AIR POLLUTION CONTROL DISTRICT
COUNTY OF SAN DIEGO

DATE: April 30, 1997

TO: Air Pollution Control Board

SUBJECT: Adoption of Amendments to Rule 67.9 (Aerospace Coating Operations)

SUMMARY:

Rule 67.9 controls volatile organic compound (VOC) emissions from coating, stripping and cleaning operations used in manufacturing and repair of aerospace components. VOC's are ozone precursors. Revisions are proposed to make changes requested by the local aerospace industry, and incorporate recordkeeping requirements mandated by the recent EPA policy.

The proposed amendments will adjust the VOC content limits for certain specialized coatings to reflect current technology, add new maskant categories with associated VOC limits, increase allowed usage of exempt coatings and prohibit disposal of waste coatings or solvents into the air.

The amendments will also provide the aerospace industry an additional multi-stage maskant system option in chemical milling and chemical processing operations. This includes a VOC calculation method, adding emission control requirements for maskant dip coating operations and recordkeeping procedures.

The amendments will require a source using a material with a VOC content exceeding the rule limits to keep daily records, in accordance with EPA policy. They will also revise the list of exempt compounds by referring to existing Rule 2 (Definitions), revise rule language for consistency with other District coating rules, add test methods and definitions for new terms, and provide other minor clarifications.

Rule 67.9 affects 20 companies. The proposed amendments will reduce VOC emissions by an estimated 2 tons per year and reduce hazardous air pollutant (perchloroethylene) emissions by an estimated 9.4 tons per year.

A draft Negative Declaration has been prepared pursuant to the California Environmental Quality Act. It has been determined that there is no substantial evidence that the proposed amendments may have a significant adverse effect upon the environment.

A workshop was held on July 23, 1996. The workshop report is attached.

Issue

Should the Board amend Rule 67.9 to satisfy the EPA requirements and to make changes requested by local industry?

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Recommendation

AIR POLLUTION CONTROL OFFICER:

(1) Adopt the resolution adding Rule 67.9 to the District Rules and Regulations and make appropriate findings:

(i) of necessity, authority, clarity, consistency, non-duplication and reference as required by Section 40727 of the State Health and Safety Code;

(ii) that adopting Rule 67.9 will alleviate a problem and will not interfere with attainment of ambient air quality standards (Section 40001 of the State Health and Safety Code);

(iii) that an assessment of socioeconomic impacts of the proposed amendments is not required by Section 40728.5 of the State Health and Safety Code because the proposed amendments do not significantly affect air quality or emission limitations and do not interfere with the District's adopted plan to attain the ambient air quality standards;

(iv) that an Initial Study was prepared by the District pursuant to the California Environmental Quality Act, and the Initial Study revealed no substantial evidence that the proposed amendments to Rule 67.9 may have a significant effect on the environment;

(v) that a proposed Negative Declaration was prepared pursuant to the California Environmental Quality Act and that public notice and a public review period were provided for the proposed Negative Declaration; that no comments were received during said public review period; and that considering the initial study and proposed Negative Declaration and the entire record before the Board, a finding be made by the Board in the exercise of its independent judgment that the proposed amendments to Rule 67.9 will not have a significant effect on the environment, and that an Environmental Impact Report need not be prepared;

(vi) that there is no evidence in the record as a whole that the proposed amendments to Rule 67.9 will have an adverse effect on wildlife resources, and on the basis of substantial evidence, the presumption of adverse effect in California Code Of Regulations, Title 14, Section 753.5(d) has been rebutted.

(2) Approve the Certificate of Fee Exemption for De Minimis Impact Finding exempting the District from payment of fees to the California Department of Fish and Game.

Alternative

There is no practical alternative. If changes requested by local industry and EPA mandated revisions are not made, the rule will not be approved by EPA for inclusion in the State Implementation Plan (SIP). This will result in hardship for affected local companies because some will be unable to obtain federal Title V operating permits due to the contradiction in requirements between the current Rule 67.9 and the EPA approved SIP version of the rule.

Advisory Statement

There was no quorum at the January 22, 1997 meeting of the Air Pollution Control District Advisory Committee. The three members present voted in support of adopting the proposed amendments to Rule 67.9.

Fiscal Impact

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

Additional Information

Attachment I contains additional background information, information on compliance with Board policy on adopting new rules, additional information on Socioeconomic Impact Assessment requirements, and information on compliance with the California Environmental Quality Act.

Attachment II contains the Resolution and Change Copy amending Rule 67.9.

Attachment III contains the report for the workshop held on July 23, 1996.

Attachment IV contains the Initial Study and Negative Declaration for the rule amendments necessary to comply with the requirements of the California Environmental Quality Act.

Concurrence:

LAWRENCE B. PRIOR III
Chief Administrative Officer

Respectfully submitted,

BY: ROBERT R. COPPER
Deputy Chief Administrative Officer

R. J. SOMMERVILLE
Air Pollution Control Officer

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TD 4/7/97

COUNTY COUNSEL APPROVAL: Form and Legality [X] Yes [ ] N/A
[ ] Standard Form [ ] Ordinance [X] Resolution

CHIEF FINANCIAL OFFICER/AUDITOR REVIEW: [ ] Yes [X] N/A
4 VOTES: [ ] Yes [X] No

CONTRACT REVIEW PANEL: [ ] Approved _____ [X] N/A

PREVIOUS RELEVANT BOARD ACTION: 11/2/93 Board Item #1

BOARD POLICIES APPLICABLE: N/A

CONCURRENCES: N/A

ORIGINATING DEPARTMENT: San Diego County Air Pollution Control District

CONTACT PERSON: Richard Smith, Deputy Director (S50) 694-3303 MS: 0-176

R. J. SOMMERVILLE, APCO
DEPARTMENT AUTHORIZED REPRESENTATIVE

APRIL 30, 1997
MEETING DATE

ADOPTION OF AMENDMENTS TO RULE 67.9 (AEROSPACE COATING OPERATIONS)

Additional Background Information

Rule 67.9 was originally adopted in 1983 to control VOC emissions from coating, stripping and cleaning operations used in manufacturing and repair of aerospace components. It was approved in the State Implementation Plan (SIP) by the Environmental Protection Agency (EPA) in 1984. The rule limits the VOC content of aerospace coatings and provides emission limitations for equipment and processes used in stripping, surface preparations, and cleaning operations. It also specifies requirements for add-on air pollution control equipment that can be used in lieu of complying with coating VOC content standards. The rule requires sources to keep records and specifies the test methods for determining compliance.

Rule 67.9 has been amended four times to encourage additional emission reductions, reflect changes in coating and cleaning technology, provide consistency with similar rules of other California air districts, and meet current federal requirements.

Presently, the aerospace industry complies with the majority of current rule requirements. However, the current rule contains VOC standards for adhesive bonding primers, fuel tank coatings, rain erosion coatings and maskants adopted to encourage developing low solvent coating technology, with the effective date of July 1994. At that time, affected aerospace companies applied for and received variances from complying with these standards from the District Hearing Board. They also requested Rule 67.9 be amended to reflect current state coating technology and provide an option for using multi-stage coatings in masking operations. Subsequently, the District evaluated existing technology, met with the affected companies and developed the proposed amendments. The amendments will increase VOC content limits for adhesive bonding primers, rain erosion resistant coatings, and fuel tank coatings to reflect current coating technology. They will increase the allowed annual usage of coatings that are exempt from the VOC content standards to 200 gallons at any facility, allow materials with a initial boiling point of 190°C or greater be used for surface cleaning or application equipment cleaning, and prohibit disposal of waste coatings or solvents into the air.

The amendments will also add a new definition for multi-stage maskant systems and specify a method for calculating the average maskant system VOC content for determining compliance. They provide new definitions for chemical milling, bonding and processing maskants with corresponding VOC content limits, and specify emission control requirements for maskant dip coating operations.

The definition of exempt compounds is being deleted, and instead refer to updated Rule 2. This adds acetone, perchloroethylene, parachlorobenzotrifluoride, and volatile methyl siloxanes to the list of exempt compounds for aerospace coating operations and removes perchloroethylene limits for maskants. Perchloroethylene is a hazardous air contaminant and a known human carcinogen. Two companies in the District apply perchloroethylene-based maskant. One company uses add-on control equipment to reduce perchloroethylene emissions and the other company has converted to a multi-stage maskant system using a combination of perchloroethylene-based and water-based maskants. This conversion and the additional rule requirements to control evaporative emissions from dip maskant application operations will result in overall perchloroethylene and VOC emission reductions compared to the current level.

The proposed amendments will also revise recordkeeping requirements for consistency with recent EPA policies by specifying that use of materials not complying with the rule VOC standards must be recorded on a daily basis.

Finally, the proposed changes will update test methods and provide other minor clarifications and changes.

Compliance with Board Policy on Adopting New Rules

On February 2, 1993, the Board directed that, with the exception of a regulation requested by business or a regulation for which a socioeconomic impact assessment is not required, no new or revised regulation shall be implemented unless specifically required by federal or state law. The proposed changes to Rule 67.9 are consistent with this Board directive because they do not require a socioeconomic impact assessment, have been requested by local businesses and are mandated by EPA.

Socioeconomic Impact Assessment

Section 40728.5 of the State Health and Safety Code requires the District to perform a socioeconomic impact assessment for new and revised rules and regulations significantly affecting air quality or emission limitations. New and revised rules and regulations that result in less restrictive emissions limits are exempt from this requirement if the action does not interfere with the District's adopted plan to attain the ambient air quality standards and does not result in any significant increase in emissions. Some of the proposed amendments to Rule 67.9 will result in less restrictive VOC emission limits and subsequent increase in VOC emissions. However, the overall effect of the rule amendments will be an additional two tons per year of VOC emission reduction. Therefore, a socioeconomic impact assessment is not required by state law.

California Environmental Quality Act

The California Environmental Quality Act requires an environmental review for certain actions. An environmental review consistent with the California Environmental Quality Act (CEQA) has been performed because the proposed amendments would result in excess emissions if it is assumed that the affected sources are in compliance with the existing VOC standards for adhesive bonding primers, rain erosion resistant coatings, fuel tank coatings and maskants. Such an assumption is necessary to satisfy CEQA requirements. However, these sources are not currently in compliance with these requirements because compliant coatings are not available. Instead, these sources are operating under a variance. In this hypothetical case for CEQA purposes, VOC and total non-carcinogenic hazardous air pollutant emissions would slightly increase while emissions of perchloroethylene, a human carcinogen, would decrease by 0.6 tons per year. In reality, all hazardous air pollutant emissions will decrease by about 9.4 tons per year and actual VOC emissions will decrease by about two tons per year as a result of these amendments.

Evaluation of these hypothetical emission increases showed they are insignificant and would not affect San Diego County's timely attainment or maintenance of the national or state ambient air quality standards. A detailed evaluation of the localized impacts of the hypothetical hazardous air pollutant increases showed that there would be no significant acute or chronic impacts. Cancer risks would be reduced as result of a decrease in perchloroethylene emissions.

An Initial Study conducted by the District considered both hypothetical and real compliance situation and concluded that there will not be a significant effect on the environment. A draft Negative Declaration was prepared pursuant to CEQA. There is no substantial evidence that any aspect of the proposed changes may result in a significant adverse effect upon the environment.

No comments were received during the comment review period.

Based on the entire record and including the information contained in the Initial Study, there is also no evidence that the proposed amendments to Rule 67.9 may have any potential adverse effect on wildlife resources or the habitat upon which wildlife depends. On the basis of substantial evidence, the District has rebutted the presumption of adverse effect in California Code of Regulations, Title 14, Section 753.5(d).

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

RESOLUTION NO. 97-131
WEDNESDAY, APRIL 30, 1997

RESOLUTION AMENDING RULE 67.9 OF REGULATION IV OF THE RULES AND REGULATIONS OF THE SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT

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

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

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

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

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

Proposed amendments to Rule 67.9 are to read as follows:

RULE 67.9. AEROSPACE COATING OPERATIONS

(a) **APPLICABILITY**

(1) This rule is applicable to the coating, masking, bonding, and paint stripping of aerospace components in operations where aerospace coatings are used, to surface cleaning related to these aerospace coating operations, and to the cleanup of application equipment associated with these operations.

(2) Any coating, surface cleaning or equipment cleaning operation which is exempt from all or a portion of this rule pursuant to Section (b), shall comply with the provisions of Rule 66, 67.6 and/or Rule 67.12 as applicable.

(b) **EXEMPTIONS**

(1) The provisions of Subsections (d)(1) through (d)(6), (d)(9), (f)(2), (f)(3), and (f)(4) shall not apply to the following:

(i) Touch-up coatings and stencil coatings.

(ii) A stationary source where not more than 50 gallons per consecutive 12-month period of aerospace coating is used. This amount does not include coatings specified in Subsections (b)(1)(i), (b)(1)(v) and (b)(1)(vi).

(iii) Coatings that are used in volumes of less than 200 gallons per consecutive 12-month period provided a total of not more than 200 gallons per consecutive 12-month period of all such non-compliant coatings are used at any stationary source. This amount shall not include coatings specified in Subsections (b)(1)(i), (b)(1)(iv), (b)(1)(v) and (b)(1)(vi).

(iv) Coatings used exclusively for purposes of research and development, including coatings applied to mock-ups and prototypes, provided not more than 50 gallons per consecutive 12-month period of all such non-compliant coatings are used at the stationary source.

(v) Coatings applied using non-refillable aerosol spray containers.

(vi) Prepreg composite materials.

It shall be the responsibility of any person claiming any of the above exemptions to maintain calendar month records of coating usage. Such records shall show the amount of each coating used in accordance with information required by Subsection (f)(1) of this rule. These records shall be retained on site for at least three years and shall be made available to the District upon request.

(2) The provisions of Subsection (d)(2) shall not apply to the use of air brushes with a capacity of three ounces (188.6 ml) or less.

(3) The provisions of Subsections (d)(9), (f)(2), and (f)(4) shall not apply to adhesives, sealants and caulking and smoothing compounds, which have a VOC content, as applied, of less than 250 grams of VOC per liter of coating, less water and less exempt compounds.

(4) The provisions of Subsections (d)(9), (f)(2), and (f)(4) shall not apply to adhesives and sealants which are applied outside application stations required to have a District Permit to Operate.

It shall be the responsibility of any person claiming exemptions (b)(3) or (b)(4) above to maintain calendar month usage records. Such records shall show the amount of each adhesive and sealant used in accordance with information required by Subsection (f)(1) of this rule. These records shall be retained on site for at least three years and shall be made available to the District upon request.

(5) Provisions of Subsection (d)(2) shall not apply to a stationary source where not more than one gallon per day of aerospace coating is used. It shall be the responsibility of any person claiming this exemption to maintain daily records of coating usage according to Section (f) of this rule. These records shall be retained on site for at least three years and shall be made available to the District upon request.

(6) The provisions of Subsections (d)(6)(ii), (iii), and (v) shall not apply to any maskant application dip tank where 20 gallons or less of coating are used per consecutive 12-month period.

(7) The provisions of Subsections (d)(6)(i), (ii), (iii), and (v) shall not apply to any maskant application dip tank that contains an aqueous coating with a volatile organic compound (VOC) content of 10% by weight or less.

(8) The provisions of Subsection (d)(4) shall not apply to surface cleaning or stripping of aerospace components in equipment that is subject to the requirements of Rule 67.6.

(c) **DEFINITIONS**

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

(1) **"Adhesive"** means a material that is used to bond one surface to another surface by attachment.

(2) **"Adhesive Bonding Primer"** means a coating applied in a very thin film to aerospace adhesive bond detail components for corrosion inhibition and adhesion of the subsequently applied adhesive.

(3) **"Adhesive Bonding Primer, Structural"** means an adhesive bonding primer used in conjunction with structural adhesives to form load carrying aircraft components.

(4) **"Adhesive Bonding Primer for Elastomers and Elastomeric Adherends"** means an adhesive bonding primer applied to elastomers or nonmetallic substrates for adhesion of the subsequently applied adhesive.

(5) **"Aerospace Coatings"** means materials including but not limited to those specified in the table in Subsection (d)(1)(i) of this rule, which contain more than 20 grams of VOC per liter of coating, as applied, less water and less exempt compounds. Preservative oils and compounds, form release agents not containing solids, and greases and waxes are not aerospace coatings.

(6) **"Aerospace Component"** means any raw material, partial or completed fabricated part, assembly of parts or completed unit of any aircraft, helicopter, missile or space vehicle, including mockups, test panels and prototypes.

(7) **"Antichafe Coating"** means a coating applied to aerospace components' moving surfaces which may rub other aerospace components' surfaces during normal operation. A material shall not be classified as an antichafe coating if it can also be classified as a dry lubricative material or a solid film lubricant.

(8) **"Application Equipment"** means equipment used for applying coatings to a substrate. Application equipment includes coating distribution lines, coating hoses, equipment used in hand application methods, and equipment used in mechanically operated application methods, including but not limited to spray guns, spinning disks, and pressure pots.

(9) **"Bearing Coating"** means a coating applied to an anti-friction bearing, a bearing housing or the area adjacent to such a bearing in order to facilitate bearing function or to protect base material from excessive wear. A material shall not be classified as a bearing coating if it can also be classified as a dry lubricative material or a solid film lubricant.

(10) **"Caulking and Smoothing Compounds"** means semi-solid materials which are applied by hand application methods and are used to aerodynamically smooth exterior

vehicle surfaces or fill cavities such as bolt hole accesses. A material shall not be classified as a caulking and smoothing compound if it can also be classified as a sealant.

(11) **"Chemical Surface Operation"** means formation or removal of a metallic or metallic oxide film by chemical or electrochemical means including, but not limited to, aging, anodizing, conversion coating, electroplating, electropolishing, etching, and chemical milling.

(12) **"Conformal Coating"** means a coating applied to electrical conductors and circuit boards to protect them against electrical discharge damage and/or corrosion.

(13) **"Dry Lubricative Material"** means a coating consisting of lauric acid, cetyl alcohol, waxes, or other non-cross linked or resin-bound materials which act as a dry lubricant.

(14) **"Elastomeric Adhesive"** means a rubber or silicone based adhesive used to bond elastomeric materials to metal substrates or to provide a flexibility to the bond formed.

(15) **"Electromagnetic Radiation Effect Coatings"** means coatings primarily applied to prevent radar detection,; detection by ultraviolet, visible, or infrared reflectance or emittance; and electromagnetic interference.

(16) **"Exempt Compound"** means the same as defined in Rule 2.

(17) **"Flight Test Coating"** means a coating applied to an aircraft prior to flight testing to protect the aircraft from corrosion and to provide the required markings during flight test evaluation.

(18) **"Form or Mold Release Agent"** means a coating applied to molds to prevent galling and/or to keep parts from being held by a mold or die during forming or molding.

(19) **"Freeboard Height"** means the distance from the maximum coating level to the top of a coating application dip tank.

(20) **"Freeboard Ratio"** means the freeboard height divided by the smaller of the interior length or width of a coating application dip tank.

(21) **"Fuel Tank Adhesive"** means an adhesive used in conjunction with a fuel tank coating to bond aerospace components exposed to fuel and must be compatible with fuel tank coatings.

(22) **"Fuel Tank Coating"** means a coating applied to the interior of a fuel tank, fuel fill and drainage tracks, or surfaces frequently wetted by fuel of an aircraft or space vehicle to protect them from corrosion, including corrosion due to acidic by-products of bacterial growth.

(23) **"Hand Application Method"** means the application of coatings by manually held non-mechanically operated equipment. Such equipment includes paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags and sponges.

(24) **"High Temperature Coating"** means a coating that must withstand temperatures higher than 350° F (177°C).

(25) **"High Temperature Resistant, Thermal Flash Resistant, Rain Erosion Resistant Coating"** means a fluoroelastomeric coating that is designed specifically to protect aerospace vehicles from thermonuclear flash, erosion from airborne particles such as rain, ice, sand, etc., and temperatures above 450° F (232°C).

(26) **"High-Volume Low-Pressure (HVLP) Spray"** means a coating application method using a spray applicator and pressurized air which is designed and operated with a permanent atomizing pressure between 0.1 and 10.0 psig, measured dynamically at the center of the applicator's air cap.

(27) **"Heat Treatment Scale Inhibitor"** means a coating that is applied to the surface of a part prior to thermal processing to inhibit the formation of scale.

(28) **"Hot Melt Sealant"** means a solid sealant that is liquefied in a heat gun prior to application to a joint.

(29) **"Impact Resistant Coating"** means a flexible coating that protects aerospace components, such as aircraft landing gear, landing gear compartments and other under fuselage surfaces, subject to abrasion from impact from runway debris.

(30) **"Line Sealer Maskant"** means a maskant used to cover scribe lines in maskant, or repair damage to a maskant, in order to protect against chemical milling or chemical processing solutions.

(31) **"Maskant for Bonding"** means a temporary coating applied directly to aerospace components during bonding processes to protect surface areas during chemical surface operations.

(32) **"Maskant for Chemical Milling"** means a coating or a multi-stage maskant applied directly to a metal aerospace component to protect a portion of the component's surface areas only during chemical milling operations. Chemical milling maskants do not include line sealer maskants or maskants for bonding.

(33) **"Maskant for Chemical Processing"** means a coating or a multi-stage maskant applied directly to an aerospace components to protect a portion of the component's surface areas during a single chemical surface operation, not including chemical milling, or during multiple chemical surface operations that include chemical milling. Chemical processing maskants do not include line sealer maskants or maskants for bonding.

(34) **"Multi-Stage Maskant"** means a system employing two or more component coatings that together function as a Type I chemical milling maskant or a maskant for chemical processing.

(35) **"Optical Anti-Reflective Coating"** means a coating with a low reflectance in the infrared and visible wavelength range used for anti-reflection on or near optical laser hardware.

(36) **"Prepreg Composite Material"** means a reinforcing material impregnated with partially polymerized organic resins and ready for application.

(37) **"Preservative Oils and Compounds"** means coatings which are applied on areas that are not intended to be painted such as cables and exterior surfaces to prevent corrosion and/or to provide lubrication.

(38) **"Pretreatment Coating"** means a coating which contains at least one-half percent by weight of acid to provide surface etching, and is applied directly to metal surfaces to provide corrosion resistance, adhesion and ease of stripping.

(39) **"Primer"** means a coating usually applied for purposes of corrosion prevention, protection from the environment, functional fluid resistance and adhesion of subsequent coatings. A primer would include a coating which is formulated to be used as a primer but which, in a specific application, is used as an initial and final coating on interior areas without subsequent application of a topcoat.

(40) **"Rain Erosion Resistant Coating"** means a coating that protects leading edges of an aircraft from erosion due to rain, dust and other particles during flight, take-off or landing.

(41) **"Research and Development"** means aerospace coating operations, including operations performed for purposes of testing and quality control, which are not used for production purposes to directly produce a deliverable product or service, other than the first-article product or service.

(42) **"Sealant"** means a viscous semisolid material that fills voids in order to seal out water, fuel, other liquids, solids, or in some cases air currents, and is applied with brushes, syringes, caulking guns, spray guns or spatulas or is applied by fill and drain method.

(43) **"Solid-Film Lubricant"** means a very thin coating consisting of a binder system containing as its chief pigment material one or more of the following: molybdenum disulfide, graphite, polytetrafluoroethylene, or other solids that act as a dry lubricant between tightly fitting surfaces.

(44) **"Space Vehicle Coating"** means a coating applied to vehicles designed for use beyond the earth's atmosphere.

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

(46) **"Stencil Coating"** means an ink or coating which is rolled, sprayed with an airbrush or a touch-up gun with capacity of 8 ounces (236.4 ml) or less, or brushed using a template to add identifying letters and/or numbers to aerospace components.

(47) **"Stripper"** means a volatile liquid applied to remove a maskant, paint, paint residue or temporary protective coating.

(48) **"Structural Adhesive - Autoclavable"** means an adhesive used to bond load-carrying aircraft components which is cured by heat and pressure in an autoclave or a press.

(49) **"Structural Adhesive - Non-Autoclavable"** means an adhesive not cured in an autoclave or a press which is used to bond load-carrying aircraft components or to perform other critical functions, such as bonding near engines.

(50) **"Structural Adhesive - Epoxy"** means a liquid or paste adhesive consisting of an epoxy resin and a curing agent used to bond aerospace components.

(51) **"Temporary Protective Coating"** means a pigmented coating applied to an aerospace component to protect it from mechanical and/or environmental damage during manufacturing or shipping.

(52) **"Thermocontrol Coating"** means a coating applied to space vehicle components to reflect heat and formulated to give specific heat reflectance, absorption and emissivity properties, or is a coating required for aerospace engine components to delay component failure due to fire.

(53) **"Topcoat"** means a coating applied over a primer as the final coat for purposes such as appearance, identification, or protection.

(54) **"Touch-up Coating"** means a coating that is used for that portion of the coating operation which is incidental to the main coating process but necessary to cover minor imperfections or to achieve coverage as required, or a coating operation which is necessary to repair minor mechanical damage prior to intended use. A touch-up coating may include small amounts of solvent, applied by hand, used to attach coating patches exhibiting inadequate adhesion.

(55) **"Transfer Efficiency"** means the ratio of the weight or volume of coating solids adhering to the part being coated to the weight or volume of coating solids used in the application process, expressed as a percentage.

(56) **"Type I Chemical Milling Maskant"** means a maskant used for a Type I chemical milling operation.

(57) **"Type II Chemical Milling Maskant"** means a maskant used for a Type II chemical milling operation.

(58) **"Type I Chemical Milling Operation"** means chemical milling of aluminum or aluminum alloys using milling solutions containing less than 0.1 weight % amines.

(59) **"Type II Chemical Milling Operation"** means chemical milling of aluminum or aluminum alloys using milling solutions containing 0.1 weight % amines or more.

(60) **"Unicoat"** means a coating which is applied directly to an aerospace component, to a chemically treated and unpainted aerospace component, or over an old coating system in lieu of stripping the old coating system, for purposes of corrosion protection, environmental protection and/or functional fluid resistance and which is not subsequently topcoated.

(61) **"Volatile Organic Compounds (VOC)"** means the same as defined in Rule 2.

(62) **"VOC Content Per Volume of Coating, Less Water and Exempt Compounds"** means the same as defined in Rule 2.

(63) **"VOC Content Per Volume of Material"** means the same as defined in Rule 2.

(64) **"Wet Fastener Installation Coating"** means a primer or sealant applied by dipping, brushing, or daubing to fasteners which are installed before the coating is cured.

(d) **STANDARDS**

(1) VOC Limits.

(i) Except as provided in Subsection (b)(1), a person shall not use in aerospace coating operations any coating which contains VOC in excess of the following limits:

Coating Category	VOC content, grams per liter of coating as applied, less water and less exempt compounds
Adhesive Bonding Primers:	
Structural	850
For Elastomers and Elastomeric Adherends	850
All Other Adhesive Bonding Primers	850
Adhesives:	
Structural Autoclavable	50
Structural Epoxy	50
Structural Non-Autoclavable	250
Elastomeric	850
Fuel Tank Adhesives	620
All Other Adhesives	250
Antichafe Coatings	600
Bearing Coatings	620
Caulking and Smoothing Compounds	850
Conformal Coatings	750
Dry Lubricative Materials:	
Fasteners Lubrication	250
Non-Fasteners Lubrication	880
Electromagnetic Radiation Effect Coatings	800
Flight Test Coatings:	
Use on Missiles, Targets	420
All Others	840
Form Release Agents	800
Fuel Tank Coatings	720
Heat Treatment Scale Inhibitors	880
High Temperature Coatings	850
High Temperature Resistant, Thermal Flash Resistant, Rain Erosion Resistant Coatings	800
Impact Resistant Coatings	420
High Temperature Coatings	850
High Temperature Resistant, Thermal Flash Resistant, Rain Erosion Resistant Coatings	800
Impact Resistant Coatings	420
Line Sealer Maskants	650
High Temperature Coatings	850
High Temperature Resistant, Thermal Flash Resistant, Rain Erosion Resistant Coatings	800

Coating Category	VOC content, grams per liter of coating as applied, less water and less exempt compounds
Impact Resistant Coatings	420
Line Sealer Maskants	650
Maskants for Bonding	600
Maskants for Chemical Milling	
Type I including Multi-Stage Maskants	250
Type II	160
All Other Chemical Milling	250
Maskants for Chemical Processing	
Chemical Processing including Multi-Stage Maskants	250
Optical Anti-Reflective Coatings	700
Pretreatment Coatings	780
Primers	350
Primers Compatible with Rain Erosion Resistant Coatings	850
Rain Erosion Resistant Coatings	690
Sealants	600
Hot Melt Sealants	100
Solid Film Lubricants:	
Fasteners Lubrication	250
Non-Fasteners Lubrication	880
Space Vehicle Coatings:	
Electrostatic Discharge Protection	800
Other Space Vehicle Coatings	1000
Adhesives	800
Temporary Protective Coatings	250
Thermocontrol Coatings	600
Topcoats	420
Unicoats	420
Wet Fastener Installation Coatings	675
All Other Coatings	420

(ii) If each coating comprising a multi-stage maskant complies with the applicable VOC limit, then the multi-stage maskant is deemed compliant. Otherwise the compliance of a multi-stage maskant with the VOC limits in Subsection (d)(1)(i) shall be determined pursuant to Subsection (d)(1)(iii) in the following manner:

(A) For a multi-stage maskant for which all component coatings are applied by methods other than dip coating, the VOC content of the multi-stage coating shall be calculated either each day of operation using that calendar day as the averaging period or each calendar month using that calendar month as the averaging period; or

(B) For a multi-stage maskant for which some component coatings are applied by dip coating, the VOC content of the multi-stage coating shall be calculated each calendar month using that calendar month as the averaging period or that calendar month and the previous two consecutive calendar months as the averaging period.

(iii) The following formula shall be used to determine the VOC content per volume of coating less water and exempt compounds, as applied, of a multi-stage maskant over a given averaging period:

$$VOC_m = \frac{\sum_{i=1}^{n} VOC_i \times V_i}{\sum_{i=1}^{n} V_i}$$

where:

VOC_m = the VOC content per volume of coating less water and exempt compounds, as applied, of a multi-stage maskant.

VOC_i = the VOC content per volume of coating less water and exempt compounds, as applied, of the i'th component coating of the multi-stage maskant.

V_i = the total coating volume of the i'th coating component less water and exempt compounds, as applied, used at an application station or added to a dip tank , as applicable, during the averaging period.

n = the total number of component coatings that comprise the multi-stage coating.

(iv) If a multi-stage maskant is determined to exceed the VOC limits of Subsection (d)(1)(i), then the owner or operator shall be deemed in violation of this rule for each day of the averaging period used to determine compliance pursuant to Subsection (d)(1)(iii) except for each day the owner or operator can demonstrate that no such noncompliant coatings were used.

The requirements of Subsection (d)(1) may be met using an Alternative Emission Control Plan (AECP) that has been approved pursuant to Rule 67.1.

(2) Application Methods

Except as provided in Subsections (b)(1), (b)(2), and (b)(5), a person shall not apply aerospace coatings in aerospace coating operations subject to this rule except by means of the following application methods:

(i) Electrostatic spray application, or

(ii) Flow coat application, or

(iii) Dip coat application, or

(iv) Hand application methods, or

(v) Airless spray application for use with maskants and temporary protective coatings only, or

(vi) High-volume low-pressure (HVLP) spray application, or

(vii) Other coating application methods that are demonstrated to have transfer efficiency at least equal to one of the above application methods, and which are used in such a manner that parameters under which they were tested are permanent features of the method. Such coating application methods shall be approved in writing by the Air Pollution Control Officer prior to use.

(3) Stripping Operations.

Except as provided in Subsection (b)(1), a person shall not use a stripper in aerospace coating operations unless the stripper:

(i) Contains 400 grams of VOC per liter of material or less as applied, or

(ii) Has a total vapor pressure of VOC of 9.5 mm Hg or less at 68°F (20° C).

(4) Surface Cleaning Operations.

Except as provided in Subsections (b)(1) and (b)(8), a person shall not use a material for surface cleaning or surface preparation of an aerospace component unless:

(i) The material contains 200 grams of VOC per liter of material or less as applied, or

(ii) The material has a total vapor pressure of VOC of 45 mm Hg or less at 68°F (20° C), or

(iii) The material has an initial boiling point of 190° C (374° F) or greater at 760 mm Hg total pressure; or

(iv) The aerospace component is cleaned in an enclosed cleaning material container which is only opened when accessing parts or adding surface cleaning materials.

(5) Cleaning of Application Equipment.

Except as provided in Subsection (b)(1), a person shall not clean aerospace coating application equipment unless the cleaning material:

(i) Contains 200 grams or less of VOC per liter of material; or

(ii) Has a total vapor pressure of VOC of 20 mm Hg or less at 68°F (20° C); or

(iii) Has an initial boiling point of 190° C (374° F) or greater at 760 mm Hg total pressure; or

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

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

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

(vii) Other application equipment cleaning methods are used that are demonstrated to be as effective as any of the equipment described above in minimizing the emissions of VOC to the atmosphere, provided that the method has been tested and approved by the Air Pollution Control Officer prior to use.

(6) Maskant Dip Coating Application Equipment.

Except as provided in Subsections (b)(1), (b)(6), and (b)(7), a person shall not use a dip tank to apply Type I chemical milling maskants or maskants for chemical processing or component coatings of a multi-stage maskants to aerospace parts unless:

(i) The dip tank is covered except when being accessed to add or remove materials; take samples; visually inspect the maskant level; clean, maintain or repair the tank; or apply maskant; and

(ii) The dip tank has a readily visible, permanent mark or line indicating the maximum allowable maskant level; and

(iii) The dip tank has a freeboard ratio greater than or equal to 0.5; and

(iv) Maskant agitation is achieved by means other than gas agitation; and

(v) Material is added to the dip tank by means of submerged filling; and

(vi) Any dip tank lip exhaust ventilation system with an inlet located below the cover of the maskant application dip tank is turned off and the ventilation duct closed when the maskant application dip tank is covered.

(7) Disposal of Waste Materials into the Air.

A person shall not use spray application equipment or any other means to dispose of waste coatings, coating components, surface preparation materials, or cleaning materials into the air, except when momentarily purging coating material from a spray applicator cap immediately before or after applying the coating material.

(8) Prohibition of Specification.

A person shall not specify the application of a coating subject to this rule for any aerospace coating operation in San Diego County if such application results in a violation of any provision of this rule. This prohibition is applicable to any written or oral

contract under the terms of which any coating is applied to any aerospace component within San Diego County.

(9) Coating Lists.

Except as provided in Subsections (b)(1), (b)(3), and (b)(4), a person using aerospace coatings subject to this rule shall provide to the Air Pollution Control Officer a list of all coatings applied in each affected facility. Such list shall contain all information required by Subsection (f)(1). The list shall also identify, for each aerospace coating, all applicable coating category uses, including allowable VOC content, specified in Subsec tion (d)(1)(i). The list shall be revised before any aerospace coating is used for purposes other than those previously identified on the list. The revised list shall be retained on site and provided to the Air Pollution Control Officer upon request. Information necessary to demonstrate that the intended use of a coating is consistent with the applicable definition of the coating use contained in Section (c) shall be provided to the District upon request.

A person shall not use any aerospace coating unless the coating is included on such list and is used only as the coating category specified on the list for that specific coating. If the intended use of a coating has been determined in writing by the Air Pollution Control Officer to be inconsistent with the applicable definition of the coating use contained in Section (c) or if the VOC content of a coating does not comply with the applicable limits specified in Subsection (d)(1), the coating shall be deleted from the list and shall not be used. Such determinations by the Air Pollution Control Officer shall not relieve the person using any aerospace coating from complying with the applicable definitions and VOC content limits of this rule.

(e) CONTROL EQUIPMENT

(1) Any person subject to this rule may comply with the provisions of Subsections (d)(1) through (d)(6) by using air pollution control equipment which has been approved in writing by the Air Pollution Control Officer provided that the air pollution control equipment:

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

(ii) Includes an emission collection system which captures organic gaseous emissions, including emissions associated with applicable coating, equipment cleaning, and surface preparation operations, and transports the captured emissions to an air pollution control device; and

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

(2) A person electing to use an air pollution control system pursuant to Subsection (e)(1) of this rule shall submit an Operation and Maintenance Plan for the air pollution control device and emission collection system to the Air Pollution Control Officer for approval and receive such approval prior to operation of the air pollution control equipment. Thereafter, the plan can be modified, with Air Pollution Control Officer approval, as necessary to ensure compliance. The Operation and Maintenance Plan shall:

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

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

(3) Upon approval of the Air Pollution Control Officer, a person electing to use an air pollution control system pursuant to this Section (e) shall implement the Operation and Maintenance plan and shall comply with the provisions of the approved plan thereafter.

(f) RECORDKEEPING

Except as provided in Subsections (b)(1), (b)(3), and (b)(4), any person using coatings, strippers, thinners, surface cleaning materials or equipment cleaning materials in aerospace coating operations shall maintain records in accordance with the following requirements:

(1) Maintain a current list of coatings, strippers, thinners, surface cleaning and equipment cleaning materials in use. This list shall provide the data necessary to evaluate compliance, including, but not limited to:

(i) Type and/or applicable category specified in Subsections (d)(1), (d)(3), (d)(4), and d(5) of each coating, stripper, thinner, surface cleaning and equipment cleaning material used, including manufacturer identification; and

(ii) Mix ratio of components; and

(iii) VOC content per volume of coating less water and exempt compounds, as applied; and

(iv) VOC content per volume of material, total vapor pressure of VOC, or initial boiling point of each stripper, surface cleaning material, and equipment cleaning material, as applied.; and

(v) For each multi-stage maskant, the applicable maskant category specified in Subsection (d)(1), and the manufacturer identification of the component coatings that comprise the multi-stage maskant.

(2) At a minimum, for each material that is in compliance with Subsections (d)(1), (d)(3), (d)(4) or (d)(5), as applicable, maintain records for each calendar month that show:

(i) For any materials not applied by dip coating, the amount of each coating, stripper, and thinner used; and

(ii) Inventory (dispensing) records for solvents used for equipment cleaning and surface cleaning operations; and

(iii) Material additions to coating application dip tanks.

(3) For each material that is not in compliance with Subsections (d)(1) maintain daily usage records for all coatings, thinners, and VOC containing materials.

(4) A person using control equipment specified in Section (e) of this rule shall:

(i) Maintain records in accordance with Subsections (f)(1) and (f)(2);

(ii) Maintain daily usage records for all coatings, strippers, cleaning and/or surface preparation materials not in compliance with Subsections (d)(1), (d)(3), (d)(4) or (d)(5) of this rule; and

(iii) Maintain daily records of key system operating parameters as approved in the Operation and Maintenance plan. Such records must be sufficient to document continuous compliance with Subsection (e)(1)(iii) during periods of emission producing activities.

All 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) Measurements of the VOC content of coatings, strippers and cleaning materials subject to Section (d) of this rule shall be conducted and reported in accordance with EPA Test Method 24 (40 CFR 60, Appendix A).

(2) Perfluorocarbon (PFC) compounds and cyclic, branched, or linear completely methylated siloxanes (VMS) shall be assumed to be absent from aerospace coatings, strippers and cleaning materials 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 approved test method which can be used to quantify the specific compounds.

(3) The overall control efficiency of air pollution control equipment operated pursuant to Subsection (e)(1)(iii) shall be determined by multiplying the capture efficiency of the emission collection system by the control efficiency of the air pollution control device. The control efficiency of the air pollution control device shall be determined using EPA Methods 18 and 25 or 25A (40 CFR 60, Appendix A) and in accordance with a protocol approved by the Air Pollution Control Officer. Capture efficiency shall be determined according to EPA's technical document, "Guidelines for Determining Capture Efficiency," January 9, 1995. Subsequent to the initial compliance demonstration period, appropriate key system operating parameters as determined by the Air Pollution Control Officer may be used as indicators of the performance of the emission collection system.

(4) Measurements of transfer efficiency pursuant to Subsection (d)(2)(vii) of this rule shall be conducted in accordance with the South Coast Air Quality Management District's "Spray Equipment Transfer Efficiency Test Procedure for Equipment User".

(5) Total vapor pressure of VOC containing materials subject to Subsections (d)(3)(ii), (d)(4)(ii) and (d)(5)(ii) of this rule shall be calculated by using the District's "Procedure for Estimating the Vapor Pressure of VOC Mixtures". If the vapor pressure of the liquid mixture exceeds the limits specified in Subsections (d)(3)(ii), (d)(4)(ii) and (d)(5)(ii), as applicable, the vapor pressure shall be determined in accordance with ASTM Standard Test Method D2879-86, 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 by using ASTM Standard Test Methods D 3792-91 and D 4457-85 and shall be used to calculate the partial pressure of water and exempt compounds. The results of vapor pressure measurements obtained using ASTM Standard Test Method D2879-96 shall be corrected for the partial pressure of water and exempt compounds.

(6) Measurements of acid content of pretreatment coating as defined in Subsection (c)(38) of this rule shall be conducted in accordance with ASTM Standard Test Method D

1613-91 for Determination of Acidity in Volatile Solvents and Intermediates used in Paint, Varnish, Lacquer and Related Products or in accordance with the test procedure specified in MIL-C-8514C(ASG).

(7) Measurement of the initial boiling point of cleaning and surface preparation materials subject to Subsection (d)(4)(iii) and/or (d)(5)(iii) of this rule shall be conducted in accordance with ASTM Standard Test Method D1078-86 for distillation range of volatile organic liquids.

(8) Measurement of solvent losses from alternative application cleaning equipment subject to Subsection (d)(5)(vii) shall be conducted and reported in accordance with the South Coast Air Quality Management District's "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems" dated October 3, 1989.

IT IS FURTHER RESOLVED AND ORDERED that the subject amendment to Rule 67.9 of Regulation IV shall take effect upon adoption.

PASSED AND ADOPTED by the Air Pollution Control Board of the San Diego County Air Pollution Control District, State of California, this 30th day of April, 1997 by the following votes:

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

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

THOMAS J. PASTUSZKA
CLERK OF THE AIR POLLUTION CONTROL BOARD

By _____
Maritza C. Steele, Deputy

APPROVED AS TO FORM AND LEGALITY
COUNTY COUNSEL
BY _____
DEPUTY

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AMENDMENTS TO RULE 67.9

Proposed amendments to Rule 67.9 are to read as follows:

RULE 67.9. AEROSPACE COATING OPERATIONS

(a) **APPLICABILITY**

(1) This rule is applicable to the coating, masking, bonding, and paint stripping of aerospace components in operations where aerospace coatings are used, to surface cleaning related to these aerospace coating operations, and to the cleanup of application equipment associated with these operations.

(2) Any coating, surface cleaning or equipment cleaning operation which is exempt from all or a portion of this rule pursuant to Section (b), shall comply with the provisions of Rule 66, 67.6 and/or Rule 67.12 as applicable.

(b) **EXEMPTIONS**

(1) The provisions of Subsections (d)(1) through (d)(6), (d)(9)~~(7)~~, (f)(2), ~~and~~ (f)(3), and (f)(4) shall not apply to the following:

(i) Touch-up coatings and stencil coatings.

(ii) A stationary source where not more than 50 gallons per consecutive 12-month period ~~year~~ of aerospace coating is used. This amount does not include coatings specified in Subsections (b)(1)(i), (b)(1)(v) and (b)(1)(vi).

(iii) Coatings ~~with separate formulations~~ that are used in volumes of less than 200 gallons per consecutive 12-month period ~~year~~ provided a total of not more than 200 ~~50~~ gallons per consecutive 12-month period ~~year~~ of all such non-compliant coatings are used at any ~~the~~ stationary source. This amount shall ~~does~~ not include coatings specified in Subsections (b)(1)(i), (b)(1)(iv), (b)(1)(v) and (b)(1)(vi).

(iv) Coatings used exclusively for purposes of research and development, including coatings applied to mock-ups and prototypes, provided not more than 50 gallons per consecutive 12-month period ~~year~~ of all such non-compliant coatings are used at the stationary source.

(v) Coatings applied using non-refillable aerosol spray containers.

(vi) Prepreg composite materials.

It shall be the responsibility of any person claiming any of the above exemptions to maintain calendar month ~~year~~ records of coating usage. Such records shall show the amount of each coating used in accordance with information required by Subsection (f)(1) of this rule. These records shall be retained on site for at least three years and shall be made available to the District upon request.

(2) The provisions of Subsection (d)(2) shall not apply to the use of air brushes with a capacity of three ounces (188.6 ml) or less.

(3) The provisions of Subsections (d)(9)~~(7)~~, (f)(2), and (f)(4)~~(3)~~ shall not apply to adhesives, sealants and caulking and smoothing compounds, which have a VOC content, as applied, of less than 250 grams of VOC per liter of coating, less water and less exempt compounds.

(4) The provisions of Subsections (d)(9)~~(7)~~, (f)(2), and (f)(4)~~(3)~~ shall not apply to adhesives and sealants which are applied outside application stations required to have a District Permit to Operate.

It shall be the responsibility of any person claiming exemptions (b)(3) or (b)(4) above to maintain calendar month ~~year~~ usage records. Such records shall show the amount of each adhesive and sealant used in accordance with information required by Subsection (f)(1) of this rule. These records shall be retained on site for at least three years and shall be made available to the District upon request.

(5) Provisions of Subsection (d)(2) shall not apply to a stationary source where not more than one gallon per day of aerospace coating is used. It shall be the responsibility of any person claiming this exemption to maintain daily records of coating usage according to Section (f) of this rule. These records shall be retained on site for at least three years and shall be made available to the District upon request.

(6) The provisions of Subsections (d)(6)(ii), (iii), and (v) shall not apply to any maskant application dip tank where 20 gallons or less of coating are used per consecutive 12-month period.

(7) The provisions of Subsections (d)(6)(i), (ii), (iii), and (v) shall not apply to any maskant application dip tank that contains an aqueous coating with a volatile organic compound (VOC) content of 10% by weight or less.

(8) The provisions of Subsection (d)(4) shall not apply to surface cleaning or stripping of aerospace components in equipment that is subject to the requirements of Rule 67.6.

(c) **DEFINITIONS**

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

(1) "**Adhesive**" ~~is~~ means a material that is used to bond one surface to another surface by attachment.

(2) "**Adhesive Bonding Primer**" ~~is~~ means a coating applied in a very thin film to aerospace adhesive bond detail components for corrosion inhibition and adhesion of the subsequently applied adhesive.

(3) "**Adhesive Bonding Primer, Structural**" ~~is~~ means an adhesive bonding primer used in conjunction with structural adhesives to form load carrying aircraft components.

(4) "**Adhesive Bonding Primer for Elastomers and Elastomeric Adherends**" ~~is~~ means an adhesive bonding primer applied to elastomers or nonmetallic substrates for adhesion of the subsequently applied adhesive.

(5) "**Aerospace Coatings**" ~~are~~ means materials including but not limited to those specified in the table in Subsection (d)(1)(i) of this rule, which contain more than 20 grams of VOC per liter of coating, as applied, less water and less exempt compounds.

Preservative oils and compounds, form release agents not containing solids, and greases and waxes are not aerospace coatings.

(6) **"Aerospace Component"** ~~is~~ means any raw material, partial or completed fabricated part, assembly of parts or completed unit of any aircraft, helicopter, missile or space vehicle, including mockups, test panels and prototypes.

(7) **"Antichafe Coating"** ~~is~~ means a coating applied to aerospace components' moving surfaces which may rub other aerospace components' surfaces during normal operation. A material shall not be classified as an antichafe coating if it can also be classified as a dry lubricative material or a solid film lubricant.

(8) **"Application Equipment"** ~~is~~ means equipment used for applying coatings to a substrate. Application equipment includes coating distribution lines, coating hoses, equipment used in hand application methods, and equipment used in mechanically operated application methods, including but not limited to spray guns, spinning disks, and pressure pots.

(9) **"Bearing Coating"** ~~is~~ means a coating applied to an anti-friction bearing, a bearing housing or the area adjacent to such a bearing in order to facilitate bearing function or to protect base material from excessive wear. A material shall not be classified as a bearing coating if it can also be classified as a dry lubricative material or a solid film lubricant.

(10) **"Caulking and Smoothing Compounds"** ~~are~~ means semi-solid materials which are applied by hand application methods and are used to aerodynamically smooth exterior vehicle surfaces or fill cavities such as bolt hole accesses. A material shall not be classified as a caulking and smoothing compound if it can also be classified as a sealant.

(11) **"Chemical Surface Operation"** means formation or removal of a metallic or metallic oxide film by chemical or electrochemical means including, but not limited to, aging, anodizing, conversion coating, electroplating, electropolishing, etching, and chemical milling.

(12)~~(11)~~ **"Conformal Coating"** ~~is~~ means a coating applied to electrical conductors and circuit boards to protect them against electrical discharge damage and/or corrosion.

(13)~~(12)~~ **"Dry Lubricative Material"** ~~is~~ means a coating consisting of lauric acid, cetyl alcohol, waxes, or other non-cross linked or resin-bound materials which act as a dry lubricant.

(14)~~(13)~~ **"Elastomeric Adhesive"** ~~is~~ means a rubber or silicone based adhesive used to bond elastomeric materials to metal substrates or to provide a flexibility to the bond formed.

(15)~~(14)~~ **"Electromagnetic Radiation Effect Coating"** ~~are~~ means coatings primarily applied to prevent radar detection~~,~~; detection by ultraviolet, visible, or infrared reflectance or emittance; and electromagnetic interference.

(16)~~(15)~~ **"Exempt Compound"** means the same as defined in Rule 2.

~~is any of the following compounds or classes of compounds: methylene chloride, 1,1,1-trichloroethane, trichlorofluoromethane (CFC-11), dichlorodifluoromethane (CFC-12), chlorodifluoromethane (HCFC-22), trifluoromethane (HFC-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); 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.~~

(17)~~(16)~~ **"Flight Test Coating"** ~~is~~ means a coating applied to an aircraft prior to flight testing to protect the aircraft from corrosion and to provide the required markings during flight test evaluation.

(18)~~(17)~~ **"Form or Mold Release Agent"** ~~is~~ means a coating applied to ~~metal sheets, or metal/composite~~ molds to prevent galling and/or to keep ~~the metal or composite~~ parts from being held by a mold or die during forming or molding.

(19) **"Freeboard Height"** means the distance from the maximum coating level to the top of a coating application dip tank.

(20) **"Freeboard Ratio"** means the freeboard height divided by the smaller of the interior length or width of a coating application dip tank.

(21)~~(18)~~ **"Fuel Tank Adhesive"** ~~is~~ means an adhesive used in conjunction with a fuel tank coating to bond aerospace components exposed to fuel and must be compatible with fuel tank coatings.

(22)~~(19)~~ **"Fuel Tank Coating"** ~~is~~ means a coating applied to the interior of a fuel tank, fuel fill and drainage tracks, or surfaces frequently wetted by fuel of an aircraft or space vehicle to protect them from corrosion, including corrosion due to acidic by-products of bacterial growth.

(23)~~(20)~~ **"Hand Application Method"** ~~is~~ means the application of coatings by manually held non-mechanically operated equipment. Such equipment includes paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags and sponges.

(24)~~(21)~~ **"High Temperature Coating"** ~~is~~ means a coating that must withstand temperatures higher than 350° F (177° C).

(25)~~(22)~~ **"High Temperature Resistant, Thermal Flash Resistant, Rain Erosion Resistant Coating"** ~~is~~ means a fluoroelastomeric coating that is designed specifically to protect aerospace vehicles from thermonuclear flash, erosion from airborne particles such as rain, ice, sand, etc., and temperatures above 450° F (232° ~~3°~~ C).

(26)~~(23)~~ **"High-Volume Low-Pressure (HVLP) Spray"** ~~is~~ means a coating application method using a spray applicator and pressurized air which is designed and operated with ~~at~~ a permanent atomizing pressure between 0.1 and 10.0 psig, ~~not to~~

~~exceed 10.0 psig~~ measured dynamically at the center of the applicator's ~~at the~~ air cap. ~~of the coating application system~~

(27)~~(24)~~ **"Heat Treatment Scale Inhibitor"** ~~is~~ means a coating that is applied to the surface of a part prior to thermal processing to inhibit the formation of scale.

(28)~~(25)~~ **"Hot Melt Sealant"** ~~is~~ means a solid sealant that is liquefied in a heat gun prior to application to a joint.

(29)~~(26)~~ **"Impact Resistant Coating"** ~~is~~ means a flexible coating that protects aerospace components, such as aircraft landing gear, landing gear compartments and other under fuselage surfaces, subject to abrasion from impact from runway debris.

(30)~~(27)~~ **"Line Sealer Maskant"** ~~is~~ means a maskant used to cover scribe lines in maskant, or repair damage to a maskant, in order to protect against chemical milling or chemical processing solutions ~~etchant in multi-step etching processes~~.

(31) **"Maskant for Bonding"** means a temporary coating applied directly to aerospace components during bonding processes to protect surface areas during chemical surface operations.

(32)~~(28)~~ **"Maskant for Chemical Milling"** ~~is~~ means a coating or a multi-stage maskant applied directly to a metal aerospace components to protect a portion of the component's surface areas only during chemical milling operations. Chemical milling maskants do not include line sealer maskants or maskants for bonding.

(33)~~(29)~~ **"Maskant for Chemical Processing"** ~~is~~ means a coating or a multi-stage maskant applied directly to an aerospace components to protect a portion of the component's surface areas during a single chemical surface operation, not including chemical milling, or during multiple chemical surface operations that include chemical milling ~~anodizing, aging, bonding, plating, etching, or other chemical surface operations~~. Chemical processing maskants do not include line sealer maskants or maskants for bonding.

(34) **"Multi-Stage Maskant"** means a system employing two or more component coatings that together function as a Type I chemical milling maskant or a maskant for chemical processing.

(35)~~(30)~~ **"Optical Anti-Reflective Coating"** ~~is~~ means a coating with a low reflectance in the infrared and visible wavelength range used for anti-reflection on or near optical laser hardware.

(36)~~(31)~~ **"Prepreg Composite Material"** ~~is~~ means a reinforcing material impregnated with partially polymerized organic resins and ready for application.

(37)~~(32)~~ **"Preservative Oils and Compounds"** ~~are~~ means coatings which are applied on areas that are not intended to be painted such as cables and exterior surfaces to prevent corrosion and/or to provide lubrication.

(38)~~(33)~~ **"Pretreatment Coating"** ~~is~~ means a coating which contains at least one-half percent by weight of acid to provide surface etching, and is applied directly to metal surfaces to provide corrosion resistance, adhesion and ease of stripping.

(39)~~(34)~~ **"Primer"** ~~is~~ means a coating usually applied for purposes of corrosion prevention, protection from the environment, functional fluid resistance and adhesion of

subsequent coatings. A primer would include a coating which is formulated to be used as a primer but which, in a specific application, is used as an initial and final coating on interior areas without subsequent application of a topcoat.

(40)~~(35)~~ **"Rain Erosion Resistant Coating"** ~~is~~ means a coating that protects leading edges of an aircraft from erosion due to rain, dust and other particles during flight, take-off or landing.

(41)~~(36)~~ **"Research and Development"** means aerospace coating operations, including operations performed for purposes of testing and quality control, which are not used for production purposes to directly produce a deliverable product or service, other than the first-article product or service.

(42)~~(37)~~ **"Sealant"** ~~is~~ means a viscous semisolid material that fills voids in order to seal out water, fuel, other liquids, solids, or in some cases air currents, and is applied with brushes, syringes, caulking guns, spray guns or spatulas or is applied by fill and drain method.

(43)~~(38)~~ **"Solid-Film Lubricant"** ~~is~~ means a very thin coating consisting of a binder system containing as its chief pigment material one or more of the following: molybdenum disulfide ~~disulfate~~, graphite, polytetrafluoroethylene, or other solids that act as a dry lubricant between tightly fitting surfaces.

(44)~~(39)~~ **"Space Vehicle Coating"** ~~is~~ means a coating applied to vehicles designed for use beyond the earth's atmosphere.

(45)~~(40)~~ **"Stationary Source"** means the same as defined in Rule 20.1.

(46)~~(41)~~ **"Stencil Coating"** ~~is~~ means an ink or coating which is rolled, sprayed with an airbrush or a touch-up gun with capacity of 8 ounces (236.4 ml) or less, or brushed using a template to add identifying letters and/or numbers to aerospace components.

(47)~~(42)~~ **"Stripper"** ~~is~~ means a volatile liquid applied to remove a maskant, paint, paint residue or temporary protective coating.

(48)~~(43)~~ **"Structural Adhesive - Autoclavable"** ~~is~~ means an adhesive used to bond load-carrying aircraft components which is cured by heat and pressure in an autoclave or a press.

(49)~~(44)~~ **"Structural Adhesive - Non-Autoclavable"** ~~is~~ means an adhesive not cured in an autoclave or a press which is used to bond load-carrying aircraft components or to perform other critical functions, such as bonding near engines.

(50)~~(45)~~ **"Structural Adhesive - Epoxy"** ~~is~~ means a liquid or paste adhesive consisting of an epoxy resin and a curing agent used to bond aerospace components.

(51)~~(46)~~ **"Temporary Protective Coating"** ~~is~~ means a pigmented coating applied to an aerospace component to protect it from mechanical and/or environmental damage during manufacturing or shipping.

(52)~~(47)~~ **"Thermocontrol Coating"** ~~is~~ means a coating applied to space vehicle components to reflect heat and formulated to give specific heat reflectance, absorption and emissivity properties, or is a coating required for aerospace engine components to delay component failure due to fire.

(53)~~(48)~~ **"Topcoat"** ~~is~~ means a coating applied over a primer as the final coat for purposes such as appearance, identification, or protection.

(54)~~(49)~~ **"Touch-up Coating"** ~~is~~ means a coating that is used for that portion of the coating operation which is incidental to the main coating process but necessary to cover minor imperfections or to achieve coverage as required, or a coating operation which is necessary to repair minor mechanical damage prior to intended use. A touch-up coating may include small amounts of solvent, applied by hand, used to attach coating patches exhibiting inadequate adhesion.

(55)~~(50)~~ **"Transfer Efficiency"** ~~is~~ means the ratio of the weight or volume of coating solids adhering to the part being coated to the weight or volume of coating solids used in the application process, expressed as a percentage.

(56) **"Type I Chemical Milling Maskant"** means a maskant used for a Type I chemical milling operation.

(57) **"Type II Chemical Milling Maskant"** means a maskant used for a Type II chemical milling operation.

(58) **"Type I Chemical Milling Operation"** means chemical milling of aluminum or aluminum alloys using milling solutions containing less than 0.1 weight % amines.

(59) **"Type II Chemical Milling Operation"** means chemical milling of aluminum or aluminum alloys using milling solutions containing 0.1 weight % amines or more.

(60)~~(51)~~ **"Unicoat"** ~~is~~ means a coating which is applied directly to an aerospace component, to a chemically treated and unpainted aerospace component, or over an old coating system in lieu of stripping the old coating system, for purposes of corrosion protection, environmental protection and/or functional fluid resistance and which is not subsequently topcoated.

(61)~~(52)~~ **"Volatile Organic Compounds (VOC)"** means the same as defined in Rule 2.

~~, for the purpose of this rule, any volatile compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, ammonium carbonate, metallic carbides, metallic carbonates, and exempt compounds which may be emitted to the atmosphere during operations or activities subject to this rule~~.

(62)~~(53)~~ **"VOC Content Per Volume ~~Liter~~ of Coating, Less Water and Exempt Compounds"** means the same as defined in Rule 2.

~~weight of VOC per combined volume of VOC and coating solids and is calculated by the following equation:~~

$$C_{cVOC} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

~~where,~~

~~C_{cVOC} = VOC content less water and exempt compounds~~
~~W_s = weight of volatile compounds including water~~
~~W_w = weight of water~~
~~W_{es} = weight of exempt compounds~~
~~V_m = volume of material~~
~~V_w = volume of water~~
~~V_{es} = volume of exempt compounds~~

(63)~~(54)~~ **"VOC Content Per Volume ~~Liter~~ of Material"** means the same as defined in Rule 2.

~~weight of VOC per volume of material and is calculated by the following equation:~~

$$C_{mVOC} = \frac{W_s - W_w - W_{es}}{V_m}$$

~~where~~

~~C_{mVOC} = VOC content~~
~~W_s = weight of volatile compounds including water~~
~~W_w = weight of water~~
~~W_{es} = weight of exempt compounds~~
~~V_m = volume of material~~

(64)~~(55)~~ **"Wet Fastener Installation Coating"** ~~is~~ means a primer or sealant applied by dipping, brushing, or daubing to fasteners which are installed before the coating is cured.

(d) **STANDARDS**

(1) VOC Limits.

(i) Except as provided in Subsection (b)(1), a ~~A~~ person shall not use in aerospace coating operations any coating which contains VOC in excess of the following limits ~~on and after the effective date specified~~:

Coating Category	VOC content, grams per liter of coating as applied, less water and less exempt compounds ~~Effective Dates~~ ~~5/21/91~~	~~7/1/94~~
Adhesive Bonding Primers:		
Structural	850	~~250~~
For Elastomers and Elastomeric Adherends	850	
All Other Adhesive Bonding Primers	850	~~350~~
Adhesives:		
Structural Autoclavable	50	
Structural Epoxy	50	
Structural Non-Autoclavable	~~850~~ 250	~~250~~
Elastomeric	850	
Fuel Tank Adhesives	620	
All Other Adhesives	250 ~~(7/1/92)~~	
Antichafe Coatings	600	
Bearing Coatings	620	
Caulking and Smoothing Compounds	850	
Conformal Coatings	750	
Dry Lubricative Materials:		
Fasteners Lubrication	250 ~~(7/1/92)~~	
Non-Fasteners Lubrication	880	

Coating Category	VOC content, grams per liter of coating as applied, less water and less exempt compounds Effective Dates ~~5/21/91~~	~~7/1/94~~
Electromagnetic Radiation Effect Coatings	800	
Flight Test Coatings:		
Use on Missiles, Targets	420	
All Others	840	
Form Release Agents	800	
~~Fuel Tank Adhesives~~	~~620 (7/1/92)~~	
Fuel Tank Coatings	~~650~~ 720	~~420~~
Heat Treatment Scale Inhibitors	880	
High Temperature Coatings	850	
High Temperature Resistant, Thermal Flash Resistant, Rain Erosion Resistant Coatings	800	
Impact Resistant Coatings	~~600~~ 420	~~420~~
Line Sealer Maskants	650	
Maskants for Bonding	600	
Maskants for Chemical Milling		
Type I including Multi-Stage Maskants	250	
Type II	160	
All Other Chemical Milling	250	
Maskants for Chemical Processing		
Chemical Processing including Multi-Stage Maskants	250	
~~Maskants (See also (d)(1)(ii), and (iii)) and (iv)) for:~~		
~~Chemical Milling~~	~~600~~	~~250~~
~~Chemical Processing~~	~~600~~	~~250~~
Optical Anti-Reflective Coatings	700	
Pretreatment Coatings	780	
Primers	350	
Primers Compatible with Rain Erosion Resistant Coatings	850	
Rain Erosion Resistant Coatings	690	~~420~~
Sealants	600 ~~(7/1/92)~~	
Hot Melt Sealants	100	
Solid Film Lubricants:		
Fasteners Lubrication	~~880~~ 250	~~250~~
Non-Fasteners Lubrication	880	

Coating Category	VOC content, grams per liter of coating as applied, less water and less exempt compounds Effective Dates ~~5/21/91~~	~~7/1/94~~
Space Vehicle Coatings:		
Electrostatic Discharge Protection	800	
Other Space Vehicle Coatings	1000	
Adhesives	800	
Temporary Protective Coatings	250	
Thermocontrol Coatings	600	
Topcoats	420 ~~(7/1/92)~~	
Unicoats	420 ~~(7/1/92)~~	
Wet Fastener Installation Coatings	675	
All Other Coatings	420	

(ii) If each coating comprising a multi-stage maskant complies with the applicable VOC limit, then the multi-stage maskant is deemed compliant. Otherwise the compliance of a multi-stage maskant with the VOC limits in Subsection (d)(1)(i) shall be determined pursuant to Subsection (d)(1)(iii) in the following manner:

(A) For a multi-stage maskant for which all component coatings are applied by methods other than dip coating, the VOC content of the multi-stage coating shall be calculated either each day of operation using that calendar day as the averaging period or each calendar month using that calendar month as the averaging period; or

(B) For a multi-stage maskant for which some component coatings are applied by dip coating, the VOC content of the multi-stage coating shall be calculated each calendar month using that calendar month as the averaging period or that calendar month and the previous two consecutive calendar months as the averaging period.

(iii) The following formula shall be used to determine the VOC content per volume of coating less water and exempt compounds, as applied, of a multi-stage maskant over a given averaging period:

$$VOC_m = \frac{\sum_{i=1}^{n} VOC_i \times V_i}{\sum_{i=1}^{n} V_i}$$

where:

VOC_m = the VOC content per volume of coating less water and exempt compounds, as applied, of a multi-stage maskant,

VOC_i = the VOC content per volume of coating less water and exempt compounds, as applied, of the i'th component coating of the multi-stage maskant,

V_i = the total coating volume of the i'th coating component less water and exempt compounds, as applied, used at an application station or added to a dip tank , as applicable, during the averaging period.

n = the total number of component coatings that comprise the multi-stage coating.

(iv) If a multi-stage maskant is determined to exceed the VOC limits of Subsection (d)(1)(i), then the owner or operator shall be deemed in violation of this rule for each day of the averaging period used to determine compliance pursuant to Subsection (d)(1)(iii) except for each day the owner or operator can demonstrate that no such noncompliant coatings were used.

~~(ii) Before July 1, 1994, a person shall not use maskants for chemical milling or chemical processing which have a VOC content of greater than 600 grams per liter of coating, less perchloroethylene, less water and less exempt compounds as applied, nor which have a perchloroethylene content greater than 1200 grams per liter of coating as applied, less water and less exempt compounds.~~

~~(iii) After July 1, 1994, a person shall not use maskants for chemical processing which have a VOC content of greater than 250 grams per liter of coating, less water, less perchloroethylene and less exempt compounds as applied, nor which have a perchloroethylene content greater than 1200 grams per liter of coating as applied, less water and less exempt compounds.~~

~~(iv) After July 1, 1994, a person shall not use maskants for chemical milling which have a VOC content greater than 250 grams per liter of coating as applied, less water and less exempt compounds.~~

The requirements of Subsection (d)(1) may be met using an Alternative Emission Control Plan (AECP) that has been approved pursuant to Rule 67.1. ~~The AECP shall not include credit for reductions in the emissions of perchloroethylene nor credit for use of perchloroethylene~~.

(2) Application Methods ~~Equipment~~.

Except as provided in Subsections (b)(1), (b)(2), and (b)(5), a person shall not apply aerospace coatings ~~containing more than 20 grams of VOC per liter of coating~~ in aerospace coating operations subject to this rule except by means of the following application methods:

(i) Electrostatic spray application, or

(ii) Flow coat application, or

(iii) Dip coat application, or

(iv) Hand application methods, or

(v) Airless spray application for use with maskants and temporary protective coatings only, or

(vi) High-volume low-pressure (HVLP) spray application, or

(vii) Other coating application methods that are demonstrated to have transfer efficiency at least equal to one of the above application methods, and which are used in such a manner that parameters under which they were tested are permanent features of the method. Such coating application methods shall be approved in writing ~~prior to use~~ by the Air Pollution Control Officer prior to use.

(3) ~~Coating Strippers~~ Stripping Operations.

Except as provided in Subsection (b)(1), a ~~A~~ person shall not use a stripper in aerospace coating operations unless the stripper:

(i) Contains 400 grams of VOC per liter of material or less as applied, or

(ii) Has a total vapor pressure of VOC of 9.5 mm Hg or less at 68°F (20° C).

(4) ~~Materials for~~ Surface Cleaning Operations.

Except as provided in Subsections (b)(1) and (b)(8), a ~~A~~ person shall not use a material for surface cleaning or surface preparation of an aerospace component unless:

(i) The material contains 200 grams of VOC per liter of material or less as applied, or

(ii) The material has a total vapor pressure of VOC of 45 mm Hg or less at 68°F (20° C), or

(iii) The material has an initial boiling point of 190° C (374° F) or greater at 760 mm Hg total pressure; or

(iv)~~(iii)~~ The aerospace component is cleaned in an enclosed cleaning material container which is only opened when accessing parts or adding surface cleaning materials.

(5) Cleaning ~~up Solvents for~~ of Application Equipment.

Except as provided in Subsection (b)(1), a ~~A~~ person shall not clean aerospace coating application equipment unless the cleaning material:

(i) Contains 200 grams or less of VOC per liter of material; or

(ii) Has a total vapor pressure of VOC of 20 mm Hg or less at 68°F (20° C); or

(iii) Has an initial boiling point of 190° C (374° F) or greater at 760 mm Hg total pressure; or

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

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

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

(vii) Other application equipment cleaning methods are used that are demonstrated to be as effective as any of the equipment described above in minimizing the emissions of VOC to the atmosphere, provided that the method ~~device~~ has been tested and approved ~~prior to use~~ by the Air Pollution Control Officer prior to use.

~~(i) The equipment is cleaned in a solvent container which is covered when not being accessed, which has a facility for draining cleaned parts and the drained solvent is returned to a closed container; or~~

~~(ii) The equipment is cleaned in a device which totally encloses the application component parts during washing, rinsing and draining; or~~

~~(iii) The cleaning solvent is transferred through the application equipment, without exposure to air, into a container that has in place an apparatus or cover which completely covers the container and has no visible holes, breaks, openings or separations between adjoining components of the container or container cover (the container may be equipped with vents provided that such vents are necessary to comply with applicable fire and safety codes); or~~

~~(iv) The cleaning solvent 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~~

~~(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 equipment is cleaned in a device where liquid solvent is pumped from a solvent container to a sink-like work area and which uses non-atomized solvent flow to flush the spray equipment and collects and returns the discharged solvent to the enclosed container; or~~

~~(vii) The equipment is cleaned in any other manner which minimizes evaporation of VOC's to the atmosphere, clean equipment and/or equipment parts are drained to the container until dripping ceases, and the cleaning material is returned to a closed container.~~

(6) Maskant Dip Coating Application Equipment.

Except as provided in Subsections (b)(1), (b)(6), and (b)(7), a person shall not use a dip tank to apply Type I chemical milling maskants or maskants for chemical processing or component coatings of a multi-stage maskants to aerospace parts unless:

(i) The dip tank is covered except when being accessed to add or remove materials; take samples; visually inspect the maskant level; clean, maintain or repair the tank; or apply maskant; and

(ii) The dip tank has a readily visible, permanent mark or line indicating the maximum allowable maskant level; and

(iii) The dip tank has a freeboard ratio greater than or equal to 0.5; and

(iv) Maskant agitation is achieved by means other than gas agitation; and

(v) Material is added to the dip tank by means of submerged filling; and

(vi) Any dip tank lip exhaust ventilation system with an inlet located below the cover of the maskant application dip tank is turned off and the ventilation duct closed when the maskant application dip tank is covered.

(7) Disposal of Waste Materials into the Air.

A person shall not use spray application equipment or any other means to dispose of waste coatings, coating components, surface preparation materials, or cleaning materials into the air, except when momentarily purging coating material from a spray applicator cap immediately before or after applying the coating material.

(8)~~(6)~~ Prohibition of Specification.

A person shall not specify the application of a coating subject to this rule for any aerospace coating operation in San Diego County if such application results in a violation of any provision of this rule. This prohibition is applicable to any written or oral contract under the terms of which any coating is applied to any aerospace component within San Diego County.

(9)~~(7)~~ Coating Lists.

Except as provided in Subsections (b)(1), (b)(3), and (b)(4), a ~~A~~ person using aerospace coatings subject to this rule shall provide to the Air Pollution Control Officer a list of all coatings applied in each affected facility. Such list shall contain all information required by Subsection (f)(1). The list shall also identify, for each aerospace coating, all applicable coating category uses, including allowable VOC content, specified in Subsec tion (d)(1)(i). The list shall be revised before any aerospace coating is used for purposes other than those previously identified on the list. The revised list shall be retained on site and provided to the Air Pollution Control Officer upon request. Information necessary to demonstrate that the intended use of a coating is consistent with the applicable definition of the coating use contained in Section (c) shall be provided to the District upon request.

A person shall not use any aerospace coating unless the coating is included on such list and is used only as the coating category specified on the list for that specific coating. If the intended use of a coating has been determined in writing by the Air Pollution Control Officer to be inconsistent with the applicable definition of the coating use contained in Section (c) or if the VOC content of a coating does not comply with the applicable limits specified in Subsection (d)(1), the coating shall be deleted from the list and shall not be used. Such determinations by the Air Pollution Control Officer shall not relieve the person using any aerospace coating from complying with the applicable definitions and VOC content limits of this rule.

~~(8) A person shall not sell, offer for sale, or supply any coating, stripping or cleaning solvent for use in aerospace coating operations in San Diego County that, after May 21, 1991, was newly formulated to contain or reformulated to increase the content of methylene chloride, 1,1,1, trichloroethane, trichlorofluoromethane (CFC-11), dichlorodifluoromethane (CFC-12), trichlorotrifluoroethane (CFC-113), dichlorotetra-fluoroethane (CFC-114), or chloropentafluoroethane (CFC-115).~~

~~(9) A person shall not manufacture, sell, offer for sale, or supply any coating, stripping or cleaning material for use in aerospace coating operations in San Diego County unless the coating, stripping or cleaning material container displays the content of methylene chloride, 1,1,1-trichloroethane, trichlorofluoromethane (CFC-11), dichlorodifluoromethane (CFC-12), trichlorotrifluoroethane (CFC-113), dichlorotetrafluoroethane (CFC-114), or chloropentafluoroethane (CFC-115).~~

(e) **CONTROL EQUIPMENT**

(1) Any person subject to this rule may comply with the provisions of Subsections (d)(1) through (d)(6)~~(5)~~ by using air pollution control equipment which has been approved in writing by the Air Pollution Control Officer provided that the air pollution control equipment:

(i) ~~The air pollution control equipment h~~ Has been installed in accordance with an Authority to Construct; and

(ii) Includes an emission collection system which captures organic gaseous emissions, including emissions associated with applicable coating, equipment cleaning, and surface preparation operations, and transports the captured emissions to an air pollution control device; and

(iii) ~~h~~ Has a combined emissions capture and control device efficiency of at least 85 percent by weight.

(2) A person electing to use an air pollution control system pursuant to Subsection (e)(1) of this rule shall submit an Operation and Maintenance Plan for the air pollution control device and emission collection system to the Air Pollution Control Officer for approval and receive such approval prior to operation of the air pollution control equipment. Thereafter, the plan can be modified, with Air Pollution Control Officer approval, as necessary to ensure compliance. The Operation and Maintenance Plan shall:

~~A person electing to comply with the provisions of Subsections (d)(1) through (d)(5) by using air pollution control equipment shall submit to the Air Pollution Control Officer for approval an Operation and Maintenance Plan for the air pollution control device and emission collection system. Such plan shall:~~

(i) Identify all key system operating parameters. Key system operating parameters are those necessary to ensure compliance with Subsections ~~(e)(1)(ii) and~~ (e)(1)(iii) ~~of this section~~, such as temperature, pressure, and/or flow rate; and

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

(3) Upon approval of the Air Pollution Control Officer, a person electing to use an air pollution control system pursuant to this Section (e) shall implement the Operation and Maintenance plan and shall comply with the provisions of the approved plan thereafter. ~~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.~~

(f) **RECORDKEEPING**

Except as provided in Subsections (b)(1), (b)(3), and (b)(4), any ~~Any~~ person using coatings, strippers, thinners, surface cleaning materials or equipment cleaning materials in aerospace coating operations shall maintain records in accordance with the following requirements:

(1) Maintain a current list of coatings, strippers, thinners, surface cleaning and equipment cleaning materials in use. This list shall provide the data necessary to evaluate compliance, including, but not limited to:

(i) Type and/or applicable category specified in Subsections (d)(1), (d)(3), (d)(4), and d(5) of each coating, stripper, thinner, surface cleaning and equipment cleaning material used, including manufacturer identification; and

(ii) Mix ratio of components; and

(iii) VOC content per volume of coating less water and exempt compounds, as applied; and

(iv) VOC content per volume of material, total vapor pressure of VOC, or initial boiling point of each stripper, surface cleaning material, and equipment cleaning material, as applied.; and

~~(iii) VOC content and/or total vapor pressure of VOC of each coating, thinner, stripper, surface cleaning and equipment cleaning material, as applied.~~

(v) For each multi-stage maskant, the applicable maskant category specified in Subsection (d)(1), and the manufacturer identification of the component coatings that comprise the multi-stage maskant.

(2) At a minimum, for each material that is in compliance with Subsections (d)(1), (d)(3), (d)(4) or (d)(5), as applicable, maintain records for each calendar month that show:

(i) For any materials not applied by dip coating, the amount of each coating, stripper, and thinner used; and

(ii) Inventory (dispensing) records for solvents used for equipment cleaning and surface cleaning operations; and

(iii) Material additions to coating application dip tanks.

~~(2) At a minimum, maintain records, each calendar month, showing the amount of each coating, stripper, and thinner used. At a minimum, maintain inventory (dispensing) records each calendar month of solvents used for equipment cleaning and surface cleaning operations. Maintain records of material additions to dip tanks used for dip coating applications.~~

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

(3) For each material that is not in compliance with Subsections (d)(1) maintain daily usage records for all coatings, thinners, and VOC containing materials.

(4)~~(3)~~ A person using control equipment specified in Section (e) of this rule shall:

(i) ~~m~~ Maintain records in accordance with Subsections (f)(1) and (f)(2);

(ii) ~~m~~ Maintain daily usage records for all coatings, strippers, cleaning and/or surface preparation materials not in compliance with Subsections (d)(1), (d)(3), (d)(4) or (d)(5) of this rule; and

(iii) ~~m~~ Maintain daily records of key system operating parameters ~~specified in Subsection (e)(2)(i)~~ as approved in the Operation and Maintenance plan. Such records must be sufficient to document continuous compliance with Subsection (e)(1)(iii) during periods of emission producing activities.

All 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) Measurements of the VOC content of coatings, strippers and cleaning materials subject to Section (d) of this rule shall be conducted and reported in accordance with EPA Test Method 24 (40 CFR 60, Appendix A) ~~as it exists on November 2, 1993~~.

(2) Perfluorocarbon (PFC) compounds and cyclic, branched, or linear completely methylated siloxanes (VMS) shall be assumed to be absent from aerospace coatings, strippers and cleaning materials 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 approved test method which can be used to quantify the specific compounds.

(3) The overall control efficiency of air pollution control equipment operated pursuant to Subsection (e)(1)(iii) shall be determined by multiplying the capture efficiency of the emission collection system by the control efficiency of the air pollution control device. The control efficiency of the air pollution control device shall be determined using EPA Methods 18 and 25 or 25A (40 CFR 60, Appendix A) and in accordance with a protocol approved by the Air Pollution Control Officer. Capture efficiency shall be determined according to EPA's technical document, "Guidelines for Determining Capture Efficiency," January 9, 1995. Subsequent to the initial compliance demonstration period, appropriate key system operating parameters as determined by the Air Pollution Control Officer may be used as indicators of the performance of the emission collection system.

~~Measurements of VOC emissions subject to Section (e) of this rule shall be conducted in accordance with EPA Methods 18, 25, and/or 25A (40 CFR 60, Appendix A) as they exist on November 2, 1993 and in accordance with a protocol approved by the Air Pollution Control Officer.~~

(4) Measurements of transfer efficiency pursuant to Subsection (d)(2)(vii) of this rule shall be conducted in accordance with the South Coast Air Quality Management District's "Spray Equipment Transfer Efficiency Test Procedure for Equipment User" ~~as it exists on November 2, 1993~~.

(5) Total vapor pressure of VOC containing materials ~~pursuant~~ subject to Subsections (d)(3)(ii), (d)(4)(ii) ~~(5)(iv)~~ and (d)(5)~~(4)~~(ii) of this rule shall be calculated by using the District's "Procedure for Estimating the Vapor Pressure of VOC ~~a solvent~~ Mixtures" ~~as it exists on November 2, 1993~~. If the vapor pressure of the liquid mixture exceeds the

limits specified in Subsections (d)(3)(ii), (d)(4)(ii) ~~(5)(iv)~~ and (d)(5)~~(4)~~(ii), as applicable, the vapor pressure shall be determined in accordance with ASTM Standard Test Method D2879-86 ~~3~~, 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 by using ASTM Standard Test Methods D 3792-91 ~~86~~ and D 4457-85 and shall be used to calculate the partial pressure of water and exempt compounds. The results of vapor pressure measurements obtained using ASTM Standard Test Method D2879-896 ~~3~~ shall be corrected for the partial pressure of water and exempt compounds.

(6) Measurements of acid content of pretreatment coating as defined in ~~pursuant to~~ Subsection (c)(38)~~(33)~~ of this rule shall be conducted in accordance with ASTM Standard Test Method D 1613-91 for Determination of Acidity in Volatile Solvents and Intermediates used in Paint, Varnish, Lacquer and Related Products or in accordance with the test procedure specified in MIL-C-8514C(ASG) ~~as it exists on November 2, 1993~~.

(7) Measurement of the initial boiling point of cleaning and surface preparation materials subject to Subsection (d)(4)(iii) and/or (d)(5)(iii) of this rule shall be conducted in accordance with ASTM Standard Test Method D1078-86 for distillation range of volatile organic liquids.

(8) Measurement of solvent losses from alternative application cleaning equipment subject to Subsection (d)(5)(vii) shall be conducted and reported in accordance with the South Coast Air Quality Management District's "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems" dated October 3, 1989.

~~(7) Measurements of perchloroethylene content in maskants pursuant to Subsections (d)(1)(ii) and (d)(1)(iii) shall be conducted in accordance with the South Coast Air Quality Management District's Test Method 310-91 for Determination of Perchloroethylene as it exists on November 2, 1993.~~

AIR POLLUTION CONTROL DISTRICT
COUNTY OF SAN DIEGO

WORKSHOP REPORT

PROPOSED AMENDED RULE 67.9—AEROSPACE COATING OPERATIONS

A workshop notice was mailed to all businesses and government operations in San Diego County that are involved in aerospace coating operations. In addition, notices were mailed to all local Chambers of Commerce, all local Economic Development Corporations, the U.S. Environmental Protection Agency (EPA), the California Air Resources Board (ARB), and other interested parties.

The workshop was held on July 23, 1996, and was attended by 15 people. Written comments were also received. The workshop comments and District responses are as follows:

1. WORKSHOP COMMENT

Subsection (b)(1)(iii) exempts up to 50 gallons per year of coatings from the volatile organic compound (VOC) content limits provided that usage of any one exempted coating at a facility does not exceed 20 gallons per year. Do the formulation of the coatings covered by this exemption need to be different from any other (aerospace) coatings used at a facility?

DISTRICT RESPONSE

No. The coating must only have a separate formulation from other coatings that are being used under this exemption. However, see also the response to Comment #2.

2. WORKSHOP COMMENT

The District should include a provision allowing averaging of coating VOC contents in separate coating categories to show compliance with the rule's VOC content limits. This would accommodate use of a small amount of coatings with special engineering properties. The 50 gallon per year exemption limit for coatings is often not sufficient to cover usage of these coatings at large aerospace operations, especially since the exemption limit is only 20 gallons per year for a single coating. For example, there are special operations requiring critical use maskants that can not meet the VOC content limits in the rule.

DISTRICT RESPONSE

EPA policy on averaging VOC contents in Reasonably Available Control Technology (RACT) rules such as Rule 67.9 requires that general averaging provisions provide at least a 10% emission reduction (an environmental discount) in comparison to separate VOC limits. The District does not believe that VOC content averaging including a 10% discount would provide significant benefit to industry. It would also greatly complicate enforcement of the rule. In addition, inclusion of such averaging might delay or jeopardize EPA approval of the rule. The proposed amended rule allows averaging in the special case of Type I or chemical processing multi-stage maskants. In this case, the coatings being averaged function together as a single maskant and the District does not believe an environmental discount is required since enforceability is much easier in this case.

The District recognizes the need to allow limited usage of coatings that require special engineering properties and are not covered by the rule's existing coating categories. Because of the rapidly changing technology in the aerospace industry, it is not reasonable to assume that coating categories can be devised to cover all current and future needs for such coatings. Therefore, Subsec-

tion (b)(1)(iii) has been revised to exempt up to 200 gallons per year of coatings from VOC content standards at any facility. This exemption limit is consistent with similar exemptions in other air districts. In addition, the District does not believe that a separate smaller exemption limit for coatings with separate formulations serves any useful purpose because very small changes in coating formulation could be used to comply with this requirement. Therefore, the District is removing the requirement in Subsection (b)(1)(iii) that usage of exempt coatings with separate formulations not exceed 20 gallons per year.

It should be noted that facilities wishing to use general VOC content averaging to comply with the rule can file an alternative emission control plan (AECP) pursuant to Rule 67.1. However, this rule requires a 20% environmental discount in accordance with EPA's AECP policy at the time of adoption.

3. WORKSHOP COMMENT

There is a need for an adhesive bonding maskant category. These maskants are used prior to adhesive bonding operations and there are no maskants available for this use that can comply with the existing rule's maskant VOC content limits. This is a critical maskant use since successful adhesive bonding may be essential to ensure structural integrity of aerospace components.

DISTRICT RESPONSE

The District agrees. A bonding maskant category with a VOC content limit of 600 grams per liter that is applicable to maskants used during bonding processes has been added to the rule's VOC content standards. The bonding process includes all operations on an aerospace component prior to and during the adhesive bonding of that component to another component.

4. WORKSHOP COMMENT

In some cases, when repairing imperfections in a maskant coating, a small amount of maskant is removed before the area is recoated. Are coatings used during this process considered touch-up coatings?

DISTRICT RESPONSE

Yes. The District would consider this a touch-up operation as long as it is incidental to the main coating process.

5. WORKSHOP COMMENT

How is the amount of coating used in dip coating operations normally determined?

DISTRICT RESPONSE

The amount of coating used in dip coating operations is normally determined by measuring the amount of coating added to the dip tank over a specified period of time.

6. WORKSHOP COMMENT

The rule requires monthly recordkeeping. However, in many cases, the amount of maskant and thinner solvents used in dip coating operations can not be determined accurately on a monthly basis. In dip coating operations, the amount of maskant used is determined by tracking the amount of maskant and thinner added to a dip tank. The amount of maskant and thinner added may vary widely on a monthly basis leading to inaccurate calculations of the amount of maskant actually used.

DISTRICT RESPONSE

See the response to Comment #27.

7. WORKSHOP COMMENT

When do the revised coating VOC content limits become effective?

DISTRICT RESPONSE

Any revised VOC limits will be effective on the date the Board adopts the amended rule. The VOC content limits in existing Rule 67.9 will remain in effect until that time.

8. WORKSHOP COMMENT

Does an emission control system used to comply with the rule standards pursuant to Section (e) need to capture emissions of surface preparation and application equipment cleaning operations associated with a coating application operation?

DISTRICT RESPONSE

An emission control system used pursuant to Section (e) must attain an overall control efficiency (capture efficiency times control efficiency) of at least 85% for all noncompliant materials. Subsection (e)(1)(ii) requires that an emission control system capture emissions only from those operations that are not in compliance with the rule standards. For example, the emissions from a coating operation using coatings not complying with the VOC content limits of Section (d) would need to be captured but the emissions from associated surface preparation or equipment cleaning operations using compliant materials or methods would not need to be captured. However, surface preparation and equipment cleaning operations not complying with Subsections (d)(4) or (d)(5) would need to be captured and controlled if this was necessary to achieve an 85% overall control efficiency for the noncompliant operations.

9. WORKSHOP COMMENT

Would an external sign that identified the bottom of a collection trough as the maximum level for coatings in a dip tank satisfy the requirement in Subsection (d)(7)(ii) for a permanent mark indicating the maximum allowable coating level?

DISTRICT RESPONSE

Yes. See also the response to Comment #32.

10. WORKSHOP COMMENT

Is the District's engineering staff prepared to evaluate alternative application equipment cleaning methods to ensure that they comply with new Subsection (d)(5)(vii)?

DISTRICT RESPONSE

Subsection (d)(5)(vii) is intended to cover alternative application equipment cleaning methods not specifically addressed in the rule. The language in Subsection (d)(5)(vii) is consistent with language of other coating rules (for example, Rule 67.3—Metal Parts and Products Coating Operations). The District engineering staff has had no problems evaluating application equipment cleaning operations addressed by this provision for other source categories. In addition, a provision defining the test method to be used to determine the effectiveness of alternative application equipment cleaning methods has been added to Subsection (g).

11. WORKSHOP COMMENT

The rule should make clear that the boiling point of application equipment cleaning and surface preparation materials is measured at atmospheric pressure to determine compliance.

DISTRICT RESPONSE

The District agrees. The rule has been clarified to indicate that boiling point of surface preparation and application equipment cleaning material is to be measured at 760 mm Hg total pressure. A test method for determining boiling points has been added to Section (g) of the rule.

12. WORKSHOP COMMENT

It may be impractical to apply the requirements for dip coating application equipment in Subsection (d)(6) to small dip coating tanks.

DISTRICT RESPONSE

The District agrees. The District is aware of only one large dip tank that is currently used to apply nonaqueous coatings. This dip tank is used to apply Type I and chemical processing maskants. Therefore, the District has revised Subsection (d)(6) to apply only to dip tanks used to apply Type I or chemical processing maskants. Small dip tanks applying other types of coatings will not be subject to Subsection (d)(6). In addition, dip coating operations using less than 20 gallons per year of coatings are exempt from the dip coating application equipment requirements as are dip coating operations using aqueous coatings with less than 10% by weight VOCs.

13. WORKSHOP COMMENT

Are submerged fill pipes required to comply with the requirement of Subsection (d)(6)(v)?

DISTRICT RESPONSE

The District interprets the term submerged filling as used in Subsection (d)(6)(v) to mean that material must be introduced below the surface of the liquid in a manner that minimizes splashing. Permanent submerged fill pipes may be used but are not required.

14. WORKSHOP COMMENT

Subsection (f)(1)(iv) requires that records of VOC content per volume of material, total vapor pressure, or initial boiling point be kept for all strippers, surface preparation material, and application equipment cleaning material. Which of these three items must be recorded for each material?

DISTRICT RESPONSE

Subsection (f)(1) requires that all information necessary to determine compliance be recorded. For strippers, surface preparation material, and application equipment cleaning material, the compliance determination can be based on any one of three physical parameters: total vapor pressure, VOC content, or initial boiling point. Information must be recorded only for the single parameter used to determine compliance.

15. WORKSHOP COMMENT

If a facility keeps monthly records and inadvertently uses a noncompliant coating , how many potential violations could the facility incur? If daily recordkeeping were required for noncompliant coatings, would the facility be fined just once for not having daily records or for every day that a company does not have daily records. This would be equivalent to a double fine for the same violation?

DISTRICT RESPONSE

Generally, District policy is to issue one violation listing the days that the District can document the use of a noncompliant coatings (but see the discussion on averaging for multi-stage maskants below). If monthly records indicate use of noncompliant coatings, the District would issue one violation listing each day during the month that such use could be documented. Because the rule has been revised to require the keeping of daily records for noncompliant coatings (see the response to Comment #40), the District would also issue a violation for failure to keep daily records of the noncompliant coating use.

However, persons subject to Rule 67.9 should be aware that EPA has different policies concerning violations at facilities that choose to keep monthly records. The District's understanding is that EPA would, upon finding a noncompliant coating, issue a violation for every day during the month, except for days the facility could document that it did not use the noncompliant coating. EPA would also issue a violation for each day during the month for failure to keep daily records of noncompliant coating use unless the facility could document nonusage on certain days.

To make the rule approvable by EPA, it has been revised to comply with EPA policy on issuance of violations when averaging is used to determine compliance of multi-stage maskants with VOC limits (see added Subsection (d)(1)(iv)). In this case, if a violation is found during the averaging period, the District would issue one violation listing every day during the averaging period except for days the source demonstrates that compliant coatings were used.

The District has expressed its concern to EPA that the complexity of coating rules may result in inadvertent use of noncompliant coatings and EPA's policy would result in unwarranted potential penalties in such cases. If a source is concerned about the potential for large fines resulting from an EPA enforcement action in this situation, the source should consider keeping daily records.

16. WORKSHOP COMMENT

If the rule does not provide options like averaging, then major sources that are subject to the aerospace National Emission Standards for Hazardous Air Pollutants (NESHAP), which does allow averaging for topcoats, primers, and maskants, will be at a disadvantage compared to companies in other states.

DISTRICT RESPONSE

Rule 67.9 is a VOC control measure and does not require control of hazardous air pollutants (HAPs) as do federal NESHAPs. EPA has proposed a Control Techniques Guideline (CTG) for aerospace coating operations which will be presumptive RACT for controlling VOCs from aerospace coating operations. If the final promulgated CTG contains VOC content averaging provisions, then the District will consider whether to include such provisions in Rule 67.9 at a later date (also see the response to Comment #22).

17. WORKSHOP COMMENT

If general VOC content averaging provisions are added after EPA approves the rule, EPA may consider such averaging to be a State Implementation Plan (SIP) relaxation and would not approve the revision. Therefore, general averaging should be added now.

DISTRICT RESPONSE

Based on the best information available, the District believes that all facilities will be able to comply with amended Rule 67.9. Inclusion of general coating VOC content averaging would complicate EPA approval of the rule and would not provide any significant benefits to affected sources (see the response to Comment #2). In addition, The District does not believe that general VOC content averaging for coatings would necessarily be considered a SIP relaxation, especially if it provides for a 10% environmental discount. EPA approval of such a revision would depend primarily on the agency's policy towards VOC content averaging at the time the rule was submitted for approval.

18. WORKSHOP COMMENT

Is the 10% environmental discount required by EPA for using VOC content averaging arbitrary?

DISTRICT RESPONSE

EPA believes the 10% environmental discount is necessary to compensate for enforcement uncertainties when averaging is used to determine compliance.

19. WORKSHOP COMMENT

Is there language that can be put into the rule stating that alternate recordkeeping is allowed if approved in advance by the Air Pollution Control Officer (APCO)?

DISTRICT RESPONSE

Rule 67.9 must be approved for inclusion in the SIP by EPA. Such language is not approvable by EPA and can not be included.

20. WORKSHOP COMMENT

How are chemical milling and chemical processing maskants distinguished?

DISTRICT RESPONSE

Chemical milling maskants are coatings used to protect a portion of an aerospace component's surface area when the only chemical surface operation employed on that component is a chemical milling operation. Chemical processing maskants are coatings used to protect portions of a component's surface area during other chemical surface operations such as anodizing or plating, but not during chemical milling unless the chemical milling operation is part of a series of chemical surface operations performed on the component.

21. WORKSHOP COMMENT

The version of Rule 67.9 that is in the SIP was adopted in 1983 and does not reflect technologically feasible VOC limits for most coating categories. At this time, this SIP version of Rule 67.9 would be the applicable federal requirement under the federal Title V operating permits program. Existing Rule 67.9, adopted in 1993, also does not reflect technologically feasible VOC limits for a few coating categories. Facilities that are subject to Title V need rapid adoption and EPA approval of proposed amended Rule 67.9 so that the applicable federal requirements reflect technological feasibility.

DISTRICT RESPONSE

The District is aware of the Title V implications for Rule 67.9 for some sources and plans to proceed with the rule adoption process as expeditiously as possible while considering the concerns of all affected parties. The proposed amended rule is also subject to review under the California Environmental Quality Act which may slow the adoption process.

22. WRITTEN COMMENT

The elements of proposed amended Rule 67.9 should be neither more or less stringent than the Maximum Achievable Control Technology (MACT) standards in the federal aerospace coating NESHAP. The District should also consider the proposed CTG for aerospace coatings. The District should raise Rule 67.9's coating VOC limits to be consistent with these federal regulations if Rule 67.9's limits are more stringent.

DISTRICT RESPONSE

The District disagrees. San Diego County is classified as a serious ozone nonattainment area by both EPA and the state Air Resources Board (ARB). The District is required by the state Health and Safety Code to adopt Best Available Retrofit Control Technology (BARCT) and all feasible measures to control ozone precursors including VOCs. The District is also required to adopt rules reflecting RACT for VOCs by the federal Clean Air Act. Rule 67.9 has been in effect for several years and, for the most part, is feasible since there have been few problems complying with the rule's coating VOC limits. The proposed amendments to Rule 67.9 include increases in VOC content limits where necessary to reflect technological feasibility. Multi-stage Type I and chemical processing maskants that comply with the rule's VOC limits have been developed and provisions have been added to the rule allowing the use of these coatings.

The proposed CTG (and MACT) applies nationwide and does not satisfy BARCT or "all feasible measures" requirements in California. To increase Rule 67.9's VOC limits to correspond to the proposed CTG limits would result in an unacceptable and unnecessary increase in VOC emissions. In addition, it would jeopardize approval of the amended rule by EPA. If this rule is not approved by EPA, the federally enforceable rule for San Diego County will remain Rule 67.9 as adopted in 1983. The 1983 rule contains VOC limits that are not technologically feasible for most coating categories included in existing Rule 67.9 and would present many problems for industry compliance.

23. WRITTEN COMMENT

Maskant repair coatings should be exempted from coating VOC limits.

DISTRICT RESPONSE

The District believes that maskant repair coatings meet the definition of touch-up coatings and, hence, are already exempt. Nevertheless, the definition of line sealer maskant has been revised to include maskant repair.

24. WRITTEN COMMENT

The definition of line sealer maskant should be clarified to indicate that line sealer maskant covers scribe lines to protect against chemical milling and/or chemical processing solutions.

DISTRICT RESPONSE

The District agrees. The definition of line sealer maskant has been clarified.

25. WRITTEN COMMENT

The definition of two stage maskant system should be expanded to include multi-stage maskant systems.

DISTRICT RESPONSE

The District agrees. The definition of two-stage maskants has been changed to a definition for multi-stage maskants. In addition, the definition has been clarified to make clear that multi-stage maskants are only to be used as Type I chemical milling maskants or chemical processing maskants since single stage maskants that can comply with the Type II chemical milling maskant VOC limit are reasonably available. However, the District would consider multi-stage Type II chemical milling maskants compliant if every stage of the multi-stage system complies with the VOC content limit for Type II maskants.

26. WRITTEN COMMENT

The formula used to calculate the average VOC content of a two-stage maskant system should be expanded to include multistage maskants and should only use the VOC content of coatings less water and exempt compounds and the maskant usages less water and exempt compounds.

DISTRICT RESPONSE

The District agrees. A formula has been included in added Subsection (d)(1)(iii) for calculating the average VOC content of a multi-stage maskant for determining compliance. The formula uses only the VOC content of the multi-stage maskant component coatings less water and exempt compounds and the volume of coatings used or added to a dip tank over a specified averaging period. Also, the table of VOC limits in Subsection (d)(1)(i) has been clarified to indicate that Type I and chemical processing maskant VOC limits are applicable to multi-stage maskants.

27. WRITTEN COMMENT

For dip tank operations with multistage maskant systems, keeping accurate monthly coating usage records is not feasible. This is because fugitive solvent evaporation and the small amount of coating typically used per month make accurate direct measurement of maskant usage impossible. The only method of calculating maskant usage is by recording maskant additions to the dip tank which may occur less than once per month. Furthermore, in the case of multi-stage maskants, nonconcurrent additions of different component maskants to different dip tanks may result in erroneous calculation of the multi-stage maskant VOC content. The rule should allow the option of determining maskant usage based on the amount of material added to a dip tank on a quarterly rather than monthly basis. By using a quarterly averaging time, errors due to non-concurrent maskant addition will be limited.

DISTRICT RESPONSE

The District agrees. Because of the unique nature of this process EPA has stated that quarterly averaging is acceptable to determine maskant usage. For Type I or chemical processing multi-stage maskants using dip tank application, Subsection (d)(1)(ii) has been added to Rule 67.9 allowing determination of average VOC content each month based on the coating's VOC content and volume usage over a consecutive (rolling) three month period.

28. WRITTEN COMMENT

For dip tank operations with multistage maskants, an approximate calendar quarter should be used as the averaging time for determining maskant usage.

DISTRICT RESPONSE

The District disagrees. An approximate quarter is not defined well enough to be used to as an averaging period and ensure rule enforceability. The District is proposing to use a consecutive (rolling) three month averaging period.

29. WRITTEN COMMENT

For maskants applied by dip coating, a monthly average maskant usage determined from the previous three month maskant usage should be used to calculate average VOC content of multistage maskant systems.

DISTRICT RESPONSE

This method produces the same result as the one the District is now proposing (see the response to Comment #27) but requires an additional calculation step that the District does not believe is needed. Therefore, the District will not revise its proposal to incorporate this suggestion.

30. WRITTEN COMMENT

Adhesive bonding can require application of bonding maskants for which no technologically feasible low VOC coatings exist. A coating category for bonding maskant with a VOC limit of 1,230 grams per liter should be included in the rule.

DISTRICT RESPONSE

The District has added a bonding maskant coating category to the rule (see the response to Comment #3). However, the VOC limit for this category has been set at 600 grams per liter since reasonably available coatings exist that can comply with this limit.

31. WRITTEN COMMENT

The VOC limit for Type I chemical milling maskant should correspond with the 622 grams per liter limit in the proposed CTG for aerospace coating.

DISTRICT RESPONSE

The District disagrees. Multi-stage maskants that can comply with the existing rule's VOC limit of 250 grams per liter for Type I maskants have been developed for use in San Diego County.

32. WRITTEN COMMENT

Because an interior mark can be covered with coating, the district should concur that the term "permanent mark" in Subsection (d)(6)(ii) includes exterior as well as interior marks for indicating the maximum level of coatings in dip tanks.

DISTRICT RESPONSE

The District concurs that an exterior mark can be used for indicating maximum dip tank coating level.

33. WRITTEN COMMENT

The rule should include an option allowing a source to voluntarily use a freeboard chiller in addition to a freeboard ratio of 0.5 to further limit dip tank emissions.

DISTRICT RESPONSE

There is no need to add such an option. A source is free to voluntarily add a freeboard chiller to a coating application dip tank provided it complies with all applicable District rules. The District would encourage any facility that wants to add a freeboard chiller to do so .

34. WRITTEN COMMENT

The recordkeeping requirements should be amended to require facilities to provide "information" on coatings rather than a "list" with information. Comprehensive lists of all coatings used at a facility are supplied as part of the annual emission inventory report. Maintaining a separate list is wasteful.

DISTRICT RESPONSE

The District disagrees. Many sites use many different coatings types and an aerospace coating list is needed to help ensure uniform enforcement. In addition, smaller facilities are not required to provide an annual emission inventory statement.

35. WRITTEN COMMENT

The method for determining compliance with VOC limits for two-stage maskants should indicate that if both coating components individually comply with the applicable VOC limits then no averaging is required to determine compliance.

DISTRICT RESPONSE

The District agrees. Added Subsection (d)(1)(ii) states that if all components of a multi-stage maskant individually comply with the applicable maskant VOC limit then the multi-stage maskant is compliant.

36. ARB COMMENT

ARB recommends that the District track perchloroethylene usage to determine if exempting it as a VOC will lead to a significant increase in emissions.

DISTRICT RESPONSE

The District will track perchloroethylene use through the normal emission inventory process and the AB2588 program. In addition, significant increases in perchloroethylene use that require new or modified equipment will require evaluation under District Rule 1200—Toxic Air Contaminants—New Source Review.

37. ARB COMMENT

The method for determining compliance with VOC limits for two-stage maskants needs to be clarified.

DISTRICT RESPONSE

The District agrees. See the response to Comment 27.

38. ARB COMMENT

ARB recommends that the District provide clarification and guidance to aerospace sources on how to comply with the federal NESHAP for aerospace coating operations, the federal aerospace coating CTG (when it is promulgated), and District Rule 67.9.

DISTRICT RESPONSE

At this time, the District expects to seek delegation to implement the federal NESHAP for aerospace coating operations. The District will provide compliance guidance to affected sources for both District Rule 67.9 and the aerospace coating NESHAP at a later date. The federal aerospace coating CTG only provides guidance for determining reasonably available control technology (RACT). Rule 67.9 will implement RACT and BARCT for San Diego County. Depending on the final CTG guidance, compliance with amended Rule 67.9, once approved by EPA, is likely to ensure compliance with the CTG.

39. ARB COMMENT

ARB recommends that the District review the aerospace coating NESHAP and forthcoming federal aerospace coating CTG for consistency with Rule 67.9.

DISTRICT RESPONSE

Rule 67.9's VOC content limits are as least as stringent as the volatile organic HAP content standards in the current federal aerospace NESHAP. The District will review Rule 67.9 for consistency with the federal aerospace CTG when this CTG is promulgated by EPA. In addition, the District will review Rule 67.9 for consistency with any amendments to the federal aerospace NESHAPs that may affect the Rule 67.9's VOC limits.

40. EPA COMMENT

Rule 67.9 provides the option of using daily or monthly recordkeeping. For prohibitory rules, EPA recordkeeping policy requires daily recordkeeping as the default. Rule 67.9 should be revised to indicate that monthly recordkeeping are allowed only when a source uses compliant coatings and daily recordkeeping is required for noncompliant coatings. The federal approvability of Rule 67.9 may be jeopardized if the recordkeeping provisions of Rule 67.9 do not reflect EPA recordkeeping policy.

DISTRICT RESPONSE

The District has revised the recordkeeping provisions of Rule 67.9 to indicate that daily records must be kept if noncompliant coatings are used by a source.

41. EPA COMMENT

Rule 67.9 requires sources claiming exemptions from the rule under subsections (b)(1), (b)(3), and (b)(4) to keep calendar year records. Records should be kept throughout the year to verify compliance. In addition, exemptions based on usage should have a compliance timeframe of each

consecutive 12-month period rather than a calendar year. The federal approvability of Rule 67.9 may be jeopardized if the recordkeeping provisions of Rule 67.9 do not reflect EPA recordkeeping policy.

DISTRICT RESPONSE

The rule has been revised to require that the exemptions of Subsections (b)(1)(ii), (b)(1)(iii), (b)(1)(iv) be based on usage limitations in every consecutive 12-month period. Also, the recordkeeping requirements for Subsections (b)(1), (b)(3), and (b)(4) have been revised to require calendar monthly records.

1/9/97
NZ:SM:jo

AIR POLLUTION CONTROL DISTRICT
COUNTY OF SAN DIEGO

NEGATIVE DECLARATION

1. Project Name:

Adoption of amended Rule 67.9 -- Aerospace Coating Operations, in the San Diego County Air Pollution Control District Rules & Regulations.

2. Project Applicant:

San Diego County Air Pollution Control District
9150 Chesapeake Drive
San Diego, California 92123-1096

3. Project Location:

Entire area within the boundaries of San Diego County. San Diego County is the southwestern most county in California.

4. Project Description:

The District proposes to adopt an amended version of existing Rule 67.9, Aerospace Coating Operations. Existing Rule 67.9 controls emissions of volatile organic compounds (VOCs), which participate in the formation of photochemical smog, from coating, masking, bonding, paint stripping of aerospace components, and associated surface application equipment and cleanup operations. The proposed amendments to Rule 67.9 include adjusting VOC content limits for some coating categories to reflect technological feasibility, adding separate coating categories and VOC content limits for chemical milling and bonding maskants, and increasing the allowed usage of coatings that are exempt from VOC content standards at any facility. In addition, the proposed amendments include defining acetone, parachlorobenzotrifluoride, volatile methylated siloxanes, and perchloroethylene as exempt compounds. The term "exempt compounds" refers to a list of chemical compounds with negligible photochemical reactivity. Unlike volatile organic compounds, exempt compounds do not participate in the formation of photochemical smog, therefore they are not regulated by District rules and regulations that control VOCs. The proposed amendments also revise rule language consistent with other District rules, and provide other clarifications.

5. Finding:

Possible emission increases as a result of adopting the proposed amendments to Rule 67.9 were estimated relative to both the case of hypothetical compliance with existing Rule 67.9 and also to the actual compliance situation, which includes consideration of variances to existing Rule 67.9 that have been granted by the District Hearing Board. These variances allow use of noncompliant coatings for adhesive bonding primers, rain erosion resistant coating, fuel tank coatings, and Type I chemical

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milling maskants because technologically feasible compliant coatings do not exist for these coating categories.

Compared to current actual emissions, adoption of the proposed amendments to Rule 67.9 would result in a decrease in emissions because affected sources are operating under variances and evaporative emissions from maskants dip tanks would be significantly reduced. No significant adverse environmental impacts were found from increased emissions to the atmosphere due to the adoption of proposed amendments to Rule 67.9, compared to hypothetical compliance with existing Rule 67.9. Any increases in VOCs compared to hypothetical compliance with existing Rule 67.9 will be insignificant and will not cause any additional exceedances of national or state air quality standards; any increase in hazardous air pollutant emissions compared to hypothetical compliance with existing Rule 67.9 will be insignificant and will not have any significant acute or chronic health impacts. The amendments will result in significant reductions in emissions of perchloroethylene. This will reduce cancer risks in San Diego County. Therefore, the adoption of the proposed amendments to Rule 67.9, Aerospace Coating Operations, will not have any significant adverse impact on the environment, and does not require preparation of an Environmental Impact Report.

Note: This action becomes final upon approval by the Air Pollution Control Board.

SDAPCD - RS:jo
12/5/96

INITIAL STUDY

San Diego Air Pollution Control District

Adoption of Amended Rule 67.9--Aerospace Coating Operations

December 4, 1996

Prepared by
Steven Moore / Natalie Zlotin

San Diego Air Pollution Control District
9150 Chesapeake Drive
San Diego, CA 92123-1096

CONTENTS

I. INTRODUCTION

1. **Project Name:**

   Adoption of amended Rule 67.9, Aerospace Coating Operations, into the San Diego County Air Pollution Control District Rules & Regulations.

2. **Project Applicant:**

   San Diego County Air Pollution Control District
   9150 Chesapeake Drive
   San Diego, California 92123-1095

3. **Project Location:**

   Entire area within the boundaries of San Diego County. San Diego County is the southwestern most county in California.

II. PROJECT DESCRIPTION

The District has proposed adopting an amended version of existing Rule 67.9—Aerospace Coating Operations. Rule 67.9 controls emissions of volatile organic compounds (VOCs), which participate in formation of photochemical smog, from coating of aerospace components and associated coating stripping and surface and application equipment and cleaning operations. The rule is being amended to adjust VOC content limits for some coating categories to reflect technological feasibility and to add separate coating categories and VOC content limits for chemical milling maskants and bonding maskants and increase the allowed usage of coatings exempt from VOC content limits. In addition, the proposed amendments will replace the definition of exempt compounds with a reference to the updated definition in Rule 2. The term "exempt compound" applies to a group of chemical compounds with negligible photochemical reactivity. Unlike volatile organic compounds (VOCs), exempt compounds do not participate in the formation of photochemical smog, therefore they are not regulated by the District rules that control VOCs. The amendments also revise rule language to be consistent with other District rules, and provide other clarifications. Specifically, the proposed amendments to the rule would:

(1) Add a new definition for multi-stage maskant systems and specify a method for calculating an average system VOC content for determining compliance with the rule.

(2) Add new definitions for Type I and Type II chemical milling maskants, bonding maskants and specialized function coatings and specify VOC content limits for these coatings.

(3) Remove perchloroethylene content limits for maskants.

(4) Specify requirements for dip coating application equipment for non-aqueous Type I chemical milling maskants.

(5) Delete the definition of exempt compounds and refer instead to an updated definition in Rule 2. This would add acetone, perchloroethylene, parachlorobenzotrifluoride, and volatile methyl siloxanes to the list of exempt compounds for aerospace coating operations.

(6) Increase of the allowed usage of coatings that are exempt from VOC content and other standards to 200 gallons at any facility.

(7) Increase VOC content limits for adhesive bonding primers, rain erosion resistant coatings, and fuel tank coatings to reflect the current state of coating technology.

(8) For consistency with other coating rules, allow materials with a initial point of 190°C or greater be used for surface cleaning or application equipment cleaning.

(9) Exempt surface cleaning and stripping operations subject to Rule 67.6—Solvent Cleaning Operations.

(10) Revise language describing application equipment cleaning requirements for consistency with other District coating rules.

(11) Refine the definition of high volume low pressure (HVLP) spray application equipment.

(12) Prohibit disposal of waste coatings or solvents into the air.

(13) Revise recordkeeping requirements for consistency with U. S. Environmental Protection Agency policies.

Each of these proposed amendments were reviewed to determine if they would have a significant adverse impact upon the environment. Proposed amendments 10–13 (some of them are administrative in nature) have no possible adverse impact on the environment. The only potential environmental impacts for amendments 1–9 would result from a possible increase of VOC and hazardous air pollutant (HAP) emissions. The significance, if any, of the possible increased air pollutant emissions is examined in the attached technical support documents (Attachments A and B).

A copy of the proposed amendments to Rule 67.9 is also attached.

III. ENVIRONMENTAL CHECKLIST

	YES	MAYBE	NO
1. **Earth.** Will the proposal result in:			
a. Unstable earth conditions or in changes in geologic substructure?	___	___	x
b. Disruptions, displacements, compaction or overcovering of the soil?	___	___	x
c. Change in topography or ground surface relief features?	___	___	x
d. The destruction, covering or modification of any unique geologic or physical features?	___	___	x
e. Any increase in wind or water erosion of soils, either on or off the site?	___	___	x
f. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake?	___	___	x
g. Exposure of people or property to geologic hazards such as earthquakes, landslides, mud slides, ground failure, or similar hazards?	___	___	x
2. **Air.** Will the proposal result in:			
a. Significant air emissions for some air contaminants?	___	___	x
b. The creation of objectionable odors?	___	___	x
c. Alteration of air movement, moisture, or temperature, or any change in climate, either locally or regionally?	___	___	x
3. **Water.** Will the proposal result in:			
a. Changes in currents, or the course of direction of water movements, in either marine or fresh waters?	___	___	x
b. Changes in absorption rates, drainage patterns, or the rate and amount of surface runoff?	___	___	x
c. Alterations to the course or flow of flood waters?	___	___	x

	YES	MAYBE	NO
d. Change in the amount of surface water in any water body?	____	____	x
e. Discharge into surface waters, or any alteration of surface water quality, including but not limited to temperature, dissolved oxygen, or turbidity?	____	____	x
f. Alteration of the direction or rate of flow of ground water?	____	____	x
g. Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?	____	____	x
h. Substantial reduction in the amount of water otherwise available for public water supplies?	____	____	x
i. Exposure of people or property to water related hazards such as flooding or tidal waves?	____	____	x

4. **Plant Life.** Will the proposal result in:

a. Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, and aquatic plants)?	____	____	x
b. Reduction of the numbers of any unique, rare or endangered species of plants?	____	____	x
c. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?	____	____	x
d. Reduction in acreage of any agricultural crop?	____	____	x

5. **Animal Life.** Will the proposal result in:

a. Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms or insects)?	____	____	x
b. Reduction of the numbers of any unique, rare or endangered species or animals?	____	____	x
c. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?	____	____	x
d. Deterioration to existing fish or wildlife habitat?	____	____	x

	YES	MAYBE	NO
6. **Noise.** Will the proposal result in:			
a. Increases in existing noise levels?	____	____	x
b. Exposure of people to severe noise levels?	____	____	x
7. **Light and Glare.** Will the proposal produce new light and glare?	____	____	x
8. **Land Use.** Will the proposal result in a substantial alteration of the present or planned land use of an area?	____	____	x
9. **Natural Resources.** Will the proposal result in increases in the rate of use of any natural resource?	____	____	x
10. **Risk of Upset.** Will the proposal involve:			
a. A risk of an explosion or the release of hazardous substances (including, but not limited to oil, pesticides, chemicals or radiation) in the event of an accident or upset conditions?	____	____	x
b. Possible interference with an emergency response plan or an emergency evacuation plan?	____	____	x
11. **Population.** Will the proposal alter the location, distribution, density, or growth rate of the human population of an area?	____	____	x
12. **Housing.** Will the proposal affect existing housing, or create a demand for addition housing?	____	____	x
13. **Transportation/Circulation.** Will the proposal result in:			
a. Generation of substantial additional vehicular movement?	____	____	x
b. Effects on existing parking facilities, or demand for new parking?	____	____	x
c. Substantial impact upon existing transportation systems?	____	____	x
d. Alterations to present patterns of circulation or movement of people and/or goods?	____	____	x

	YES	MAYBE	NO
e. Alterations to waterborne, rail or air traffic?	____	____	x
f. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?	____	____	x
14. **Public Services.** Will the proposal have an effect upon, or result in a need for, new or altered governmental services in any of the following areas:			
a. Fire protection?	____	____	x
b. Police protection?	____	____	x
c. Schools?	____	____	x
d. Parks or other recreational facilities?	____	____	x
e. Maintenance of public facilities, including roads?	____	____	x
f. Other government services?	____	____	x
15. **Energy.** Will the proposal result in:			
a. Use of substantial amounts of fuel or energy?	____	____	x
b. Substantial increase in demand upon existing sources of energy, or require the development of new sources of energy?	____	____	x
16. **Utilities.** Will the proposal result in a need for new systems, or substantial alterations to existing utilities?	____	____	x
17. **Human Health.** Will the proposal result in:			
a. Creation of any health hazard or potential health hazard (excluding mental health)?	____	____	x
b. Exposure of people to potential health hazards?	____	____	x
18. **Aesthetics.** Will the proposal result in the obstruction of any scenic vista or view open to the public, or will the proposal result in the creation of an aesthetically offensive site open to public view?	____	____	x

	YES	MAYBE	NO
19. **Recreation.** Will the proposal result in an impact upon the quality or quantity of existing recreational opportunities?			X
20. **Cultural Resources.** Will the proposal:			
a. Result in the alteration of or the destruction of a prehistoric or historic archaeological site?			X
b. Result in adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object?			X
c. Have the potential to cause a physical change which would affect unique ethnic cultural values?			X
d. Restrict existing religious or sacred uses within the potential impact area?			X
21. **Mandatory Findings of Significance.** Does the project have:			
a. The potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?			X
b. The potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time while long-term impacts will endure well into the future.)			X
c. Impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environment is significant.)			X
d. Environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X

IV. DETERMINATION OF CONSISTENCY WITH EXISTING ZONING, PLANS, AND LAND-USE CONTROLS

Adoption of Rule 67.9 will be consistent with existing zoning, plans, and other applicable land use controls.

V. DETERMINATION OF DEPARTMENT OF FISH & GAME DE MINIMIS IMPACT FINDING

Based on the information contained in the environmental checklist of this Initial Study, there is no evidence before the San Diego County Air Pollution Control District that adoption of amended Rule 67.9 will have any potential for adverse effect on wildlife resources or the habitat upon which the wildlife depends; and,

The San Diego County Air Pollution Control District has, on the basis of substantial evidence, rebutted the presumption of adverse effect to the resources listed in Section 753.5(d) of the California Code of Regulations.

VI. DETERMINATION OF ENVIRONMENTAL IMPACT DOCUMENT

Evaluation of Potential Impacts and Effects on the Environment of the Proposed Project

The proposed amendments to Rule 67.9 will add several new requirements, delete some outdated provisions, and revise some of the existing provisions. Each of these new or revised provisions were reviewed to determine if their inclusion in Rule 67.9 would have a significant adverse impact upon the environment. The following rule amendments were reviewed:

(1) A new definition for multi-stage maskant systems and specification of a method for calculating an average system VOC content for determining compliance with the rule.

(2) New definitions for Type I and Type II chemical milling maskants, bonding maskants and specialized function coatings and new VOC content limits for these coatings.

(3) Removal of perchloroethylene content limits for maskants.

(4) Requirements for dip coating application equipment for non-aqueous Type I chemical milling maskants.

(5) Addition of acetone, perchloroethylene, parachlorobenzotrifluoride, and volatile methyl siloxanes to the list of exempt compounds for aerospace coating operations by reference to Rule 2's definition of exempt compounds.

(6) Increase of the allowed usage of coatings that are exempt from VOC content and other standards to 200 gallons at any facility.

(7) Increase of VOC content limits for adhesive bonding primers, rain erosion resistant coatings, and fuel tank coatings.

(8) Allowing materials with an initial point of 190° C or greater be used for surface cleaning or application equipment cleaning material compliance.

(9) Exemption of surface cleaning and stripping operations subject to Rule 67.6—Solvent Cleaning Operations.

(10) Revision of language describing application equipment cleaning requirements for consistency with other District coating rules.

(11) Revision of the definition of high volume low pressure (HVLP) spray application equipment.

(12) Prohibition of disposal of waste coatings or solvents into the air.

(13) Revision of recordkeeping requirements for consistency with U. S. Environmental Protection Agency policies.

Proposed amendments 10–13 have no possible significant adverse impact on the environment.

Proposed Amendments 1–9 may potentially increase the emissions of VOCs and hazardous air pollutants into the atmosphere. Accordingly, District staff reviewed each of the these amendments for their potential environmental impact (see Attachments A and B). No significant adverse environmental impacts were found from increased emissions to the atmosphere due to the adoption of proposed amendments to Rule 67.9, compared to hypothetical compliance with existing Rule 67.9. Any increases in VOCs compared to hypothetical compliance with existing Rule 67.9 will be insignificant and will not cause any additional exceedances of national or state air quality standards; any increase in hazardous air pollutant emissions compared to hypothetical compliance with existing Rule 67.9 will be insignificant and will not have any significant acute or chronic health impacts. The amendments will result in significant reductions in emissions of perchloroethylene. This will reduce cancer risks in San Diego County. Therefore, the adoption of the proposed amendments to Rule 67.9, Aerospace Coating Operations, will not have any significant adverse impact on the environment, and does not require preparation of an Environmental Impact Report.

Based upon the information regarding these amendments provided in Attachments A and B, there is no reasonable possibility that this portion of the proposed project will result in a significant impact upon the environment.

On the basis of this initial evaluation:

[X] I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION should be prepared.

[ ] I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures(s) described in the Initial Study will be applied to the project. A MITIGATED NEGATIVE DECLARATION should be prepared.

[ ] I find the proposed project, individually and/or cumulatively, MAY have a significant effect on the environment and determine that an ENVIRONMENTAL ASSESSMENT is required.

12-5-96

STEVEN B. MOORE
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County of San Diego
Air Pollution Control District

ATTACHMENT A

TECHNICAL DOCUMENTATION FOR PROPOSED PROJECT TO AMEND DISTRICT RULE 67.9

December 4, 1996

Prepared by
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SUMMARY

This report evaluates proposed amendments to District Rule 67.9—Aerospace Coating Operations—for potential adverse environmental impacts to air quality. There are no known possible adverse impacts on other environmental media from these amendments. Rule 67.9 regulates volatile organic compound (VOC) emissions from aerospace coating operations. The proposed amendments evaluated include defining acetone, parachlorobenzotrifluoride (PCBTF), volatile methyl siloxanes (VMS) ethane, and perchloroethylene (perc) as exempt compounds (organic compounds not considered VOCs); adjusting VOC content limits for some coating categories to reflect technological feasibility; increasing the allowed usage of coatings that are exempt from VOC content standards at any facility; and adding separate coating categories and VOC content limits for chemical milling maskants and bonding maskants. Proposed amendments that are obviously environmentally beneficial or administrative in nature were not evaluated.

Possible emission increases as a result of adopting the proposed amendments to Rule 67.9 were estimated relative to the case of hypothetical compliance with existing Rule 67.9 (hypothetical compliance assumes the use of either technologically infeasible compliant coatings or air pollution control systems). Compared to hypothetical compliance with existing Rule 67.9, total VOC emissions would increase by about 0.03 tons per day, and hazardous air pollutant (HAP) emissions having known health risks would increase by about 0.023 tons per day, while emissions of perc, a human carcinogen, would decrease. Compared to current actual emissions (including variances) VOC emissions would decrease by 0.009 tons per day and HAP emissions having known health risks would decrease by about 0.0375 tons per day, including a 0.05 tons per day decrease in perc emissions. Actual emissions would decrease because affected sources are operating under variances and evaporative emissions from maskants dip tanks would be significantly reduced. In comparison, total anthropogenic VOC emissions are approximately 236 tons per day and total HAP emissions are in excess of 35 tons per day in San Diego County.

A detailed evaluation of the environmental effects from the hypothetical emission increases associated with the proposed amendments to Rule 67.9 show no significant adverse environmental impacts. The hypothetical VOC emission increase is insignificant and would not affect San Diego County's timely attainment or maintenance of the National Ambient Air Quality Standard (NAAQS) nor the State Ambient Air Quality Standard (SAAQS) and would not cause any additional exceedances of either standard. An evaluation of the localized impacts of hypothetical HAP emission increases showed there would be no significant acute or chronic health impacts. Cancer risks would be reduced because of hypothetical and actual decreases in perc emissions. No other significant adverse environmental impacts are expected. Therefore, the adoption of proposed amendments to Rule 67.9 would have no significant environmental impact.

INTRODUCTION

The federal Clean Air Act (FCAA) requires that areas not attaining the National Ambient Air Quality Standard (NAAQS) for ozone control emissions of tropospheric ozone precursors, including volatile organic compounds (VOCs), and attain the NAAQS by a date specified in the Act. San Diego County is classified as a serious ozone nonattainment area by the U. S. Environmental Protection Agency (EPA) and has demonstrated[1] that it will attain the NAAQS for ozone by 1999 as required by the FCAA.

District Rule 67.9—Aerospace Coating Operations—is part of the District plan to attain the NAAQS for ozone and controls emissions of volatile organic compounds from coating of aerospace

components and associated coating stripping, surface preparation, and application equipment cleaning operations. The rule contains standards that limit the VOC content of over 40 aerospace coating categories. The rule also contains equipment, VOC content, or VOC vapor pressure standards to limit VOC emissions from coating stripping, surface preparation, and application equipment cleaning operations. Air pollution control equipment may also be used to comply with these standards.

The District has proposed adopting an amended version of existing Rule 67.9. The rule is being amended to adjust VOC content limits for some coating categories to reflect technological feasibility, to increase the allowed usage of coatings exempt from VOC content standards, and to add separate coating categories and VOC content limits for chemical milling maskants and bonding maskants. In addition, the proposed amendments will replace the definition of exempt compounds with a reference to the updated District Rule 2—Definitions. The term "exempt compound" applies to a group of chemical compounds with negligible photochemical reactivity. Unlike VOCs, exempt compounds do not participate in the photochemical formation of ozone, therefore they are not regulated by District rules that control VOCs. However, some exempt compounds are classified as hazardous air pollutants (HAPs) and may have local toxic impacts. The amendments also revise rule language to be consistent with other District rules, and provide other clarifications. Several of these changes have no possible adverse environmental impact being environmentally beneficial or administrative in nature. Therefore, the following proposed amendments to the rule were evaluated for adverse environmental impacts:

(1) Addition of a new definition for multi-stage maskant systems and specification of a method for calculating an average system VOC content for determining compliance with the VOC content limits for maskants.

(2) Addition of definitions for Type I chemical milling maskants and bonding maskants and specification of VOC content limits for these coatings.

(3) Removal of perc content limits for maskants.

(4) Specification of requirements for dip coating application equipment for non-aqueous Type I chemical milling maskants.

(5) Deletion of the definition of exempt compounds and instead referencing an updated definition in Rule 2. This would add acetone, perc, PCBTF, VMS, and ethane to the list of exempt compounds for aerospace coating operations.

(6) Increase of the allowed usage of coatings that are exempt from VOC content and other standards to 200 gallons at any facility.

(7) Increase of VOC content limits for adhesive bonding primers, rain erosion resistant coatings, and fuel tank coatings to reflect the current state of coating technology.

(8) For consistency with other coating rules, allowing materials with a initial point of 190°C or greater be used for surface cleaning or application equipment cleaning.

(9) Exemption of surface cleaning and stripping operations subject to Rule 67.6—Solvent Cleaning Operations from Rule 67.9 requirements.

Any possible environmental impacts of these rule amendments could only relate to increased VOC and HAP emission to the atmosphere. In the case of VOC emissions, the only known environmental impact that needs to be considered is increases in ambient ozone levels. Because ozone formation attributed to VOC emissions results from a complex set of photochemical reactions taking place over hours or days, the environmental impact of increased VOCs is countywide and could be analyzed in the context of the total VOC emissions in San Diego County. On the other hand, the impacts of HAP emissions may be localized. Therefore HAP emissions were evaluated

for the possibility of localized potential human health impacts. The District knows of no other possible significant adverse environmental impacts resulting from increases of HAP emissions.

With the exception of adding acetone, PCBTF, VMS, and ethane to the list of exempt compounds, the estimated VOC and HAP emission changes and the possible resulting adverse environmental impacts are evaluated in the following report. The environmental impact of adding acetone, PCBTF, VMS, and ethane to the exempt compound list has been previously evaluated for the Negative Declaration[2, 3]adopted with the May, 1996, amendments to Rule 2. This study concluded that no significant environmental impact would result from exempting those compounds as VOCs. The Initial Study and Negative Declaration relating to amendments to Rule 2 are available for inspection and copying at the District office and are incorporated in this study by reference. Adding perc to the list of exempt compounds was also considered before adoption of amended Rule 2, and it was determined that there was no significant adverse environmental impact. However, this compound is a common solvent for aerospace maskants and its environmental impact as a HAP is reevaluated in this report.

Possible emission increases as a result of adopting the proposed amendments to Rule 67.9 were estimated relative both to the case of hypothetical compliance with existing Rule 67.9 and also to the actual compliance situation, which includes consideration of variances to existing Rule 67.9 that have been granted by the District Hearing Board. These variances allow use of noncompliant coatings for adhesive bonding primers, rain erosion resistant coatings, fuel tank coatings, and Type I chemical milling maskants because technologically feasible compliant coatings do not exist for these coating categories. In the evaluation, the emission increases relative to hypothetical compliance with existing Rule 67.9 are referred to as hypothetical emission increases, and the emission increases relative to the actual compliance situation are referred to as actual emission increases (or decreases).

EMISSION ESTIMATES

All emission estimates consider only existing facilities. It appears highly unlikely that new aerospace operations will locate in San Diego County in the foreseeable future. As amended, Rule 67.9 is as least as stringent as the proposed national Control Techniques Guidelines for aerospace operations and is as stringent as aerospace coating regulations in other large California districts. In addition, the coating categories affected represent only a small fraction of the total aerospace coating use in San Diego County.

DEFINING PERC AS AN EXEMPT COMPOUND AND EMISSIONS FROM MASKANT COATING OPERATIONS.

The proposed amendments to Rule 67.9 have the hypothetical potential to increase VOC emissions and VOC HAP emissions from maskant operations. In addition, incorporating the definition of exempt compounds by reference to Rule 2 would define perc as an exempt compound. Its emissions would then not be controlled by Rule 67.9 and might increase as a result.

The toxicity and photochemical reactivity of perc was examined in the Rule 2 Negative Declaration. Perc is negligibly photochemically reactive and not considered an ozone precursor. However, it is considered a human carcinogen. The only significant source of perc emissions from aerospace coating operations of which the District is aware are maskant coating operations. The estimated changes in perc emission are discussed in this section because it is interrelated to the

proposed amendments affecting masking coating operations. These proposed amendments will only impact two facilities in San Diego County.

Chemical Milling Maskants. The hypothetical and actual emission increases from chemical milling maskants resulting from the adoption of the proposed amendments to Rule 67.9 are discussed in detail in Attachment B. When compared to hypothetical compliance with existing Rule 67.9, the combined effect of these rule changes would be to decrease perc emissions by about 2,700 pounds per year and increase VOC emissions by about 3,700 pounds per year at one facility. There would be no change in perc or VOC emissions at the other facility because they must continue use of an air pollution control system to comply with other District rules. Actual perc emissions will decrease by about 25,800 pounds per year (12.9 tons per year) and actual VOC emissions will decrease by about 12,300 pounds per year (6.2 tons per year) compared to current levels. This would occur because the sources do not presently comply with existing Rule 67.9 and operate under variance and maskant dip tank evaporative emissions would be reduced by compliance with the proposed amendments.

Bonding Maskants. Proposed amendments to Rule 67.9 add a definition for bonding maskants with a VOC content limit of 600 grams per liter. Total bonding maskant usage in 1995 was estimated at 210 gallons per year, all at one facility. Existing Rule 67.9 would require these maskants to comply with a VOC content limit of 250 grams per liter, but no compliant coatings are available for this maskant application. Assuming that compliance with the existing rule would require that emissions be controlled by carbon adsorption, the estimated hypothetical annual emission increases for the amended rule are about 1560 pounds of perc and 260 pounds of VOCs, including 160 pounds of toluene and 100 pounds of xylene. However, the bonding maskant is currently used under a variance from Rule 67.9, so there would be no actual emission increase of perc or VOCs from adopting the proposed amendments.

ADHESIVE BONDING PRIMERS, RAIN EROSION RESISTANT COATINGS, AND FUEL TANK COATINGS

Adhesive bonding primers, rain erosion resistant coatings, and fuel tank coatings are specialty coatings used in the aerospace industry in relatively small amounts. Among these three coating categories, adhesive bonding primers have by far the highest usage in San Diego County (approximately 600 gallons per year). Existing Rule 67.9 contains technology forcing limits that went into effect in July, 1994. No coatings compliant with these limits currently exist. All coatings used under variance have the VOC content complying with the higher VOC limits allowed from 1991 to July 1994 (except for the one gallon of fuel tank coating used which is slightly over the 1991 limit). At this time, three facilities in San Diego County use these coatings.

VOC Emissions. Table 1 shows the latest estimated usage of adhesive bonding primers, rain erosion resistant coatings, and fuel tank coatings (from 1994 or 1995 information) and the hypothetical increase in emissions that would occur if proposed amendments to Rule 67.9 are adopted. The hypothetical emission increase (3600 pounds per year) from these coatings as a result of adoption of proposed amendments to Rule 67.9 was calculated by comparing the emissions from the coatings currently in use to hypothetical coatings that could comply with the existing technology forcing VOC limits. However, since these three coatings are currently being used under a variance, there would be no actual increase in emissions.

Table 1. Hypothetical Emission Increases for Adhesive Bonding Primers, Rain Erosion Resistant Coatings, and Fuel Tank Coatings.

Coating	Existing technology forcing VOC limit, g/l	Proposed VOC limit, g/l	Estimated usage, gallons	Average VOC content of current coatings, g/l	Hypothetical emission increase, lb
Adhesive bonding primer	250/350	850	590	770	3,580
Rain erosion resistant	420	690	9.5	555	20
Fuel tank	420	720	1	709	5
Totals	—	—	601	—	3,605

HAP emissions. Typical solvents in adhesive bonding primers are methyl ethyl ketone (MEK), toluene, glycol ethers, and methanol. All these compounds, except MEK, contribute to chronic health hazards,[4] glycol ethers being the most hazardous. None of these compounds are currently considered to have cancer risks. A typical solvent composition for adhesive bonding primers is: 50–70% MEK, 0–50% toluene, 0–20% glycol ether, and 0–1% methanol. The methanol can be ignored since it is present in very small amounts and its chronic health hazard impact per unit mass is less than that for toluene or glycol ethers. Rain erosion resistant primers contain similar solvents to adhesive bonding primers and fuel tank coatings can be assumed to also contain similar solvents. Assuming a typical solvent composition of 50% MEK, 30% toluene, and 20% glycol ethers, the estimated hypothetical emission increases of toluene and glycol ethers are shown in Table 2.

Table 2. Hypothetical Toluene and Glycol Ether Emission Increases for Adhesive Bonding Primers, Rain Erosion Resistant Coatings, and Fuel Tank Coatings.

Source	Fraction total emissions	Toluene emissions, lb/yr	Glycol ether emissions, lb/yr
Facility A	0.79	855	570
Facility B	0.03	31	21
Facility C	0.18	195	130
Total	1.00	1,081	721

INCREASE OF ALLOWED USAGE OF COATINGS EXEMPT FROM VOC LIMITS

The proposed amendments to Rule 67.9 increase the allowed usage at any facility of coatings exempt from VOC limits from 20 gallons per year of any one formulation and 50 gallons per year total to 200 gallons per year total. The purpose of this rule amendment is to allow limited usage of coatings with special properties not otherwise provided for in the rule. Most large facilities would likely approach the 200 gallon per year usage limit over time.

VOC Emissions. The maximum density for common VOC coating solvents is around 1000 grams per liter for glycol ethers. Assuming five of the six largest aerospace coating users in San Diego County increase their exempt coating use from 20 to 200 gallons per year, the increase in VOC emissions would be 7,500 pounds per year if all the coatings had a VOC content of 1000 grams per liter. The sixth large company in San Diego County uses water-based maskants almost exclusively and is not expected to increase its use of exempt coatings. The smaller aerospace operations are estimated to account for less than 5% of the total aerospace coatings used in San Diego County and are expected to have little need for exempt coatings. Therefore, excess emissions from the smaller aerospace facilities are assumed to be negligible .

HAP Emissions. The solvent composition of hypothetical exempt coatings is, of course, unknown. Of commonly used VOC coating solvents, glycol ethers are the most toxic per unit mass. It is unlikely that more toxic exempt compounds would be used as solvents since they are more expensive than common solvents and are often only used to meet VOC limits not achievable with common solvents. Therefore, a most conservative assumption is that adopting the 200 gallon per year limit for the use of exempt coatings might increase glycol ether emissions by 1500 pounds at each of the five facilities mentioned above.

Boiling Point Criteria Allowed for Compliance of Surface Preparation and Cleaning Materials

A proposed amendment to Rule 67.9 allows materials with initial boiling point of 190° C or greater to be used for compliance with surface preparation and coating application equipment cleaning material standards. This is an alternative to existing standards which include a total VOC vapor pressure at 20° C of 45 mm Hg or less for surface preparation materials and 20 mm Hg or less for application equipment cleaning as compliance alternatives. The District considers organic materials with a initial boiling point of 190° C to have vapor pressures less than 20 mm Hg at 20° C. An examination of the boiling points of common organic solvents having vapor pressures greater than 20 mm Hg at 20° C showed that none of these solvents had a boiling point greater than 120° C. Therefore, materials complying with a 190° C initial boiling point would also comply with the current rule on the basis of vapor pressure and there would be no increase in HAP or VOC emissions from adopting this proposed amendment.

Exemption of Equipment Complying with Rule 67.6

One proposed amendment to Rule 67.9 allows equipment subject to the requirements of Rule 67.6—Solvent Cleaning Operations— to be exempt from Rule 67.9 provisions for surface preparation and stripping operations. Rule 67.6 applies to equipment used for solvent cleaning.

Surface Preparation. The existing surface preparation provisions of rule 67.9 allow surface cleaning with any cleaning material in an enclosed container that is only opened when accessing parts or adding surface cleaning material. In addition to a cover completely covering the container except when processing work, Rule 67.6 includes requirements for freeboard ratios greater than 0.5, water covers, refrigerated condensing coils, drying tunnels, and low vapor pressure cleaning materials depending on the type of solvent cleaner. These additional measures will reduce emissions compared to the surface cleaning in a container as allowed by existing Rule 67.9. Therefore, adopting the proposed amendment would not increase VOC or HAP emissions from surface preparation operations.

Stripping Operations. The District considers using a simple enclosed container as specified in the surface cleaning operations provision of existing Rule 67.9 to be equivalent to using a surface cleaning material with a VOC content of 200 grams per liter or less. Using solvent cleaning

equipment subject to Rule 67.6 for stripping operations should result in less emissions than using a simple enclosed container because of additional standards (see above) in Rule 67.6. Since the existing stripping operation provisions of Rule 67.9 allow stripping materials that have a VOC content of 400 grams per liter or less, using equipment subject to Rule 67.6 should not increase VOC or HAP emissions. Therefore, there would be no VOC or HAP emission increases from stripping operations as a result of adopting the proposed rule amendment.

ENVIRONMENTAL IMPACTS

ACETONE, PCBTF, VMS AND ETHANE DEFINED AS EXEMPT COMPOUNDS

The significance of any adverse environmental impacts from defining acetone, PCBTF, VMS and ethane as exempt compounds was evaluated for the Negative Declaration adopted with the May, 1996, amendments to Rule 2. The toxic and photochemical reactivity of these compounds was thoroughly evaluated. Any anticipated adverse environmental impacts from exempting these compounds from the VOC definition was evaluated for coating operations in San Diego County—including the aerospace coating operations. No significant adverse environmental impact was found. Since there has been no significant change in the information or conditions upon which the Rule 2 Negative Declaration was based, it can be concluded that there will be no significant impact from defining these compounds as exempt compounds by adoption of proposed amendments to Rule 67.9.

ENVIRONMENTAL IMPACT OF VOC EMISSION INCREASES

The total hypothetical potential emission increases in VOC emissions as a result of adoption of proposed amendments to Rule 67.9 are shown in Table 3. The hypothetical emission increases are calculated assuming that companies use either air pollution control equipment (maskants only) or nonexistent coatings to comply with existing Rule 67.9. Actual VOC emissions are calculated assuming current emission levels. The table shows that actual emissions would decrease because most sources affected by amendments that would hypothetically increase emissions are operating under variance. At the same time, the proposed amendments would significantly reduce VOC and perc evaporative emissions from maskant dip tank operations.

Table 3. Potential VOC Emission Increases from Adoption of Proposed Amendments to Rule 67.9.

Rule 67.9 amendments	Hypothetical VOC emission increase, lb/yr	Actual VOC emission increase from current levels, lb/yr
Maskants	4,000	-12,000
Adhesive bonding primers rain erosion resistant coatings, and fuel tank coatings	3,600	0
200 gal/yr limit for exempt coatings	7,500	7,500
High boiling point surface preparation and equipment cleaning materials	0	0
Exemption of equipment complying with Rule 67.6	0	0
TOTALS	15,100	-4,500

Table 3 shows that, assuming a 250 day year for industrial operations, the total hypothetical increase in VOC emissions is 0.03 tons per day. The primary and secondary federal National Ambient Air Quality Standard (NAAQS) for ozone (120 ppb) can be attained[5] with a margin of 9 ppb by the District even if an additional 1 ton per day of VOCs were emitted in San Diego County. In comparison, the hypothetical increase of VOC emissions of 0.03 tons per day from amendments to Rule 67.9 is not significant. In addition, a hypothetical increase of 0.03 tons per day is estimated to increase peak ozone concentrations in San Diego County by only about 0.003 ppb. Because District ozone monitoring instruments are not sensitive to increases in ozone concentration of less than about 1 ppb, there will be no additional exceedances of either the NAAQS or SAAQS.

The federal primary NAAQS and State Ambient Air Quality Standard for ozone have been established to protect the public health with an adequate margin of safety and the secondary NAAQS for ozone standard protects public welfare, including the environment, from any known or anticipated adverse effects.[6] Therefore, there would be no significant adverse environmental impact from the hypothetical VOC emission increase from adoption of proposed amendments to Rule 67.9.

ENVIRONMENTAL IMPACTS OF HAZARDOUS AIR POLLUTANTS

Overall Emission Increase. The expected hazardous air pollutants whose emissions would hypothetically increase as a result of amendments to Rule 67.9 and that might have significant human health impacts are: toluene, glycol ethers, xylenes, and perc. Table 4 shows the hypothetical emission increase of these HAPs relative to compliance with the existing rule. Actual HAP emissions would significantly decrease for the same reasons actual VOC emissions would decrease.

The hypothetical HAP emission increase as a result of proposed rule amendments affecting maskant operations is a net increase of 480 pounds per year (a 1,230 pounds per year decrease in perc emissions year and a 1,710 pounds per year increase in VOC HAP emissions). Estimated actual perc emissions from maskant operations would decrease by about 26,100 pounds per year and VOC HAP emissions would decrease by about 3,460 pounds per year. It should be noted that the estimated HAP emission increase from the allowed use of exempt coatings assumes the worst case: all VOCs used in these coatings are HAPs.

The total hypothetical HAP emission increase of 11,600 pounds per year is distributed over the 5 largest aerospace coating operations affected by the proposed rule amendments. Any impacts from these HAP emission increases would be localized near the affected facilities. The District expects no possible adverse environmental impact for this magnitude of hypothetical emission increase distributed among the five affected large aerospace facilities. Nevertheless, whether or not there is any possible human health impact is evaluated below.

Table 4. Potential HAP Emission Increases from Adoption of Proposed Amendments to Rule 67.9.

Rule 67.9 amendments	Hypothetical HAP emission increase, lb/yr	Estimated actual HAP emission increase from current levels, lb/yr
Maskants	480	-26,200
Adhesive bonding primers rain erosion resistant coatings, and fuel tank coatings	3,600	0
200 gal/yr limit for exempt coatings	7,500	7,500
High boiling point surface preparation and equipment cleaning materials	0	0
Exemption of equipment complying with Rule 67.6	0	0
TOTALS	11,600	-18,700

Human Health Impacts. The health impacts from HAPs can be classified as carcinogenic, chronic, and acute impacts. Acute health impacts depend on maximum short term emission rates (one hour or less) and are not easily evaluated from annual emission rates. However, maximum short term emission rates for coating operations, which depend on the physical method of application, are not likely to increase as a result of small increases in annual emissions. Therefore, any acute health hazards from amendments of Rule 67.9 are not significant.

Among the HAPs having known health impacts and having hypothetical emission increases as a result of amending Rule 67.9, only perc is considered a possible carcinogen. The proposed rule amendments affecting maskant coatings would decrease perc emissions by about 1100 pounds per year from the maskant operations relative to hypothetical compliance with existing Rule 67.9. In reality, actual perc emissions will decrease by about 26,000 pounds per year from current levels. The District knows of no other coatings affected by the proposed rule amendments that contain perc as a solvent. Therefore, the rule amendments will decrease carcinogenic health risks in San Diego County.

Chronic human health hazards from the HAP increases will be localized near the emission sources. Estimated chronic health impacts for toluene, xylenes, and glycol ethers are shown in Table 5 for the five largest users of aerospace coatings in San Diego County that would hypothetically increase HAP emissions as a result of proposed amendments to Rule 67.9. These estimates assume that the increases in the chronic health hazard index (HHI) are proportional to emission increases. The HHI for each source is the District's current best estimate and based on 1993 emission inventories. These estimates do not include the effect of perc emission reductions, which would decrease Facility A's estimated HHI. Table 5 shows that the estimated individual HHIs, including the effects of emission increases from proposed amendments to Rule 67.9, are all less than 1.0. Based on the standards in District Rules 1200 and 1210, a HHI less than 1.0 indicates no significant adverse chronic health impact. In addition, only facilities C and E are in close enough proximity that combined hypothetical emission increases need to be evaluated for chronic health impacts. Considering a worst case, the combined maximum HHI for the two facilities is 0.32, indicating no significant adverse chronic health impacts. Therefore, there are no significant adverse chronic health impacts from adoption of proposed amendments to Rule 67.9.

Table 5. Chronic Health Hazard Index Changes from Adoption of Proposed Amendments to Rule 67.9.

Source	Estimated 1993 chronic HHI	Estimated chronic HHI after adoption of Rule 67.9 amendments
Facility A	0.4	0.414
Facility B	0.26	0.269
Facility C	0.2	0.202
Facility D	0.02	0.022
Facility E	0.1	0.124

CONCLUSION

No significant adverse environmental impacts were found from hypothetical increased VOC and HAP emissions to the atmosphere due to the adoption of proposed amendments to Rule 67.9, and no impacts on other environmental media are possible. Adopting these proposed amendments would result in increases of VOC and some HAP emissions in comparison to hypothetical compliance with existing Rule 67.9. Actual emissions of VOCs and HAPs would be reduced from existing levels. The hypothetical emission increase of VOC emissions is about 0.03 tons per day and the hypothetical HAP emission increase is about 0.023 tons per day. However, perc emissions would hypothetically decrease by 0.0024 tons per day. Actual VOC emissions would decrease by about 0.009 tons per day, and HAP emissions would decrease by about 0.038 tons per day. The hypothetical increase in VOC emissions as a result of adopting proposed amendments to Rule 67.9 is insignificant and would not affect San Diego County's ability to attain and maintain the federal NAAQS for ozone, nor would this hypothetical increase in VOC emissions cause any additional exceedances of the NAAQS or SAAQS. The hypothetical increase in HAP emissions as a result of adopting proposed amendments to Rule 67.9 would not have significant acute or chronic health impacts. In addition, adopting the proposed amendments to Rule 67.9 would also hypothetically and actually reduce perc emissions. This would reduce cancer risks in San Diego County. Therefore, adoption of the proposed amendments to Rule 67.0 would have no significant adverse environmental impact in San Diego County.

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1 1994 State Implementation Plan Attainment Demonstration for the San Diego Air Basin, San Diego County Air Pollution Control District.

2 Initial Study, Adoption of Amended Rule 2 -- Definitions, Laura Yannayon, San Diego County Air Pollution Control District, 1996.

3 Technical Documentation for Proposed Project to Amend District Rule 2, Laura Yannayon, San Diego County Air Pollution Control District, 1996.

4 CAPCOA Air Toxics "Hot Spots" Program Revised 1992 Risk Assessment Guidelines, Toxics Committee of the Air Pollution Control Officers Association, October, 1993.

5 The California State Implementation Plan for Ozone, California Environmental Protection Agency, Air Resources Board, Adopted November 15, 1994.

6 42 U.S.C. 7409.

ATTACHMENT B

INTERNAL MEMORANDUM

October 8, 1996

To: Natalie Zlotin
Senior Engineer, Manager Rule Development Section

From: Steven Moore
Senior Engineer

Subject: Effect of Proposed Revision of Rule 67.9 on Perchloroethylene (Perc) and VOC Emissions from Aerospace Maskant Coating Operations

Perc and VOC emissions from maskant operations are currently regulated by Rule 67.9—Aerospace Coating Operations—since perc is considered a VOC in the currently adopted version of Rule 67.9. Rule 67.9 controls VOC emissions by setting VOC content limits for coatings or, alternatively, by use of an add-on control system with at least 85% control efficiency. However, Rule 67.9 is in the process of being revised. The proposed amendments to Rule 67.9 include a new bonding maskant category with VOC content standards, VOC content standards for multistage maskant systems, coating application dip tank standards, and replacing the existing VOC definition with the definition in Rule 2—Definitions. Rule 2 lists perc as an exempt compound and, therefore, not a VOC. Therefore, Rule 67.9 would no longer be applicable to perc emitted from maskant operations.

All other coating prohibitory rules now reference Rule 2 when defining exempt compounds. However, unless the proposed amendments to Rule 67.9 are adopted, perc would still be considered a VOC for purposes of Rule 67.9. The possible increases in perc and VOC emissions from aerospace coating operations are evaluated below for the case where the proposed amendments to Rule 67.9 are adopted and perc is considered and exempt compound in Rule 67.9.

Two aerospace facilities in San Diego County use perc containing maskants in their aerospace coating operations. Facility A applies maskant to aerospace parts in a dip coating operation and applies a very small amount of bonding maskant by spray coating. Facility B applies maskant in a spray coating operation with emissions controlled by carbon adsorption. No other aerospace coatings are known to use perc as a solvent.

FACILITY A

Information supplied by Facility A for 1995 indicates that Facility A applied approximately 2,050 gallons of maskant, which contained about 50% perc and 25% VOCs by weight (perc is not considered a VOC for discussion purposes). This maskant is applied by dip coating in a dip tank equipped with a lid and lip exhaust system. In addition, a small amount of bonding maskant, about 210 gallons, is applied by spray application. The bonding maskant contains about 69% perc and 10% VOCs by weight.

Except when coating operations are taking place, the dip tank lid is closed, and the lip exhaust does not operate. The coating operation may take up to 2.5 hours for a single rack of parts. In addition to the emissions associated with the drying of the applied maskant, a significant amount of solvent evaporates from the dip tank. Thinner is periodically added to the dip tank to replace maskant solvent that has evaporated and maintain the maskant viscosity. Approximately 3,410 gallons of

thinner, which contains about 67% perc and 33% other VOCs by weight, was added to the dip tank in 1995.

The maskant currently used by Facility A does not comply with the VOC content standards of Rule 67.9 and Facility A operates the maskant dip coating operation under a variance. Facility A has developed a two stage Low VOC Maskant System (LVMS) that uses the current maskant as a basecoat with a water-based maskant topcoat, which is also applied by dip coating. The water-based maskant topcoat contains no perc but does contain about 1% by weight VOC (this VOC is also a toxic air contaminant). This two stage system reduces the use of the current perc containing maskant by 60% and will comply with proposed amended Rule 67.9 if perc is an exempt compound. By reducing the amount of perc maskant used, the LVMS system would also reduce evaporative emissions from the dip tank operations. In addition, the dip tank used to apply the perc-based maskant would have to comply with the dip tank standards, analogous to the degreasing equipment standards in Rule 67.6, which would reduce dip tank evaporation emissions by an estimated additional 67%, for an overall emission reduction of about 87%. Besides the LVMS, Facility A has been unable to find any other compliant maskants to replace the current perc containing maskant.

If the proposed amendments to Rule 67.9 are not adopted and perc is not considered exempt compound for aerospace coating operations, Facility A would continue to use a perc based maskant, which requires less drying time and one less coating operation to apply than the LVMS. To comply with Rule 67.9. Facility A would likely install a carbon adsorber to control perc emissions and use reformulated maskants containing only perc as a solvent to make solvent recovery easier. It should be noted that Facility B switched to similarly reformulated maskants after installing a carbon adsorption system. Carbon adsorption is the typical add-on control method used to control emissions from perc containing maskants because the presence of chlorine makes thermal or catalytic oxidation infeasible or too expensive. To comply with Rule 67.9, this add-on control system would only be required to function during coating operations and would reduce emissions from maskant drying and dip tank evaporative emissions during coating operations by 85%.

The table below gives the perc and VOC emissions calculated for current operations, use of the LVMS maskant system—possible if perc is exempted from the VOC definition as in the proposed amendments to Rule 67.9—and current operations controlled by an add-on control system with 85% overall control efficiency—necessary if perc is not exempted from the VOC definition as is the case with existing Rule 67.9. In the analysis, all evaporative emissions were assumed to occur when the dip tank was in operation. This maximizes the dip tank evaporative emission reductions that could be achieved with an add-on control system.

The current bonding maskant used by Facility A does not comply with the existing maskant VOC content standards in Rule 67.9 and is used under variance. However, it could comply with the proposed VOC content standard of 600 grams per liter for bonding maskants in proposed amended rule 67.9. The estimated 1995 emissions from bonding maskant application are 1820 pounds of perc and 260 pounds of VOCs. There are no existing suitable bonding maskants that could meet the existing Rule 67.9 VOC content standard of 250 grams per liter. To comply with existing Rule 67.9, Facility A would use carbon adsorption with 85% control and a reformulated bonding maskant containing only perc as a solvent. This would result in estimated emission reductions of 1,530 pounds of perc and 260 pounds of VOCs. There would be no emission reductions from bonding maskants if proposed amendments to Rule 67.9 are adopted.

When compared to hypothetical compliance with existing Rule 67.9, the proposed amendments to Rule 67.9 would result in an overall perc emission reduction of about 1,200 pounds per year and an VOC emission increase of about 4,000 pounds per year for Facility A maskant operations. However, since the maskant operations are currently under variance, compliance with proposed

amendments to Rule 67.9 would in reality decrease perc emissions by about 26,100 pounds per year and decrease VOC emissions by about 12,300 pounds per year.

Facility A Maskant Dip Coating Emissions

Scenario	Perc emissions[1,2,3] (lbs/yr)	VOC emissions[4] (lbs/yr)
Current Operation (Under variance)	33,300	16,000[5]
Perc is exempt & LVMS is used to comply with Rule 67.9[6] limits (proposed amended Rule 67.9)	7,200	3,700[7]
Perc is not exempt & 85% emission control equipment is used[8] to comply with Rule 67.9 limits (existing Rule 67.9)	9,900	0

1 Based on 1995 spike log information for perc maskant dip tank. Perc and VOC emissions include both emissions from drying of applied maskant and evaporative emissions from coating dip tank used to apply the perc maskant coating.

2 All evaporative emissions from the perc maskant application dip tank are assumed to occur during coating operations only.

3 Evaporative losses from water-based maskant dip tank of LVMS is assumed to be negligible.

4 VOC emissions exclude perc.

5 The current operation VOC emissions include about 4900 pounds of toluene.

6 The LVMS system reduces perc and VOC emissions from maskant drying by about 60%. Evaporative emissions from the dip tank used to apply perc maskant are reduced overall by about 87%—60% due to reduction in the amount of coating applied and an additional 67% due to increased freeboard height required to comply with the requirements of draft amended Rule 67.9 (based on a 0.5 freeboard ratio and a stagnant film model for mass transfer below the region of the tank affected by the lip exhaust).

7 The LVMS VOC emissions include about 1300 pounds of toluene and 175 pounds of ethylene glycol monobutyl ether.

8 LVMS does not comply with the existing Rule 67.9 limits for maskants since perc is not considered an exempt compound for aerospace coating operations. Therefore, a carbon adsorption add-on control system achieving 85% overall control would be used with a maskant containing only perc solvent, which performs better than the LVMS. In this case the proposed freeboard requirement would not be applicable due to the use of an add-on control system.

FACILITY B

Based on the 1993 emission inventory report, Facility B uncontrolled emissions of perc are 95,600 pounds per year. The emissions are controlled by carbon adsorption and the controlled emissions of perc are about 31,600 pounds per year. The maskants used at Facility B for the most part contain only perc as a solvent to make solvent recovery from the carbon adsorption system easier. Facility B' Permits to Operate contain permit conditions requiring the use of a carbon adsorber to control perc emissions as a VOC. If the proposed amendments to Rule 67.9 are adopted and perc is an exempt VOC for aerospace coating operations, Facility B would have to apply for a permit modification to cease use of the carbon adsorber. According to District policy, such an application would be subject to a health risk assessment.

The health risk from 85,000 pounds of uncontrolled perc emissions in 1989 was assessed as part of the AB2588 program. The excess risk of cancer due to perc at the maximum exposed individual (MEI) point for all toxic air contaminants was 41×10^{-6}. Based on this assessment, and assuming that the health risk is proportional to the perc emissions, the estimated health risk for 1993 operations are shown in the table below for emissions controlled by carbon adsorption and uncontrolled emissions. The increase in the excess risk of cancer for the uncontrolled operations over the controlled operations is about 30×10^{-6}. This violates the District's health risk criteria (1×10^{-6} excess cancer risk) for approving an application for modification. Therefore, the application to cease carbon adsorption control of the perc emissions would be denied, and no emissions increase would occur. This estimate of increased risk is possibly smaller than the actual risk increase because the MEI point for all toxic air contaminants may not coincide with MEI point for perc.

Facility B Maskant Emissions

Scenario	Perc emissions[1], lb/yr	Estimated risk x 10^6 at point of combined toxic MEI[2]
Current operation --Using carbon adsorber to comply with NSR emission limits	31,600	15
Perc exempt—Carbon adsorber not needed to comply with NSR emission limits[3] (proposed amended Rule 67.9)	95,600	46

1 Based on 1993 emission inventory of 95,600 lb/yr with an average 67% control efficiency.

2 Risk from perc alone. Estimated from 1989 AB 2588 emission inventory and associated risk assessment at MEI for all TACs combined. This may underestimate actual risk since MEI for perc may differ from the MEI for all TACs combined.

3 Facility B maskants contain only perc. Therefore, the maskants would meet the VOC content standards of proposed amended Rule 67.9, and the carbon adsorber would not be necessary.