



Air Pollution Control Board
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Air Pollution Control Officer
R. J. Sommerville

October 13, 1992

TO: Rule 67.19 - Coatings and Printing Inks Manufacturing Operations
Workshop Participants and Interested Parties

FROM: Richard J. Smith
Deputy Director

SUBJECT: **RULE 67.19 - COATINGS AND PRINTING INKS
MANUFACTURING OPERATIONS - REVISED RULE**

Attached for your review is the revised draft of Rule 67.19. Rule 67.19 has been amended to address the additional comments from affected industry received by the District subsequent to November 17, 1991, and to clarify the intent of this rule. New changes are presented in italic, additions are double-underlined and deletions are struck-through. Following is a summary of the major changes.

- 1) Section (a) was amended to clarify that operations subject to this rule shall not be subject to Rule 66.
- 2) Subsection (b)(3) was amended to clarify that records required to be kept pursuant to this section should be based on CEM data.
- 3) Subsection (c)(1) was amended to clarify the definition of "coating".
- 4) Subsections (c)(4) and (d)(5)(i) were amended to clarify the test methods used to determine the VOC content of liquids and cleaning materials.
- 5) Subsection (c)(5) was added to define "lacquer-based coating".
- 6) Subsection (c)(13) was amended to make the definition of "stationary source" consistent with the new definition specified in a proposed New Source Review rule.
- 7) Subsection (d)(2) was amended to delay the effective date of the provision which requires facilities emitting more than 120 pounds of VOC per day to control emissions from the manufacture of lacquer-based coatings by at least 90 percent by weight to January 1, 1996. This delay is necessary since it is not cost-effective to install add-on control equipment if the lacquer-based coatings are scheduled to be phased out by 1995 because they use 1,1,1-trichloroethane, whose production and subsequent use will be phased out by the end of 1995.
- 8) Subsection (d)(5)(iv) was added to allow an alternative way for cleaning equipment.
- 9) Subsection (f)(3) was added to require facilities to keep daily records of the control equipment's key system operating parameters.

- 10) Subsection (g)(3) was amended to delete the reference to the EPA test method used for measuring capture efficiency.
- 11) Subsections (g)(4) and (g)(5) were amended to specify the test method for determining the content of exempt compounds.

If you have any questions, please call Natalie Zlotin at (619) 694-3312 or me at (619) 694-3303. Comments on the revised draft of Rule 67.19 should be submitted to the District no later than October 30, 1992.



RICHARD J. SMITH
Deputy Director

RJS:TTL:jo

Attachment



September 11, 1991

TO: Rule 67.19 - Coatings and Printing Inks Manufacturing Operations
Workshop Participants and Interested Parties

FROM: Richard J. Smith
Deputy Director

SUBJECT: **RULE 67.19 - COATINGS AND PRINTING INKS
MANUFACTURING OPERATIONS, REVISED RULE
AND WORKSHOP REPORT**

Attached for your review are the revised draft of Rule 67.19 and the workshop report. Please advise us, in writing, no later than September 25, 1991 of any major issues that still remain.

This rule will likely be scheduled for presentation to the Air Pollution Control District Advisory Committee on October 23, 1991.

If you have any questions, please call Natalie Zlotin at (619) 694-3312.

Natalie Zlotin

for RICHARD J. SMITH
Deputy Director

RJS:TTL:jo

Attachments

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 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

December 21, 1993

TO: Rule 67.19 (Coatings & Printing Inks Manufacturing)
Workshop Participants & Other Interested Parties

FROM: Richard J. Smith
Deputy Director

**RULE 67.19 - FINAL RULE, WORKSHOP REPORT &
SOCIOECONOMIC IMPACT ASSESSMENT**

Attached for your review are the final Rule 67.19, workshop report and socioeconomic impact assessment that will be considered for adoption by the Air Pollution Control Board. The rule will likely be scheduled for public hearing in March, 1994.

If you have any questions, please call Natalie Zlotin at (619) 694-3312 or myself at (619) 694-3303.

RICHARD J. SMITH
Deputy Director

RJSm:NZ:jo

Attachments

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.

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).

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.

DISTRICT RESPONSE

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

PC:jo
12/21/93

AIR POLLUTION CONTROL DISTRICT

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 ~~this rule and in compliance with~~ Section (d) of this rule shall not be subject to Rule 67.17. Manufacturing operations and equipment cleaning operations subject to this rule ~~and in compliance with the provisions of this rule~~ shall not be subject to Rule 66.

(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 equipment are less than an average of 15.0 pounds (6.8 kg) on each per day of operation for each calendar month, provided the owner or operator of the stationary source such equipment maintains daily monthly records necessary to establish average daily emission levels. These records shall be retained on site for at least three years and ~~shall be made available to the District upon request. For the purposes of this exemption, all process emissions, including those from equipment cleanup, shall be summed to determine daily emission rate.~~

(2) 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 paste inks.

(3) 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.

(c) DEFINITIONS

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

(1) ~~"California Coastal Waters" means that area between the San Diego County coastline and a line starting at the intersection of a line joining:~~

34.0° N	120.5° W
and 33.0° N	119.5° W

and a line 33.7° W from the San Diego County line:

thence to 33.0° N	119.5° W
thence to 32.5° N	118.5° W

and ending at the California-Mexico border at the Pacific Ocean.

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

(3) **"Coating or Printing Ink Disperser"** means an equipment used to disperse coating or printing ink solids, including but not limited to any grinding mill, high speed dispersion mill or roller mill. The container used to hold the coating or printing ink during dispersion operations shall be considered as part of the disperser.

(2) (4) **"Exempt Compound"** means any of the following compounds: methylene chloride; 1,1,1-trichloroethane; trichlorofluoromethane (CFC-11); dichlorodifluoromethane (CFC-12); chlorodifluoromethane (CFC-22), trifluoromethane (FC-23); trichlorotrifluoroethane (CFC-113); dichlorotetrafluoroethane (CFC-114); chloropentafluoroethane (CFC-115); dichlorotrifluoroethane (HCFC-123); tetrafluoroethane (HFC-134a); dichlorofluoroethane (HCFC-141b); chlorodifluoroethane (HCFC-142b); 2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124); pentafluoroethane (HFC-125); 1,1,2,2-tetrafluoroethane (HFC-134); 1,1,1-trifluoroethane (HFC-143a); 1,1-difluoroethane (HFC-152a); eyelic, branched, or linear, completely fluorinated alkanes, ethers and tertiary amines with no unsaturations; and sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine. 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;

and any other compound(s) listed as negligibly reactive by the U.S. Environmental Protection Agency.

(3) (5) **"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) (6) **"Fugitive Liquid Leak"** means a visible leak of liquid material containing more than 10 percent of VOC by weight, at a rate in excess of three drops per minute.

(7) **"Grinding Mill"** means a mill with cylindrical chambers containing grinding media such as balls, stones, pebbles, or sand that grind and disperse coating or printing ink solids.

(8) **"High Speed Dispersion Mill"** means a mixer with one or more blades that rotate at high speed in order to disperse coating or printing ink solids.

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

(6) (9) **"Manufacturing Operations"** means mixing, blending, and/or compounding, and/or cleaning 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) (10) **"New Equipment"** means any coating or printing ink manufacturing equipment for which an Authority to Construct was issued after (*date of adoption*).

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

(10) (12) **"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.

(13) **"Roller Mill"** means a mill with horizontal rollers that grind and disperse coating or printing ink solids.

(12) (14) **"Stationary Source"** as defined in Rule 20.1, a unit or an aggregation of units of non-vehicular air contaminant emitting articles, machines, equipment or other contrivances, all of which are located on one property or adjoining properties under the same ownership or entitlement to use and operate. This includes any unit or aggregation of units in the California Coastal Waters off San Diego County.

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

(14) (16) **"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 before application of add-on air pollution control equipment.

(16)(17) **"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)(18) **"Water-Based Coating"** means a water miscible or water reducible coating that contains more than 5 percent of water by weight in its volatile fraction.

(18)(19) **"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 raw 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. ~~For not more than 10 percent of the circumference, there shall be no gap greater than 1/8 inch in width between the lid and 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 raw materials, or 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

~~(ii) (iii) There are no holes, tears or openings in the lid, except~~ The lid may have a slit to allow clearance for insertion of a mixer shaft if so equipped. The slit shall be covered after insertion of the mixer, except to allow safe clearance for the mixer shaft. The diameter width of the opening 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 Subsections (b)(3), a~~ A person shall not operate any coating or printing ink disperser at a stationary source emitting more than 100 pounds of VOC in any day of operation (45.4 kg/day), before control from all conduct any coating and/or printing ink manufacturing operations, excluding equipment cleaning operations, unless VOC emissions from the disperser mixing vats used for such operations are vented to an air pollution control system which meets the requirements of Sections (e) and (h).

(3) ~~Except as provided in Subsection (b)(2), a~~ A person shall not transfer or allow the transfer of resins, coatings, printing inks or solvents containing VOC's 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 24 ~~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 shall be made available to the District upon request. An unrecorded leak shall be considered a violation of this rule.

(5) ~~Effective (six months after date of adoption), a~~ 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 ~~a manufacturing equipment cleaning device~~ 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 ~~can be~~ 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).

~~In lieu of complying with the provisions of Subsection (d)(5)(i) or (d)(5)(ii), a person may elect to use an air pollution control system which meets the requirements of Sections (e) and (h).~~

(e) CONTROL EQUIPMENT

(1) A person subject to the provisions of Subsection (d)(2) ~~or electing to use control equipment to comply with the requirements of Subsections (d)(1) and/or (d)(5)~~ shall comply by using an air pollution control system which:

- (i) Has been installed in accordance with an Authority to Construct; and
- (ii) Includes an emission collection system which captures ~~at least 95 percent by weight of the VOC organic gaseous emissions generated from coating and/or ink manufacturing operations, the mixing vats, dispersers or equipment cleaning, as applicable, including emissions associated with filling and emptying operations,~~ and transports ~~the captured~~ emissions to the ~~an~~ air pollution control device; and
- (iii) ~~Includes an air pollution control device which reduces captured VOC emissions by~~ Has an overall emissions control efficiency of at least 95 ~~90~~ percent by weight.

Emissions over an entire production cycle, not exceeding 5 hours, shall be used to determine compliance with the control efficiency requirements of Subsections ~~(e)(1)(ii) and (e)(1)(iii)~~.

(2) A person subject to the provisions of Subsection (e)(1) ~~of this rule~~ shall submit an Operation and Maintenance Plan for the VOC 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 Subsections ~~(e)(1)(ii) and (e)(1)(iii)~~; 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 daily records necessary to establish daily calendar year emission levels for all coating and/or printing ink manufacturing operations at the stationary source for each coating or printing ink disperser. 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, the type and amounts of each ingredient containing VOC used, and the types and amounts of cleaning materials used.

(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 daily records of the control equipment's key system operating parameters specified in Subsection (e)(2)(i).

(3) ~~The recordkeeping requirements contained in Subsection (d)(4).~~

These records shall be retained on site for at least three years and shall be 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).

(1) ~~The VOC content of cleaning materials subject to Subsection (d)(5)(i) of this rule shall be determined in accordance with ASTM Standard Recommended Practices for General Gas Chromatography Procedures, E 260-73, General Techniques of Infrared Quantitative Analysis, E 168-67, or General Techniques of Ultraviolet Quantitative Analysis, E 169-63.~~

(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.

~~(2) (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. Measurements of VOC emissions subject to Section (e) of this rule shall be conducted, using a protocol approved by the District, in accordance with 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), using a test 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.

~~and with EPA Capture Efficiency Test Method published in 55 FR 26865, June 29, 1990. An alternative method for determining capture efficiency may be used provided such method has been approved, in advance, by the Air Pollution Control Officer and U. S. Environmental Protection Agency for the specific processes being tested.~~

~~(3) (4)~~ Total vapor pressure of VOC in cleaning materials subject to Subsection (d)(5)(i) of this rule 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.

~~(4) (5)~~ The VOC content of liquids pursuant to Subsection (c)(4) (6) and cleaning materials subject to Subsection (d)(5)(i) of this rule shall be determined in accordance with ASTM Standard Recommended Practices for General Gas Chromatography Procedures, E 260-73, General Techniques of Infrared Quantitative Analysis, E 168-67, or General Techniques of Ultraviolet Quantitative Analysis, E 169-63 or with EPA Test Method 24 or 24A (40 CFR 60, Appendix A), as applicable, as it they exists on (date of adoption). and ASTM Standard Test Method D 4457-85 for determination of dichloromethane and 1,1,1-

trichloroethane in paints and coatings by direct injection in a gas chromatograph, as applicable.

(5) ~~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's) and/or manufacturer's specification sheets and raw materials purchase records shall be used to determine the presence and content of such exempt compound in the materials subject to this rule.~~

(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.

(6) (8) The water content of coatings pursuant to Subsection (c)(17) (18) of this rule 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 (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, or electing to use control equipment to comply with the requirements of Subsections (d)(1) and/or (d)(5) 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)*, issue purchase orders for the basic VOC control device and other long delivery time components necessary to comply with Section (e).

(iii) By *(twenty-one months after date of adoption)*, demonstrate be in compliance with Section (e) and Subsection (d)(1).

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

(4) Any person installing new equipment who is subject to the provisions of Subsection (d)(2) or electing to use control equipment to comply with the requirements of Subsections (d)(1) and/or (d)(5) this rule shall comply with the provisions of Section (e) this rule upon startup.

(2) ~~By (three months after date of adoption), any person who is subject to this rule and believes that he/she is not subject to the requirements of Subsection (d)(2) shall make an affirmative demonstration to the District that emissions from all coating and/or printing ink manufacturing operations at the stationary source, excluding equipment cleaning operations, are less than 100 pounds of VOC on every day of operation.~~

(3) ~~Any person operating existing equipment who is subject to the provisions of Subsections (d)(1), (d)(3) and (d)(4) and is not electing to use control equipment to comply with the requirements of Subsection (d)(1) shall comply with the requirements of these subsections upon (date of adoption).~~

(5) ~~Any person installing new equipment who is subject to the provisions of Subsections (d)(1), (d)(3), (d)(4) and (d)(5), and is not electing to use control equipment to comply with the requirements of Subsections (d)(1) and/or (d)(5) shall comply with the requirements of these subsections upon initial installation and startup.~~

SOCIOECONOMIC IMPACT ASSESSMENT

PROPOSED RULE 67.19 - COATINGS AND PRINTING INKS MANUFACTURING OPERATIONS

FINAL

December 1993

**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. Emissions of VOC from these sources are estimated to have been approximately 142 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.
- Installation of air pollution control systems to capture and reduce VOC emissions from mixing vats at facilities emitting 25 tons or more per year of VOC's.
- 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 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 108 tons per year or 76% 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 ¹, 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 ¹ 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	120
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 ².

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	\$ 2.10
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 (e.g., water-based vs. solvent-based). 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 \$80,000.

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 \$1,200,000 and \$160,000, respectively, with a total annualized cost of approximately \$360,000 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 cited in Table 2 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 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 controlled.

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	\$1,400,000	\$380,000	0.4%
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 0.4% (about \$380,000 per year) of the company's annual sales (Table 3). While this represents a significant annual compliance cost to the affected company, the cost-effectiveness (\$0.20 to \$2.10 per pound) associated with 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 a company of this size would 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 7 cents per gallon.

Overall, the total industry cost of compliance with the requirements of proposed Rule 67.19 is estimated to be approximately \$410,000 per year. About 8% 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 federal Clean Air Act Amendments of 1990, 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 Regional Air Quality Strategy 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 Federal Clean Air Act Amendments of 1990, 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.

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 108 tons per year or 76.1% from 1991 emission levels.

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 108 tons per year and will significantly reduce the potential for new VOC emissions from any future coatings and printing inks manufacturing operations.

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 Region wide Forecast (1990-2015)", October 25, 1991.

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

3/28/94

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).

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).

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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.

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.

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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).

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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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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.

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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.

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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.

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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'.

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

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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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DISTRICT RESPONSE

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

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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.

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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.

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