCM was made available to the public for review and comment, and was discussed at public consultation meetings on October 31, 1989, November 3, 1989, February 22, 1990, and February 27, 1990;

WHEREAS, in accordance with Health and Safety Code Section 39665(c), the Staff Report, Technical Support Document, and relevant comments on the proposed ATCM received during public consultation with the districts, affected sources, and the public were made available for public review and comment 45 days prior to the public hearing to consider the proposed ATCM;

WHEREAS, a public hearing and other administrative proceedings were held in accordance with the provisions of Chapter 3.5 (commencing with Section 11340), Part 1, Division 3, Title 2 of the Government Code;

WHEREAS, in consideration of the Staff Report, Technical Support Document, and the written comments and public testimony it has received, the Board finds that:

> Ethylene oxide emissions from sterilizers and aerators are not currently regulated to a degree that adequately protects the public health statewide;
>
> The emission of ethylene oxide from sterilizers and aerators after the pesticidal use has been completed results in public exposure to ethylene oxide;
>
> Lifetime exposure (70 years) to ethylene oxide emitted from sterilizers and aerators contributes an additional 360 to 510 potential cancer cases to the statewide incidence of cancer;
>
> The proposed ATCM would reduce ethylene oxide emissions from sterilizers and aerators by 99 percent overall by requiring most sources to reduce emissions from sterilizers by 99-99.9 percent and emissions from aerators by 95-99 percent;
>
> The proposed ATCM has tiered control requirements and the degree of control required is proportional to the amount of ethylene oxide used per year at each source;
>
> The proposed ATCM would require facilities to reduce their ethylene oxide emissions from sterilizers and aerators to the lowest level achievable through application of the best available control technology, as required by Health and Safety Code Section 39666(c), and therefore complies with the requirements of state law for the control of sources of toxic air contaminants identified by the Board;

Compliance with the requirements of the proposed ATCM will not interfere with the pesticidal use of ethylene oxide;

No alternative considered would be either more effective at carrying out the purpose for which the ATCM is proposed, or both as effective and less burdensome to affected private persons, than the proposed ATCM;

Adoption of the proposed ATCM will not have a significant, adverse economic impact on most small businesses because they use four or less pounds of ethylene oxide per year and would be exempt from the control requirements and associated costs; the proposed ATCM may have significant, adverse economic impact on some small businesses using more than four pounds of ethylene oxide per year and subject to the control requirements; the reporting and emission control requirements which apply to small businesses are necessary for the health, safety, and welfare of the people of the state;

WHEREAS, the Board further finds that:

Chlorofluorocarbon-12 (CFC-12) is a commonly used diluent for ethylene oxide mixtures and is emitted from some sterilizers and aerators as a part of the mixture; chlorofluorocarbons have been implicated in the destruction of the ozone layer;

Adoption of the proposed ATCM is not expected to result in any increase in CFC-12 emissions, and may bring about a decrease in CFC-12 emissions by encouraging more efficient use of EtO-CFC mixtures, or the use of alternative sterilization methods;

Adoption of the proposed ATCM may result in significant adverse environmental impacts by resulting in increased generation of liquid ethylene glycol (about 900,000 lbs/year) and airborne carbon dioxide (about 300,000 lbs/year), reaction products of common ethylene oxide control technologies;

Ethylene glycol is considered a hazardous waste as defined in Title 22, Section 66696 (a)(6), California Code of Regulations; if discharged untreated, it could pose a hazard to human health and the environment due to its toxicity; mitigation measures to avoid the potential hazard include recycling, treatment and discharge to a sanitary sewer if permitted by the local sanitation district, and disposal as a hazardous waste; the California Department of Health Services is required by law to regulate these disposal activities under Title 22, California Code of Regulations; local sanitation districts are permitted to accept hazardous waste at publicly owned treatment works pursuant to Title 22, Sections 66371 (2) and 66392 (a), California Code of Regulations;

Carbon dioxide has been identified as a greenhouse gas which contributes to global warming; there are no feasible mitigation

measures which could be imposed by the Board or any other public agency and no feasible alternatives which would substantially reduce the potential adverse impact of increased carbon dioxide emissions while at the same time providing the substantial overall health benefit realized by the reduction in emissions of ethylene oxide through the application of control technology; and

The proposed ATCM will result in significant public health benefits due to the 99 percent overall reduction in both ethylene oxide emissions and associated potential cancer risks; this consideration overrides any potential adverse environmental impact that may occur as a result of any slight increase in carbon dioxide emissions.

NOW, THEREFORE, BE IT RESOLVED that the Board approves the ATCM, to be set forth in Section 93108, Subchapter 7.5, Chapter 1, Part III, Titles 17 and 26, California Code of Regulations, including the changes from the original staff proposal as discussed on the record and endorsed by the Board, as set forth in Attachment A.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to adopt the airborne toxic control measure as set forth in Attachment A after making it available to the public for a period of 15 days, provided that the Executive Officer shall consider such written comments as may be submitted during this period, shall make modifications as may be appropriate in light of the comments received, and shall present the regulations to the Board for further consideration if he determines that this is warranted.

BE IT FURTHER RESOLVED that the Board recommends that local Air Pollution Control Districts and Air Quality Management Districts consider including provisions to decrease chlorofluorocarbon emissions when adopting their district regulations to implement the proposed ATCM.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to send the adopted ATCM to the districts and provide assistance to the districts in adopting regulations to implement the ATCM.

I hereby certify that the above is a true and correct copy of Resolution 90-34, as adopted by the Air Resources Board.

Pat Hutchens for

Judith M. Lounsbury, Board Secretary