



Air Pollution Control Board  
Brian P. Bilbray District 1  
Dianne Jacob District 2  
Pamela Slater District 3  
Leon L. Williams District 4  
John MacDonald District 5

Air Pollution Control Officer  
R. J. Sommerville

DATE: April 19, 1994  
TO: Air Pollution Control Board  
SUBJECT: Adoption of New Rule 67.19 (Coatings and Printing Inks Manufacturing Operations)

### SUMMARY:

New Rule 67.19 will regulate emissions of volatile organic compounds (VOC's) from manufacturing of coatings, including paints, and printing inks. The rule will affect three companies (two small and one large) and reduce their emissions by approximately 71%, or 73 tons per year. It will require affected businesses to equip mixing vats producing solvent-based paints or inks with lids and use complying solvents or enclosed equipment in cleaning operations. Two small companies, subject to the rule, have already complied with these requirements. The one large affected company is a federal "major source"; hence, it will also be required to install add-on control equipment reflecting reasonably available control technology (RACT). Facilities emitting less than 15 pounds per day of VOC's from all coatings and printing inks manufacturing operations will be exempt from the rule's emission control requirements.

Rule 67.19 also satisfies the requirements of the California Clean Air Act to apply all feasible VOC control measures as expeditiously as possible. The proposed rule is consistent with the Board's direction of February 2, 1993, regarding implementation of new or revised rules because the 1990 Federal Clean Air Act mandate, the adoption of RACT level rules for major sources of VOC emissions. In addition, in January 1993, the Environmental Protection Agency (EPA) notified the District that a failure to submit Rule 67.19 before July 15, 1994, will result in imposition of federal sanctions including a 2 to 1 emission offset ratio for new and modified facilities and withholding of up to \$75 million in federal transportation funds. An assessment of the socioeconomic impacts of the proposed rule was prepared and concluded that the rule will not have a significant impact on employment or the economy of the region. District staff met frequently with affected businesses and made many changes to the proposed rule to minimize adverse socioeconomic impacts.

### Issue

Should the Board adopt new Rule 67.19 (Coatings and Printing Inks Manufacturing Operations) to reduce volatile organic compound emissions from the manufacturing of coatings and printing inks in San Diego County?

### Recommendation

#### AIR POLLUTION CONTROL OFFICER

1. Set June 7, 1994 at 2:00 p.m., as the date and time for public hearing to consider the resolution adopting new Rule 67.19 into the Rules and Regulations of the San Diego County Air Pollution Control District.

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2. Direct the Clerk of the Board to notice the Hearing pursuant to Section 40725 of the State Health and Safety Code.
3. Following the hearing: (a) adopt the resolution adopting Rule 67.19 and, (b) make appropriate findings:
  - (i) of necessity, authority, clarity, consistency, non-duplication and reference as required by Section 40727 of the State Health and Safety Code;
  - (ii) that new Rule 67.19 will alleviate a problem and promote attainment of ambient air quality standards (Section 40001 of the State Health and Safety Code);
  - (iii) that an assessment of the socioeconomic impact of new Rule 67.19 has been prepared and has been made available for public review and comment, 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; and
  - (iv) that there is no reasonable possibility that the new rule may have a significant effect on the environment, and that the adoption of new Rule 67.19 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 Advisory Committee recommended adopting proposed Rule 67.19 at its December 15, 1993 meeting.

**Fiscal Impact**

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

**Alternatives**

Not adopt Rule 67.19. The requirements of the Federal Clean Air Act to adopt rules reflecting reasonably available control technology (RACT) for major sources of volatile organic compounds (VOC) emissions and the requirements of the California Clean Air Act to adopt all feasible VOC control measures (Health and Safety Code Section 40914) would not be met under this alternative. Also, on January 15, 1993, EPA notified the District that RACT rules for certain major VOC sources, including coatings and printing inks manufacturing, were not submitted before the November 15, 1992, Federal Clean Air Act deadline. EPA stated it will impose federal sanctions (2 to 1 emission offset ratio for new and expanding major industrial sources and withholding federal transportation funds) on San Diego County if Rule 67.19 is not submitted to EPA before July 15, 1994. Accordingly, this alternative is not recommended.

**BACKGROUND:**

Rule 67.19 was developed to comply with federal and state law. The Federal Clean Air Act requires all major sources of volatile organic compounds (emitting 25 tons per year or more) be subject to reasonably available control technology (RACT). On January 15, 1993, EPA

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determined that the District failed to submit RACT rules for some major sources of VOC emissions, including coating and printing inks manufacturing, before the November 15, 1992, Federal Clean Air Act deadline. EPA stated it will impose federal sanctions (2 to 1 emission offset ratio for new and expanding major industrial sources and withholding of up to \$75 million in federal transportation funds) on San Diego County if Rule 67.19 is not submitted by July 15, 1994. In addition, the California Clean Air Act requires adopting all feasible VOC control measures.

The rule will affect three facilities: two manufacture paints and one manufactures inks. All will be required to cover mixing vats for solvent-based paints or inks with lids, and install submerged fill pipes on stationary VOC materials storage tanks with 550 gallons capacity or more. Tanks used to store epoxy resins, water-based coatings or inks, paste inks, or mixing vats used for production of water-based coatings or inks are exempt from these requirements. All three affected facilities are required to reduce VOC emissions from solvents used to clean manufacturing equipment. The one paint manufacturing facility that is a major federal source will also be required to install an air pollution control system reducing VOC emissions from solvent-based paint manufacturing by 90%. Sources emitting less than 15 pounds per day of VOC's from all coatings and inks manufacturing operations are exempt from the entire rule provided that monthly records are kept to determine average daily emissions.

To reduce VOC emissions from clean-up operations, equipment cleaning must be conducted using either low VOC cleaning materials or cleaning devices enclosing the equipment being cleaned. Other specified cleaning procedures minimizing VOC emissions may also be used. Rule 67.19 allows the use of recycled cleaning materials exceeding the VOC limit, provided fresh cleaning materials comply with the VOC content limit and the cleaning materials are reclaimed on site. The rule also requires that fugitive liquid leaks be promptly recorded and repaired.

The rule includes a compliance schedule providing the large company up to 12 months to implement control equipment requirements, and to phase-out paints formulated with 1,1,1-trichloroethane (TCA). This solvent has been identified by EPA as a significant stratospheric ozone depleting compound and is being phased out of production and use nationally. The phase-out, already planned by the affected facility, will allow it to avoid an expensive air pollution control system for chlorinated solvents. New facilities will be required to comply with Rule 67.19 at the time of equipment installation and start-up. Recordkeeping requirements and test methods for determining compliance are also included in the rule.

Section 40001 of the State Health and Safety Code requires the District to determine, prior to adopting any rule to reduce emissions of criteria pollutants, that the rule will alleviate a problem and promote the attainment or maintenance of state or federal air quality standards. San Diego County does not attain the state or federal ambient air quality standard for ozone. The proposed rule will reduce emissions of volatile organic compounds (ozone precursors) by 73 tons per year. Therefore, it will help to alleviate San Diego County's ozone non-attainment problem by promoting the attainment of the state and federal ozone standards.

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. Proposed new Rule 67.19 is mandated by the Federal Clean Air Act which requires that all major sources of VOC emissions be controlled by rules reflecting reasonably available control technology. Failure to submit such a rule for coating and printing inks manufacturing operations to EPA before July 15, 1994, will result in the imposition of federal sanctions on San Diego county. Rule 67.19 also complies with the California Clean Air Act requirements to adopt all feasible control measures. Accordingly, Rule 67.19 is 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 rules and regulations significantly affecting air quality or emission limitations. Rule 67.19 imposes new emission limitations on sources. Accordingly, an SIA was prepared by the District and made available for public comment at the November 19, 1993 workshop. The final socioeconomic impact assessment reflects changes made as a result of workshop comments. The socioeconomic impact assessment concluded that the rule will result in a total compliance cost to industry of up to \$310,000 per year. The estimated total annual compliance cost to be incurred by the two small businesses is \$31,000. This amount represents less than 1% of their respective gross sales. In addition, both companies have already met most of the proposed rule requirements. Given the relatively low magnitude of costs of compliance for these small companies, it is anticipated that the adoption of Rule 67.19 will not result in significant adverse impact on small businesses in San Diego county.

The total annual cost of compliance for the large facility is approximately \$280,000 per year, or 0.3% of the company's gross annual sales. It is expected that the company will be able either to absorb these costs or pass the costs on to its customers. In the latter case, the average cost increase of a gallon of paint should be less than 7 cents (0.5%). In addition, this same company is planning to expand its operations in San Diego county, requiring the use of Best Available Control Technology (BACT) to comply with the District's New Source Review rules. The add-on control equipment required by Rule 67.19 will meet this requirement.

Overall, the cost-effectiveness of Rule 67.19 will range from savings of \$0.56 to costs of \$2.35 per pound of emissions reduced. This is comparable to the cost-effectiveness of other VOC control measures adopted by the District. Due to the relatively low compliance costs imposed by the rule, it is unlikely that any affected firms would leave San Diego county, or reduce their work force, or completely close their businesses. Therefore, it may be concluded that Rule 67.19 will not have a significant impact on the economy or employment of San Diego County.

### **California Environmental Quality Act**

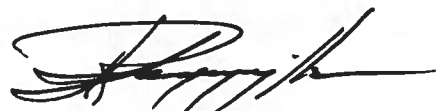
The California Environmental Quality Act requires an environmental review for certain actions. No significant adverse impacts on the environment have been suggested; no such impacts are reasonably possible. The adoption of proposed new Rule 67.19 will not have a significant effect on the environment 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.

Public workshops on proposed Rule 67.19 were held on July 9, 1991 and November 19, 1993. The workshop reports and Socioeconomic Impact Assessment are attached.

Concurrence:

DAVID E. JANSSEN  
Chief Administrative Officer

Respectfully submitted,



R. J. SOMMERVILLE  
Air Pollution Control Officer

**AIR POLLUTION CONTROL BOARD  
AGENDA ITEM  
INFORMATION SHEET**

**SUBJECT:** Adoption of New Rule 67.19 (Coatings and Printing Inks Manufacturing Operations)

**SUPV DIST.:** All

**COUNTY COUNSEL APPROVAL:** Form and Legality ☒ Yes ☐ N/A  
☐ Standard Form ☐ Ordinance ☒ Resolution

**AUDITOR APPROVAL:** ☒ N/A ☐ Yes **4 VOTES:** ☐ Yes ☒ No

**FINANCIAL MANAGEMENT REVIEW:** ☐ Yes ☒ No

**CONTRACT REVIEW PANEL:** ☐ Approved \_\_\_\_\_ ☐ N/A

**CONTRACT NUMBER(S):** N/A

**PREVIOUS RELEVANT BOARD ACTION:**

**BOARD POLICIES APPLICABLE:**

**CITIZEN COMMITTEE STATEMENT:** The Air Pollution Control District Advisory Committee recommended adoption of proposed Rule 67.19 at its December 15, 1993 meeting.

**CONCURRENCES:** N/A

**ORIGINATING DEPARTMENT:** Air Pollution Control District County of San Diego

**CONTACT PERSON:** Richard J. Smith, Deputy Director 750-3303 MS: 0-176



R.J. SOMMERVILLE  
DEPARTMENT AUTHORIZED REPRESENTATIVE

APRIL 19, 1994  
MEETING DATE

FINDINGS OF THE SAN DIEGO COUNTY AIR POLLUTION  
CONTROL BOARD IN RESPECT TO ADOPTION OF  
NEW RULE 67.19 (COATINGS AND PRINTING INKS  
MANUFACTURING 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 new District Rule 67.19 is necessary for the District to satisfy the requirements of section 182(a)(1)(A) of the federal Clean Air Act requiring adoption of rules relating to reasonably available control technology for new or modified stationary sources, and California Health and Safety Code sections 40914 requiring adoption of all feasible measures for reducing emissions of volatile organic compounds and 40919 requiring application of best available retrofit control technology to existing stationary sources.
  2. (Authority) The adoption of the new proposed rule is authorized by Health and Safety Code sections 40001, 40702 and 40914.
  3. (Clarity) The proposed new rule is written so that its meaning can be easily understood by persons directly affected by the rule.
  4. (Consistency) The proposed rule is in harmony with, and not in conflict with or contrary to, existing statutes, court decisions, and State law and Federal regulations.
  5. (Nonduplication) The proposed rule does not impose the same requirements as an existing state or federal regulation.
  6. (Reference) The adoption of the proposed new rule implements section 182(a)(1)(A) of the federal Clean Air Act [42 U.S.C. section 7511a(a)(1)(A)], and California Health and Safety Code sections 40914 and 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 proposed rule may have a significant effect on the environment, and that the adoption of the proposed rule 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 is necessary to satisfy federal and state law, and that the proposed rule will promote the attainment of state and federal ambient air quality standards.

APCD Meeting 6/7/94  
Agenda Item #2

OFFICIAL RECORD

Clerk of the Board of Supervisors

Exhibit No. \_\_\_\_\_ Agenda No. 2

Meeting Date JUN 7 1994 ( )

Presented by C. C. C.

Document No. 759971

THOMAS J. PASTUSZKA

Clerk of the Board of Supervisors

## NEW ADDED RULE

Reso 94-197  
Re Rules and Regulations of the)  
Air Pollution Control District )  
of San Diego County . . . . .)

TUESDAY, JUNE 7, 1994

### RESOLUTION ADDING RULE 67.19 TO REGULATION IV OF THE RULES AND REGULATIONS OF THE SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT

On motion of Member \_\_\_\_\_, seconded by Member \_\_\_\_\_  
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:

Proposed new Rule 67.19 is to read as follows:

#### **RULE 67.19. COATINGS AND PRINTING INKS MANUFACTURING OPERATIONS**

##### **(a) APPLICABILITY**

Except as otherwise provided in Section (b), this rule is applicable to any person who manufactures coatings or printing inks. Mixing, blending, and compounding operations subject to Section (d) of this rule shall not be subject to Rule 67.17. Manufacturing operations and equipment cleaning operations subject to this rule shall not be subject to Rule 66 or 67.6.

##### **(b) EXEMPTIONS**

(1) The provisions of this rule shall not apply to any stationary source where emissions of volatile organic compounds (VOC's) from all coating and/or printing ink manufacturing operations are less than an average of 15.0 pounds (6.8 kg) per day of operation for each calendar month, provided the owner or operator of the stationary source maintains monthly usage and production records of VOC containing materials necessary to establish average daily VOC emission levels. The average daily emission levels shall be determined by taking into account the number of operational days per given month. The monthly records of VOC containing materials shall be retained on site for at least three years and made available to the District upon request.

(2) The requirements of Subsection (d)(2) of this rule shall not apply to a stationary source where the combined uncontrolled emissions of VOC's from all coating and/or ink manufacturing operations, including emissions from equipment cleaning, are less than 25 tons in each calendar year.

(3) The requirements of Subsection (d)(3) of this rule shall not apply to any stationary storage tank with a capacity of less than 550 gallons (2080 liters) or to any stationary storage tank used exclusively for storage of epoxy resins, water-based coatings or inks, or paste inks.

(4) The requirements of Subsections (d)(1) and (d)(2) of this rule shall not apply to mixing vats that are used exclusively for mixing water-based coatings or inks.

### (c) DEFINITIONS

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

(1) **"Coating"** means a material which can be applied to a surface and which forms a solid continuous film in order to beautify and/or protect the surface. This includes, but is not limited to, any primer, paint, varnish, stain, lacquer, enamel, shellac, sealer, or maskant, but excludes adhesive.

(2) **"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), 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.

(3) **"Existing Equipment"** means any coating or printing ink manufacturing equipment for which a District Authority to Construct or Permit to Operate was issued before (*date of adoption*).

(4) **"Fugitive Liquid Leak"** means a visible leak of material containing more than 10 percent of VOC by weight, at a rate in excess of three drops per minute.

(5) **"Magie Oil"** means any hydrocarbon petroleum distillate which has an initial boiling point between 510-630°F (266-333°C).



(6) **"Manufacturing Operations"** means mixing, blending, and/or compounding operations, including the addition of materials in such operations, associated with the production of coatings and/or printing inks for sale for off-site use.

(7) **"Mixing Vat"** means any vat used to grind, disperse, mix, blend, and/or compound coating or printing ink ingredients.

(8) **"New Equipment"** means any coating or printing ink manufacturing equipment for which an Authority to Construct was issued after *(date of adoption)*.

(9) **"Paste Ink"** means a printing ink that contains, primarily, Magie oil or diethylene glycol as solvent.

(10) **"Printing Ink"** means any fluid or viscous composition used in printing, impressing, or transferring an image onto a substrate.

(11) **"Production Cycle"** means an interval of time between the start and the finish of a coatings or printing inks manufacturing process during which the entire sequence of operations necessary for the production of a specific coating or printing ink is completed.

(12) **"Stationary Source"** as defined in Rule 20.1.

(13) **"Stationary Storage Tank"** means any tank, reservoir, or other container used to store, but not transport, VOC containing materials.

(14) **"Submerged Fill Pipe"** means any fill pipe which has its discharge opening entirely submerged when the liquid level is six inches above the bottom of the tank. "Submerged fill pipe," when applied to a tank which is loaded from the side, means any fill pipe which has its discharge opening entirely submerged when the liquid level is 18 inches above the bottom of the tank.

(15) **"Uncontrolled VOC Emissions"** means VOC emissions from a coating and/or printing ink manufacturing operation which occurred or would have occurred in the absence of any air pollution control equipment added or process modifications made on or after November 15, 1990.

(16) **"Volatile Organic Compound (VOC)"** means any volatile compound containing at least one atom of carbon excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonates, and exempt compounds which may be emitted to the atmosphere during the production of coatings and/or printing inks subject to this rule.

(17) **"Water-Based Coating or Ink"** means a water miscible or water reducible coating or ink that contains more than five percent of water by weight.

(18) **"Wipe Cleaning"** means a method of cleaning by physically rubbing a surface with a material such as a rag or paper wetted with a cleaning solvent to remove contaminants or coating or printing ink residues from the surface.

(d) **STANDARDS**

(1) A person shall not manufacture coatings and/or printing inks containing VOC's unless all mixing vats used for such manufacture are kept covered, except when adding

materials, taking samples, visually inspecting the fluid level, or wipe cleaning the vats, with lids which satisfy the following conditions:

(i) Lids are maintained in good condition such that, when in place, they maintain contact with the rim with gaps less than or equal to 1/2 inch in width for at least 90 percent of the circumference of the rim of the vat. The cumulative length of gaps between the lid and the rim of the vat exceeding 1/2 inch in width shall not exceed 10 percent of the circumference; and

(ii) There are no holes, tears, or openings in the lid, except the slit specified in Subsection (d)(1)(iii) and openings for adding materials, taking samples, or visually inspecting the fluid level. The openings shall be equipped with covers which do not have any holes or tears. All openings shall be covered when the mixing vat is not being accessed; and

(iii) The lid may have a slit to allow clearance for insertion of a mixer shaft if so equipped. The width of the slit in the lid for the mixer shaft shall be no more than 2 inches greater than the diameter of the mixing shaft, or no more than 4 inches greater than the diameter of the mixing shaft for lids on mixing vats subject to Subsection (d)(2). For any mixing vat with a capacity of more than 55 gallons (208 liters), the slit shall be covered after insertion of the mixer, except to allow safe clearance for the mixer shaft.

In lieu of complying with the provisions of Subsection (d)(1), a person may elect to use an air pollution control system which meets the requirements of Sections (e) and (h).

(2) Except as provided in Subsection (b)(2), a person shall not conduct any coating and/or printing ink manufacturing operations unless uncontrolled VOC emissions from mixing vats used for such operations are reduced by at least 90 percent by weight.

(3) Except as provided in Subsection (b)(3) a person shall not transfer or allow the transfer of resins, coatings, printing inks, or solvents containing VOCs into any stationary storage tank unless such tank is:

(i) Equipped with a submerged fill pipe; or

(ii) Vented to an air pollution control system which meets the requirements of Sections (e) and (h).

(4) A person shall not manufacture coatings and/or printing inks unless fugitive liquid leaks in equipment storing, mixing, blending, or transferring materials containing more than 10 percent of VOC by weight are promptly recorded and repaired. Repair shall be completed the first time the leaking equipment is off-line for a period of time long enough to complete the repair, but in no case more than 72 hours after a leak was first detected and recorded. The record shall specify the time, date, and location of each observed leak and the time and date of repair. Records shall be retained on site for at least three years and made available to the District upon request. An unrecorded leak shall be considered a violation of this rule.

(5) A person shall not clean any equipment used in the manufacturing of coatings and/or printing inks unless:

(i) The cleaning material contains 200 grams or less of VOC per liter of material or has a total vapor pressure of VOC of 20 mm Hg or less at 68°F (20°C); or

(ii) Cleaning is conducted using an enclosed system which includes a container that completely encloses the equipment being cleaned during cleaning, except to place or remove the equipment. The cleaned equipment shall be completely drained of excess cleaning material before the container is opened for removal of the equipment. The drained cleaning material shall be returned to a closed container. The cleaning device shall be kept closed during the intervals between cleaning cycles unless access is required for maintenance or repair. The cleaning device may be equipped with vents provided that such vents are necessary to comply with applicable fire and safety codes; or

(iii) Cleaning is conducted using an enclosed system which has in place an apparatus or lid which completely covers the equipment being cleaned during washing, rinsing, and draining and has no visible holes, breaks, openings, or separations. The drained cleaning material shall be returned to a closed container. The system may be equipped with vents provided that such vents are necessary to comply with applicable fire and safety codes; or

(iv) The cleaning material is collected in a manner to minimize emissions and is reclaimed on site, and all fresh cleaning materials used at the facility, excluding cleaning materials used in enclosed systems which satisfy the requirements of Subsection (d)(5)(ii) or (d)(5)(iii), are in compliance with the requirements of Subsection (d)(5)(i). The resulting wastes from on site reclamation systems shall not contain more than 20 percent VOC by weight; or

(v) The equipment or equipment parts are cleaned in a container which is open only when being accessed or when cleaning material is being added, and clean equipment and/or equipment parts are drained to the container until dripping ceases; or

(vi) The cleaning material is flushed through the equipment, provided that the supplying and receiving vessels are covered with lids meeting the requirements of Subsection (d)(1).

#### (e) CONTROL EQUIPMENT

(1) A person who elects to comply with the provisions of Subsection (d)(2) by using an air pollution control system shall use a system which:

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

(ii) Includes an emission collection system which captures VOC emissions generated from coating and/or ink manufacturing operations, and transports the captured emissions to an air pollution control device; and

(iii) Has an overall emissions control efficiency of at least 90 percent by weight.

Emissions over an entire production cycle, not exceeding five hours, shall be used to determine compliance with the control efficiency requirements of Subsection (e)(1)(iii).

(2) A person subject to the provisions of Subsection (e)(1) shall submit an Operation and Maintenance Plan for the air pollution control device and emission collection system to the Air Pollution Control Officer for approval. Thereafter, the plan can be modified, with written Air Pollution Control Officer approval, as necessary to ensure compliance. Such plan shall:

(i) Identify all key system operating parameters. Key system operating parameters are those necessary to ensure compliance with Subsection (e)(1) such as temperatures, pressures, and flow rates; 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 the approval of the Air Pollution Control Officer, and shall comply with the provisions of the approved plan thereafter.

#### (f) RECORDKEEPING

Any person who manufactures coatings and/or printing inks shall maintain records in accordance with the following requirements:

(1) Maintain records necessary to establish calendar year emission levels for all coating and/or printing ink manufacturing operations at the stationary source. These records shall include, but shall not be limited to, the type and amount of each coating or printing ink produced during each calendar year.

(2) Maintain a current list showing the VOC content or total vapor pressure of VOC, as applicable, for each cleaning material used.

(3) Maintain records of the amounts of cleaning materials used during each calendar year.

(4) For air pollution control equipment, maintain records sufficient to demonstrate continuous operation and compliance of the emission control device during periods of emission producing activities, including daily records of the control equipment's key system operating parameters specified in Subsection (e)(2)(i).

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

#### (g) TEST METHODS

(1) Uncontrolled VOC emission rates from coating and/or ink manufacturing operations shall be determined using emission factors specified in EPA Publication AP-42, Compilation of Air Pollutant Emission Factors, as it exists on (*date of adoption*). An alternative method for determining VOC emissions may be used provided such method has been approved, in advance, by the Air Pollution Control Officer, the Air Resources Board (ARB), and U.S. Environmental Protection Agency (EPA).

(2) Measurement of VOC content of reclamation wastes pursuant to Subsection (d)(5)(iv) shall be conducted and reported in accordance with EPA Method 25D as referenced in 56 Federal Register 33494, July 22, 1991.

(3) The overall control efficiency pursuant to Subsection (e)(1)(iii) shall be determined by multiplying the capture efficiency of the emission collection system by the control efficiency of the air pollution control device. The control efficiency of the air pollution control device shall be determined using EPA Methods 18, 25 and/or 25A (40 CFR 60, Appendix A), as they exist on (*date of adoption*), and test procedures shall be

performed in accordance with a protocol approved by the Air Pollution Control Officer. The capture efficiency shall be determined 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, shall be used as indirect verification that capture efficiency performance has not diminished.

(4) Total vapor pressure of VOC in cleaning materials subject to Subsection (d)(5)(i) shall be calculated by using the District's "Procedure for Estimating the Vapor Pressure of a Solvent Mixture" as it exists on (*date of adoption*). If the calculated vapor pressure of the liquid mixture exceeds the limit specified in Subsection (d)(5)(i), the vapor pressure shall be determined in accordance with ASTM Standard Test Method D 2879-83, Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope. The fraction of water and exempt compounds in the liquid phase shall be determined using ASTM Standard Test Methods D 3792-86 and D 4457-85, respectively, and shall be used to calculate the partial pressure of water and exempt compounds. The fraction of VOC's shall be determined by using manufacturer specification data. The results of vapor pressure measurements obtained using ASTM Standard Test Method D2879-83 shall be corrected for the partial pressure of water and exempt compounds.

(5) The VOC content of liquids pursuant to Subsection (c)(4) and cleaning materials subject to Subsection (d)(5)(i) shall be determined in accordance with EPA Test Method 24 or 24A (40 CFR 60, Appendix A), as applicable, as they exist on (*date of adoption*).

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

(7) Measurements of the initial boiling point of Magie oils pursuant to Subsection (c)(5) shall be conducted in accordance with ASTM Standard Test Method D 1078-86.

(8) The water content of coatings pursuant to Subsection (c)(17) shall be determined in accordance with ASTM Standard Test Method D 3792-86.

#### (h) COMPLIANCE SCHEDULE

Except as otherwise provided in this section, the requirements of this rule shall be effective on and after (*twelve months after date of adoption*).

(1) Any person operating existing equipment, who is subject to the provisions of Subsection (d)(2), except for existing equipment manufacturing coatings containing 1,1,1-trichloroethane, and who installs air pollution control equipment to meet the requirements of that subsection shall meet the following increments of progress:

(i) By (*six months after date of adoption*), submit to the Air Pollution Control Officer an application for Authority to Construct and Permit to Operate an air pollution control system meeting the requirements of Section (e).

(ii) By (*twelve months after date of adoption*), install air pollution control equipment pursuant to Subsections (d)(1) and (d)(2).

(2) Any person operating existing equipment, except for existing equipment manufacturing coatings containing 1,1,1-trichloroethane, who is subject to the

provisions of Subsection (d)(2), and implements process modifications to meet the requirements of that subsection shall meet the following increments of progress:

(i) By *(six months after date of adoption)*, submit a process modification plan for meeting the requirements of Subsection (d)(2) to the Air Pollution Control Officer for approval. Thereafter, the plan can be modified with the approval of the Air Pollution Control Officer as necessary to ensure compliance.

(ii) By *(twelve months after date of adoption)*, fully implement the plan that has been approved by the Air Pollution Control Officer pursuant to Subsection (h)(2)(i).

(3) Any person operating existing equipment which manufactures coatings containing 1,1,1-trichloroethane who is subject to the provisions of Subsection (d)(2) shall submit to the Air Pollution Control Officer a phase-out schedule for such coating manufacture with a final termination date not later than January 1, 1996.

(4) Any person operating existing equipment who is electing to use enclosed cleaning systems pursuant to Subsection (d)(5)(ii) or (d)(5)(iii) shall comply with Subsection (d)(5)(ii) or (d)(5)(iii) by *(twelve months after date of adoption)*.

(5) Any person installing new equipment subject to this rule shall comply with the provisions of this rule upon startup.

**IT IS FURTHER RESOLVED AND ORDERED** that the subject addition of Rule 67.19 to 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 7th day of June, 1994 by the following votes:

<b>AYES:</b>	Bilbray, Jacob, MacDonald
<b>NOES:</b>	None
<b>ABSENT:</b>	Slater, Williams

APPROVED AS TO FORM AND LEGALITY  
COUNTY COUNSEL

BY Dutton

STATE OF CALIFORNIA)ss.  
County of San Diego)

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.

THOMAS J. PASTUSZKA  
Clerk of the Air Pollution Control Board

By Maritza C. Steele  
Maritza C. Steele, Deputy

Resolution No. 94-197  
No. 2 (APCB)  
6/7/94  
MCS

**NEW ADDED RULE  
CHANGE COPY**

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

**RESOLUTION ADDING RULE 67.19  
TO REGULATION IV  
OF THE RULES AND REGULATIONS OF THE  
SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT**

On motion of Member \_\_\_\_\_, seconded by Member \_\_\_\_\_  
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:

Proposed new Rule 67.19 is to read as follows:

**RULE 67.19. COATINGS AND PRINTING INKS MANUFACTURING**

**(a) APPLICABILITY**

Except as otherwise provided in Section (b), this rule is applicable to any person who manufactures coatings or printing inks. Mixing, blending, and compounding operations subject to Section (d) of this rule shall not be subject to Rule 67.17. Manufacturing operations and equipment cleaning operations subject to this rule shall not be subject to Rule 66 or 67.6.

**(b) EXEMPTIONS**

(1) The provisions of this rule shall not apply to any stationary source where emissions of volatile organic compounds (VOCs) from all coating and/or printing ink manufacturing operations are less than an average of 15.0 pounds (6.8 kg) per day of operation for each calendar month, provided the owner or operator of the stationary source maintains monthly usage and production records of VOC containing materials necessary to establish average daily VOC emission levels. The average daily emission levels shall be determined by taking into account the number of operational days per given month. The monthly



records of VOC containing materials shall be retained on site for at least three years and made available to the District upon request.

~~(3)~~ (2) The requirements of Subsection (d)(2) of this rule shall not apply to a stationary source where the combined uncontrolled emissions of VOC's from all coating and/or ink manufacturing operations, including emissions from equipment cleaning, are less than 25 tons in each calendar year.

~~(2)~~ (3) The requirements of Subsection (d)(3) of this rule shall not apply to any stationary storage tank with a capacity of less than 550 gallons (2080 liters) or to any stationary storage tank used exclusively for storage of epoxy resins, water-based coatings or inks, or paste inks.

(4) The requirements of Subsections (d)(1) and (d)(2) of this rule shall not apply to mixing vats that are used exclusively for mixing water-based coatings or inks.

### (c) DEFINITIONS

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

(1) **"Coating"** means a material which can be applied to a surface and which forms a solid continuous film in order to beautify and/or protect the surface. This includes, but is not limited to, any primer, paint, varnish, stain, lacquer, enamel, shellac, sealer, or maskant, but excludes adhesive.

(2) **"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), 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.

(3) **"Existing Equipment"** means any coating or printing ink manufacturing equipment for which a District Authority to Construct or Permit to Operate was issued before (*date of adoption*).

(4) **"Fugitive Liquid Leak"** means a visible leak of material containing more than 10 percent of VOC by weight, at a rate in excess of three drops per minute.

(5) **"Magie Oil"** means any hydrocarbon petroleum distillate which has an initial boiling point between 510-630°F (266-333°C).

(6) **"Manufacturing Operations"** means mixing, blending, and/or compounding operations, including the addition of materials in such operations, associated with the production of coatings and/or printing inks for sale for off-site use.

(7) **"Mixing Vat"** means any vat used to grind, disperse, mix, blend, and/or compound coating or printing ink ingredients.

(8) **"New Equipment"** means any coating or printing ink manufacturing equipment for which an Authority to Construct was issued after (*date of adoption*).

(9) **"Paste Ink"** means a printing ink that contains, primarily, Magie oil or diethylene glycol as solvent.

(10) **"Printing Ink"** means any fluid or viscous composition used in printing, impressing, or transferring an image onto a substrate.

(11) **"Production Cycle"** means an interval of time between the start and the finish of a coatings or printing inks manufacturing process during which the entire sequence of operations necessary for the production of a specific coating or printing ink is completed.

(12) **"Stationary Source"** as defined in Rule 20.1.

(13) **"Stationary Storage Tank"** means any tank, reservoir, or other container used to store, but not transport, VOC containing materials.

(14) **"Submerged Fill Pipe"** means any fill pipe which has its discharge opening entirely submerged when the liquid level is six inches above the bottom of the tank. "Submerged fill pipe," when applied to a tank which is loaded from the side, means any fill pipe which has its discharge opening entirely submerged when the liquid level is 18 inches above the bottom of the tank.

(15) **"Uncontrolled VOC Emissions"** means VOC emissions from a coating and/or printing ink manufacturing operation which occurred or would have occurred in the absence of any air pollution control equipment added or process modifications made before application of add-on air pollution control equipment on or after November 15, 1990.

(16) **"Volatile Organic Compound (VOC)"** means any volatile compound containing at least one atom of carbon excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonates, and exempt compounds which may be emitted to the atmosphere during the production of coatings and/or printing inks subject to this rule.

(17) **"Water-Based Coating or Ink"** means a water miscible or water reducible coating or ink that contains more than five percent of water by weight.

(18) **"Wipe Cleaning"** means a method of cleaning by physically rubbing a surface with a material such as a rag or paper wetted with a cleaning solvent to remove contaminants or coating or printing ink residues from the surface.

(d) **STANDARDS**

(1) A person shall not manufacture coatings and/or printing inks containing VOC's unless all mixing vats used for such manufacture are kept covered, except when adding materials, taking samples, visually inspecting the fluid level, or wipe cleaning the vats, with lids which satisfy the following conditions:

(i) Lids are maintained in good condition such that, when in place, they maintain contact with the rim with gaps less than or equal to 1/2 inch in width for at least 90 percent of the circumference of the rim of the vat. The cumulative length of gaps between the lid and the rim of the vat exceeding 1/2 inch in width shall not exceed 10 percent of the circumference; and

(ii) There are no holes, tears, or openings in the lid, except the slit specified in Subsection (d)(1)(iii) and openings for adding materials, taking samples, or visually inspecting the fluid level. The openings shall be equipped with covers which do not have any holes or tears. All openings shall be covered when the mixing vat is not being accessed; and

(iii) The lid may have a slit to allow clearance for insertion of a mixer shaft if so equipped. The width of the slit in the lid for the mixer shaft shall be no more than 2 inches greater than the diameter of the mixing shaft, or no more than 4 inches greater than the diameter of the mixing shaft for lids on mixing vats subject to Subsection (d)(2). For any mixing vat with a capacity of more than 55 gallons (208 liters), the slit shall be covered after insertion of the mixer, except to allow safe clearance for the mixer shaft.

In lieu of complying with the provisions of Subsection (d)(1), a person may elect to use an air pollution control system which meets the requirements of Sections (e) and (h).

(2) Except as provided in Subsection (b)(3)(2), a person shall not conduct any coating and/or printing ink manufacturing operations unless uncontrolled VOC emissions from mixing vats used for such operations are ~~vented to an air pollution control system which meets the requirements of Sections (e) and (h)~~ reduced by at least 90 percent by weight.

(3) Except as provided in Subsection (b)(2)(3) a person shall not transfer or allow the transfer of resins, coatings, printing inks, or solvents containing VOCs into any stationary storage tank unless such tank is:

(i) Equipped with a submerged fill pipe; or

(ii) Vented to an air pollution control system which meets the requirements of Sections (e) and (h).

(4) A person shall not manufacture coatings and/or printing inks unless fugitive liquid leaks in equipment storing, mixing, blending, or transferring materials containing more than 10 percent of VOC by weight are promptly recorded and repaired. Repair shall be completed the first time the leaking equipment is off-line for a period of time long enough to complete the repair, but in no case more than 72 hours after a leak was first detected and recorded. The record shall specify the time, date, and location of each observed leak and the time and date of repair. Records shall be retained on site for at least three years and made available to the District upon request. An unrecorded leak shall be considered a violation of this rule.

(5) A person shall not clean any equipment used in the manufacturing of coatings and/or printing inks unless:

(i) The cleaning material contains 200 grams or less of VOC per liter of material or has a total vapor pressure of VOC of 20 mm Hg or less at 68°F (20°C); or

(ii) Cleaning is conducted using an enclosed system which includes a container that completely encloses the equipment being cleaned during cleaning, except to place or remove the equipment. The cleaned equipment shall be completely drained of excess cleaning material before the container is opened for removal of the equipment. The drained cleaning material shall be returned to a closed container. The cleaning device shall be kept closed during the intervals between cleaning cycles unless access is required for maintenance or repair. The cleaning device may be equipped with vents provided that such vents are necessary to comply with applicable fire and safety codes; or

(iii) Cleaning is conducted using an enclosed system which has in place an apparatus or lid which completely covers the equipment being cleaned during washing, rinsing, and draining and has no visible holes, breaks, openings, or separations. The drained cleaning material shall be returned to a closed container. The system may be equipped with vents provided that such vents are necessary to comply with applicable fire and safety codes; or

(iv) The cleaning material is collected in a manner to minimize emissions and is reclaimed on site, and all fresh cleaning materials used at the facility, excluding cleaning materials used in enclosed systems which satisfy the requirements of Subsection (d)(5)(ii) or (d)(5)(iii), are in compliance with the requirements of Subsection (d)(5)(i). The resulting wastes from on site reclamation systems shall not contain more than 20 percent VOC by weight; or

(v) The equipment or equipment parts are cleaned in a container which is open only when being accessed or when cleaning material is being added, and clean equipment and/or equipment parts are drained to the container until dripping ceases; or

(vi) The cleaning material is flushed through the equipment, provided that the supplying and receiving vessels are covered with lids meeting the requirements of Subsection (d)(1).

**(e) CONTROL EQUIPMENT**

(1) A person who elects to comply with ~~subject to~~ the provisions of Subsection (d)(2) ~~shall comply by using an air pollution control system~~ shall use a system which:

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

(ii) Includes an emission collection system which captures ~~organic gaseous~~ VOC emissions generated from coating and/or ink manufacturing operations, and transports the captured emissions to an air pollution control device; and

(iii) . Has an overall emissions control efficiency of at least 90 percent by weight.

Emissions over an entire production cycle, not exceeding five hours, shall be used to determine compliance with the control efficiency requirements of Subsection (e)(1)(iii).

(2) A person subject to the provisions of Subsection (e)(1) shall submit an Operation and Maintenance Plan for the air pollution control device and emission collection system to the Air Pollution Control Officer for approval. Thereafter, the plan can be modified, with written Air Pollution Control Officer approval, as necessary to ensure compliance. Such plan shall:

(i) Identify all key system operating parameters. Key system operating parameters are those necessary to ensure compliance with Subsection (e)(1) such as temperatures, pressures, and flow rates; 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 the approval of the Air Pollution Control Officer, and shall comply with the provisions of the approved plan thereafter.

**(f) RECORDKEEPING**

Any person who manufactures coatings and/or printing inks shall maintain records in accordance with the following requirements:

(1) Maintain records necessary to establish calendar year emission levels for all coating and/or printing ink manufacturing operations at the stationary source. These records shall include, but shall not be limited to, the type and amount of each coating or printing ink produced during each calendar year.

(2) Maintain a current list showing the VOC content or total vapor pressure of VOC, as applicable, for each cleaning material used.

(3) Maintain records of the amounts of cleaning materials used during each calendar year.

(4) For air pollution control equipment, maintain records sufficient to demonstrate continuous operation and compliance of the emission control device during periods of emission producing activities, including daily records of the control equipment's key system operating parameters specified in Subsection (e)(2)(i).

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

**(g) TEST METHODS**

(1) Uncontrolled VOC emission rates from coating and/or ink manufacturing operations shall be determined using emission factors specified in EPA Publication AP-42, Compilation of Air Pollutant Emission Factors, as it exists on (*date of adoption*). An alternative method for determining VOC emissions may be used provided such method has been approved, in advance, by the Air Pollution Control Officer, the Air Resources Board (ARB), and U.S. Environmental Protection Agency (EPA).

(2) Measurement of VOC content of reclamation wastes pursuant to Subsection (d)(5)(iv) shall be conducted and reported in accordance with EPA Method 25D as referenced in 56 Federal Register 33494, July 22, 1991.

(3) The overall control efficiency pursuant to Subsection (e)(1)(iii) shall be determined by multiplying the capture efficiency of the emission collection system by the control efficiency of the air pollution control device. The control efficiency of the air pollution control device shall be determined using EPA Methods 18, 25 and/or 25A (40 CFR 60, Appendix A), as they exist on (*date of adoption*), and test procedures shall be performed in accordance with a protocol approved by the Air Pollution Control Officer. The capture efficiency shall be determined 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, shall be used as indirect verification that capture efficiency performance has not diminished.

(4) Total vapor pressure of VOC in cleaning materials subject to Subsection (d)(5)(i) shall be calculated by using the District's "Procedure for Estimating the Vapor Pressure of a Solvent Mixture" as it exists on (*date of adoption*). If the calculated vapor pressure of the liquid mixture exceeds the limit specified in Subsection (d)(5)(i), the vapor pressure shall be determined in accordance with ASTM Standard Test Method D 2879-83, Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isotenoscope. The fraction of water and exempt compounds in the liquid phase shall be determined using ASTM Standard Test Methods D 3792-86 and D 4457-85, respectively, and shall be used to calculate the partial pressure of water and exempt compounds. The fraction of VOC's shall be determined by using manufacturer specification data. The results of vapor pressure measurements obtained using ASTM Standard Test Method D2879-83 shall be corrected for the partial pressure of water and exempt compounds.

(5) The VOC content of liquids pursuant to Subsection (c)(4) and cleaning materials subject to Subsection (d)(5)(i) shall be determined in accordance with EPA Test Method 24 or 24A (40 CFR 60, Appendix A), as applicable, as they exist on (*date of adoption*).

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

(7) Measurements of the initial boiling point of Magie oils pursuant to Subsection (c)(5) shall be conducted in accordance with ASTM Standard Test Method D 1078-86.

(8) The water content of coatings pursuant to Subsection (c)(17) shall be determined in accordance with ASTM Standard Test Method D 3792-86.

#### (h) COMPLIANCE SCHEDULE

Except as otherwise provided in this section, the requirements of this rule shall be effective on and after (~~twelve six months after date of adoption~~).

(1) Any person operating existing equipment, who is subject to the provisions of Subsection (d)(2), except for existing equipment manufacturing coatings containing 1,1,1-trichloroethane, and who installs air pollution control equipment to meet the requirements of that subsection shall meet the following increments of progress:

(i) By (*six months after date of adoption*), submit to the Air Pollution Control Officer an application for Authority to Construct and Permit to Operate an air pollution control system meeting the requirements of Section (e).

(ii) By *(twelve months after date of adoption)*, install air pollution control equipment pursuant to Subsections (d)(1) and (d)(2).

(2) Any person operating existing equipment, except for existing equipment manufacturing coatings containing 1,1,1-trichloroethane, who is subject to the provisions of Subsection (d)(2), and implements process modifications to meet the requirements of that subsection shall meet the following increments of progress:

(i) By *(six months after date of adoption)*, submit a process modification plan for meeting the requirements of Subsection (d)(2) to the Air Pollution Control Officer for approval. Thereafter, the plan can be modified with the approval of the Air Pollution Control Officer as necessary to ensure compliance.

(ii) By *(twelve months after date of adoption)*, fully implement the plan that has been approved by the Air Pollution Control Officer pursuant to Subsection (h)(2)(i).

~~(2)~~ (3) Any person operating existing equipment which manufactures coatings containing 1,1,1-trichloroethane who is subject to the provisions of Subsection (d)(2) shall submit to the Air Pollution Control Officer a phase-out schedule for such coating manufacture with a final termination date not later than January 1, 1996.

~~(3)~~ (4) Any person operating existing equipment who is electing to use enclosed cleaning systems pursuant to Subsection (d)(5)(ii) or (d)(5)(iii) shall comply with Subsection (d)(5)(ii) or (d)(5)(iii) by *(twelve months after date of adoption)*.

~~(4)~~ (5) Any person installing new equipment subject to this rule shall comply with the provisions of this rule upon startup.

**IT IS FURTHER RESOLVED AND ORDERED** that the subject addition of Rule 67.19 to 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 \_\_\_\_\_ day of \_\_\_\_\_, 1994 by the following votes:

**AYES:**  
**NOES:**  
**ABSENT:**

# **WORKSHOP REPORT**

## **RULE 67.19 - COATINGS AND PRINTING INKS MANUFACTURING OPERATIONS**

A workshop notice was mailed to all companies manufacturing coatings or printing inks 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 July 9, 1991. The comments received and District responses are as follows:

### **WORKSHOP COMMENT**

Why did the District use 15 pounds per day as the exemption limit under Subsection (b)(1)?

### **DISTRICT RESPONSE**

This is the general exemption limit allowed by the EPA for small stationary sources. The amount of emissions generated from coatings and printing inks manufacturing facilities emitting less than 15 pounds per day is estimated to be less than 1 percent of the of total emissions from coatings and printing inks manufacturing operations in San Diego County. Therefore, inclusion of this exemption in Rule 67.19 will not significantly affect the District's overall emissions reduction goal, while eliminating unnecessary burdens on small sources.

### **WORKSHOP COMMENT**

Subsection (b)(2) refers to stationary storage tanks. Are portable storage tanks also included in this exemption?

### **DISTRICT RESPONSE**

Yes, they are. As defined in Section (c), "stationary storage tank" means any tank used to store VOC containing materials. Therefore, any portable storage tank will be considered as a stationary storage tank for the purposes of this rule. However, mobile storage tanks used to transport VOC containing materials are not subject to Rule 67.19.

### **WORKSHOP COMMENT**

What is the area defined under Subsection (c)(1)?

### **DISTRICT RESPONSE**

The area defined by Subsection (c)(1) is the area of the Pacific Ocean off San Diego County which is within the District's jurisdiction. Since coatings and printing inks manufacturing facilities are not expected to be located in this area, the reference to "California Coastal Waters" has been deleted from the definition of "stationary source" for the purposes of Rule 67.19. In addition, the definition of "California Coastal Waters" has been deleted from Rule 67.19.



### **WORKSHOP COMMENT**

The requirements of Subsection (d)(1)(i) are quite precise in terms of what size of gaps between the lid and the rim of the vats are allowed. Since some mixing vats may have impellers that wobble more than others, it is recommended that this subsection be changed to make the requirements less specific.

### **DISTRICT RESPONSE**

The District does not agree. The specific requirements of Subsection (d)(1)(i) are included to improve the enforceability of Rule 67.19. Rule 67.19 includes provisions allowing adequate clearance between the mixer shaft and the slit on the lid, thereby minimizing the probability that the impellers' wobbling would significantly impair the ability to close the lid properly. In addition, gaps greater than 1/8 inch in width are allowed, provided the total length of these gaps does not exceed the specified limit. Therefore, the District believes the requirements of this subsection are reasonable.

### **WORKSHOP COMMENT**

Subsection (d)(1)(ii) should be amended to allow openings on the lids for addition of raw materials. The openings will have spring-loaded covers which would be kept closed after the materials have been added.

### **DISTRICT RESPONSE**

The District agrees. Subsection (d)(1) has been revised to allow lids to be equipped with openings, provided the openings are kept covered when not being accessed.

### **WORKSHOP COMMENT**

Subsection (d)(1)(ii) should be revised to exempt small mixing vats with a capacity of 55 gallons or less from the requirement that the slit on the lid must be covered after insertion of the mixer.

### **DISTRICT RESPONSE**

The District agrees. Subsection (d)(1) has been amended as suggested.

### **WORKSHOP COMMENT**

Would the 100 pounds per day emission limit specified in Subsection (d)(2), above which add-on control are required, be reduced in the future?

### **DISTRICT RESPONSE**

The emission limit of Subsection (d)(2) has been changed to 120 pounds per day to allow for potential fluctuations in daily production level. This daily emission limit was chosen based on results of a cost-effectiveness analysis for coatings and printing inks manufacturing operations in San Diego County. The District has no current plans to lower this limit.

### **WORKSHOP COMMENT**

Would a stationary storage tank be required to have a submerged fill pipe even if emissions from the tank are vented to an air pollution control system?

### **DISTRICT RESPONSE**

No, it would not be required to have a submerged fill pipe. Subsection (d)(3) has been amended to include the option of using an air pollution control system in lieu of installing submerged fill pipes on stationary storage tanks.

### **WORKSHOP COMMENT**

If a leak is detected at the end of Friday and the facility is not operating during the weekend, it may be impossible to have the leak completely repaired within the 24-hour time frame specified in Subsection (d)(4). It is recommended that the deadline for repairing fugitive liquid leaks be extended.

### **DISTRICT RESPONSE**

The District agrees. Subsection (d)(4) has been amended to extend the leak repair time to the first time the leaking equipment is off-line but not more than 72 hours. This time limit is consistent with other District rules.

### **WORKSHOP COMMENT**

Subsection (d)(4) specifies that an unrecorded leak shall be considered a violation of Rule 67.19. Would a facility be cited if there is a leak that is very small and, therefore, may not be detected and reported during regular inspection by facility personnel?

### **DISTRICT RESPONSE**

Yes, the facility will be issued a Notice of Violation in this case. The above statement was incorporated into Subsection (d)(4) to improve the enforceability of the rule. As written, any facility subject to Rule 67.19 will not be able to circumvent the rule by claiming that they are not aware of the leaks. Facilities subject to this rule are encouraged to have frequent inspections to ensure that all leaks are promptly detected. It should be noted that a fugitive liquid leak, as defined in Section (c), is a visible leak at a rate in excess of three drops per minute. Such leaks are not small and, therefore, should be detectable during routine inspections.

### **WORKSHOP COMMENT**

Would there always be someone at the District so that a facility can notify the District in case fugitive liquid leaks are detected?

### **DISTRICT RESPONSE**

Facilities are not required to notify the District upon detection of a fugitive liquid leak. However, Subsection (d)(4) requires that fugitive liquid leaks be promptly recorded and repaired.

### **WORKSHOP COMMENT**

What are some of the cleaning materials that would meet the VOC content or vapor pressure requirements of Subsection (d)(5)(i)?

### **DISTRICT RESPONSE**

They might be either water-based caustic cleaning agents (e.g., RES-AWAY), or high boiling point solvents (e.g., dibasic ester, propylene glycol methyl ether or propylene glycol methyl ether acetate). Although these cleaning materials may not be applicable for all coatings and printing inks, the use of these materials, where appropriate, is allowed as an option in Rule 67.19.

### **WORKSHOP COMMENT**

In order to minimize the amount of hazardous waste generated at coatings and printing inks manufacturing facilities, spent cleaning solvents are often recycled on-site. The contaminated cleaning solvents can either be used as raw materials for the next batch or processed in a still to recover the solvents for use in equipment cleanup operations. Even in the case where only compliant solvents are purchased for use in equipment cleaning, the recovered solvents may be contaminated with other solvents used to make the coatings or printing inks and, therefore, may no longer meet the VOC content or vapor pressure limit of Subsection (d)(5)(i). Subsection (d)(5) should be revised to allow the use of solvents which are recycled on site.

### **DISTRICT RESPONSE**

The District agrees. Subsection (d)(5) has been amended to allow the use of recycled solvents for equipment cleaning, provided that the spent solvents are reclaimed on-site and that all fresh solvents used at the facility, excluding solvents used in approved equipment cleaning systems, are in compliance with the VOC content or vapor pressure limit of Subsection (d)(5)(i).

### **WORKSHOP COMMENT**

Subsection (d)(5)(i) specifies a maximum vapor pressure limit for cleaning solvents at 20 °C. However, some solvents have vapor pressure data available at 25 °C only. It is recommended that this subsection be changed to allow the use of vapor pressure data at 25 °C if data at 20 °C are not obtainable.

### **DISTRICT RESPONSE**

The District does not agree. The vapor pressure requirement of Subsection (d)(5)(i) is consistent with other District rules. Since compliant solvents are normally formulated to comply with the specific requirements of a rule, data on the properties of these materials are generally provided at the temperature referenced in the rule, i.e., at 20 °C. It is not necessary to specify a higher reference temperature unless adequate technical justification is provided to show that vapor pressure data for most cleaning solvents are not available at 20 °C. Such justification has not been provided to the District.

### **WORKSHOP COMMENT**

During the production of coatings and printing inks, it is often necessary to switch batches from one disperser to another or to divide one batch among several dispersers. Therefore, it would be virtually impossible to maintain daily records of production for each individual disperser. Subsection (f)(1) should be revised to allow daily records to be kept on a facility-wide basis instead.

### **DISTRICT RESPONSE**

The District agrees. Since daily emissions from a facility can be calculated based on the total amount of coatings or printing inks produced each day, Subsection (f)(1) has been amended to require daily recordkeeping on a facility-wide basis.

### **WORKSHOP COMMENT**

Maintaining daily records of cleaning solvent usage is generally not feasible since the same solvent can be used to clean equipment for several days before the spent solvent is reclaimed or disposed. In addition, since the dirty solvent would be contaminated with coating or printing ink residues, it will be virtually impossible to accurately estimate the amount of solvent left after cleaning. It is recommended that Subsection (f)(1) be modified to allow facilities to maintain daily records of the amount of fresh solvent dispensed for cleanup operations instead of the amount of cleaning materials used.

### **DISTRICT RESPONSE**

The District does not agree. Emissions generated from equipment cleanup operations can not be accurately determined based solely on records of fresh cleaning solvents dispensed at the facility. Since a large portion of the cleaning solvent generally remains in the liquid phase after the cleaning operation is finished, the use of fresh solvent dispensing records may lead to substantial overestimation of emissions. This problem is more pronounced if the spent solvents are not recovered and reused on site. While it may be very difficult to estimate the amount of cleaning solvent used daily in some cases as discussed above, the District believes this problem would be alleviated if usage data are collected over a longer period. Therefore, Section (f) has been amended to change the recordkeeping requirements on the amount of cleaning solvent used from daily to monthly. Monthly solvent usage data may be estimated from the amount of fresh solvent dispensed, the amount of solvent reclaimed and reused on-site, and/or the amount of spent solvent disposed or sent to offsite reclaimers. It should be noted that facilities subject to Rule 67.19 are still required to maintain daily records of the type of cleaning materials used to demonstrate compliance with the VOC content or vapor pressure limit of Subsection (d)(5)(i).

### **WORKSHOP COMMENT**

Will the compliance schedule specified in Section (h) supersede the compliance dates in other sections of Rule 67.19?

### **DISTRICT RESPONSE**

Yes, it will. Section (h) provides a schedule for complying with the various requirements of Rule 67.19. This schedule may vary depending on whether the equipment is existing or new equipment.

### **WRITTEN COMMENT**

Paste inks normally contain only solvents with very low vapor pressure such as Magie oil [boiling point: 575-630 °F (302-333 °C), vapor pressure: <1 mm Hg at 150 °F (66 °C)] or diethylene glycol [boiling point: 473 °F (245 °C), vapor pressure: <0.01 mm Hg at 67 °F (20°C)]. Since paste inks are generally mixed at a temperature of less than 105 °F (41 °C), the amount of solvent evaporated during the manufacture of these materials is negligible. It is recommended that paste inks be exempted from the requirements of Rule 67.19.

### **DISTRICT RESPONSE**

The District does not agree. The District believes that some paste inks may be manufactured at elevated temperature. Therefore, emissions from these processes may be significant. Exempting paste inks from the requirements of Rule 67.19 is not justifiable unless adequate documentation is provided to show that emissions from paste inks manufacturing operations are negligible. Such justification has not been provided to the District.

### **WRITTEN COMMENT**

Since interim recordkeeping is required and low VOC coatings are predominantly manufactured, credit should be allowed for the emission of less than 100 pounds per day of VOC. For example, if in production the total VOC emission is 55 pounds of VOC per day, a VOC emission of 145 pounds should be allowed on the next day; not exceeding 31,200 pounds of VOC emission per year (6 working days x 52 weeks).

### **DISTRICT RESPONSE**

The District does not agree. Rule 67.19 is intended to reduce daily emissions since VOC's are precursors of ozone for which short-term hourly ambient air quality standards are specified. The use of an emission averaging period exceeding 24 hours will not be allowed by the EPA. Also, a maximum daily emission limit was specified to improve the enforceability of Rule 67.19. However, in order to address the effect of potential fluctuations in daily production level, the maximum daily emission limit of Subsection (d)(2) has been increased by 20 percent.

### **WRITTEN COMMENT**

In certain occasions, a coating or printing ink manufacturing company will purchase 100% solid resins and, therefore, will be unable to fill the tanks with submerged fill pipes due to the high viscosity of the resins. It is recommended that Subsection (d)(3) be amended to limit the submerged fillpipe requirement to resins containing volatiles.

### **DISTRICT RESPONSE**

The District agrees that it is not necessary to use submerged fill pipes for transferring resins with low volatility. Subsection (b)(2) has been amended to include an exemption from the submerged filling requirements for tanks used for storage of epoxy resins.

### **EPA COMMENT**

The applicability provision of Section (a) would exempt mixing, blending and compounding operations from Rule 67.17 and Rule 66, provided that they are in compliance with the requirements of Section (d). Currently, all sources not specifically exempted from Rules 67.17 and 66 are subject to their emission limitations (caps) and other emission control requirements. Adoption of Section (a), as drafted, would constitute a relaxation of the State Implementation Plan (SIP). Such a relaxation will become a rule approvability issue unless commensurate emission reductions from other source categories and rules, in keeping with reasonable further progress (3 percent per year) requirements and an attainment demonstration, are submitted to the EPA for approval.

## **DISTRICT RESPONSE**

The District does not agree. Since Rule 66 governs the general handling of organic solvents, its requirements in most cases are much less stringent than other District VOC rules which are specifically tailored to a particular type of operations. Therefore, the District believes that operations which are subject to and in compliance with a District source specific VOC rule should not be subject to Rule 66. For example, Rule 66 would limit organic emissions from a typical paint manufacturing line to 3000 pounds per day per line. Rule 67.19 would require 90 percent emission controls if emissions from all lines exceed 120 pounds per day. Clearly Rule 67.19 is more stringent.

Similarly, Rule 67.17 is a general rule for controlling emissions from the storage of materials containing organic compounds. Rule 67.17 requires covers on VOC containers when not in use and sets no emission limits. Rule 67.19 also requires covers and requires lids used on mixing vats to meet certain requirements which are specified to ensure maximum control of fugitive evaporation losses, while taken into account limitations due to the physical configuration of the mixing equipment. The Rule 67.19 requirements for lids will allow mixing vats to be covered even when the coatings or printing inks are being mixed. In this case, Rule 67.19 will be more stringent than Rule 67.17. Thus, mixing operations which are subject to and in compliance with Rule 67.19 should not also be subject to Rule 67.17. In addition, since Rule 67.17 has not yet been incorporated as part of the SIP, such provisions do not constitute a relaxation of the SIP.

## **EPA COMMENT**

The definition of "exempt compound" in Subsection (c)(4) or the definition of "volatile organic compound" in Subsection (c)(17) should be modified to exempt ethane since it is "negligibly" photochemically reactive. This should not affect the federal approvability of the rule since, the Clean Air Act (Section 116) states, with specific exceptions, that nothing in the Act shall preclude or deny a state's authority to adopt or enforce rules to limit emissions of air pollutants. However, EPA can only allow your SIP's attainment demonstration to credit emissions/reductions of precursor pollutants which contribute to ambient concentrations of pollutants for which EPA has set national ambient air quality standards.

## **DISTRICT RESPONSE**

The District does not agree that the VOC definition should be changed. Emissions from the manufacturing of coatings and printing inks generally do not contain significant amounts of ethane. The inclusion of ethane in the VOC definition is consistent with other District rules and the regulations of other California air districts. Any reduction of ethane emissions shall not be credited as a reduction of precursor pollutants in the SIP.

## **EPA COMMENT**

A uniform method must be prescribed for all numerical "standards" provisions such as those specified in Subsection (d)(1)(i). A method is needed to describe how to measure/determine the portion of a lid that maintains more than 1/8 inch gap over the 10 percent or more of the circumference of the rim. Different percent contact measurements are possible without a procedure.

## **DISTRICT RESPONSE**

The District does not agree. A very simple procedure can generally be used to determine if a gap exceeds the maximum width allowable by the rule. For example, a dowel or rod whose uniform diameter is the same as the maximum allowable width can be inserted between the lid and the rim of the container along the circumference. If the stick passes through, then the gap is deemed larger than

the allowable limit. The lengths of such gaps will then be measured and summed to determine if the total length exceeds the limit specified in the rule. Such simple procedures are routinely performed by the District's enforcement staff to verify compliance with the gap requirements of other District rules. It is not necessary to specify a method for determining compliance with the requirements of Subsection (d)(1)(i).

#### **EPA COMMENT**

As specified in Subsection (g)(1), (g)(3), (g)(4) and (g)(6), test methods are proposed to be adopted by reference for the purpose of this rule. Please be aware that EPA approval of this rule will be contingent upon a satisfactory finding with respect to the reproducibility of test results. Also, more than one method is specified for some determinations. Please specify when each of the options is applicable or limit the prescribed method to that which yields the most accurate (reproducible) results.

#### **DISTRICT RESPONSE**

Subsection (g)(4) has been amended to clarify when each referenced test method is appropriate. Methods not yet approved by EPA will be forwarded to EPA with the approved rule.

#### **ARB COMMENT**

Subsection (b)(1) exempts facilities emitting less than 15 lb/day but gives no indication of how emissions are to be estimated. Emissions factors should be specified, preferably in Section (g), or the exemption should be based on production rate rather than emissions.

#### **DISTRICT RESPONSE**

Emissions generated from the manufacturing of coatings and printing inks can vary widely, depending on the type of products formed, i.e., coatings versus printing inks or water-based versus solvent-based. Therefore, it will not be feasible to specify an exemption limit based on production rate. However, as suggested, Section (g) has been modified to include a reference to EPA Publication AP-42, Compilation of Air Pollutant Emission Factors. If more accurate emission factors are developed in the future, Rule 67.19 could be revised to incorporate the new emission factors. In addition, Section (g) has been amended to allow the use of alternative methods for determining emissions from coatings and printing inks manufacturing operations, provided that such methods have been approved in advance by the Air Pollution Control Officer, ARB and EPA.

#### **ARB COMMENT**

Subsection (e)(1) presents emission control system requirements in terms of "VOC" capture and abatement efficiencies. Emissions collection and abatement equipment acts in similar fashion on the halogenated compounds exempted in the rule's definition of VOC and other non-exempt compounds. Furthermore, the capture efficiency test method specified in Section (g) does not discriminate between exempt and non-exempt organic compounds. It is recommended that Subsection (e)(1) specify equipment performance in terms of efficiency in capture and control of "organic gases measured as total equivalent carbon", rather than "VOC" as defined in this rule, for consistency and to improve testing feasibility.

#### **DISTRICT RESPONSE**

The District agrees. Section (e) has been amended to delete the reference to "VOC" in the emissions control requirements. However, since Section (g) has also been modified to replace EPA Test

Method 25 by Method 25A as recommended, the suggested reference to "organic gases measured as total equivalent carbon" is no longer applicable. The phrase "organic gaseous emissions" has been used instead.

### **ARB COMMENT**

The phrase "or equipment cleaning" in Subsection (e)(ii) should be changed to "and equipment cleaning". Also, the terminology used to refer to "dispersers" in this Subsections (e)(ii), (c)(8) and (d)(2) should be consistent.

### **DISTRICT RESPONSE**

Since control equipment may be used to comply with the requirements of Subsection (d)(1), (d)(2), (d)(3) or (d)(5), or any combination thereof, the phrase "and/or equipment cleaning" has been incorporated in the revised Section (e). To clarify the intent of Rule 67.19, which is to primarily control emissions from mixing vats, the references to "dispersers" and "high speed dispersion mill" have been deleted from the rule. In addition, a definition of "mixing vat" has been added to Rule 67.19.

### **ARB COMMENT**

Unless emissions are to be routinely estimated and recorded in the daily records required in Subsection (f)(1), the reference to "daily emission levels" is confusing and out of context. The exemption of small facilities in Subsection (b)(1) and restrictions in Subsection (d)(2) based on emissions are related to emissions estimates and should be mentioned if it is intended that the required records substantiate compliance. If emissions are to be estimated from the material composition and usage data required, then the applicable emission factors should be specified, most appropriately in Section (g) than here.

### **DISTRICT RESPONSE**

The production and material usage records required in Subsection (f)(1) will be used in conjunction with the emission factors specified in Section (g) to determine compliance with the emission limits of Subsections (b)(1) and (d)(2). To minimize potential confusion, the reference to "daily emission levels" in Subsection (f)(1) has been deleted.

### **ARB COMMENT**

Emissions factors should be specified in Section (g) if it is intended that emissions be estimated from material composition and usage data.

### **DISTRICT RESPONSE**

The District agrees. Section (g) has been modified to include references to the emission factors currently used by the District to estimate emissions from the manufacturing of coatings and printing inks.

### **ARB COMMENT**

EPA Method 24 should be specified in Subsection (g)(1) for determination of VOC content in cleaning materials, supplemented by ARB Method 432 or ASTM D4457-85 for quantification of exempt compounds. The methods currently cited in this subsection for determination of VOC content are suitable for general analysis only.



### **DISTRICT RESPONSE**

The District believes that the use of EPA Method 24 for measuring the VOC content of cleaning materials is inconsistent with the general definition of VOC specified in Rule 67.19, which does not exempt organic compounds on the basis of volatility. EPA Method 24 is based on the premise that any material which is not evaporated at the end of the test period will be considered as "non-volatile" and will not be evolved during normal operations. This assumption is valid if the material tested is a coating, which generally does contain a significant amount of solids. If an equal aliquot of cleaning material is tested using EPA Method 24, it is expected that some portion of the cleaning material will still remain in the liquid phase at the end of the test period. However, since cleaning materials generally do not contain any solids, the remaining liquid portion will also evaporate eventually during actual operations. This effect is more pronounced if the cleaning material is a solvent with low volatility.

However, the District has no objection in specifying EPA Method 24 if Rule 67.19 is modified to explicitly state that the proposed VOC limits are based on the VOC content as determined by EPA Method 24. Subsections (c)(4) and (d)(5)(i) have been modified to reflect this.

### **ARB COMMENT**

Subsection (g)(5) states that if an approved test method for identifying and quantifying an exempt compound specified in Subsection (c)(4) does not exist on date of adoption, Material Safety Data Sheets (MSDS) and/or manufacturer specification sheets and raw materials purchase records shall be used to determine the presence and content of such exempt compounds. ARB staff believes that adequate test methods are available for inclusion in the rule. Compliance verification based on MSDS sheet or manufacturer specification sheets and/or raw material purchase records will not allow the District to independently verify compliance with the requirements specified for exempt compound content. In addition, blended solvent mixtures oftentimes are used for clean-up purposes and manufacturer specification sheets may not always be accurate. Therefore, as written, this portion of the rule will be unenforceable.

### **DISTRICT RESPONSE**

While general test methods such as ASTM Standard Practice for Packed Column Gas Chromatography, E 260-85, may be applicable in theory for determining the content of any exempt compound in the materials subject to this rule, detailed procedures for conducting such measurements are not available at the present time to determine the content of some exempt compounds recently adopted by the EPA, i. e., perfluorocarbon (PFC) compounds. Therefore, it is not feasible to reference appropriate test methods for these exempt compounds in Rule 67.19. Although these exempt compounds are included in the general definition of "exempt compound" to preserve the consistency among the definitions used in other District VOC rules, they are not expected to be present in coatings and printing inks. Therefore, the District believes that it is not possible to specify test methods for these compounds at present. The provisions of Subsection (g)(5) has also been deleted from Rule 67.19 since the test method referenced in Section (g) is applicable to all exempt compounds which are expected to be present in coatings and printing inks.

### **ARB COMMENT**

It is recommended that the exemption for stationary storage tanks in Subsection (b)(2) be reduced from 550 gallons to 260 gallons. The 260 gallon exemption limit is found in the Bay Area Air Quality Management District (BAAQMD) Regulation 8, Rule 5, Storage of Organic Liquids.

### **DISTRICT RESPONSE**

The District does not agree. The 550 gallon exemption limit is consistent with current District rules governing the control of emissions from the storage and handling of organic compounds. The District will reexamine the appropriateness of this exemption limit in conjunction with the whole issue of organic materials storage in future rule development activities.

### **ARB COMMENT**

It is recommended that the exemption for water-based coatings and/or paste inks in Subsection (b)(2) be modified to be as stringent as other district rules. For example, beginning March 1, 1992, the BAAQMD Regulation 8, Rule 35, Coatings and Ink Manufacturing, will not exempt inks or coating, unless they contain less than 1 percent volatile organic compounds by weight.

### **DISTRICT RESPONSE**

The District does not agree. In general, the solvent content of water-based coatings are significantly less than solvent-based coatings. The District believes that emissions generated from the transfer of water-based coatings into storage tanks are negligible. Similarly, since paste inks generally contain solvents with low vapor pressure, emissions associated with the transfer of the paste inks into storage tanks are expected to be insignificant. Therefore, the District believes that it is appropriate to exempt water-based coatings and paste inks from the submerged fill requirements of Subsection (d)(3).

### **ARB COMMENT**

Subsection (c)(4) should be modified to incorporate the EPA's latest policy on exempt compounds as cited in the Federal Register, March 18, 1990.

### **DISTRICT RESPONSE**

As written, the EPA's latest policy on exempt compounds has been incorporated into the definition of "exempt compound" in this rule. However, this definition has been amended to clarify the type of perfluorocarbon compounds to be included in the category of "exempt compound."

### **ARB COMMENT**

Subsection (c)(6) defines "fugitive liquid leak" as 3 drops or more per minute of liquids containing at least 10% VOC; Subsection (d)(4) imposes repair and recordkeeping requirements on fugitive liquid leaks but exempts materials containing less than 10% VOC; and Subsection (g)(4) specifies test methods for determining the VOC content of leaking liquid. The exemption of liquids containing less than 10% VOC imposes unnecessary and costly VOC content testing requirements on enforcement programs. The exemption should be eliminated or limited to leaks in potable water systems. Liquid leaking from paint/ink manufacturing equipment should be considered unacceptable by definition.

### **DISTRICT RESPONSE**

The District does not agree. Besides potable water systems, there are other types of liquids which may be present at a coatings or printing inks manufacturing facility that do not contain significant amounts of VOC (e.g., caustic cleaning materials). Therefore, the District believes that it is necessary to specify a cutoff level for the VOC content of liquids below which VOC emissions generated from the leaking of such liquids are expected to be negligible. The 10% VOC criterion is consistent with the fugitive liquid leak requirements specified in other District rules.

### **ARB COMMENT**

The definition of "paste ink" in Subsection (c)(11) includes all inks that contain "Magie oil or glycol." It might be more appropriate to instead define paste inks as inks of paste-like consistency compounded using heavy, low-volatility vehicles. If the present characterization is retained, "Magie oil" should be defined, and the specific glycol compound(s) used should be indicated.

### **DISTRICT RESPONSE**

The District believes that the present characterization of "paste ink" is necessary to improve the enforceability of this rule. However, to clarify the District's intent, the definition of "paste ink" has been amended to indicate the specific glycol compound as suggested. Further, a definition of "Magie oil" has also been added to Rule 67.19.

### **ARB COMMENT**

It is recommended that Subsection (c)(18) be modified to define a "water-based coating" as one that contains 10 percent or more water by weight, as done in the BAAQMD Regulation 8, Rule 35.

### **DISTRICT RESPONSE**

The District does not agree. The current definition of "water-based coating" is consistent with the definition for waterborne coatings provided in EPA Test Method 24. The District has discussed this issue with the South Coast Air Quality Management District (SCAQMD) and the BAAQMD staff and is not aware of any justifiable basis for the 10% by weight of water criterion included in BAAQMD's Rule 35.

### **ARB COMMENT**

In Subsection (c)(18), the definition of "water-based coating" specifies 5% water in the "volatile fraction." It is more usual for this specification to be 5% water by weight in the material as a whole. Additionally, it is recommended that only water miscible or water reducible materials be accepted as water-based.

### **DISTRICT RESPONSE**

The District agrees. The definition of "water-based coating" has been modified as suggested.

### **ARB COMMENT**

It is recommended that the District includes in Subsection (d)(2), in addition to the 100 pound limit, a requirement that the VOC emissions from a stationary vat shall not exceed 6.8 kg (15 pounds) per day, as done in the BAAQMD Regulation 8, Rule 35.

### **DISTRICT RESPONSE**

The District does not agree. The maximum facility-wide daily emission limit specified in Subsection (d)(2) was chosen based on results of a cost-effectiveness analysis which is specific to coatings and printing inks manufacturing operations in San Diego County. The District believes that the suggested 15 pounds per vat emission limit would not be cost-effective and would be very difficult to enforce.

### **ARB COMMENT**

Subsection (d)(2) imposes restrictions on "dispenser" equipment but the terminology defined in Subsection (c)(8) is "high speed dispersion mill." The defined terminology should be used. In addition, Subsection (d)(2) refers to facilities that emit more than 100 pounds VOC per day from coating and ink manufacturing. In the absence of an emissions control system, these emissions will be fugitive and very difficult to measure. Emission factors and daily production rates should be specified for estimating emissions to determine this section's applicability, or applicability should be conditioned on production rate.

### **DISTRICT RESPONSE**

To clarify the intent of Rule 67.19, which is to control emissions from mixing vats, all references to "dispensers" and "high speed dispersion mill" have been deleted from the rule. In addition, a definition of "mixing vat" has been added to rule 67.19.

Emissions generated from the manufacturing of coatings and printing inks can vary widely, depending on the type of products formed, i.e., coatings versus printing inks or water-based versus solvent-based. Therefore, it will not be feasible to condition the applicability of Subsection (d)(2) solely on production rate. However, Section (g) has been modified to include references to the emission factors currently used by the District to determine the applicability of Subsection (d)(2). Alternate methods for determining VOC emissions may also be used, provided such methods have been approved in advance by the Air Pollution Control Officer, ARB and EPA.

### **ARB COMMENT**

The presentation of acceptable cleanup practices in Subsection (d)(5) would be clearer if the option of installing an emissions control system, presented at the end of the section, was made Subsection (d)(5)(iii).

### **DISTRICT RESPONSE**

The District believes that Subsection (d)(5) is adequately clear as written.

### **ARB COMMENT**

Subsection (d)(5)(ii) describes acceptable cleaning equipment. Requiring that solvent be drained "before the container can be opened" implies an automatic interlock which may not be present. Therefore, it is recommended that this phrase be changed to "before the container is opened." In addition, the terminology "manufacturing equipment cleaning device" is awkward and should be changed to "cleaning device" or "enclosed cleaning system."

### **DISTRICT RESPONSE**

The District agrees. The description of an acceptable cleaning equipment has been modified as suggested.

**ARB COMMENT**

Subsection (e)(1) states that "emissions over an entire production cycle shall be used to determine compliance with the control efficiency requirements of Subsections (e)(1)(ii) and (e)(1)(iii)." In order to improve the enforceability of this subsection, it is recommended that a definition be added in the rule which defines a "production cycle."

**DISTRICT RESPONSE**

The District agrees. A definition of "production cycle" has been added to Rule 67.19.

**ARB COMMENT**

Specification of emissions control system performance in terms of total organic carbon instead of VOC as defined in this rule would simplify testing requirements. EPA Method 25A (measurement with flame ionization detector) would be appropriate in such case and is consistent with the capture efficiency methodology cited. While EPA Methods 25 and 18 specified in Subsection (g)(2) are acceptable for determining emissions of "VOC" as defined in this rule, they are integrated grab sample methods and multiple samples may be required if cycle times are long. EPA Method 25A is more sensitive than Method 25 and comparatively simple and economical.

**DISTRICT RESPONSE**

The District agrees. Section (g) has been modified to replace EPA Test Method 25 with EPA Test Method 25A as suggested. However, since EPA Test Method 25A may not be appropriate for measuring halogenated compounds, the District believes that it is necessary to retain EPA Test Method 18 for use in conjunction with EPA Test Method 25A in cases where the coatings or printing inks are expected to contain halogenated compounds.

TL:mt  
09/10/91

# AIR POLLUTION CONTROL DISTRICT

## PROPOSED RULE 67.19 - COATINGS AND PRINTING INKS MANUFACTURING OPERATIONS

### WORKSHOP REPORT

A workshop notice was mailed to all companies manufacturing coatings or printing inks in San Diego County. Notices were also mailed to all Chambers of Commerce in San Diego County, all Economic Development Corporations, the U.S. Environmental Protection Agency (EPA), the California Air Resources Board (ARB), and other interested parties.

The proposed rule and Socioeconomic Impact Assessment (SIA) were presented for public comment. The workshop was held on November 4, 1993, and was attended by 6 people. Written comments were also received. The comments and District responses are as follows:

#### 1. WORKSHOP COMMENT

Rule 67.19 requires the installation of air pollution control systems at facilities emitting 25 tons or more per year of VOC's. Such systems can cost in excess of \$1,000,000, and the lack of a similar regulation in the South Coast Air Quality Management District could result in a significant competitive disadvantage for firms in San Diego.

#### DISTRICT RESPONSE

The District advised EPA, Region IX of this comment and expressed a similar concern. EPA indicated that, as mandated by a court order, a Federal Implementation Plan (FIP) for the South Coast district is being currently developed by EPA. EPA stated that the FIP will include requirements for air pollution control systems at coating manufacturing facilities in the South Coast district.

#### 2. WORKSHOP COMMENT

Many portable vats can be used for storage or transportation of materials, or as mixing vats for the coating production. Are they subject to the requirements of Subsection (d)(3) which requires submerged fill pipes?

#### DISTRICT RESPONSE

No. Subsection (c)(13) specifies that only tanks which are not used to transport materials are considered stationary storage tanks. However, the lids on these portable vats are still subject to the requirements of Subsection (d)(1).

#### 3. WORKSHOP COMMENT

Many portable vats used for coating or printing ink production are less than 550 gallons in capacity. Are they subject to the requirements for submerged fill pipes?

### **DISTRICT RESPONSE**

No. Subsection (b)(2) exempts tanks with a capacity of less than 550 gallons. The lids on these vats are subject to the requirements of Subsection (d)(1).

### **4. WORKSHOP COMMENT**

Reinforced thin gauge aluminum lids are the most desirable vessel lids considering cost, operation, and fire safety issues. However, these lids get bent in actual use, and maintaining compliance with the gap requirements of Subsection (d)(1)(i) may be difficult.

### **DISTRICT RESPONSE**

These lids typically have brims, and a determination of compliance with the lid conditions required by Subsection (d)(1) can be made by measuring the gaps between the brim of the lid and the vessel. The vertical gaps, if any, between the bottom extension of the brim on the lid and the top of the rim of the vessel must comply with Subsection (d)(1)(i). The aluminum lids should be able to comply with this requirement.

### **5. WORKSHOP COMMENT**

Manufacturing operations for some coatings require specially designed lids to allow access for manual redistribution of pigment in the vats during mixing. The lids on such vats should be exempt from the requirements of Subsection (d)(1) if they are vented to an air pollution control device.

### **DISTRICT RESPONSE**

The District agrees. Subsection (d)(1) has been revised to reflect this.

### **6. WORKSHOP COMMENT**

Stationary let-down tanks are sometimes used as storage tanks. They should be exempt from the requirements of Subsection (d)(3) for submerged fill pipes if they are vented to an air pollution control device.

### **DISTRICT RESPONSE**

The District agrees. Subsection (d)(3) has been revised to clarify that any vessel vented to an air pollution control device does not require a submerged fill pipe.

### **7. WORKSHOP COMMENT**

Although most of the equipment cleaning at a coating or ink manufacturing facility involves the cleaning of the tanks and vats, a small portion of the cleaning includes the flushing or wiping of certain pieces of equipment with conventional solvents. Rule 67.19 should allow these types of cleaning.

### **DISTRICT RESPONSE**

Rule 67.19 has been revised to include an option for enclosed cleaning of any type of equipment. Parts can be soaked in enclosed containers with conventional solvents to dissolve or loosen hardened coatings or other contaminants, or an enclosed parts washer may be used. An option has also been included for contained flushing of equipment. These are similar to equipment cleaning requirements in other District rules, and in conjunction with Subsection (d)(5), should provide sufficient flexibility for compliance with Rule 67.19.

### **8. WORKSHOP COMMENT**

Is a canning line considered a filling operation subject to the emission control requirements of Subsection (e)(1)(ii)?

### **DISTRICT RESPONSE**

No. Subsection (e)(1)(ii) refers to the control of emissions from manufacturing operations, which are defined in Subsection (c)(6). For clarity, Subsection (c)(6) has been revised to specify that the addition of ingredients used in mixing, blending, or compounding is considered a part of manufacturing operations. The reference to 'filling and emptying' has been deleted from Subsection (e)(1)(ii).

### **9. WORKSHOP COMMENT**

For some large mixing operations, the mixing shaft can wobble such that a slit as much as two inches greater in width than the shaft may not provide safe clearance for the shaft. Rule 67.19 should allow a larger gap. No additional emissions are expected since these operations are subject to the emission control requirements.

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The District agrees. Subsection (d)(1)(iii) has been revised to provide for 4 inches of clearance for shafts in mixing vats subject to Subsection (d)(2).

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Tanks are sometimes inserted in the transfer lines from production vessels to canning operations, to handle surges in the volumes of materials being transferred. The fluid level in these tanks must be visually monitored. Rule 67.19 should allow this.

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The District agrees. Subsection (d)(1) has been revised to provide that lid openings can remain uncovered during visual inspection of fluid levels in the tanks.



## **11. WORKSHOP COMMENT**

How would compliance with the cleaning requirements of Subsection (d)(5) be determined for a facility which uses only low-vapor pressure materials and a reclamation system?

### **DISTRICT RESPONSE**

Since low vapor pressure materials may be used to clean off waste materials which contain conventional high vapor pressure solvents, the resulting reclaimed cleaning material may not comply with the vapor pressure requirement of Subsection (d)(5)(i). To provide an option to use such reclaimed material, Subsection (d)(5)(iv) had been included in the rule. To assure compliance with Subsection (d)(5)(iv), a facility should label designated containers for the reclaimed materials, since these cleaning materials will not be subject to Subsection (d)(5)(i).

## **12. WORKSHOP COMMENT**

How would annual usage records for cleaning materials be kept to comply with Subsection (f)(3) for a facility which uses a reclamation system?

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This type of a cleaning process reclaims and reuses spent solvent, but some solvent is disposed of with the still bottoms or is evaporated, so the process must be supplemented with new 'make-up' solvent. Only the new solvent which is added to the process should be recorded as usage in yearly records.

## **13. WORKSHOP COMMENT**

Vessels used in the manufacture of coatings or inks containing no VOC's, such as ultraviolet (UV) curable inks, should not be subject to the lid requirements of Subsection (d)(1).

### **DISTRICT RESPONSE**

The District agrees. Subsection (d)(1) has been revised to clarify this.

## **14. WORKSHOP COMMENT**

Why was Section (f) revised to require yearly rather than daily records of coating and ink production and cleaning material usage?

### **DISTRICT RESPONSE**

Except for Subsection (b)(1), which has its own recordkeeping requirements, Rule 67.19 does not have daily emission limits. Therefore, daily records are not required to comply with the rule. The recordkeeping requirements of Subsections (f)(1) and (f)(3) will be used to determine the applicability of the exemption from emission control systems in Subsection (b)(3). Since this exemption is based on a yearly emission level, requirements for daily records would be an unnecessary burden on the affected facilities.

## **15. WORKSHOP COMMENT**

Rule 67.19 should provide incentives for facilities to reduce their use of VOC's with practices such as in-house recycling or product substitution.

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Increasingly stringent requirements for the VOC content of coatings has long been providing paint manufacturers across the country with incentive to reduce or substitute their use of VOC's in coating formulations. Additionally, the federal Clean Air Act Amendments of 1990 have identified many of the VOC's used in coatings as hazardous air pollutants (HAPs), and manufacturers will have to reduce or substitute their use of HAPs in coating formulations and cleaning materials. At the local level, the District is examining a possible restructure of its emission fees to more accurately reflect the emission levels at a particular facility. This would provide an additional incentive for paint manufacturers to reduce VOC emissions.

## **16. ARB COMMENT**

Subsection (d)(1)(iii) refers to a 'diameter' of a slit in a lid. Since such a slit would typically be rectangular, 'diameter' should be changed to 'width'.

### **DISTRICT RESPONSE**

Subsection (d)(1)(iii) has been modified as suggested.

## **17. ARB COMMENT**

Subsection (b)(2) includes perfluorocarbons and "any other compounds listed as negligibly reactive by the U.S. Environmental Protection Agency" as exempt compounds. Subsection (g)(6), which provides for testing of perfluorocarbons, should also provide for testing of the "other" compounds listed by EPA.

### **DISTRICT RESPONSE**

Following the workshop, the District has identified possible future problems associated with the reference to other compounds listed by EPA, and the reference has been deleted from Subsection (b)(2).

## **18. ARB COMMENT**

Subsection (g)(3) refers to an overall control efficiency calculation from the capture and control device efficiency, but does not indicate how capture efficiency will be determined. A provision for District approval of site-specific capture efficiency determination protocols should be included.

### **DISTRICT RESPONSE**

Subsection (g)(3) has been modified as suggested.

## **19. ARB COMMENT**

Subsection (g)(4) provides for quantifying water and exempt compound weight fractions of a mixture, for correction of the total vapor pressure measured for the mixture. This correction will require the mole percents of all the components in the mixture. This subsection should specify methods of analysis for this, such as ASTM E 168-87, E 169-87, and E 260-85, or specify that reliable product formulation data may be used.

### **DISTRICT RESPONSE**

The District expects that corrections for water and exempt compounds will not be required for the majority of low vapor pressure solvents, since in practice, such solvents are mixtures of VOC's. However, this section was revised to reflect that in cases where mole percentages of VOC components in the liquid phase are needed, they can be obtained from the manufacturer's specification data.

## **20. EPA COMMENT**

Section (g)(3) which requires approval of test protocols by the Air Pollution Control Officer should specify that such approval is not necessary for any compliance testing conducted by EPA.

### **DISTRICT RESPONSE**

Section (g) has been modified as suggested.

## **21. SIA COMMENT**

An air pollution control system is being installed to meet BACT requirements for the manufacturing operations, and this system will also meet the requirements of Rule 67.19. The projected installed cost of the equipment, however, is exceeding the initial estimate of \$686,000, and is closer to \$1,200,000. The SIA should reflect this update.

### **DISTRICT RESPONSE**

Based on the costs cited in the comment, the SIA has been updated as suggested.

## **22. SIA COMMENT**

Enclosed cleaning systems which cost \$27,000 have been found to have excessive operational problems. Systems available which should not have these problems cost \$80,000 to \$100,000 installed. The SIA should reflect this update.

### **DISTRICT RESPONSE**

The SIA has been revised to show that the estimated costs for equipment cleaning as required by Subsection (d)(5) will be dependent upon which option is chosen. For compliance with Subsections (d)(5)(ii) and (d)(5)(iii), the cost estimates for enclosed cleaning systems have been updated as cited in the comment.

### **23. SIA COMMENT**

Operation of an air pollution control system as required by Subsection (d)(2) will result in a loss of pigment during pigment addition in mixing operations. Losses from the partial operation of such a system were compared to losses from an existing pigment collection system. Additional expenses estimated from this comparison are about \$85,000 per year for the entire operation. The SIA should reflect this update.

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Based on the costs cited in the comment, the SIA has been updated as suggested.

PC:jo  
12/21/93

# **AIR POLLUTION CONTROL DISTRICT**

## **PROPOSED RULE 67.19 - COATINGS AND PRINTING INKS MANUFACTURING OPERATIONS**

### **2ND WORKSHOP REPORT ADDENDUM**

This workshop addendum includes a revised District response to one workshop comment and District responses to additional written comments from the California Air Resources Board that arrived too late to be included in the workshop report. The comments and District responses are as follows:

#### **1. WORKSHOP COMMENT (COMMENT #1 IN THE SECOND WORKSHOP REPORT)**

Rule 67.19 requires the installation of air pollution control systems at facilities emitting 25 tons or more per year of VOC's. Such systems can cost in excess of \$1,000,000, and the lack of a similar regulation in the South Coast Air Quality Management District could result in a significant competitive disadvantage for firms in San Diego.

#### **REVISED DISTRICT RESPONSE**

Since the original District response to this comment, the District has had further discussions with EPA, Region IX. EPA stated that the court ordered FIP for the South Coast Air Quality Management District will not include requirements for air pollution control systems at coating manufacturing facilities in the South Coast district. However, the EPA also stated that a SIP call for the SCAQMD's Rule 1141.1, Coatings and Ink Manufacturing, will be issued, and the rule will then have to be revised to conform with RACT standards.

#### **2. ARB COMMENT**

Subsection (b)(1) exempts coating and printing inks manufacturing facilities that emit less than an average of 15 pounds per day of operation, provided that monthly records are kept to verify the exemption. Keeping monthly records may underestimate the daily emissions if calendar days rather than operating days are used to calculate the average emissions.

#### **DISTRICT RESPONSE**

The District agrees. Subsection (b)(1) has been revised to clarify that days of operation must be used to calculate the average daily emissions.

#### **3. ARB COMMENT**

The term fugitive leak is mentioned in Subsection (b)(4) and has not been defined.

#### **DISTRICT RESPONSE**

The District disagrees. The term fugitive leak is defined in Subsection (c)(4).

# **AIR POLLUTION CONTROL DISTRICT**

## **PROPOSED RULE 67.19 - COATINGS AND PRINTING INKS MANUFACTURING OPERATIONS**

### **2ND WORKSHOP REPORT**

A workshop notice was mailed to all companies manufacturing coatings or printing inks in San Diego County. Notices were also mailed to all Chambers of Commerce in San Diego County, all Economic Development Corporations, the U.S. Environmental Protection Agency (EPA), the California Air Resources Board (ARB), and other interested parties.

The proposed rule and its accompanying Socioeconomic Impact Assessment (SIA) were presented for public comment. The workshop was held on November 4, 1993, and was attended by 6 people. Written comments were also received. The comments and District responses are as follows:

#### **1. WORKSHOP COMMENT**

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#### **DISTRICT RESPONSE**

The District advised EPA, Region IX of this comment and expressed a similar concern. EPA indicated that, as mandated by a court order, a Federal Implementation Plan (FIP) for the South Coast district is being currently developed by EPA. EPA stated that the FIP will include requirements for air pollution control systems at coating manufacturing facilities in the South Coast district (see addendum).

#### **2. WORKSHOP COMMENT**

Many portable vats can be used for storage or transportation of materials, or as mixing vats for the coating production. Are they subject to the requirements of Subsection (d)(3) which requires submerged fill pipes?

#### **DISTRICT RESPONSE**

No. Subsection (c)(13) specifies that only tanks which are not used to transport materials are considered stationary storage tanks. However, the lids on these portable vats are still subject to the requirements of Subsection (d)(1).

#### **3. WORKSHOP COMMENT**

Many portable vats used for coating or printing ink production are less than 550 gallons in capacity. Are they subject to the requirements for submerged fill pipes?

### **DISTRICT RESPONSE**

No. Subsection (b)(2) exempts tanks with a capacity of less than 550 gallons. The lids on these vats are subject to the requirements of Subsection (d)(1).

### **4. WORKSHOP COMMENT**

Reinforced thin gauge aluminum lids are the most desirable vessel lids considering cost, operation, and fire safety issues. However, these lids get bent in actual use, and maintaining compliance with the gap requirements of Subsection (d)(1)(i) may be difficult.

### **DISTRICT RESPONSE**

These lids typically have brims, and a determination of compliance with the lid conditions required by Subsection (d)(1) can be made by measuring the gaps between the brim of the lid and the vessel. The vertical gaps, if any, between the bottom extension of the brim on the lid and the top of the rim of the vessel must comply with Subsection (d)(1)(i). The aluminum lids should be able to comply with this requirement.

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Manufacturing operations for some coatings require specially designed lids to allow access for manual redistribution of pigment in the vats during mixing. The lids on such vats should be exempt from the requirements of Subsection (d)(1) if they are vented to an air pollution control device.

### **DISTRICT RESPONSE**

The District agrees. Subsection (d)(1) has been revised to reflect this.

### **6. WORKSHOP COMMENT**

Stationary let-down tanks are sometimes used as storage tanks. They should be exempt from the requirements of Subsection (d)(3) for submerged fill pipes if they are vented to an air pollution control device.

### **DISTRICT RESPONSE**

The District agrees. Subsection (d)(3) has been revised to clarify that any vessel vented to an air pollution control device does not require a submerged fill pipe.

### **7. WORKSHOP COMMENT**

Although most of the equipment cleaning at a coating or ink manufacturing facility involves the cleaning of the tanks and vats, a small portion of the cleaning includes the flushing or wiping of certain pieces of equipment with conventional solvents. Rule 67.19 should allow these types of cleaning.

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Rule 67.19 has been revised to include an option for enclosed cleaning of any type of equipment. Parts can be soaked in enclosed containers with conventional solvents to dissolve or loosen hardened coatings or other contaminants, or an enclosed parts washer may be used. An option has also been included for contained flushing of equipment. These are similar to equipment cleaning requirements in other District rules, and in conjunction with Subsection (d)(5), should provide sufficient flexibility for compliance with Rule 67.19.

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PC:jo  
3/28/94

## **AIR POLLUTION CONTROL DISTRICT**

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Many portable vats can be used for storage or transportation of materials, or as mixing vats for the coating production. Are they subject to the requirements of Subsection (d)(3) which requires submerged fill pipes?

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#### **3. WORKSHOP COMMENT**

3/28/94

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Reinforced thin gauge aluminum lids are the most desirable vessel lids considering cost, operation, and fire safety issues. However, these lids get bent in actual use, and maintaining compliance with the gap requirements of Subsection (d)(1)(i) may be difficult.

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The District agrees. Subsection (d)(1) has been revised to reflect this.

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Increasingly stringent requirements for the VOC content of coatings has long been providing paint manufacturers across the country with incentive to reduce or substitute their use of VOC's in coating formulations. Additionally, the federal Clean Air Act Amendments of 1990 have identified many of the VOC's used in coatings as hazardous air pollutants (HAPs), and manufacturers will have to reduce or substitute their use of HAPs in coating formulations and cleaning materials. At the local level, the District is examining a possible restructure of its emission fees to more accurately reflect the emission levels at a particular facility. This would provide an additional incentive for paint manufacturers to reduce VOC emissions.

**16. ARB COMMENT**

Subsection (d)(1)(iii) refers to a 'diameter' of a slit in a lid. Since such a slit would typically be rectangular, 'diameter' should be changed to 'width'.

**DISTRICT RESPONSE**

Subsection (d)(1)(iii) has been modified as suggested.

#### **17. ARB COMMENT**

Subsection (b)(2) includes perfluorocarbons and “any other compounds listed as negligibly reactive by the U.S. Environmental Protection Agency” as exempt compounds. Subsection (g)(6), which provides for testing of perfluorocarbons, should also provide for testing of the “other” compounds listed by EPA.

#### **DISTRICT RESPONSE**

Following the workshop, the District has identified possible future problems associated with the reference to other compounds listed by EPA, and the reference has been deleted from Subsection (b)(2).

#### **18. ARB COMMENT**

Subsection (g)(3) refers to an overall control efficiency calculation from the capture and control device efficiency, but does not indicate how capture efficiency will be determined. A provision for District approval of site-specific capture efficiency determination protocols should be included.

#### **DISTRICT RESPONSE**

Subsection (g)(3) has been modified as suggested.

#### **19. ARB COMMENT**

Subsection (g)(4) provides for quantifying water and exempt compound weight fractions of a mixture, for correction of the total vapor pressure measured for the mixture. This correction will require the mole percents of all the components in the mixture. This subsection should specify methods of analysis for this, such as ASTM E 168-87, E 169-87, and E 260-85, or specify that reliable product formulation data may be used.

#### **DISTRICT RESPONSE**

The District expects that corrections for water and exempt compounds will not be required for the majority of low vapor pressure solvents, since in practice, such solvents are mixtures of VOC's. However, this section was revised to reflect that in cases where mole percentages of VOC components in the liquid phase are needed, they can be obtained from the manufacturer's specification data.

**20. EPA COMMENT**

Section (g)(3) which requires approval of test protocols by the Air Pollution Control Officer should specify that such approval is not necessary for any compliance testing conducted by EPA.

**DISTRICT RESPONSE**

Section (g) has been modified as suggested.

**21. COMMENT REGARDING THE SIA**

An air pollution control system is being installed to meet BACT requirements for the manufacturing operations, and this system will also meet the requirements of Rule 67.19. The projected installed cost of the equipment, however, is exceeding the initial estimate of \$686,000, and is closer to \$1,200,000. The SIA should reflect this update.

**DISTRICT RESPONSE**

Based on the costs cited in the comment, the SIA has been updated as suggested.

**22. COMMENT REGARDING THE SIA**

Enclosed cleaning systems which cost \$27,000 have been found to have excessive operational problems. Systems available which should not have these problems cost \$80,000 to \$100,000 installed. The SIA should reflect this update.

**DISTRICT RESPONSE**

The SIA has been revised to show that the estimated costs for equipment cleaning as required by Subsection (d)(5) will be dependent upon which option is chosen. For compliance with Subsections (d)(5)(ii) and (d)(5)(iii), the cost estimates for enclosed cleaning systems have been updated as cited in the comment.

**23. COMMENT REGARDING THE SIA**

Operation of an air pollution control system as required by Subsection (d)(2) will result in a loss of pigment during pigment addition in mixing operations. Losses from the partial operation of such a system were compared to losses from an existing pigment collection system. Additional expenses estimated from this comparison are about \$85,000 per year for the entire operation. The SIA should reflect this update.

**DISTRICT RESPONSE**

Based on the costs cited in the comment, the SIA has been updated as suggested.

PC:jo  
3/28/94

# **AIR POLLUTION CONTROL DISTRICT**

## **PROPOSED RULE 67.19 - COATINGS AND PRINTING INKS MANUFACTURING OPERATIONS**

### **2ND WORKSHOP REPORT ADDENDUM**

This workshop addendum includes a revised District response to one workshop comment and District responses to additional written comments from the California Air Resources Board that arrived too late to be included in the workshop report. The comments and District responses are as follows:

#### **1. WORKSHOP COMMENT (COMMENT #1 IN THE SECOND WORKSHOP REPORT)**

Rule 67.19 requires the installation of air pollution control systems at facilities emitting 25 tons or more per year of VOC's. Such systems can cost in excess of \$1,000,000, and the lack of a similar regulation in the South Coast Air Quality Management District could result in a significant competitive disadvantage for firms in San Diego.

#### **REVISED DISTRICT RESPONSE**

Since the original District response to this comment, the District has had further discussions with EPA, Region IX. EPA stated that the court ordered FIP for the South Coast Air Quality Management District will not include requirements for air pollution control systems at coating manufacturing facilities in the South Coast district. However, the EPA also stated that a SIP call for the SCAQMD's Rule 1141.1, Coatings and Ink Manufacturing, will be issued, and the rule will then have to be revised to conform with RACT standards.

#### **2. ARB COMMENT**

Subsection (b)(1) exempts coating and printing inks manufacturing facilities that emit less than an average of 15 pounds per day of operation, provided that monthly records are kept to verify the exemption. Keeping monthly records may underestimate the daily emissions if calendar days rather than operating days are used to calculate the average emissions.

#### **DISTRICT RESPONSE**

The District agrees. Subsection (b)(1) has been revised to clarify that days of operation must be used to calculate the average daily emissions.

#### **3. ARB COMMENT**

The term fugitive leak is mentioned in Subsection (b)(4) and has not been defined.

#### **DISTRICT RESPONSE**

The District disagrees. The term fugitive leak is defined in Subsection (c)(4).

# **AIR POLLUTION CONTROL DISTRICT**

## **PROPOSED RULE 67.19 - COATINGS AND PRINTING INKS MANUFACTURING OPERATIONS**

### **2ND WORKSHOP REPORT**

A workshop notice was mailed to all companies manufacturing coatings or printing inks in San Diego County. Notices were also mailed to all Chambers of Commerce in San Diego County, all Economic Development Corporations, the U.S. Environmental Protection Agency (EPA), the California Air Resources Board (ARB), and other interested parties.

The proposed rule and its accompanying Socioeconomic Impact Assessment (SIA) were presented for public comment. The workshop was held on November 4, 1993, and was attended by 6 people. Written comments were also received. The comments and District responses are as follows:

#### **1. WORKSHOP COMMENT**

Rule 67.19 requires the installation of air pollution control systems at facilities emitting 25 tons or more per year of VOC's. Such systems can cost in excess of \$1,000,000, and the lack of a similar regulation in the South Coast Air Quality Management District could result in a significant competitive disadvantage for firms in San Diego.

#### **DISTRICT RESPONSE**

The District advised EPA, Region IX of this comment and expressed a similar concern. EPA indicated that, as mandated by a court order, a Federal Implementation Plan (FIP) for the South Coast district is being currently developed by EPA. EPA stated that the FIP will include requirements for air pollution control systems at coating manufacturing facilities in the South Coast district (see addendum).

#### **2. WORKSHOP COMMENT**

Many portable vats can be used for storage or transportation of materials, or as mixing vats for the coating production. Are they subject to the requirements of Subsection (d)(3) which requires submerged fill pipes?

#### **DISTRICT RESPONSE**

No. Subsection (c)(13) specifies that only tanks which are not used to transport materials are considered stationary storage tanks. However, the lids on these portable vats are still subject to the requirements of Subsection (d)(1).

#### **3. WORKSHOP COMMENT**

Many portable vats used for coating or printing ink production are less than 550 gallons in capacity. Are they subject to the requirements for submerged fill pipes?

### **DISTRICT RESPONSE**

No. Subsection (b)(2) exempts tanks with a capacity of less than 550 gallons. The lids on these vats are subject to the requirements of Subsection (d)(1).

### **4. WORKSHOP COMMENT**

Reinforced thin gauge aluminum lids are the most desirable vessel lids considering cost, operation, and fire safety issues. However, these lids get bent in actual use, and maintaining compliance with the gap requirements of Subsection (d)(1)(i) may be difficult.

### **DISTRICT RESPONSE**

These lids typically have brims, and a determination of compliance with the lid conditions required by Subsection (d)(1) can be made by measuring the gaps between the brim of the lid and the vessel. The vertical gaps, if any, between the bottom extension of the brim on the lid and the top of the rim of the vessel must comply with Subsection (d)(1)(i). The aluminum lids should be able to comply with this requirement.

### **5. WORKSHOP COMMENT**

Manufacturing operations for some coatings require specially designed lids to allow access for manual redistribution of pigment in the vats during mixing. The lids on such vats should be exempt from the requirements of Subsection (d)(1) if they are vented to an air pollution control device.

### **DISTRICT RESPONSE**

The District agrees. Subsection (d)(1) has been revised to reflect this.

### **6. WORKSHOP COMMENT**

Stationary let-down tanks are sometimes used as storage tanks. They should be exempt from the requirements of Subsection (d)(3) for submerged fill pipes if they are vented to an air pollution control device.

### **DISTRICT RESPONSE**

The District agrees. Subsection (d)(3) has been revised to clarify that any vessel vented to an air pollution control device does not require a submerged fill pipe.

### **7. WORKSHOP COMMENT**

Although most of the equipment cleaning at a coating or ink manufacturing facility involves the cleaning of the tanks and vats, a small portion of the cleaning includes the flushing or wiping of certain pieces of equipment with conventional solvents. Rule 67.19 should allow these types of cleaning.

### **DISTRICT RESPONSE**

Rule 67.19 has been revised to include an option for enclosed cleaning of any type of equipment. Parts can be soaked in enclosed containers with conventional solvents to dissolve or loosen hardened coatings or other contaminants, or an enclosed parts washer may be used. An option has also been included for contained flushing of equipment. These are similar to equipment cleaning requirements in other District rules, and in conjunction with Subsection (d)(5), should provide sufficient flexibility for compliance with Rule 67.19.

### **8. WORKSHOP COMMENT**

Is a canning line considered a filling operation subject to the emission control requirements of Subsection (e)(1)(ii)?

### **DISTRICT RESPONSE**

No. Subsection (e)(1)(ii) refers to the control of emissions from manufacturing operations, which are defined in Subsection (c)(6). For clarity, Subsection (c)(6) has been revised to specify that the addition of ingredients used in mixing, blending, or compounding is considered a part of manufacturing operations. The reference to 'filling and emptying' has been deleted from Subsection (e)(1)(ii).

### **9. WORKSHOP COMMENT**

For some large mixing operations, the mixing shaft can wobble such that a slit as much as two inches greater in width than the shaft may not provide safe clearance for the shaft. Rule 67.19 should allow a larger gap. No additional emissions are expected since these operations are subject to the emission control requirements.

### **DISTRICT RESPONSE**

The District agrees. Subsection (d)(1)(iii) has been revised to provide for 4 inches of clearance for shafts in mixing vats subject to Subsection (d)(2).

### **10. WORKSHOP COMMENT**

Tanks are sometimes inserted in the transfer lines from production vessels to canning operations, to handle surges in the volumes of materials being transferred. The fluid level in these tanks must be visually monitored. Rule 67.19 should allow this.

### **DISTRICT RESPONSE**

The District agrees. Subsection (d)(1) has been revised to provide that lid openings can remain uncovered during visual inspection of fluid levels in the tanks.



## **11. WORKSHOP COMMENT**

How would compliance with the cleaning requirements of Subsection (d)(5) be determined for a facility which uses only low-vapor pressure materials and a reclamation system?

### **DISTRICT RESPONSE**

Since low vapor pressure materials may be used to clean off waste materials which contain conventional high vapor pressure solvents, the resulting reclaimed cleaning material may not comply with the vapor pressure requirement of Subsection (d)(5)(i). To provide an option to use such reclaimed material, Subsection (d)(5)(iv) had been included in the rule. To assure compliance with Subsection (d)(5)(iv), a facility should label designated containers for the reclaimed materials, since these cleaning materials will not be subject to Subsection (d)(5)(i).

## **12. WORKSHOP COMMENT**

How would annual usage records for cleaning materials be kept to comply with Subsection (f)(3) for a facility which uses a reclamation system?

### **DISTRICT RESPONSE**

This type of a cleaning process reclaims and reuses spent solvent, but some solvent is disposed of with the still bottoms or is evaporated, so the process must be supplemented with new 'make-up' solvent. Only the new solvent which is added to the process should be recorded as usage in yearly records.

## **13. WORKSHOP COMMENT**

Vessels used in the manufacture of coatings or inks containing no VOC's, such as ultraviolet (UV) curable inks, should not be subject to the lid requirements of Subsection (d)(1).

### **DISTRICT RESPONSE**

The District agrees. Subsection (d)(1) has been revised to clarify this.

## **14. WORKSHOP COMMENT**

Why was Section (f) revised to require yearly rather than daily records of coating and ink production and cleaning material usage?

### **DISTRICT RESPONSE**

Except for Subsection (b)(1), which has its own recordkeeping requirements, Rule 67.19 does not have daily emission limits. Therefore, daily records are not required to comply with the rule. The recordkeeping requirements of Subsections (f)(1) and (f)(3) will be used to determine the applicability of the exemption from emission control systems in Subsection (b)(3). Since this exemption is based on a yearly emission level, requirements for daily records would be an unnecessary burden on the affected facilities.

## **15. WORKSHOP COMMENT**

Rule 67.19 should provide incentives for facilities to reduce their use of VOC's with practices such as in-house recycling or product substitution.

### **DISTRICT RESPONSE**

Increasingly stringent requirements for the VOC content of coatings has long been providing paint manufacturers across the country with incentive to reduce or substitute their use of VOC's in coating formulations. Additionally, the federal Clean Air Act Amendments of 1990 have identified many of the VOC's used in coatings as hazardous air pollutants (HAPs), and manufacturers will have to reduce or substitute their use of HAPs in coating formulations and cleaning materials. At the local level, the District is examining a possible restructure of its emission fees to more accurately reflect the emission levels at a particular facility. This would provide an additional incentive for paint manufacturers to reduce VOC emissions.

## **16. ARB COMMENT**

Subsection (d)(1)(iii) refers to a 'diameter' of a slit in a lid. Since such a slit would typically be rectangular, 'diameter' should be changed to 'width'.

### **DISTRICT RESPONSE**

Subsection (d)(1)(iii) has been modified as suggested.

## **17. ARB COMMENT**

Subsection (b)(2) includes perfluorocarbons and "any other compounds listed as negligibly reactive by the U.S. Environmental Protection Agency" as exempt compounds. Subsection (g)(6), which provides for testing of perfluorocarbons, should also provide for testing of the "other" compounds listed by EPA.

### **DISTRICT RESPONSE**

Following the workshop, the District has identified possible future problems associated with the reference to other compounds listed by EPA, and the reference has been deleted from Subsection (b)(2).

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Subsection (g)(3) refers to an overall control efficiency calculation from the capture and control device efficiency, but does not indicate how capture efficiency will be determined. A provision for District approval of site-specific capture efficiency determination protocols should be included.

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The District expects that corrections for water and exempt compounds will not be required for the majority of low vapor pressure solvents, since in practice, such solvents are mixtures of VOC's. However, this section was revised to reflect that in cases where mole percentages of VOC components in the liquid phase are needed, they can be obtained from the manufacturer's specification data.

## **20. EPA COMMENT**

Section (g)(3) which requires approval of test protocols by the Air Pollution Control Officer should specify that such approval is not necessary for any compliance testing conducted by EPA.

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Section (g) has been modified as suggested.

## **21. COMMENT REGARDING THE SIA**

An air pollution control system is being installed to meet BACT requirements for the manufacturing operations, and this system will also meet the requirements of Rule 67.19. The projected installed cost of the equipment, however, is exceeding the initial estimate of \$686,000, and is closer to \$1,200,000. The SIA should reflect this update.

### **DISTRICT RESPONSE**

Based on the costs cited in the comment, the SIA has been updated as suggested.

## **22. COMMENT REGARDING THE SIA**

Enclosed cleaning systems which cost \$27,000 have been found to have excessive operational problems. Systems available which should not have these problems cost \$80,000 to \$100,000 installed. The SIA should reflect this update.

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The SIA has been revised to show that the estimated costs for equipment cleaning as required by Subsection (d)(5) will be dependent upon which option is chosen. For compliance with Subsections (d)(5)(ii) and (d)(5)(iii), the cost estimates for enclosed cleaning systems have been updated as cited in the comment.

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Operation of an air pollution control system as required by Subsection (d)(2) will result in a loss of pigment during pigment addition in mixing operations. Losses from the partial operation of such a system were compared to losses from an existing pigment collection system. Additional expenses estimated from this comparison are about \$85,000 per year for the entire operation. The SIA should reflect this update.

**DISTRICT RESPONSE**

Based on the costs cited in the comment, the SIA has been updated as suggested.

PC:jo  
3/28/94

# **SOCIOECONOMIC IMPACT ASSESSMENT**

## **PROPOSED RULE 67.19 - COATINGS AND PRINTING INKS MANUFACTURING OPERATIONS**

**March 1994**

**Air Pollution Control District  
9150 Chesapeake Drive  
San Diego CA 92123**

# **SOCIOECONOMIC IMPACT ASSESSMENT PROPOSED RULE 67.19**

## **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 proposed District Rule 67.19. Rule 67.19 is a new rule developed to reduce volatile organic compound (VOC) emissions from the manufacturing of coatings and printing inks in San Diego County. There are six facilities in San Diego County manufacturing coatings and printing inks. VOC emissions from these sources are estimated to have been approximately 103 tons in 1991. The rule will affect three manufacturing facilities in San Diego County. The remaining three facilities will be exempt from Rule 67.19 since each of them emits less than 15 pounds of VOC per day.

Rule 67.19 requires affected facilities to implement the following control strategies to reduce VOC emissions from the manufacturing process and equipment cleanup operations.

- Use of lids on mixing vats used for manufacturing solvent-based coatings or inks.
- Installation of air pollution control systems at facilities emitting 25 tons or more per year of VOC's to capture and reduce VOC emissions from manufacturing of solvent-based coatings or inks.
- Installation of submerged fill pipes on storage tanks, except storage tanks of less than 550 gallons capacity and tanks used to store epoxy resins, water-based coatings or inks, or paste inks.
- Use of low VOC containing materials, low volatility solvents or enclosed cleaning devices to reduce VOC emissions from equipment cleanup operations.
- Recording and prompt repair of fugitive liquid leaks.
- Recording the VOC emission control equipment key operating parameters, the type and amount of products produced and cleaning materials used.

Implementation of proposed Rule 67.19 is expected to reduce annual VOC emissions from the three affected coatings and printing inks manufacturing facilities by approximately 73 tons per year or 71% from 1991 emission levels, with cost-effectiveness ranging from savings of \$0.56 per pound of VOC emissions controlled to costs of \$2.35 per pound.

## **THE NECESSITY OF ADOPTING RULE 67.19**

The Federal Clean Air Act Amendments of 1990 (FCAA) requires the District to adopt rules reflecting Reasonably Available Control Technology (RACT) for major VOC sources. The largest paint manufacturing facility in San Diego County is a major source of VOC emissions. Additionally, a tactic requiring the emission control measures contained in proposed Rule 67.19 was included in the 1991 Regional Air Quality Strategy (RAQS). The District is mandated by the California Clean Air Act to adopt all feasible VOC control measures included in the RAQS in an expeditious manner in order to attain the state and national ambient air quality standards for ozone. Rule 67.19 meets these requirements.

## IMPACT ASSESSMENT

As specified in the Health and Safety Code, "socioeconomic impact" means the following:

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 adopting, 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 Rule 67.19

Rule 67.19 will affect the paints and coatings manufacturing industry (SIC 2851) and the printing inks manufacturing industry (SIC 2893) in San Diego County.

The paints and coatings industry serves three primary markets. The largest is architectural coatings which includes interior and exterior house paints and undercoats. The second largest is product coatings for the original equipment manufacturing market such as automotive, appliances, furniture, and other consumer and industrial products. The third is special-purpose coatings, including high-performance maintenance, automotive refinishing, marine vessel and other miscellaneous specialty coatings. While specific data on historical trends regarding shipments and prices of paints and coatings produced in San Diego County are not available, they can be expected to generally follow the same trends as described below for the US market.

Based on recent statistics,<sup>1</sup> there are approximately 1065 paint companies operating in the US, 45% of which have fewer than 20 employees. Architectural coatings accounted for approximately 52% of total paint shipments in the US in 1990. Product coatings for the Original Equipment Manufacturer (OEM) market, i.e., automotive and appliance coatings, and special-purpose coatings made up the remaining 32% and 16%, respectively, of total shipments. Although the average unit price per gallon of paint rose 9.3% in 1990, the volume of paint shipment in the US declined more than 6% from the previous year as a result of the on-going recession<sup>1</sup> and, to a lesser extent, developments of more durable coatings and more efficient coating application methods. The recession, however, has also benefited the paints and coatings industry since it serves to moderate the prices of raw materials. The relatively lower raw material prices have given paints and coatings manufacturers some leeway in recovering the costs they must bear as they formulate their paints and coatings to meet increasingly stringent government regulations on volatile organic compound emissions. Nevertheless, with increases in product prices barely keeping pace with inflation on an average annual basis in recent years, the paints and coatings industry will continue to depend on factors other than price increases to maintain profitability. Such factors include gaining in market share, buying market share, and

improving manufacturing efficiencies. While the productivity for the paints and coatings manufacturing industry has increased in recent years, the number of workers involved in production, research and development, and management has continued to decline.

Proposed Rule 67.19 will directly affect one printing ink and two paint manufacturing facilities in San Diego County. Two of the three affected facilities would be considered small businesses under Section 11342 (e) of the California Government Code, which defines a manufacturing enterprise not exceeding 250 employees as a "small business." Table 1 shows the number of employees, gross sales estimates, and annual emission estimates for these companies in 1991.

**TABLE 1**  
**General Economic Characteristics and Emission Levels of Affected Coatings and Printing Inks Manufacturers in San Diego County**

Manufacturer	Number of Employees	1991 Estimated Gross Sale (million dollars)	1991 Estimated VOC Emissions (tons per year)
A	682	\$91.0	82
B	50	\$6.0	16
C	35	\$2.2	5

The affected facilities account for 0.1 % of San Diego County's civilian work force of 728,000.<sup>2</sup>

### Economic Impacts and Range of Probable Costs

Table 2 summarizes the cost-effectiveness associated with various VOC emission control strategies required in proposed Rule 67.19.

**TABLE 2**  
**Cost-Effectiveness of Proposed VOC Emission Control Requirements**

VOC Control Strategy	Cost-Effectiveness (\$/lb VOC reduced)	
	Small Business	Large Business
Closed Mixing Vats	(\$ 0.35 to \$ 0.56) (savings)	(\$ 0.35 to \$ 0.56) (savings)
Add-on Control	N/A	\$ 2.25
Submerged Fill Pipes	\$ 2.35	\$ 2.35
Enclosed Cleaning Devices	\$ 1.82 to \$ 2.20	\$ 0.21
Compliant Cleaning Materials	(\$0.32) (savings)	(\$ 0.32) (savings)

Emission reductions associated with the leak reporting/repair and recordkeeping requirements of Rule 67.19 are not quantifiable. Therefore, the cost-effectiveness was not calculated for these control strategies.



**a. Closed Mixing Vats:**

The cost of installing lids on mixing vats ranges from \$500 to \$3500 per lid. The cost of the lid is dependent upon the size of the mixing vat and the material from which the lid is manufactured. The estimated cost-effectiveness also varies depending on the size of the mixing vats as well as the type of coatings or printing inks manufactured. Although the affected facilities will incur initial capital costs for the lids, lower raw materials consumption realized from reduced solvent evaporation losses will result in overall savings to the facilities.

In San Diego County, lids have already been installed on mixing vats at the two small affected facilities for the purpose of improving workers' health and safety. Therefore, this control strategy will not impose any additional capital costs on small businesses. At the largest affected facility, the installation of lids not associated with the add-on emissions control equipment would result in an initial capital cost of up to \$30,000.

**b. Add-on Control:**

Rule 67.19 requires stationary sources emitting 25 tons per year or more of VOC's to install air pollution control equipment. Smaller facilities are exempted due to the prohibitive costs associated with the small-scale use of add-on control technology such as incineration or carbon adsorption. For the one large manufacturing facility which will be affected by this requirement, the costs of control are well within the range of the cost-effectiveness of other VOC control measures adopted by the District. The cost-effectiveness of an add-on control device is cited in Table 2.

The initial capital cost and the annual operating cost of installing add-on emission control systems (e.g., thermal oxidizers) at the single affected facility in San Diego County (company A) were estimated to be approximately \$750,000 and \$140,000, respectively, with a total annualized cost of approximately \$260,000 per year.

**c. Submerged Fill Pipe:**

The cost of installing a submerged fill pipe ranges between \$260 to \$360 per storage tank. The cost-effectiveness of this control measure is approximately \$2.35 per pound of VOC reduced and was calculated based on a typical 1000-gallon solvent-based coating storage tank with an average annual throughput of 50,000 gallons per year. Actual cost-effectiveness will depend on the affected facility's storage throughput as well as the volatility of the stored materials. Since most storage tanks at affected facilities in San Diego County are already submerged-filled, the cost of compliance with this control strategy is expected to be minimal (e.g., annualized cost of less than \$200 per year).

**d. Enclosed Cleaning Devices:**

Capital costs for enclosed cleaning systems such as drum and pail wash systems range from \$4000 to \$5000 for 5 to 25 gallon vats and from \$60,000 to \$100,000 for 55 to 700 gallon vats. The corresponding operating costs for the two ranges of vat sizes are 4-5 cents per batch and 15 cents per batch, respectively. One such cleaning system can be used to clean several vats. The estimated cost-effectiveness associated with the use of enclosed cleaning devices is dependent on the size of the mixing vats, the type of products manufactured, and the frequency of cleaning performed.

If enclosed cleaning systems are installed, this would result in capital costs of approximately \$100,000, \$80,000 and \$60,000 for companies A, B, and C, respectively and annualized costs of approximately \$5,000, \$11,700, and \$10,200 per year for companies A, B, and C, respectively. As

shown in Table 2, the cost-effectiveness of this control measure ranges from \$0.21 to \$2.20 per pound of VOC emissions reduced.

**e. Compliant Cleaning Materials:**

Compliant cleaning materials such as low VOC containing cleaners or low volatility solvents are generally more expensive than the solvents conventionally used for equipment cleanup. However, the use of such materials will reduce solvent evaporation losses and may result in overall savings to the affected facility. The cost-effectiveness cited in Table 2 was estimated based on the use of a low vapor pressure solvent such as Cellosolve acetate. The actual cost-effectiveness will vary depending on the type of compliant solvents used.

Affected facilities may comply with the rule by using enclosed cleaning systems or compliant cleaning materials. If compliant cleaning materials are used, the affected facilities are expected to incur little or no additional cost.

**f. Leak Reporting/Repair:**

While reduction of VOC emissions associated with the leak reporting/repair requirement of Rule 67.19 is generally not quantifiable, such requirement will impose additional costs. Assuming that it takes an employee approximately 4 hours per week to perform the leak inspections at the largest affected facility (company A), the resulting additional labor, overhead, and repair costs would be approximately \$7,500 per year. The corresponding costs to each of the two small businesses are estimated to be approximately half of this value (\$3,800 per year).

**g. Recordkeeping:**

The recordkeeping requirements of Rule 67.19 are necessary to improve the enforceability of the rule, even though additional recordkeeping will not directly result in any associated VOC emissions reduction. At two affected facilities, existing Permits to Operate currently require production records be kept on a daily basis, and all three facilities currently compile emissions inventory information annually. There will be some overlap between these existing requirements and those of proposed Rule 67.19. However, assuming that annual recordkeeping requirements are due solely to Rule 67.19, the increased labor requirements to compile such records would be about 20 hours per year per facility, corresponding to an additional cost of about \$600 per facility.

The overall costs of compliance incurred by the affected facilities are summarized in Table 3 below.

**TABLE 3**  
**Overall Costs of Compliance for Affected Coatings and Printing Inks**  
**Manufacturing Establishments in San Diego County**

Establishment	Initial Capital Costs (\$)	Annual Compliance Cost (\$/year)	Percent of Company 1991 Gross Annual Sales
A	\$880,000	\$280,000	0.3%
B	\$80,000	\$16,000	0.3%
C	\$60,000	\$15,000	0.7%

The total annual cost of compliance which would be incurred by the largest affected facility in San Diego County (company A) is estimated to be 0.3% (about \$280,000 per year) of the company's annual sales (Table 3). This does not represent a significant annual compliance cost to the affected company, and the cost-effectiveness (a savings of \$0.56 per pound to a cost of \$2.35 per pound) for the proposed rule for this company is comparable to the cost-effectiveness associated with other VOC control measures already adopted by the District. It is expected that the company will be able to secure the necessary initial capital expenditures and absorb the additional annual costs without significant adverse impacts. On average, the increased cost of coatings should be less than \$.07 per gallon.

Overall, the total industry cost of compliance with the requirements of proposed Rule 67.19 is estimated to be approximately \$310,000 per year. About 10% of this cost (\$31,000) will be incurred by the two small businesses affected by the rule (companies B and C). The estimated annual compliance costs incurred by the two small businesses represent only a small percentage of their respective sales (0.3% and 0.7%), as shown in Table 3. Given the relatively low magnitude of costs imposed by the proposed rule on these two companies, it is anticipated that the adoption of proposed Rule 67.19 would not result in significant adverse impacts on small businesses in San Diego County. Additionally, the compliance costs of the affected facilities represent the worst-case, i.e. the use of enclosed cleaning systems. If facilities B and C comply with the rule by using compliant cleaning materials, these estimated costs will be significantly reduced.

### **Employment Impacts**

Due to the relatively low annual compliance costs imposed by proposed Rule 67.19, it is unlikely that any affected firms would be induced to leave San Diego County, to reduce the work force, or to completely close their business as a result of adoption of the rule. Additional costs to the affected industry may be passed on to the consumers in the form of higher prices. The incremental increase, however, would be small; less than one-half of one percent of the 1991 prices of coatings and printing inks produced in San Diego County. Therefore, adoption of Rule 67.19 is not expected to result in loss of jobs. While there may be some potential increase in local businesses associated with the sale and installation of control equipment and/or increase in additional maintenance activities at affected facilities, it is not anticipated that such increases are large enough to create new jobs.

### **Availability and Cost-Effectiveness of Alternatives to Rule 67.19**

There are three basic alternatives to Rule 67.19: not adopt the rule, adopt a less stringent rule, and adopt a more stringent rule.

The first alternative (not adopt the rule) is not a viable option. It is inconsistent with the FCAA, which require air pollution control districts to adopt rules reflecting reasonably available control technology for major sources emitting more than 25 tons per year of VOC's by November 15, 1992. On January 15, 1993, EPA notified the District of a finding of failure to submit RACT rules for several major sources of VOC emissions, one of which is a paint manufacturing operation. EPA also stated that this failure would result in the imposition of federal sanctions, such as withholding of federal funds to the region and severe restrictions on industrial expansion, unless the required rules are adopted within 18 months of the finding, i.e. by July 15, 1994. Failure to adopt RACT rules within two years of such finding would also result in promulgation of a Federal Implementation Plan. Therefore, Rule 67.19 should be adopted as expeditiously as possible to fulfill the requirements of the FCAA. Additionally, a tactic containing the emissions control measures required by proposed Rule 67.19 is included in the 1991 RAQS which was adopted by the Air Pollution Control Board on June 30, 1992. Therefore, this alternative would be inconsistent

with the RAQS and with the California Clean Air Act of 1988 which requires the District to adopt all feasible VOC control strategies.

In the second alternative (adopt a less stringent rule), a rule less stringent than being proposed would be inconsistent with the FCAA, which requires the District to adopt a rule to implement RACT at the largest affected facility (Company A). Additionally, such alternative would prevent the District from achieving cost-effective reductions at smaller VOC sources (companies B and C). Rule 67.19 incorporates control requirements which exist in similar rules adopted by other air pollution control districts in California. These requirements are not expected to impose any adverse economic impacts beyond the level associated with other VOC rules already adopted by the District. Thus, adopting a rule less stringent than the proposed Rule 67.19 would not be consistent with the California Clean Air Act of which mandates the District to adopt all feasible measures to achieve further VOC emission reductions necessary to attain the state and national ambient air quality standards for ozone.

In the third alternative (adopt a more stringent rule), the rule could be made more stringent than proposed Rule 67.19 in a variety of ways. As written, only coatings and printing inks manufacturing sources emitting 25 tons or more per year of VOC's, i.e., company A, are required to install add-on control devices. Rule 67.19 could have included a requirement for installation of add-on emission controls on all mixing vats, regardless of the size of the manufacturing facility. However, the costs associated with this alternative would be very expensive for small facilities, with a cost-effectiveness of \$8 per pound of VOC reduced or more. The capital and annual costs of imposing such a requirement on the two affected small businesses (companies B and C) would likely result in lost jobs in San Diego County. This alternative is not recommended.

Additionally, Rule 67.19 could be made more stringent by requiring add-on emission controls and/or lids on the largest facility's mixing vats that are used for mixing water-based paints. Because of the small amount of VOC emissions from water-based paints (less than 3 tons per year at the largest facility), these requirements would not be cost-effective. The cost-effectiveness of an add-on control system for the mixing vats would more than \$55 per pound of VOC reduced. For mixing typical water-based paints, the cost-effectiveness of lids on the mixing vats would be more than \$10 per pound of VOC reduced. This alternative is not recommended.

Another approach to making the rule more stringent would be to require the installation of vapor recovery systems on storage tanks in lieu of or in addition to the use of submerged fill pipes. While such requirement traditionally has been shown to be cost-effective when applied to the petroleum industry, it is expected that the costs associated with installing vapor recovery systems on storage tanks in the coatings and printing inks manufacturing industry would be prohibitive due to the relatively smaller size of the storage tanks, the significantly lower volume of material, and the substantially smaller emissions per gallon of material stored. This alternative is not recommended.

Rule 67.19 could also be made more stringent by requiring the installation of add-on control systems to reduce VOC emissions from equipment cleanup operations instead of requiring the use of low VOC/low volatility cleaning materials or enclosed equipment cleaning devices. The cost of this alternative, however, is expected to be prohibitively high due to the relatively low emissions levels associated with equipment cleaning operations in comparison to emissions from mixing operations. Thus, a more stringent rule would not be economically justified. This alternative is not recommended.

Finally, the proposed rule could be made more stringent by deleting the exemption for small VOC sources emitting less than 15 pounds of VOC per day. There are three existing facilities which emit less than 15 pounds of VOC per day in San Diego County. The total VOC emissions (0.7 tons per year) from these facilities make up only 0.5% of the total emissions from the manufacturing of

coatings and printing inks in San Diego County in 1991. Therefore, requiring these small sources to comply with the requirements of proposed Rule 67.19 would not result in any appreciable increase in the total amount of emission reductions achieved. Such requirement would not be cost-effective and would impose unjustified financial burdens on small sources. This alternative is not recommended.

### **Emission Reduction Potential**

Implementation of Rule 67.19 is expected to reduce annual VOC emissions from the manufacturing of coatings and printing inks in San Diego County by approximately 73 tons per year or 71% from 1991 emission levels.

### **Minimization of Adverse Socioeconomic Impacts**

The District has worked closely with the affected companies to minimize economic impacts which may result from Rule 67.19 to the extent allowed by state and federal requirements. Industry representatives were consulted during the rule development process in two formal workshops, numerous additional meetings, and other written and telephone contacts. Provisions that reflect this effort include clean-up requirements providing for the option of using cleaning materials reclaimed on-site and exemptions from the requirements for storage tank submerged fill pipes for epoxy resin, paste ink, and water-based coating and ink storage. Also, the District re-evaluated emission factors for water-based coatings and ink manufacturing which showed that VOC emissions were negligible. As a result of this re-evaluation, a large paint manufacturing company will not be required to install vat covers or add-on emission control equipment on water-based paint mixing vats. This will significantly reduce the total capital and annual compliance costs for this facility.

## **CONCLUSIONS**

Based on the above analysis, Rule 67.19 is expected to have minimal impacts on employment and the economy in San Diego County and is not expected to cause any undue hardships on coatings and printing inks manufacturing facilities. Rule 67.19 will reduce VOC emissions from existing coatings and printing inks manufacturing facilities by approximately 73 tons per year and will significantly reduce the potential for new VOC emissions from any future coatings and printing inks manufacturing operations.

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## **REFERENCES**

- 1 Reisch M. S., "Higher Paint Sales Brighten Profits Outlook," *C&EN*, October 14, 1991, pp. 29-58.
- 2 SANDAG, "Regional Growth Forecasts: Preliminary Series 8 Regionwide Forecast (1990-2015)," October 25, 1991.