

**Air Pollution Control Board**

Greg Cox	District 1
Dianne Jacob	District 2
Pam Slater	District 3
Ron Roberts	District 4
Bill Horn	District 5

Air Pollution Control Officer
R. J. Sommerville

DATE: July 25, 1995

TO: Air Pollution Control Board

SUBJECT: Adoption of Amendments to Rule 67.4 (Metal Container, Metal Closure and Metal Coil Coating Operations)

SUMMARY:

Rule 67.4 controls volatile organic compound (VOC) emissions from metal container, metal closure (cans and drums) and metal coil coating operations. In response to a request from a local company, the proposed amendments lower the VOC limit for end sealing coatings used for food and beverage containers. This company wants these lower limits included in the State Implementation Plan for California because they then become Lowest Achievable Emission Rate control technology under the federal new source review program and, as a result, will be required on other similar new and modified sources elsewhere in the United States. This will help level the playing field between this company and its competitors. The amendments also satisfy Best Available Retrofit Control Technology (BARCT) requirements of the California Clean Air Act by implementing new requirements for cleaning coating application equipment.

The proposed changes require the VOC limit for can end sealing compounds to be 20 g/l or less which represents state-of-the-art low-VOC technology used by a local manufacturer. The changes also decrease the VOC limit for exterior and interior spray coatings for new drums, pails and lids, and add new requirements for equipment cleaning operations reflecting statewide BARCT guidance. In addition, clarifications along with updated definitions and test methods have been added.

The two companies subject to the rule have been in compliance with the new coating application equipment cleaning requirements for a number of years. The only company affected by the lower VOC limit for can coatings has been using a complying coating since 1992 and has achieved approximately 17 tons per year emission reductions.

A socioeconomic impact assessment (SIA) of the proposed amendments has been prepared. It indicates the revised rule will not have any impact on employment or the economy in the region.

Issue

Should the Board adopt amendments to Rule 67.4 (Metal Container, Metal Closure and Metal Coil Coating Operations) to make changes requested by industry, reflect state BARCT requirements, and make other minor modifications?

SUBJECT: Adoption of Amendments to Rule 67.4

Recommendation

AIR POLLUTION CONTROL OFFICER:

Adopt the resolution amending Rule 67.4 and make appropriate findings:

- (1) of necessity, authority, clarity, consistency, non-duplication and reference as required by Section 40727 of the State Health and Safety Code.
- (2) that amended Rule 67.4 will alleviate a problem and promote attainment of ambient air quality standards (Section 40001 of the State Health and Safety Code);
- (3) that an assessment of the socioeconomic impact of amended Rule 67.4 has been prepared, and that the socioeconomic impacts of the proposed rule amendments have been actively considered and the District has made a good faith effort to minimize any adverse socioeconomic impacts; and
- (4) that there is no reasonable possibility that the amended rule may have a significant effect on the environment, and that adoption of amended Rule 67.4 is categorically exempt from the provisions of the California Environmental Quality Act pursuant to California Code of Regulations, Title 14, Sections 15300 and 15308, as an action taken to assure the maintenance or protection of the environment and where the regulatory process involves procedures for protection of the environment.

Advisory Statement

The Air Pollution Control District Advisory Committee recommended adopting the proposed amendments to Rule 67.4 at its May 24, 1995 meeting.

Fiscal Impact

Adopting the proposed amendments will have no fiscal impact on the District.

Alternative

Not adopt amendments to Rule 67.4. This alternative would be inconsistent with the California Clean Air Act which requires the District to adopt rules reflecting Best Available Retrofit Control Technology. In addition, changes requested by a local company will not be made. Accordingly, this alternative is not recommended.

BACKGROUND:

San Diego County is classified as a serious non-attainment area for federal and state ozone standards. Both federal and state law require the District to control Volatile Organic Compounds (VOCs) because they are ozone precursors. In addition, the California Clean Air Act requires the District to adopt rules reflecting all feasible ozone precursor control measures and Best Available Retrofit Control Technology (BARCT).

Rule 67.4 was first adopted in 1979 to control VOC emissions from can and coil coating operations. It was revised in 1990 to correct deficiencies identified by the Environmental Protection

SUBJECT: Adoption of Amendments to Rule 67.4

Agency (EPA) and was last amended in 1994 to correct additional deficiencies identified by EPA. Recently, one local company affected by this rule requested that the VOC limit for end sealing compounds be revised to reflect the latest state-of-the art coating technology: a water-based end sealing compound for food and beverage cans with less than 20 g/l of VOC's. The amended rule accomplishes this. In addition, it implements state BARCT requirements and achieves the emission reductions contained in the District's Regional Air Quality Strategy developed to show how the San Diego Air Basin will achieve the emission reductions necessary to meet the state ambient air quality standard for ozone as required by the California Clean Air Act.

The proposed changes revise VOC content limits for exterior and interior spray coatings for new drums, pails and lids, and add standards and options for cleaning coating application equipment, including an exemption for solvents used in volumes less than 10 gallons per month. Also clarifications along with updated definitions and test methods are made.

On February 2, 1993, the Air Pollution Control Board directed that, with the exception of a regulation requested by business or a regulation for which a socioeconomic impact assessment is not required, no new or revised regulation shall be implemented unless specifically required by federal or state law. Amendments to Rule 67.4 are required by the California Clean Air Act, and requested by the local business and are consistent with the February 2, 1993 Board direction.

Socioeconomic Impact Assessment

Section 40728.5 of the State Health and Safety Code requires the District to perform a socioeconomic impact assessment (SIA) for new and revised rules and regulations significantly affecting air quality or emission limitations. The amendments to Rule 67.4 impose new VOC limitations on coating and cleaning operations. Accordingly, an SIA was prepared by the District and made available for public comments at the April 18, 1995 workshop. The SIA concluded that the amendment of Rule 67.4 will not have any impact on the region's economy or employment. Specific findings are enumerated below:

1. There are two facilities in San Diego County subject to the rule which emitted approximately 80 tons of VOCs in 1990. They cannot be classified as small businesses.
2. The new requirements for cleaning application equipment are not expected to result in additional expenses because both companies have been complying with these requirements for a number of years.
3. The one company affected by the lower VOC limit is a can coating operation. It has used an end sealing compound for food and beverage containers with a VOC content of 20 g/l since 1992 and achieved a 17.5 tons per year emission reduction. While the proposed lower limit will not create any additional expenses for the facility, the cost of new technology was calculated to provide the information required by law.
4. Assuming it was not already in use, the total annual cost increase for the new compound would be approximately \$96,700, with a corresponding cost-effectiveness of \$2.75 per pound of VOC reduced. This is well within the cost-effectiveness values of other control measures adopted by the District.

The District worked closely with the two affected companies during the rule development process. Company representatives were consulted in a formal workshop and several informal consultations. These businesses support and encouraged the new lower VOC content limits for end sealing compounds proposed in the rule.

SUBJECT: Adoption of Amendments to Rule 67.4

California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires an environmental review for certain actions. No significant adverse impacts on the environment have been suggested; no such impacts are reasonably possible. Adopting the proposed amendments to Rule 67.4 will not have a significant effect on the environment and is categorically exempt from the provisions of the California Environmental Quality Act pursuant to California Code of Regulations, Title 14, Sections 15300 and 15308, as an action taken to assure the maintenance or protection of the environment where the regulatory process involves procedures for protection of the environment.

A public workshop on proposed Rule 67.4 was held on April 18, 1995. The workshop report and Socioeconomic Impact Assessment are attached.

Concurrence:

Respectfully submitted,

DAVID E. JANSSEN
Chief Administrative Officer



R. J. SOMMERVILLE
Air Pollution Control Officer

FINDINGS OF THE SAN DIEGO COUNTY AIR POLLUTION
CONTROL BOARD IN RESPECT TO ADOPTION OF
AMENDMENTS TO RULE 67.4 (METAL CONTAINER, METAL CLOSURE
AND METAL COIL COATING OPERATIONS)

- A. Pursuant to section 40727 of the Health and Safety Code, the Air Pollution Control Board of the San Diego County Air Pollution Control District makes the following findings:
1. (Necessity) The adoption of the proposed amendments to District Rule 67.4 is necessary for the District to satisfy the requirements of Health and Safety Code section 40919 mandating rules requiring best available retrofit control technology for stationary sources of air pollution.
 2. (Authority) The adoption of the proposed rule amendments is authorized by Health and Safety Code sections 40001 and 40702.
 3. (Clarity) The proposed rule amendments are written so that their meaning can be easily understood by persons directly affected by the rule.
 4. (Consistency) The proposed rule amendments are in harmony with, and not in conflict with or contrary to, existing statutes, court decisions, and state and federal regulations.
 5. (Nonduplication) The proposed amendments do not impose the same requirements as an existing state or federal regulation.
 6. (Reference) The adoption of the proposed amendments implements Health and Safety Code section 40919.
- B. The Air Pollution Control Board further finds that an assessment of socioeconomic impacts of the proposed rule was performed and made available for public comment and review pursuant to Health and Safety Code section 40728.5, and that the socioeconomic impacts of the proposed rule have been actively considered and the District has made a good faith effort to minimize adverse socioeconomic impacts.
- C. The Air Pollution Control Board further finds that there is no reasonable possibility that the amended rule may have a significant effect on the environment, and that the adoption of the proposed amendments is categorically exempt from the provisions of the California Environmental Quality Act pursuant to California Code of Regulations, title 14, sections 15300 and 15308, as an action taken to assure the protection of the environment which will not have a significant effect on the environment and where the regulatory process involves procedures for protection of the environment.
- D. The Air Pollution Control Board further finds in accordance with Health and Safety Code section 40001 that the adoption of the proposed rule amendments is necessary to satisfy state law, and that the proposed amendments will promote the attainment of state and federal ambient air quality standards.

APCD Meeting 7/25/95
Agenda Item #3

OFFICIAL RECORD

Clerk of the Board of Supervisors

Exhibit No. 1 Agenda No. APCD3

Meeting Date 7-25-95 (APCD)

Presented by County Counsel

Document No. _____

Year _____

Resolution No. 95-275

Re Rules and Regulations of the
Air Pollution Control District)
of San Diego County)

**RESOLUTION AMENDING RULE 67.4
OF REGULATION IV
OF THE RULES AND REGULATIONS OF THE
SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT
Tuesday, July 25, 1995**

On motion of Member Horn, seconded by Member Cox the following resolution is adopted:

WHEREAS, the San Diego County Air Pollution Control Board, pursuant to Section 40702 of the Health and Safety Code, adopted Rules and Regulations of the Air Pollution Control District of San Diego County; and

WHEREAS, said Board now desires to amend said Rules and Regulations; and

WHEREAS, notice has been given and a public hearing has been had relating to the amendment of said Rules and Regulations pursuant to Section 40725 of the Health and Safety Code.

NOW THEREFORE IT IS RESOLVED AND ORDERED by the San Diego County Air Pollution Control Board that the Rules and Regulations of the Air Pollution Control District of San Diego County be and hereby are amended as follows:

Rule 67.4 is amended to read as follows:

RULE 67.4. METAL CONTAINER, METAL CLOSURE AND METAL COIL COATING OPERATIONS

(a) APPLICABILITY

(1) This rule applies to all metal container, metal closure and metal coil coating operations in which volatile organic compounds (VOC's) are employed.

(2) Operations subject to this rule shall not be subject to Rules 66 and 67.3.

(b) RESERVED

(c) DEFINITIONS

For the purpose of this rule, the following definitions shall apply:

(1) "**Cleaning Material**" means a VOC containing material used for cleaning hands, tools, application equipment and work area.

(2) "**Closure**" means any metal component which is used to close or seal a container.

(3) "**Coating Line**" means an operation or process for applying, drying or oven baking and/or curing surface coatings, together with associated equipment including a coating applicator, flash-off area and oven.

(4) **"Coil"** means any flat metal sheets or strips that have been formed into rolls or coils for further industrial or commercial use.

(5) **"Container"** means any can, pail or drum.

(6) **"Drum"** means any manufactured or reconditioned cylindrical metal container that is larger than 12 gallon but smaller than 110 gallon capacity.

(7) **"End"** means a part of a container which is used for its closure after the container is filled with a product.

(8) **"End Sealing Compound"** means a compound which is coated onto a container closure and which functions as a gasket when the closure is assembled onto the container.

(9) **"Exempt Compound"** means any of –

(i) the following compounds:

1,1,1-trichloroethane,
methylene chloride, (dichloromethane),
trichlorofluoromethane (CFC-11),
dichlorodifluoromethane (CFC-12),
trifluoromethane (HFC-23),
trichlorotrifluoroethane (CFC-113),
dichlorotetrafluoroethane (CFC-114),
chloropentafluoroethane (CFC-115),
chlorodifluoromethane (HCFC-22),
dichlorotrifluoroethane (HCFC-123),
dichlorofluoroethane (HCFC-141b),
1,1,1,2-tetrafluoroethane (HFC-134a),
1,1,2,2-tetrafluoroethane (HFC-134),
chlorodifluoroethane (HCFC-142b),
2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124),
pentafluoroethane (HFC-125),
1,1,1-trifluoroethane (HFC-143a),
1,1-difluoroethane (HFC-152a),

(ii) the following linear volatile methyl siloxane (VMS) compounds:

hexamethyldisiloxane (MM),
octamethyltrisiloxane (MDM),
decamethyltetrasiloxane (MD₂M),
dodecamethylpentasiloxane (MD₃M),
tetradecamethylhexasiloxane (MD₄M),
dimethyl silicones and siloxanes (MD_xM),

(iii) the following cyclic volatile methyl siloxane (VMS) compounds:

hexamethylcyclotrisiloxane (D₃),
octamethylcyclotetrasiloxane (D₄),
decamethylcyclopentasiloxane (D₅),
dodecamethylcyclohexasiloxane (D₆),
cyclopolydimethylsiloxanes (D_x),

- (iv) the following branched volatile methyl siloxane (VMS) compounds:
1,1,1,3,5,5,5-heptamethyl-3-[(trimethylsilyl)oxyl]-trisiloxane (M₃T),
1,1,1,5,5,5-hexamethyl-3,3-bis[(trimethylsilyl)oxy]-trisiloxane (M₄Q),
pentamethyl[(trimethylsilyl)oxy]cyclotrisiloxane (MD₃),
- (v) and the following four classes of perfluorocarbon (PFC) compounds:
cyclic, branched, or linear, completely fluorinated alkanes;
cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;
cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and
sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.

(10) **"Exterior Base Coating"** means a coating applied to the exterior of a container, body, closure or flat sheet to provide a protection to the metal or to provide background for any lithographic operation.

(11) **"Exterior Body Spray"** means a coating sprayed on the exterior of the container body to provide a decorative or protective finish.

(12) **"Food/Beverage Container"** means a metal container in which food or beverages intended for human consumption are packaged.

(13) **"Interior Base Coating"** means a coating applied to the interior of a container body or end or flat sheet to provide a protective lining between the product and the container.

(14) **"Interior Body Spray"** means a coating sprayed on the interior of the container to provide a protective film between the product and the container.

(15) **"Letterpress Coating"** means an acrylate-based topcoat which is used for coating letterpress printing plates during the manufacture of such plates.

(16) **"Lid"** means a reusable closure.

(17) **"Metal Container, Metal Closure, and Metal Coil Coating"** means any coating containing VOC's applied by spray, roller or other means to the inside and/or outside of metal containers, drums, pails, lids, closures or to the surface of flat sheets, rolls, or coil for further industrial or commercial use.

(18) **"Overvarnish"** means a coating applied directly over a design coating to reduce the coefficient of friction, to provide gloss and to protect the finish against abrasion and corrosion.

(19) **"Pail"** means any manufactured or reconditioned cylindrical metal container that is from one gallon to 12 gallon capacity and constructed of 29 gauge or heavier material.

(20) **"Pet Food Container"** means a metal container in which food for animal (non-human) consumption is packaged.

(21) **"Stationary Source"** means the same as defined in Rule 20.1.

(22) **"Three-Piece Container Side-Seam Spray"** means a coating sprayed on the exterior and/or interior of a welded, cemented or soldered seam to protect the exposed metal.

(23) **"Two-Piece Container Exterior End Spray"** means a coating sprayed on the exterior end of a container to provide protection to the metal.

(24) **"Volatile Organic Compound (VOC)"** means any volatile compound containing at least one atom of carbon, which may be emitted to the atmosphere during operations or activities subject to this rule, except methane, carbon monoxide, carbon dioxide, carbonic acid, ammonium carbonate, metallic carbides and carbonates, and exempt compounds.

(25) **"VOC Content Per Volume of Coating, Less Water and Exempt Compounds"** means the weight of VOC per combined volume of VOC and coating solids and is calculated by the following equation:

$$C_{c\text{voc}} = (W_s - W_w - W_{es}) / (V_m - V_w - V_{es})$$

where:

$C_{c\text{voc}}$	=	VOC content of coating, less water and exempt compounds
W_s	=	weight of volatile compounds including water and exempt compounds
W_w	=	weight of water
W_{es}	=	weight of exempt compounds
V_m	=	volume of material including water and exempt compounds
V_w	=	volume of water
V_{es}	=	volume of exempt compounds

(26) **"VOC Content Per Volume of Material"** means the weight of VOC per volume of material and is calculated by the following equation:

$$C_{m\text{voc}} = (W_s - W_w - W_{es}) / V_m$$

where:

$C_{m\text{voc}}$	=	VOC content of material
W_s	=	weight of volatile compounds including water and exempt compounds
W_w	=	weight of water
W_{es}	=	weight of exempt compounds
V_m	=	volume of material including water and exempt compounds

(d) STANDARDS

(1) VOC Limits

Except as provided for in Section (e), a person shall not use or apply coatings on any coating line of the type designated below which contains VOC's in excess of the following limits at the point of application:

(i)	Grams of VOC per liter of coating (less water and exempt compounds)
<u>Metal Container or Closure Coating Lines</u>	
Sheet base coat (exterior and interior) and overvarnish	180
Two-piece container exterior base coat and overvarnish	250
Container exterior body spray and exterior closure spray	250
Three-piece container side-seam spray	660
End sealing compound:	
Food/Beverage Container	20
Pet Food Container	20
Non-Food Container	20
Container interior body spray:	
Two-piece container	420
Three-piece container	310
Reconditioned drums, pails and lids:	
Exterior spray	420
Interior spray	510
New drums, pails and lids :	
Exterior spray	340
Interior spray	420
(ii)	Grams of VOC per liter of coating (less water and exempt compounds)
<u>Coil Coating Line</u>	
(A) Letterpress coatings	200
(B) Other coil coatings	200

(2) Cleaning of Application Equipment

A person shall not use VOC containing materials for the cleaning of application equipment used in operations subject to this rule unless:

- (i) The cleaning material contains 200 grams or less of VOC per liter of material; or

- (ii) The cleaning material has an initial boiling point of 190°C (374°F) or greater; or
- (iii) The solvent has a total VOC vapor pressure of 20 mm Hg or less, at 20°C (68°F); or
- (iv) The cleaning material is flushed or rinsed through the application equipment in a contained manner that will minimize evaporation into the atmosphere; or
- (v) The application equipment or equipment parts are cleaned in a container which is open only when being accessed for adding, cleaning, or removing application equipment or when cleaning solvent is being added, provided the cleaned equipment or equipment parts are drained to the container until dripping ceases; or
- (vi) A system is used that totally encloses the component parts being cleaned during the washing, rinsing, and draining processes; or
- (vii) The combined usage of cleaning materials not complying with any of the standards described in Subsection (2)(i) through Subsection (2)(vi) above is less than 10 gallons each calendar month at a stationary source.

(e) ADD-ON CONTROL DEVICE

(1) In lieu of complying with the provisions of Subsection (d)(1), a person may use an air pollution control system which:

- (i) has been installed in accordance with an Authority to Construct; and
- (ii) includes an emission collection system which captures and transports organic gaseous emissions to an air pollution control device; and
- (iii) has a combined VOC emissions capture and control device efficiency of at least 85 percent by weight.

(2) A person subject to the requirements of this section shall submit to the Air Pollution Control Officer for approval an Operation and Maintenance (O&M) plan for the proposed emission control device and emission collection system. Such plan shall:

- (i) identify all key system operating parameters. Key system operating parameters are those necessary to ensure compliance with Subsection (e)(1)(iii) such as temperature, pressure, and/or flow rate, and
- (ii) include proposed inspection schedules, anticipated ongoing maintenance, and proposed recordkeeping practices regarding the key system operating parameters.

(3) The Operation and Maintenance plan must be submitted to the Air Pollution Control Officer and receive approval prior to operation of the air pollution control equipment. A person subject to the requirements of this section shall implement the plan on approval of the Air Pollution Control Officer.

(f) RECORDKEEPING

(1) Any person subject to the requirements of Sections (d) or (e) of this rule shall maintain records in accordance with the following:

(i) Maintain a current list of coatings and volatile organic compounds (VOC's) in use which provides all of the coating and VOC data necessary to evaluate compliance.

(ii) Maintain records on a monthly basis showing the types and amounts of solvents used for clean-up.

(2) Any person complying with the requirements of Subsection (d)(1) shall maintain daily or monthly records showing the type and amount used of each coating, solvent used as thinner or diluent, and VOC-containing material.

(3) Any person complying with the requirements of Subsection (d)(1) by using control equipment pursuant to Section (e) of this rule shall:

(i) for all materials not in compliance with Subsection (d)(1) of this rule, maintain daily records of the amount used of each material coating, solvent used as thinner or diluent, and VOC-containing material; and

(ii) maintain daily records sufficient to document continuous compliance with Subsection (e)(1)(iii), including records of key system operating parameters as approved in the Operation and Maintenance plan.

Such records shall be retained on site for at least three years, and shall be made available to the District upon request.

(g) VOC TEST METHODS

(1) Measurements of VOC content of coatings and cleaning materials subject to Subsections (d)(1)(i), (d)(1)(ii)(B), and (d)(2)(i) of this rule shall be conducted and reported in accordance with EPA Test Method 24 (40 CFR 60, Appendix A) as it exists on (*date of adoption*)

(2) Measurements of VOC content of coatings subject to Subsection (d)(1)(ii)(A) of this rule shall be conducted and reported in accordance with San Diego Air Pollution Control District's Method 24D for Determination of Density, Total Volatile Matter Content, and Weight Solids of Surface Coatings Containing Photosensitive Reactive Diluents as it exists on (*date of adoption*).

(3) Measurement of the control device efficiency subject to Subsection (e)(1)(iii) of this rule shall be conducted in accordance with EPA Methods 18 and/or 25A (40 CFR 60) as they exist on (*date of adoption*) and in accordance with a protocol approved by the Air Pollution Control Officer.

(4) Measurement of the emission collection system capture efficiency subject to Subsection (e)(1) (ii) of this rule shall be determined according to EPA's technical document, "Guidelines for Determining Capture Efficiency," dated January 9, 1995, using a protocol approved by the Air Pollution Control Officer. Subsequent to the initial compliance demonstration period, applicable key system operating parameters, as approved by the Air Pollution Control Officer, may be used as verification that capture efficiency has not diminished.

(5) Perfluorocarbon (PFC) compounds and other exempt compounds shall be assumed to be absent from a coating, or cleaning material subject to this rule unless a manufacturer of the material or a facility operator identifies the specific individual compound(s) present in the material and provides an EPA and ARB approved test method which can be used to quantify the specific compounds.

(6) Measurement of the initial boiling point of cleaning materials subject to Subsection (d)(2)(ii) shall be conducted in accordance with ASTM Standard Test Method D1078-86 for distillation range of volatile organic liquids.

(7) Calculation of total VOC vapor pressure for materials subject to Subsection (d)(2)(iii) of this rule shall be conducted in accordance with the District's "Procedures for Estimating the Vapor Pressure of VOC Mixtures" as it exists on (date of adoption). If the vapor pressure of the liquid mixture, as calculated by this procedure, exceeds the limits specified in Subsection (d)(2)(iii), the vapor pressure shall be determined in accordance with ASTM Standard Test Method D2879-86. The solvent composition shall be determined using one of the following ASTM standard recommended practices: E168-92, E169-93 or E260-91. The fraction of water and exempt compounds in the liquid phase shall be determined by using ASTM Standard Test Methods D3792-91 and D4457-85 and shall be used to calculate the partial pressure of water and exempt compounds. The results of vapor pressure measurements obtained using ASTM Test Method D2879-86 shall be corrected for partial pressure of water and exempt compounds.

IT IS FURTHER RESOLVED AND ORDERED that the subject amendments to Rule 67.3 of Regulation IV, shall take effect upon adoption.

PASSED AND ADOPTED by the Air Pollution Control Board of the San Diego County Air Pollution Control District, State of California, this 25th day of July, 1995 by the following votes:

AYES: Cox, Jacob, Roberts, Horn
NOES: None
ABSENT: Slater

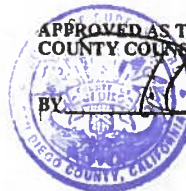
This is a true certified copy of the original document on file or of record in my office. I have the seal of the County of San Diego and signature of the Clerk of the Board of Supervisors, imprinted in purple ink.

Thomas J. Pastuszka
Clerk of the Board, San Diego County, California

STATE OF CALIFORNIA)
County of San Diego) ss By Deputy: S Morgan

I hereby certify that the foregoing is a full, true, and correct copy of the Original Resolution which is now on file in my office.

BY Susan Morgan
Susan Morgan, Deputy



AIR POLLUTION CONTROL DISTRICT
COUNTY OF SAN DIEGO

PROPOSED AMENDMENTS TO RULE 67.4

CHANGE COPY

Rule 67.4 is amended to read as follows:

RULE 67.4. METAL CONTAINER, METAL CLOSURE AND METAL COIL COATING OPERATIONS

(a) **APPLICABILITY**

(1) This rule applies to all metal container, metal closure and metal coil coating operations in which volatile organic compounds (VOC's) are employed.

(2) Operations subject to this rule shall not be subject to Rules 66 and 67.3.

(b) **RESERVED**

(c) **DEFINITIONS**

For the purpose of this rule, the following definitions shall apply:

(1) "Cleaning Material" means a VOC containing material used for cleaning hands, tools, application equipment and work area.

(1)(2) "Closure" means any metal component which is used to close or seal a container.

(2)(3) "Coating Line" means an operation or process for applying, drying or oven baking and/or curing surface coatings, together with associated equipment including a coating applicator, flash-off area and oven.

(3)(4) "Coil" means any flat metal sheets or strips that have been formed into rolls or coils for further industrial or commercial use.

(4)(5) "Container" means any cans, pails or drums.

(5)(6) "Drum" means any manufactured or reconditioned cylindrical metal container that is larger than 12 gallon but smaller than 110 gallon capacity.

(7) "End" means a part of a container which is used for its closure after the container is filled with a product.

(6)(8) "End Sealing Compound" means a compound which is coated onto a container closure and which functions as a gasket when the closure is assembled onto the container.

(7)(9) "Exempt Compound" means any of - ~~the following compounds or classes of compounds: 1,1,1 trichloroethane, methylene chloride, trichlorofluoromethane (CFC-11), dichlorodifluoromethane (CFC-12), trifluoromethane (HFC-23), trichlorotrifluoroethane (CFC-113), dichlorotetrafluoroethane (CFC-114), chloropentafluoroethane (CFC-115),~~

~~chlorodifluoromethane (HCFC-22), dichlorotrifluoroethane (HCFC-123), dichlorofluoroethane (HCFC-141b), 1,1,1,2-tetrafluoroethane (HFC-134a), 1,1,2,2-tetrafluoroethane (HFC-134), chlorodifluoroethane (HCFC-142b), 2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124), pentafluoroethane (HFC-125), 1,1,1-trifluoroethane (HFC-143a), 1,1-difluoroethane (HFC-152a),~~

(i) the following compounds:

1,1,1-trichloroethane,
methylene chloride. (dichloromethane),
trichlorofluoromethane (CFC-11),
dichlorodifluoromethane (CFC-12),
trifluoromethane (HFC-23),
trichlorotrifluoroethane (CFC-113),
dichlorotetrafluoroethane (CFC-114),
chloropentafluoroethane (CFC-115),
chlorodifluoromethane (HCFC-22),
dichlorotrifluoroethane (HCFC-123),
dichlorofluoroethane (HCFC-141b),
1,1,1,2-tetrafluoroethane (HFC-134a),
1,1,2,2-tetrafluoroethane (HFC-134),
chlorodifluoroethane (HCFC-142b),
2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124),
pentafluoroethane (HFC-125),
1,1,1-trifluoroethane (HFC-143a),
1,1-difluoroethane (HFC-152a),

(ii) the following linear volatile methyl siloxane (VMS) compounds:

hexamethyldisiloxane (MM),
octamethyltrisiloxane (MDM),
decamethyltetrasiloxane (MD₂M),
dodecamethylpentasiloxane (MD₃M),
tetradecamethylhexasiloxane (MD₄M),
dimethyl silicones and siloxanes (MD_xM)

(iii) the following cyclic volatile methyl siloxane (VMS) compounds:

hexamethylcyclotrisiloxane (D₃),
octamethylcyclotetrasiloxane (D₄),
decamethylcyclopentasiloxane (D₅),
dodecamethylcyclohexasiloxane (D₆),
cyclopolydimethylsiloxanes (D_x),

- (iv) the following branched volatile methyl siloxane (VMS) compounds:
1.1.1.3.5.5.5-heptamethyl-3-[(trimethylsilyl)oxy]-trisiloxane (M₃T),
1.1.1.5.5.5-hexamethyl-3.3.bis[(trimethylsilyl)oxy]-trisiloxane (M₄O),
pentamethyl[(trimethylsilyl)oxy]cyclotrisiloxane (MD₃),
- (v) and the following four classes of perfluorocarbon (PFC) compounds:
- (i) cyclic, branched, or linear, completely fluorinated alkanes;
- (ii) cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;
- (iii) cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and
- (iv) sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.

~~(8)~~(10) **"Exterior Base Coating"** means a coating applied to the exterior of a container, body, closure or flat sheet to provide a protection to the metal or to provide background for any lithographic operation.

~~(9)~~(11) **"Exterior Body Spray"** means a coating sprayed on the exterior of the container body to provide a decorative or protective finish.

~~(10)~~(12) **"Food/Beverage Container"** means a metal container in which food or beverages intended for human consumption are packaged.

~~(11)~~(13) **"Interior Base Coating"** means a coating applied to the interior of a container body or end or flat sheet to provide a protective lining between the product and the container.

~~(12)~~(14) **"Interior Body Spray"** means a coating sprayed on the interior of the container to provide a protective film between the product and the container.

~~(13)~~(15) **"Letterpress Coating"** means an acrylate-based topcoat which is used for coating letterpress printing plates during the manufacture of such plates.

~~(14)~~(16) **"Lid"** means a reusable closure.

~~(15)~~(17) **"Metal Container, Metal Closure, and Metal Coil Coating"** means any coating containing VOC's applied by spray, roller or other means to the inside and/or outside of metal containers, drums, pails, lids, closures or to the surface of flat sheets, rolls, or coil for further industrial or commercial use.

~~(16)~~(18) **"Overvarnish"** means a coating applied directly over a design coating to reduce the coefficient of friction, to provide gloss and to protect the finish against abrasion and corrosion.

(17)(19) "Pail" means any manufactured or reconditioned cylindrical metal container that is from one gallon to 12 gallon capacity and constructed of 29 gauge or heavier material.

(18)(20) "Pet Food Container" means a metal container in which food for animal (non-human) consumption is packaged.

(21) "Stationary Source" means the same as defined in Rule 20.1.

(19)(22) "Three-Piece Container Side-Seam Spray" means a coating sprayed on the exterior and/or interior of a welded, cemented or soldered seam to protect the exposed metal.

(20)(23) "Two-Piece Container Exterior End Spray" means a coating sprayed on the exterior end of a container to provide protection to the metal.

(21)(24) "Volatile Organic Compound (VOC)" ~~for the purpose of this rule~~ means any volatile compound containing at least one atom of carbon, which may be emitted to the atmosphere during operations or activities subject to this rule, except excluding methane, carbon monoxide, carbon dioxide, carbonic acid, ammonium carbonate, metallic carbides and carbonates, and exempt compounds ~~which may be emitted to the atmosphere during the application of and/or subsequent drying or curing of coatings or compounds subject to this rule. VOC limits are expressed in grams of VOC content per liter of coating minus water and exempt compound.~~

(25) "VOC Content Per Volume of Coating, Less Water and Exempt Compounds" means the weight of VOC per combined volume of VOC and coating solids and is calculated by the following equation:

$$C_{c\text{voc}} = (W_s - W_w - W_{es}) / (V_m - V_w - V_{es})$$

where:

$C_{c\text{voc}}$ = VOC content of coating, less water and exempt compounds

W_s = weight of volatile compounds including water and exempt compounds

W_w = weight of water

W_{es} = weight of exempt compounds

V_m = volume of material including water and exempt compounds

V_w = volume of water

V_{es} = volume of exempt compounds

(26) "VOC Content Per Volume of Material" means the weight of VOC per volume of material and is calculated by the following equation:

$$C_{m\text{voc}} = (W_s - W_w - W_{es}) / V_m$$

where:

$C_{m\text{voc}}$ = VOC content of material

<u>W_s</u>	=	<u>weight of volatile compounds including water and exempt compounds</u>
<u>W_w</u>	=	<u>weight of water</u>
<u>W_{es}</u>	=	<u>weight of exempt compounds</u>
<u>V_m</u>	=	<u>volume of material including water and exempt compounds</u>

(d) **REQUIREMENTS STANDARDS**

(1) **VOC Limits**

Except as provided for in Section (e), a person shall not use or apply coatings on any coating line of the type designated below which contains VOC's in excess of the following limits at the point of application:

<u>(+) (i)</u>	<u>Grams of VOC per liter of coating (minus less water and exempt compounds)</u>
<u>Metal Container or Closure Coating Lines</u>	
Sheet base coat (exterior and interior) and overvarnish	180
Two-piece container exterior base coat and overvarnish	250
Container exterior body spray and exterior closure spray	250
Three-piece container side-seam spray	660
End sealing compound:	
Food/Beverage Container	440 <u>20</u>
Pet Food Container	20
Non-Food Container	20
Container interior body spray:	
Two-piece container	420
Three-piece container	310
New and R <u>reconditioned drums, pails and lids:</u>	
Exterior spray	420
Interior spray	510
<u>New drums, pails and lids :</u>	
<u>Exterior spray</u>	<u>340</u>
<u>Interior spray</u>	<u>420</u>

(2)(ii)	<u>Coil Coating Line</u>	Grams of VOC per liter of coating (<u>minus less water and exempt compounds</u>)
(i)(A)	Letterpress coatings	200
(ii)(B)	Other coil coatings	200

(2) Cleaning of Application Equipment

A person shall not use VOC containing materials for the cleaning of application equipment used in operations subject to this rule unless:

(i) The cleaning material contains 200 grams or less of VOC per liter of material; or

(ii) The cleaning material has an initial boiling point of 190°C (374°F) or greater; or

(iii) The solvent has a total VOC vapor pressure of 20 mm Hg or less, at 20°C (68°F); or

(iv) The cleaning material is flushed or rinsed through the application equipment in a contained manner that will minimize evaporation into the atmosphere; or

(v) The application equipment or equipment parts are cleaned in a container which is open only when being accessed for adding, cleaning, or removing application equipment or when cleaning solvent is being added, provided the cleaned equipment or equipment parts are drained to the container until dripping ceases; or

(vi) A system is used that totally encloses the component parts being cleaned during the washing, rinsing, and draining processes; or

(vii) The combined usage of cleaning materials not complying with any of the standards described in Subsection (2)(i) through Subsection (2)(vi) above is less than 10 gallons each calendar month at a stationary source.

(e) **ADD-ON CONTROL DEVICE**

(1) In lieu of complying with the provisions of Subsection (d)(1), a person may use an air pollution control system which:

(i) has been installed in accordance with an Authority to Construct; and

(ii) includes an emission collection system which captures and transports organic gaseous emissions to an air pollution control device; and

(iii) has a combined VOC emissions capture and control device efficiency of at least 85 percent by weight.

(2) A person subject to the requirements of this section shall submit to the Air Pollution Control Officer for approval an Operation and Maintenance (O&M) plan for the proposed emission control device and emission collection system. Such plan shall:

(i) identify all key system operating parameters. Key system operating parameters are those necessary to ensure compliance with Subsection (e)(1)(iii) such as temperature, pressure, and/or flow rate, and

(ii) include proposed inspection schedules, anticipated ongoing maintenance, and proposed recordkeeping practices regarding the key system operating parameters.

(3) The Operation and Maintenance plan must be submitted to the Air Pollution Control Officer and receive approval prior to operation of the air pollution control equipment. A person subject to the requirements of this section shall implement the plan on approval of the Air Pollution Control Officer.

(f) RECORDKEEPING

(1) Any person subject to the requirements of Sections (d) or (e) of this rule shall maintain records in accordance with the following:

(i) Maintain a current list of coatings and volatile organic compounds (VOC's) in use which provides all of the coating and VOC data necessary to evaluate compliance.

(ii) Maintain records on a monthly basis showing the types and amounts of solvents used for ~~surface preparation and~~ clean-up.

(2) Any person complying with the requirements of Subsection (d)(1) shall maintain daily or monthly records showing the type and amount used of each coating, solvent used as thinner or diluent, and VOC-containing material.

(3) Any person complying with the requirements of Subsection (d)(1) by using control equipment pursuant to Section (e) of this rule shall:

(i) for all materials not in compliance with Subsection (d)(1) of this rule, maintain daily records of the amount used of each material coating, solvent used as thinner or diluent, and VOC-containing material; and

(ii) maintain daily records sufficient to document continuous compliance with Subsection (e)(1)(iii), including records of key system operating parameters as approved in the Operation and Maintenance plan.

Such records shall be retained on site for at least three years, and shall be made available to the District upon request.

(g) VOC TEST METHODS

(1) Measurements of VOC content of coatings and cleaning materials subject to Subsections (d)(1)(i), and (d)(2)(1)(ii)(B), and (d)(2)(i) of this rule shall be conducted and reported in accordance with EPA Test Method 24 (40 CFR 60, Appendix A) as it exists on ~~September 27, 1994~~ (date of adoption) and ~~ASTM Test Method D 4457-85 for determination of dichloromethane and 1,1,1-trichloroethane in paints and coatings by direct injection into a gas chromatograph.~~

(2) Measurements of VOC content of coatings subject to Subsection (d)(2)(i) (1)(ii)(A) of this rule shall be conducted and reported in accordance with San Diego Air Pollution Control District's Method 24D for Determination of Density, Total Volatile Matter Content, and Weight Solids of Surface Coatings Containing Photosensitive Reactive Diluents as it exists on September 27, 1994 (*date of adoption*).

(3) Measurements of VOC emissions subject to Section (e) of this rule shall be conducted in accordance with EPA Methods 18, and 25 or 25A (40 CFR 60, Appendix A) as they exist on September 27, 1994. Test procedures shall be performed in accordance with a protocol approved by the Air Pollution Control Officer.

(3) Measurement of the control device efficiency subject to Subsection (e)(1)(iii) of this rule shall be conducted in accordance with EPA Methods 18 and/or 25A (40 CFR 60) as they exist on (*date of adoption*) and in accordance with a protocol approved by the Air Pollution Control Officer.

(4) Measurement of the emission collection system capture efficiency subject to Subsection (e)(1) (ii) of this rule shall be determined according to EPA's technical document, "Guidelines for Determining Capture Efficiency," dated January 9, 1995, using a protocol approved by the Air Pollution Control Officer. Subsequent to the initial compliance demonstration period, applicable key system operating parameters, as approved by the Air Pollution Control Officer, may be used as verification that capture efficiency has not diminished.

(4)(5) Perfluorocarbon (PFC) compounds and other exempt compounds shall be assumed to be absent from a coating, or cleaning, or surface preparation material subject to this rule unless a manufacturer of the material or a facility operator identifies the specific individual compound(s) present in the material and provides an EPA and ARB approved test method which can be used to quantify the specific compounds.

(6) Measurement of the initial boiling point of cleaning materials subject to Subsection (d)(2)(ii) shall be conducted in accordance with ASTM Standard Test Method D1078-86 for distillation range of volatile organic liquids.

(7) Calculation of total VOC vapor pressure for materials subject to Subsection (d)(2)(iii) of this rule shall be conducted in accordance with the District's "Procedures for Estimating the Vapor Pressure of VOC Mixtures" as it exists on (*date of adoption*). If the vapor pressure of the liquid mixture, as calculated by this procedure, exceeds the limits specified in Subsection (d)(2)(iii), the vapor pressure shall be determined in accordance with ASTM Standard Test Method D2879-86. The solvent composition shall be determined using one of the following ASTM standard recommended practices: E168-92, E169-93 or E260-91. The fraction of water and exempt compounds in the liquid phase shall be determined by using ASTM Standard Test Methods D3792-91 and D4457-85 and shall be used to calculate the partial pressure of water and exempt compounds. The results of vapor pressure measurements obtained using ASTM Test Method D2879-86 shall be corrected for partial pressure of water and exempt compounds.

**AIR POLLUTION CONTROL DISTRICT
SAN DIEGO COUNTY**

**RULE 67.4. - METAL CONTAINER, METAL CLOSURE AND
METAL COIL COATING OPERATIONS**

WORKSHOP REPORT

A workshop notice was mailed to each company known to be involved in Metal Container, Metal Closure or Metal Coil Coating Operations in San Diego County. Notices were also mailed to all Economic Development Corporations and Chambers of Commerce in San Diego County, the U.S. Environmental Protection Agency (EPA), the California Air Resources Board (ARB), and other interested parties.

The workshop was held on April 18, 1995, and was attended by two people. The comments and District responses are as follows:

1. WORKSHOP COMMENT:

Rule 67.4 does not have a definition for an "end", i.e., a part of a container which is used to close the container permanently after it is filled with a product. The definition should reflect the difference between a lid and an end.

DISTRICT RESPONSE:

The District agrees. Section (c) has been revised as suggested.

2. WORKSHOP COMMENT:

A definition for cleaning material should be included in the rule.

DISTRICT RESPONSE:

The District agrees. A definition of cleaning material has been added.

3. WORKSHOP COMMENT:

It is unclear whether all the requirements of Subsection (d)(2) must be met to comply with the emission standards for cleaning materials specified in this subsection.

DISTRICT RESPONSE:

Rule 67.4 provides a facility a number of options to comply with the emission standards for cleaning materials specified in Subsection (d)(2). Compliance with any provision of this subsection is sufficient to meet the rule requirements.

4. WORKSHOP COMMENT:

If a facility uses exclusively coatings with a VOC content less than 20 g/liter, which is now required by the amended rule, it results in significant emission reductions. The District's fee schedule should be revised to reflect the lower VOC emissions from the facility.

DISTRICT RESPONSE:

The fee schedules in the District's Rule 40 are currently being revised. The emission fee component of the total fees for sources that emit more than 10 tons per year will be charged based on the source's most recent approved actual emissions (likely 1993 data). Sources emitting less than 10 tons per year will be charged a nominal emissions fee. A public workshop on Rule 40 will take place on May 18, 1995.

5. WRITTEN COMMENT:

EPA recently issued a revision to the definition of volatile organic compounds (VOCs) to add parachlorobenzotrifluoride (PCBTF) to the list of compounds which do not participate in the formation of ground level ozone (exempt compounds). The District should add PCBTF to the list of exempt compounds in Rule 67.4 at this time.

DISTRICT RESPONSE:

Although EPA has listed parachlorobenzotrifluoride as an exempt compound, ARB has not yet taken any action regarding exemption of this compound from the VOC definition. Therefore, the District will consider this issue after ARB issues its recommendations. In addition, the proposed exemption of PCBTF by EPA will not affect Rule 67.4, because the only two companies subject to this rule do not presently use exempt compounds or plan to use them in the future.

6. ARB COMMENT:

No comments at this time

7. EPA COMMENT:

No comments at this time.

The Socioeconomic Impact Analysis (SIA) was presented at this workshop. No comments regarding it were received.

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SOCIOECONOMIC IMPACT ASSESSMENT

**PROPOSED AMENDED RULE 67.4 -
METAL CONTAINER, METAL CLOSURE AND
METAL COIL COATING OPERATIONS**

**San Diego County
Air Pollution Control District**

May 1995

**SOCIOECONOMIC IMPACT ASSESSMENT
PROPOSED AMENDED RULE 67.4 -METAL CONTAINER,
METAL CLOSURE AND METAL COIL COATING OPERATIONS**

INTRODUCTION

Section 40728.5 of the State Health & Safety Code requires the Air Pollution Control District (District) to perform a socioeconomic impact assessment for any new or amended rules that will significantly affect air quality or emission limitations. This report contains the District's assessment of the socioeconomic impacts of amended District Rule 67.4 - Metal Container, Metal Closure and Metal Coil Coating Operations.

Rule 67.4 regulates the volatile organic compound (VOC) emissions from can and coil coating operations. It was initially adopted in 1979 and last amended in 1994 to correct some administrative deficiencies identified by EPA.

The current rule amendments reflect Best Available Retrofit Control Technology (BARCT) requirements¹ of the California Clean Air Act and are included in the District's Regional Air Quality Strategy. In addition, the revised rule reflects the state-of-the-art in low VOC technology for end sealing compounds in aluminum can manufacturing which is currently being used by a San Diego-based company.

Specifically, the amendments to Rule 67.4 include the following:

- The VOC content limit for end sealing compounds for food and beverage containers is decreased from 200 to 20 grams per liter.
- The VOC content limits for exterior and interior spray for new drums, pails, and lids are decreased to be consistent with the BARCT Guidance.
- Requirements for equipment cleanup operations are added as required by the BARCT Guidance.
- Test methods for initial boiling point and total VOC vapor pressure for solvents are included in conjunction with new requirements for application equipment cleaning.
- New definitions for calculations of the VOC content for coatings and cleaning materials are added, and the definition for volatile organic compounds is updated.

There are two sources in San Diego County subject to the rule. Their combined VOC emissions were approximately 80 tons in 1990. In 1992, one of the two facilities, a can coating operation, introduced a new water-based end sealing compound with a very low VOC content. This resulted in a 17.5 ton per year emission reduction. This low VOC compound is reflected in the amended rule.

The remaining rule revisions will not result in significant emission reductions because some of them are not applicable to operations in San Diego County. Others, such as equipment cleaning requirements, have been in place for a number of years at the affected facilities.

The overall cost-effectiveness of the proposed amendments is estimated to be approximately \$5500 per ton (\$2.75/lb) of VOC reduced.

THE NECESSITY OF AMENDING RULE 67.4

The California Clean Air Act requires that District rules reflect Best Available Retrofit Control Technology (BARCT). Additionally, the one affected can coating operation has requested that the District include a low VOC limit for food and beverage can end sealing compound used by that company. The proposed amendments to Rule 67.4 will accomplish both objectives.

IMPACT ASSESSMENT

State law requires that whenever the District proposes adoption, amendment or repeal of a rule or regulation significantly affecting air quality or emission limitations, a socioeconomic impact assessment must be prepared, to the extent that data are available. The Health and Safety Code Section 40728.5 specifies the following elements to be included in the socioeconomic impact assessment:

- (1) The type of industries or business, including small business, affected by the rule or regulation.
- (2) The range of probable costs, including costs to industry or business, including small business, of the rule or regulation.
- (3) The impact of the rule or regulation on employment and the economy of the region affected by the adoption of the rule or regulation.
- (4) The availability and cost-effectiveness of alternatives to the rule or regulation being proposed or amended.
- (5) The emission reduction potential of the rule or regulation.
- (6) The necessity of adoption, amending, or repealing the rule or regulation in order to attain state and federal ambient air standards.

Item 6 is discussed in the preceding section. The remaining items are discussed below.

Type of Industries Affected by Amended Rule 67.4

Amended Rule 67.4 will directly affect two companies in San Diego County (SIC Codes 3411 and 3479). One company manufactures aluminum cans for food, beverage, pet food, and non-food containers. The manufacturing process for these containers includes application of end sealing compounds. The other company applies coatings to coils used for flexographic printing plates.

Economic Impacts and Range of Probable Costs

The revised provision requiring low VOC content end sealing compounds for food and beverage containers applies to one company which has been using a water-based coating meeting the proposed VOC limit since 1992. Therefore, the proposed limit will not create any additional expenses for the facility. However, the cost of conversion to this new technology was calculated in this assessment to provide the information required by state law.

The price of the water-based end sealing compound is slightly higher than the solvent based compound used previously by the facility. In addition, new heaters had to be installed to provide for necessary drying of the compound. The annualized capital cost for these heaters, based on the reported capital and installation costs², 10-year equipment life and 10% interest, is estimated to be \$37,250. The annual cost to operate the heaters, based on a 16-hour day, 250-day per year operation, is estimated to be \$39,270.

Production levels reported for the can end coating facility³ were used to estimate the cost difference resulting from the use of the water-based compound compared to the solvent-based compound. The cost increase is estimated to be approximately \$20,000 per year.

Based on the above, the total annual cost increase for the new, low VOC compound is approximately \$96,700. The corresponding emission reduction which would be achieved assuming the same rate of production is 25.5 tons of VOCs per year.

Since the low VOC end sealing compounds are already in use by the facility, the cost-effectiveness was calculated using the actual amount of emission reduction reported to the District. The actual VOC emissions reduced since the facility started to use low VOC end sealing compounds is 17.5 tons per year. The difference between the theoretical and actual emission reductions can be a result of variation in the production rates or the size of can ends, or both. Based on actual reported emission reductions, the corresponding cost-effectiveness was estimated as \$5500 per ton (\$2.75/lb) which is well within the cost-effectiveness values of other control measures adopted by the District.

The Rule 67.4 amendments for cleanup of application equipment are not expected to result in additional expenses. Both facilities subject to the rule use primarily water as the cleaning material. There is some usage of VOC-containing cleaning materials, but the amounts are within the limits stipulated in the proposed rule provisions. Therefore, no additional expenses are expected as a result of these revisions.

The remaining amendments to Rule 67.4 are administrative and will not result in additional costs to the affected facilities.

Employment Impacts

It is unlikely that the proposed amendments will result in any local workforce reduction. Both companies subject to the rule have already implemented the proposed measures without a negative impact on employment. All other revisions in the rule are primarily administrative and should not require any changes to the facility's workforce.

Availability and Cost-Effectiveness of Alternatives

There are three basic alternatives to Rule 67.4: not to amend the rule, propose a less stringent rule, or propose a more stringent rule.

The first and second alternatives are not viable options because they would be inconsistent with the California Clean Air Act of 1988 which requires the District to adopt rules reflecting BARCT to reduce emissions of VOCs. Amendments to Rule 67.4 are needed to fulfill the requirements of the state Act.

The third alternative is to adopt a more stringent rule. The rule could be made more stringent than the proposed amended Rule 67.4 by decreasing the VOC content limits for coil coatings or to require additional add-on control equipment at the coil coating facility. Such requirements, however, would go beyond requirements of state law (BARCT) and would be too costly. In addition, most coatings used at the one affected coil coating facility are water-based and it is not expected that the amount of VOCs in these coatings can be reduced further. Accordingly, this alternative is not recommended.

Emission Reduction Potential

The use of a low VOC end sealing compound by the one affected can coating facility has already resulted in an annual emission reduction of approximately 17.5 tons.

Minimization of Adverse Socioeconomic Impacts

The District has worked closely with the two affected companies to minimize the economic impacts which may result from Rule 67.4 to the extent allowed by state and federal requirements. Company representatives were consulted during the rule development process in two formal workshops and several informal consultations. Industry supported and encouraged the new lower VOC content limit for end sealing compounds that has been proposed in the rule.

Conclusions

Based on the above analysis, amended Rule 67.4 will have no impact on employment and the economy in San Diego County.

At the same time, the VOC emission reduction that will be maintained under amended Rule 67.4 contributes to the attainment of federal and state ambient air quality standards for ozone.

REFERENCES

- (1) "Draft Proposed Determination of Reasonably Available Control Technology and Best Available Retrofit Control Technology for Metal Container, Closure and Coil Coating Operations", ARB, June 24, 1992.
- (2) Personal communication with Marvin Kaylor, Director - Technical Service, Van Can Co., February 9, 1995.
- (3) Van Can Co. Plan for Compliance with APCD Rule 67.4, September 10, 1985.

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