

State of California  
AIR RESOURCES BOARD

Resolution 89-28

March 10, 1989

Agenda Item No.: 89-5-3

WHEREAS, Health and Safety Code Section 39003 charges the Air Resources Board ("ARB" or "Board") to coordinate efforts throughout the state to attain and maintain state and federal ambient air quality standards;

WHEREAS, Health and Safety Code Section 41500 provides that the Board shall review the rules and regulations of the local air pollution control districts ("districts") to determine whether the rules and regulations are sufficiently effective to achieve and maintain the state ambient air quality standards;

WHEREAS, Health and Safety Code Section 39002 authorizes the Board to undertake control activities in any area, after holding public hearings, when it determines that the local or regional authority has failed to meet its responsibilities under Division 26 of the Health and Safety Code or any other provision of law;

WHEREAS, Health and Safety Code Section 39517 provides that a district shall be given notice and the opportunity to act before the Board adopts any rule or regulation for the district;

WHEREAS, pursuant to Health and Safety Code Sections 39602 and 41650-41652, the Board is responsible for ensuring that nonattainment area plans comply with the requirements of the federal Clean Air Act (42 U.S.C. Sec. 7401 et seq.);

WHEREAS, the California Clean Air Act (Stats. 1988, chap. 1568) provides that districts shall endeavor to achieve and maintain state ambient air quality standards for ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide by the earliest practicable date (Health and Safety Code Section 40910);

WHEREAS, the Air Resources Board ("ARB" or "Board") and the Environmental Protection Agency have established health-based ambient air quality standards for ozone and for particulate matter, and these standards are frequently violated in the San Joaquin Valley Air Basin;

WHEREAS, the Board conducted a public hearing April 7, 1988 in Fresno on growth and air quality impacts in the San Joaquin Valley Air Basin with a focus on the ambient air quality standards for ozone, carbon monoxide, and fine particulate matter and received information and testimony concerning the current air quality and the anticipated worsening of the air quality in the Valley in light of projected economic, population, and industrial growth;

WHEREAS, the information presented to the Board at the April 7, 1988 meeting included an analysis of the rapid growth in small electrical generation

test the circulating water to determine the concentration of hexavalent chromium monthly

*and*

show a decrease in hexavalent chromium concentrations in the circulating water each month,

*and*

keep the results of the tests of circulating water for two years and give them to the district when asked,

*and*

the hexavalent chromium concentration in the circulating water must not exceed 8 milligrams hexavalent chromium per liter of circulating water.

**(i) I am planning to build a cooling tower after the effective date of this regulation. Do I need to notify the district? Yes, no later than 90 days before you begin to operate the cooling tower, you must write and tell the district the following:**

who is the owner and operator of the cooling tower,

*and*

where the cooling tower will be located,

*and*

when you plan to start operation.

**(j) I switched to non-chromate treatments before this regulation became effective, do I have to meet the same requirements? If you have not used hexavalent chromium in your cooling tower for at least one year immediately before the compliance date, or if your cooling tower has never used hexavalent chromium, and you can demonstrate this to the district, then the district may waive the testing requirement.**

**Such demonstration may be made by written certification signed**

hexavalent chromium per liter of circulating water, then the testing requirement is ended. All other requirements remain the same. The district may, however, require you to resume testing the circulating water at any time if the district has information that the circulating water may contain hexavalent chromium.

**(g) How do I test the circulating water for hexavalent chromium? You must test the circulating water to determine hexavalent chromium concentrations using American Public Health Association Method 312B, or an equivalent method approved by the district. You will find Method 312B in a book called *Standard Methods for the Examination of Water and Wastewater*, Sixteenth Edition, published by the American Public Health Association, and available at libraries and bookstores nationwide.**

**(h) I use hexavalent chromium in a wooden cooling tower. Even if I stop adding hexavalent chromium on the compliance date, hexavalent chromium from the wood may cause the concentration in the circulating water to exceed 0.15 milligrams per liter for a time after the compliance date. How may I avoid being cited immediately after the compliance date? You may avoid being cited for violations of the 0.15 milligrams per liter hexavalent chromium concentration limit for up to six months after the compliance date. In order to not be cited during the transition period, you must:**

comply with all other requirements of this regulation,

*and*

notify the district in writing that your cooling tower has wooden components that are exposed to the circulating water, and that you plan to take advantage of this section,

*and*

chromium every six months,

and

keep the results of all required tests of circulating water for two years, and give them to the district when asked.

**(d) What information must I send the district? Within 90 days after the effective date of this regulation, you must write and tell the district the following:**

that you own or operate a cooling tower,

and

where the cooling tower is located,

and

who is the owner or operator of the cooling tower,

and

whether or not you use hexavalent chromium in the cooling tower,

and

if you are using hexavalent chromium, when you plan to stop.

**(e) When must I comply with the hexavalent chromium limits? You must stop adding hexavalent chromium-containing compounds to the circulating water in your cooling tower and meet the 0.15 milligrams per liter hexavalent chromium concentration limit no later than 180 days after the effective date of the regulation. This is the compliance date for the regulation.**

**(f) For how long do I have to test the circulating water? If, after the effective date of this regulation, 2 consecutive required tests showing concentrations of hexavalent chromium less than 0.15 milligrams of**

**93103. Regulation For Chromate Treated Cooling Towers**

**(a) Definitions.** In this regulation, *hexavalent chromium* and *chromate* are substances identified as toxic air contaminants by the Air Resources Board. *You, yours, I, and my* mean the person who owns or operates, or who plans to build, own, or operate, a cooling tower. The *district* is the local air pollution control district or air quality management district. A *cooling tower* is a device which evaporates circulating water to remove heat from a process, a building, or a refrigerator, and puts the heat into the ambient air. *Must* means a provision is mandatory, and *may* means a provision is permissive.

**(b) Who must comply with this regulation?** Any person who owns or operates, or who plans to build, own, or operate, a cooling tower must comply with this regulation.

**(c) What must I do to comply with this regulation?** To comply with this regulation, you must:

notify the district in writing about your cooling tower,

and

not add any hexavalent chromium-containing compounds to the cooling tower circulating water,

and

keep the hexavalent chromium concentration in the cooling tower circulating water less than 0.15 milligrams hexavalent chromium per liter of circulating water,

and

test the circulating water to determine the concentration of hexavalent

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Hearing to Consider the Adoption of an Airborne  
Toxic Control Measure for Hexavalent Chromium Emissions  
from Cooling Towers

Agenda Item No.: 89-4-2

Public Hearing Date: March 9, 1989

Response Date: March 9, 1989

Issuing Authority: Air Resources Board

Comment: No comments were received identifying any significant environmental issues pertaining to this item. The staff report identified potential adverse environmental effects as a result of the use of compounds as substitute for hexavalent chromium. A detailed analysis of the effects of the use of substitute compounds is found in the Technical Support Document, pages IV-5 and V-5 to V-16. In Resolution 89-29, the Board found that

"The public health and environmental benefits from the proposed control measure, specifically the elimination of hexavalent chromium and the associated cancer risks, far outweigh any potential adverse health and environmental impacts that may result from this regulatory action and there are no feasible mitigation measures which would substantially reduce any adverse impact while at the same time providing the substantial overall health benefit realized by the reductions in emissions of hexavalent chromium."

Response: N/A

Certified: \_\_\_\_\_

*Amy Allison*  
Board Secretary

Date: \_\_\_\_\_

*1/9/90*

The need for disposal of hexavalent chromium will be minimal because operators will be able to eliminate or significantly reduce inventories of hexavalent chromium or chromate containing treatments prior to the effective date of the ban; after the transition period, remaining inventory may be able to be returned to the supplier or must be disposed of subject to regulation as a hazardous waste; and

The public health and environmental benefits from the proposed control measure, specifically the elimination of hexavalent chromium and the associated cancer risks, far outweigh any potential adverse health and environmental impacts that may result from this regulatory action and there are no feasible mitigation measures which could be taken by the Board and no feasible alternatives which would substantially reduce any adverse impact while at the same time providing the substantial overall health benefit realized by the reductions in emissions of hexavalent chromium.

NOW, THEREFORE, BE IT RESOLVED, that the Board hereby approves the adoption of Section 93103, Subchapter 7.5, Chapter 1, Part III, Titles 17 and 26, California Code of Regulations as set forth in Attachment A.

BE IT FURTHER RESOLVED that the Board direct 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, and with such modifications as may be appropriate in light of written comments submitted during this period, provided that the Executive Officer shall present the regulations to the Board for further consideration if he determines that this is warranted in light of the written comments received.

I hereby certify that the above is a true and correct copy of Resolution 89-29, as adopted by the Air Resources Board.

  
\_\_\_\_\_  
Cary Allison, Board Secretary

The proposed airborne toxic control measure would essentially eliminate hexavalent chromium emissions from chromate-treated cooling towers by prohibiting the use of hexavalent chromium in cooling towers;

The reporting requirements of the proposed regulation 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:

Adoption of the proposed airborne toxic control measure will result in increases in emissions into the air and waste water discharges of substitute chemicals used to treat cooling tower circulating water and may require cooling tower operators to dispose of chromate inventory on hand at the time the ban takes effect;

Several of the common substitutes for hexavalent chromium are not expected to have adverse health effects at levels associated with use in cooling towers; other substitutes may have some adverse health or environmental impacts at these levels but many are short-term and reversible and none are as serious as the impacts from hexavalent chromium;

Mitigation measures include the use of permit conditions for airborne emissions or water discharges from permitted sources to insure the use of the least harmful substitute or to limit discharges or emissions to environmentally safe levels; the authority to take these permitting actions is within the purview of other public agencies such as local air pollution control districts and water quality control agencies;

For nonpermitted cooling towers adverse impacts can be minimized if operators evaluate and consider health and environmental impacts in selecting a substitute water treatment; however, there are no feasible means for the Board to require such an assessment for nonpermitted sources due to the large number of small sources affected:

WHEREAS, the staff report for the proposed ATCM and its Technical Support Document in conjunction with the "Hexavalent Chromium Control Plan" and its Technical Support Document constitute the report on the need and appropriate degree of regulation for hexavalent chromium required by Health and Safety Code Section 39665;

WHEREAS, the proposed ATCM would essentially eliminate hexavalent chromium emissions and the potential lifetime cancer incidence (70-900 cancer cases) from chromate-treated cooling towers by prohibiting the use of hexavalent chromium containing treatments, necessitating the use of substitutes, which are considered the best available control technology, as required by Health and Safety Code Section 39666 (c);

WHEREAS, the proposed ATCM was made available to the public for review and comment, and was discussed at public consultation meetings on April 27, 1988, September 21, 1988 and November 29, 1988;

WHEREAS, in accordance with Health and Safety Code Section 39665(c), the staff report and relevant comments received during public consultation with the districts, affected industry sources, and the public were made available for public review and comments 45 days prior to the public hearing to consider the proposed ATCM;

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

WHEREAS, a public hearing and other administrative proceedings were held in accordance with 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 and the written comments and public testimony it has received, the Board finds:

The added lifetime potential cancer cases from exposure to hexavalent chromium emissions from chromate-treated cooling towers contribute to the statewide and local incidence of cancer;

The proposed airborne toxic control measure for hexavalent chromium complies with the requirements of state law for control of sources of toxic air contaminants identified by the Board;