SACRAMENTO METROPOLITAN
AIR QUALITY MANAGEMENT DISTRICT

STAFF REPORT

Proposed Amendments to

Rule 451, Surface Coating of Miscellaneous Metal Parts and Products

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BACKGROUND

Ground level ozone is a secondary pollutant formed from photochemical reactions of nitrogen oxides (NOx) and volatile organic compounds (VOC) in the presence of sunlight. Ozone is a strong irritant that adversely affects human health and damages crops and other environmental resources. As documented by the U.S. Environmental Protection Agency (EPA) in the most recent Criteria Document for ozone (U.S. EPA 2006), both short-term and long-term exposure to ozone can irritate and damage the human respiratory system, resulting in:

- decreased lung function;
- development and aggravation of asthma;
- increased risk of cardiovascular problems such as heart attacks and strokes;
- increased hospitalizations and emergency room visits; and
- premature deaths.

The District is currently designated as a nonattainment area for both the state and federal ozone standards. Since VOCs are a precursor to ozone, one of the strategies to control ozone pollution is to reduce VOC emissions from existing stationary sources. The projected 2011 VOC emission inventory for Sacramento County includes 29 tons per year for miscellaneous metal parts and products coatings and 25 tons per year for metal furniture and fixtures coatings.

Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings

On October 7, 2008, EPA promulgated a Control Techniques Guidelines (CTG) for Miscellaneous Metal and Plastic Parts Coatings (EPA-453/R-08-003, September 2008). The CTG contains Reasonably Available Control Technology (RACT) guidelines and recommendations, including VOC content limits, specific exemptions, and recommended work practice procedures, for coatings applied on six different substrate categories: miscellaneous metal parts and products, miscellaneous plastic parts and products, transportation plastic parts, business machine plastic parts, the metal and plastic parts of pleasure craft, and motor vehicle materials. Section 182(b)(2) of the federal Clean Air Act (CAA) requires the District to implement RACT for the source categories included in the CTG.

Rule 451, Surface Coating of Miscellaneous Metal Parts and Products

Rule 451 was first adopted on June 19, 1979 and last amended on September 25, 2008. The rule applies to coating, coating removal (stripping), surface preparation, and cleanup operations for miscellaneous metal parts and products. Miscellaneous metal parts and products include all metal parts and products which are not subject to other District coating rules.

Staff is proposing to amend Rule 451 to incorporate the requirements of the CTG for the miscellaneous metal parts and products category as required by the Clean Air Act. The proposed amendments will strengthen the existing limits on three coating categories of miscellaneous metal parts and products.

LEGAL MANDATES

Federal Mandates:

The District is designated as a severe nonattainment area for the federal 8-hour ozone standard. Federal Clean Air Act section 172(c)(1) specifies that State Implementation Plans (SIPs) for nonattainment areas must include "reasonably available control measures" (RACM), including "reasonably available control technology" (RACT), for sources of emissions. Section 182(b)(2)(A) of the CAA provides that for nonattainment areas classified as "moderate" or worse, states must revise their SIPs to include RACT for sources of VOC emissions for each category of VOC sources covered by all CTG documents issued after November 15, 1990, and prior to the area's date of attainment. EPA defines RACT as "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility," (44 FR 53761, September 17, 1979). Pursuant to CAA Sections 108(b) and (c), EPA periodically publishes information regarding available controls. In developing Control Techniques Guidelines, EPA evaluates, among other things, the sources of VOC emissions and the available control approaches for addressing these emissions, including the costs of such approaches. CTG documents establish the presumptive minimum recommendations for RACT.

On October 7, 2008, EPA promulgated a Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings (EPA-453/R-08-003, September 2008). EPA's CTG provides the presumptive minimum recommendations for RACT for various coating categories, including coatings for miscellaneous metal parts and products. The proposed amendments to Rule 451 will satisfy the RACT requirements for coating operations for miscellaneous metal parts and products. In addition, many of the limits in Rule 451 are more stringent than the recommended limits in the CTG and, therefore, may be viewed as going beyond the RACT requirements.

State Mandates:

The District is designated "serious" nonattainment for the state ozone standard. The California Clean Air Act requires areas designated as "serious" to adopt control measures required in Sections 40919 of the California Health and Safety Code (HSC). Amendments to Rule 451 (adopted on September 25, 2008) were included in the "2009 Triennial Report and Plan Revision" (SMAQMD, 2010). The plan commitment for this rule also satisfies the following requirements:

- California HSC Section 40919 requires districts designated serious nonattainment for ozone to adopt Best Available Retrofit Control Technology (BARCT) for all existing permitted sources. BARCT means an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of sources (HSC Section 40406).
- Transport Mitigation Emission Control Requirements: Title 17, Section 70600 of the California Code of Regulations requires that districts within the areas of origin of transported air pollutants, as identified in Section 70500(c), include sufficient emission control measures (including "all feasible measures" and BARCT) in their attainment plans for ozone to mitigate the impact of pollution sources within their jurisdictions on ozone concentrations in downwind areas commensurate with the level of contribution. An upwind district must comply with the transport mitigation planning and

implementation requirements set forth in this section regardless of its attainment status, unless the upwind district complies with the requirements of Section 70601.

The limits proposed for Rule 451 have been implemented in the SCAQMD and are effective in SJVAPCD on January 1, 2011. Coatings that meet the proposed limits are available and are currently being used. Staff considers the proposed limits for Rule 451 to be feasible. The proposed amendments to Rule 451 will meet the BARCT requirements and fulfill the state plan commitment.

CTG RECOMMENDATIONS FOR MISCELLANEOUS METAL PARTS AND PRODUCTS COATINGS

The Control Techniques Guidelines document for Miscellaneous Metal and Plastic Parts Coatings (CTG) contains recommended VOC content limits for coatings applied to miscellaneous metal parts and products. This section addresses how the current rule coating categories match up with the CTG categories and limits, and how the CTG recommendations can be incorporated into Rule 451.

The following table is a comparison of coating categories and VOC limits in the CTG for Miscellaneous Metal and Plastic Parts Coatings and the current version of Rule 451:

CTG Recommendation for Metal Parts			**Current Version of Rule 451**		
Coating Category	**Air Dried**	**Baked**	**Coating Category**	**Air Dried**	**Baked**
Camouflage	420	420	Camouflage	420	360
Electrical Insulating	420	420	Electrical Insulating	340	275
Extreme High-Gloss	420	360	Extreme High Gloss	420	360
Extreme Performance	420	360	Extreme Performance	420	420*
Heat-Resistant	420	360	Heat Resistant	420	360
Metallic	420	420	Metallic/Iridescent	420	420
Prefabricated Architectural Multi-Component	420	280	Prefabricated Architectural Component	420	275
			Aluminum Coating for Window Frames and Door Frames	420	420*
Prefabricated Architectural One-Component	420	280	Prefabricated Architectural Component	420	275
			Aluminum Coating for Window Frames and Door Frames	420	420*
Pretreatment Coatings	420	420	Pretreatment Wash Primer**	420	420
Etching Filler	420	420			
Silicone Release	420	420	Silicone Release Coating	420	420
Solar-Absorbent	420	360	Solar Absorbent	420	360
General One-component	340	280	Non-Skid	420*	360*
			All Other Coatings	340	275
General Multi-component	340	280	All Other Coatings	340	275

CTG Recommendation for Metal Parts			Current Version of Rule 451		
Coating Category	**Air Dried**	**Baked**	**Coating Category**	**Air Dried**	**Baked**
High Performance Architectural	740	740	All Other Coatings	340	275
High Temperature	420	420			
Military Specification	340	280			
Mold-Seal	420	420			
Pan Baking	420	420			
Repair and Touch Up	420	360			
Vacuum-Metalizing	420	420			
Drum Coating, New Exterior	340	340			
Drum Coating, New, Interior	420	420			
Drum Coating, Reconditioned, Exterior	420	420			
Drum Coating, Reconditioned, Interior	500	500			

*This VOC limit in the current version of Rule 451 is less stringent than the VOC limit listed for the corresponding coating category in the CTG.

**In the current version of Rule 451, the definition of "pretreatment wash primer" does not limit the solids content by weight. In the CTG, the definition of "pretreatment coating" limits the solids content to no more than 12 percent by weight, and the definition of "etching filler" limits the solid to less than 23 percent solids by weight. Both categories, pretreatment coating and etching filler, are categorized as pretreatment wash primer in the current version of Rule 451.

The coating categories for aluminum coatings for window frames/door frames and non-skid coatings that are included in the current version of Rule 451 are not listed as coating categories in the CTG. Aluminum coatings for window frames/door frames would be classified under the CTG as "prefabricated architectural one-component or multi-component coatings," and non-skid coatings would be classified under the CTG as "general one-component coatings."

The recommended VOC limits for the coating categories in the CTG, except for the VOC limit for the baked aluminum coatings for window frames/door frames, baked extreme performance, and non-skid coatings, are either equivalent to or less stringent than the VOC limits listed in the corresponding categories in the current version of Rule 451. Therefore, to meet the RACT requirements, Staff is proposing to lower the VOC limits for baked aluminum coatings for window frames/door frames, baked extreme performance, and non-skid coatings in Rule 451 to be consistent with the VOC limits recommended by the CTG.

SUMMARY OF PROPOSED AMENDMENTS

The significant proposed amendments for Rule 451 are summarized below. For a detailed list of changes, see Appendix B.

Rule 451 Proposed Amendments

The following table summarizes the proposed VOC content limits of coatings for miscellaneous metal parts and products (other coating categories remain unchanged):

	VOC CONTENT: Grams/Liter (Lbs/Gal) less water and exempt compounds	
EXISTING COATING CATEGORY	**AIR DRIED**	**BAKED**
Aluminum Coating for Window Frames and Door Frames	420 (3.5)	420 (3.5) Effective (six months after date of adoption) 275 (2.3)
Extreme Performance	420 (3.5)	420 (3.5) Effective (six months after date of adoption) 360 (3.0)
Non-Skid This category will sunset on (six months after date of adoption) and thereafter be subject to All Other Coatings	420 (3.5)	360 (3.0)
NEW COATING CATEGORY	**AIR DRIED**	**BAKED**
Etching Filler	420 (3.5)	420 (3.5)

The proposed amendments to Rule 451 would make the rule consistent with other District coating rules by expanding the applicability to include any person who supplies, sells, offers for sale, manufactures, distributes, uses, applies, or solicits the use or application of any coating, coating remover (stripper), surface preparation material, and cleanup material for miscellaneous metal parts and products.

The following proposed amendments to Rule 451 would make the rule at least as stringent as the recommended requirements in the CTG applicable to coatings for miscellaneous metal parts and products:

- Add an exemption for automobile and light duty-truck coating operations during manufacture on an assembly line, which are covered by a different CTG (Control Techniques Guidelines for Automotive and Light-Duty Truck Assembly Coatings, EPA-453/R-08-006, September 2008). Currently, there are no sources in Sacramento County to which this CTG applies.
- Reduce the VOC limits for the following types of miscellaneous metal parts and products coatings: baked aluminum coatings for window frames/door frames and baked extreme performance coatings.
- Reduce the VOC limit for non-skid coatings to be equivalent to the recommended limits in the CTG. The non-skid coating would be classified as “general one-component coatings” in the CTG because this coating category is not specifically listed in the CTG. Six months after the date of adoption, the VOC limits for this coating category would be the same limits as for the “all other coatings” category. Staff is proposing to sunset this coating category to simplify the rule. Any non-skid coating applied to miscellaneous metal parts and products would be subject to the VOC content of the “all other coatings” category.
- Add and/or modify definitions for consistency with the CTG.

EMISSIONS IMPACT

The District's projected emission inventory for 2011 is 29 tons per year from miscellaneous metal parts and products coatings and 25 tons per year from metal furniture and fixture coatings, not including solvent usages. Even though there are changes to VOC limits, no sources are affected by the proposed amendments to this rule, and therefore, no emission reductions are expected.

COST IMPACT

Section 40703 of the California HSC requires that the District consider and make public its findings relating to the cost effectiveness of implementing an emission control measure.

No sources are affected by the proposed amendments to this rule. As a result, no additional compliance costs will be incurred.

INCREMENTAL COST EFFECTIVENESS

The District is required to identify one or more potential control options that achieve the emission reduction objective for the regulation (California Health and Safety Code Section 40920.6).

No source is affected by the proposed amendment to the rule, and therefore, no incremental cost effectiveness analysis is necessary for this rule.

SOCIOECONOMIC IMPACT ANALYSIS

HSC Section 40728.5 requires a district to perform an assessment of the socioeconomic impacts before adopting, amending, or repealing a rule that will significantly affect air quality or emission limitations. The District Board is required to actively consider the socioeconomic impacts of the proposal and make a good faith effort to minimize adverse socioeconomic impacts.

HSC Section 40728.5 defines "socioeconomic impact" as follows:

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

Type of industry or business, including small business, affected by the proposed rule: Rule 451 applies to any person/business that performs coating of miscellaneous metal parts and products. These operations are performed in a shop environment. This rule also applies to the manufacturers, sellers or distributors of coatings and solvents for these operations.

Impact on employment and economy in the District of the proposed rule: Staff has found that all applicable facilities are already in compliance with the amendments to Rule 451; therefore, no impact is expected from the proposed amendments to Rule 451.

Range of probable costs, including costs to industry or business, including small business of the proposed rule: No costs are expected for industry/business subject to Rule 451.

Availability and cost effectiveness of alternatives to the proposed rule: An alternative to the proposed amendments to the rule is to not adopt them. However, the District is required by Section 182(b)(2) of the Clean Air Act to revise the SIP to include RACT rules for source types covered by CTG documents. If the proposed amendments to Rule 451 are not adopted, the District will not fulfill the federal RACT requirements or state mandates discussed previously in the Legal Mandates section.

Emission reduction potential of the proposed rule: The proposed amendments to Rule 451 are not expected to achieve emission reductions.

Necessity of adopting the rule: Staff finds that the proposed amendments to Rule 451 are necessary to satisfy the requirements of Section 182(b)(2) of the federal Clean Air Act, which requires the District adopt RACT for CTG source categories. The proposed amendments to Rule 451 are needed to implement RACT requirements for miscellaneous metal parts and products as recommended by the CTG (EPA-453/R-08-003, September 2008).

PUBLIC COMMENTS

Staff held a public workshop to discuss the proposed amendments on September 16, 2010. A public notice for the workshop was mailed to interested and potentially affected parties, including all permitted stationary sources (except for gas stations and dry cleaners), industry associations, coating manufacturers and suppliers, and all persons who have requested to receive rulemaking notices. The notice was also published as a display ad in the Sacramento Bee and posted on the District web site. The draft rule and staff report were available for public review prior to the public workshop.

Staff received comments and questions concerning Rule 451 at the workshop, as well as written comments from coating manufacturers and distributors. CARB and EPA reviewed the proposed amendments and had no comments. All comments and responses are included in Appendix C.

Oral comments at the workshop as well as subsequent written comments from two coating manufacturers expressed concern that VOC-compliant pretreatment wash primers may not be available if they must meet the proposed addition of solids content to the definition of the coating category.

In the current version of Rule 451, pretreatment wash primers must contain at least 0.5% acid

by weight, but there is no restriction on solids content. Staff had proposed to add to this definition a restriction limiting the solids content to no more than 12% by weight, consistent with the definition in the CTG. However, the CTG also contains another coating category, "etching filler," that is also applied to bare metal surfaces and must contain at least 0.5% acid by weight and less than 23% solids by weight. The CTG VOC limits for etching filler are the same as the limits for pretreatment wash primer (baked: 420 g/l, air-dried: 420 g/l). Therefore, in response to these comments, Staff is proposing to add the category "etching filler," with the same VOC limits as pretreatment wash primer, consistent with the CTG.

Several other comments and questions concerned the initial proposal to prohibit atomization of cleanup and surface preparation materials. The commenters stated that if surface preparation or cleanup could not be performed using a spray, then operators would need to prepare surfaces or clean equipment using solvent-laden towels and rags, a less effective cleaning technique that may also increase spillage and VOC emissions. Staff had proposed this workplace practice because the CTG had recommended that equipment cleaning be performed without atomizing the cleaning solvent with all spent solvents captured in closed container. However, the CTG did not recommend a VOC limit for the materials used for cleanup or surface preparation. The VOC limit for cleanup and surface preparation materials in Rule 451 is 25 g/l. Staff discussed this issue with EPA. EPA responded that the stringent 25 g/l VOC content limit for cleanup and surface preparation materials would be considered an equivalent control to the prohibition of atomizing cleanup and surface preparation materials, and this workplace practice need not be required. South Coast AQMD Rule 1171, Surface Cleaning Operations, also does not require these work practice requirements when the cleaning solvent contains 25 g/l or less. Therefore, in response to comments, Staff is no longer proposing to prohibit atomization of cleanup and surface preparation materials.

ENVIRONMENTAL REVIEW AND COMPLIANCE

Staff received a comment that tertiary butyl acetate should be exempted from the definition of VOC to reduce the flammability risks associated with cleaning and gun-flushing with acetone-based cleaners and coatings. With the current proposal, Staff is not proposing to change the VOC limit of 25 g/l for cleaning materials that was established in the September 2008 amendments of Rule 451 and went into effect in September 2009; therefore, this would not be an impact of the current proposal. In addition, the rule does not dictate the use of any specific compound. Nevertheless, Staff has considered the potential flammability risks associated with the use of acetone.

Many conventional cleaning solvents, such as toluene, xylene, methyl ethyl ketone and isopropyl alcohol are as flammable as acetone. Acetone has a lower flashpoint (-4 °F) than conventional solvents. However, its lower explosive limit of 26,000 ppmv in air is higher than other solvents, and this concentration is not likely to be achieved in a well-ventilated shop environment. In addition, businesses are required to report the storage and use of flammable materials to local fire departments, which in turn require permits with conditions that may include specifications for sprinkler systems, electrical systems, ventilation, and containment.

Coating facilities in Sacramento are already using acetone for cleaning operations, and Staff is not aware of any flammability problems associated with its use. Requirements for solvents to contain 25 g/l or less VOC have been in effect in South Coast AQMD Rule 1171, Solvent

Cleaning Operations, since 2003. Sources there have largely used acetone to comply, with no significant adverse effects. Therefore, Staff considers the flammability concerns regarding the use of acetone to be unwarranted.

California Public Resources Code (Section 21159) requires an environmental analysis of the reasonably foreseeable methods of compliance. The proposed amendments to Rule 451 are not expected to require any source within the District to change its operations to comply.

Staff finds that the proposed rule is exempt from the California Environmental Quality Act as an action by a regulatory agency for protection of the environment (Class 8 Categorical Exemption, Section 15308 State CEQA Guidelines) and because it can be seen with certainty that there is no possibility that the activity in question may have a significant adverse effect on the environment. (Section 15061(b)(3), State CEQA Guidelines).

FINDINGS

The California Health and Safety Code (HSC), Division 26, Air Resources, requires local districts to comply with a rule adoption protocol as set forth in Section 40727 of the Code. This section has been revised through legislative mandate to contain six findings that the District must make when developing, amending, or repealing a rule. The findings and their statutory definitions are listed in the following table.

Rule 451 – Required Findings

Finding Required	Finding for Rule 451
Authority: The District must find that a provision of law or of a state or federal regulation permits or requires the District to adopt, amend, or repeal the rule.	The District is authorized to adopt and amend Rule 451 by California Health and Safety Code (HSC) Sections 40001, 40702, 40716, 41010 and 41013. [HSC Section 40727(b)(2)].
Necessity: The District must find that the rulemaking demonstrates a need exists for the rule, or for its amendment or repeal.	It is necessary to amend Rule 451 to comply with the Reasonably Available Control Technology requirements of the federal Clean Air Act Sections 172(c)(1) and 182(b)(2)(A), and BARCT requirements of HSC Section 40919(a)(3) [HSC Section 40727(b)(1)].
Clarity: The District must find that the rule is written or displayed so that its meaning can be easily understood by the persons directly affected by it.	Staff has reviewed the proposed amendments to the rule and determined that it can be understood by the affected parties. In addition, the record contains no evidence that people directly affected by the rule cannot understand the rule. [HSC Section 40727(b)(3)].
Consistency: The rule is in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or state or federal regulations.	The proposed amendments to the rule do not conflict with, and are not contradictory to, existing statutes, court decisions, or state or federal regulations. [HSC Section 40727(b)(4)].
Non-Duplication: The District must find that either: 1) The rule does not impose the same requirements as an existing state or federal regulation; or (2) that the duplicative requirements are necessary or proper to execute the powers and duties granted to, and imposed upon the District.	The proposed amendments to the rule do not duplicate any existing state or federal regulations. [HSC Section 40727(b)(5)].

Finding Required	Finding for Rule 451
Reference: The District must refer to any statute, court decision, or other provision of law that the District implements, interprets, or makes specific by adopting, amending or repealing the rule.	In adopting the proposed amendment to the rule, the District is implementing the requirements of HSC Sections 40919(a)(3) and Sections 172(c)(1) and 182(b)(2)(A) of the federal Clean Air Act. [HSC Section 40727(b)(6)]
Additional Informational Requirements: In complying with HSC Section 40727.2, the District must identify all federal requirements and District rules that apply to the same equipment or source type as the proposed rule or amendments.	Appendix A includes a comparison with federal requirements. [HSC Section 40727.2].

REFERENCES

1. Sacramento Metropolitan Air Quality Management District, 2009 Triennial Report and Plan Revision, January 28, 2010.

2. San Joaquin Valley Air Pollution Control District. Final Draft Staff Report for Proposed Amendments to Rule 4603, Surface Coating of Metal Parts and Products, and Rule 4684, Polyester Resin Operations, August 2009.

3. South Coast Air Quality Management District, Rule 1107 – Coating of Metal Parts and Products, January 6, 2006.

4. South Coast Air Quality Management District, Rule 1171 – Solvent Cleaning Operations, August 2, 2002.

5. South Coast Air Quality Management District, Rule 1171 – Solvent Cleaning Operations, May 1, 2009.

6. U.S. Environmental Protection Agency. “Air Quality Criteria for Ozone and Related Photochemical Oxidants”, (EPA 600/R-05/004aF), February 2006.

7. U.S. Environmental Protection Agency. Control Techniques Guidelines for Automobile and Light-Duty Truck Assembly Coatings. (EPA-453/R-08-006), September 2008.

8. U.S. Environmental Protection Agency. Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings. (EPA-453/R-08-003), September, 2008.

APPENDIX A

40727.2 Matrix for Proposed Amendments to Rule 451, Surface Coating of Miscellaneous Metal Parts and Products

		Comparative Requirements	
Elements of Comparison	**Specific Provisions**	**Proposed Rule 451**	**Best Available Control Technology (BACT)/ Lowest Achievable Emission Rate (LAER)**
Applicability		Any person who supplies, sells, offers for sale, manufactures, distributes, uses, applies, or solicits the use or application of any coating for miscellaneous metal parts and products within the District.	Surface coating of miscellaneous metal parts and products
Exemptions		Usage of materials exceeding VOC content less than 55 gal/yr Coating of prefabricated architectural components or structures not coated in a shop environment, motor vehicles, aircraft or aerospace vehicles, components, and tooling, cans, coils, or magnetic wire; magnetic data storage discs; metal parts of pleasure crafts Adhesives, safety-indicating coatings, stencil coatings; conformal coatings; hand lettering coatings; automobile and light-duty truck assembly coatings Coatings from aerosol containers less than or equal to 1 liter Touch-up coating and repair coating operations, application of texture coating	
Averaging Provisions		None	
Units		Grams of VOC per liter of material or pounds of VOC per gallons of material	

		Comparative Requirements	
Elements of Comparison	**Specific Provisions**	**Proposed Rule 451**	**Best Available Control Technology (BACT)/ Lowest Achievable Emission Rate (LAER)**
Emissions Limits		Emission limits specified in Sections 301-303 and 305.3-305.4, or install emissions control equipment specified in Section 306 with overall system efficiency of ≥ 90%.	For spray booths with an exhaust less than 30,000 acfm, use low VOC materials achieved in practice and high-transfer efficiency equipment. For spray booths with an exhaust flow rate greater than or equal 30,000 acfm, use an air pollution control device when it is cost-effective; otherwise, use low VOC materials achieved in practice and high transfer efficiency equipment.
	Compliance alternatives	Emission control equipment	Emission control equipment
Work Practice Requirements		Closed containers for disposal of materials used for surface preparation, cleanup and coating removal; closed containers; minimizing spills, and conveyance of VOC materials using closed containers or pipes.	Closed containers for disposal of materials used for surface preparation, cleanup and coating removal; closed containers; cleanup to take place in an enclosed system, no atomizing of cleanup or surface preparation solvent.
Monitoring/ Records	Recordkeeping	Currently used list of materials; product data sheets of all materials; daily and monthly usages; recordkeeping for air pollution control equipment if used.	
	Frequency	Daily and/or monthly for coating usages. Records kept for a continuous five-year period.	
Monitoring/ Testing	Test Methods	Applicable test methods are specified under Section 502 of the rule.	
	Frequency	No frequency specified in the rule	

APPENDIX B
LIST OF CHANGES TO RULE

Rule 451, Surface Coating of Miscellaneous Metal Parts and Products

NEW SECTION NUMBER	EXISTING SECTION NUMBER	PROPOSED CHANGES
102	Same	Expanded the applicability to include any person who supplies, sells, offers for sale, manufactures, distributes, uses, applies or solicits the use or application of any miscellaneous metal parts and products coatings, coating removers (strippers), surface preparation material, and cleanup material.
110	Same	Revised section references.
111	Same	Revised language for consistency with other District rules. Removed the coating operation description specific to each District rule. Updated and capitalized rule titles.
N/A	111.6	Removed section because Rule 456 was already listed.
112	Same	Revised section references.
113	Same	Changed the term “provisions” to “requirements” for rule consistency.
114	Same	Revised language for clarification.
114.2	Same	Changed to the use the term “texture coating” consistent with the CTG (EPA-453/R-08-003).
116	N/A	Added exemption for automobile and light-duty truck assembly coating operations.
205	206	Moved definition of “application equipment” to be in alphabetical order.
206	205	Section renumbered.
207	N/A	Added definition of “automobile” to clarify the automobile and light-duty assembly operations exemption.
208	N/A	Added definition of “automobile and light-duty truck assembly operations” to clarify the automobile and light-duty assembly operations exemption.
209-213	207-211	Section renumbered.
214	212	Revised language for clarification.
NA	213	Removed “conformal coating” definition because it is no longer used in the rule.
215	214	Section renumbered.
216	215	Revised the definition of “electrical insulating coating” to be consistent with the CTG.
217	216	Section renumbered.
N/A	217	Removed “enclosed gun cleaner” definition because it no longer relates to any requirement.
219	N/A	Added definition of “etching filler” consistent with the CTG.
220	219	Section renumbered.
221	220	Revised definition of “extreme high gloss coating” to update the test method and added “at least” to show at least 75% reflectance.
222-228	221-227	Sections renumbered.

NEW SECTION NUMBER	EXISTING SECTION NUMBER	PROPOSED CHANGES
229	N/A	Added definition of "light-duty truck" to clarify the automobile and light-duty assembly operations exemption.
230	228	Section renumbered.
231	N/A	Added definition of "mask coating" consistent with the CTG.
232-235	229-232	Section renumbered.
236	233	Changed "non-compliant coating" to "non-compliant material". Revised definition to apply to all coatings, coating removers, cleaning or surface preparation materials that do not comply with the VOC limits and are not exempt. Section references updated.
237	234	Added sunset date for "non-skid coating" coating category after which these coatings are subject to "all other coating" category.
238	235	Section renumbered.
239	236	Revised definition of "pretreatment wash primer" to include percent solids by weight, consistent with the CTG.
240	237	Revised definition of "repair coating" for clarification.
241-246	238-243	Section renumbered.
247	244	Revised definition of "stencil coating" for clarification.
248	245	Section renumbered.
249	246	Revised the term "textured finish" to "texture coating" to be consistent with the CTG.
250-252	247-249	Section Renumbered.
301	Same	Lowered VOC content limits, effective 6 months after date of adoption, for baked aluminum coating for window frames and door frames and baked extreme performance coatings, consistent with the CTG. Added sunset date for non-skid coatings and updated section references. Added new coating category for "etching filler" and its VOC limits, consistent with the CTG.
302	Same	Removed expired date. Added new coating category for "etching filler" and its VOC limits.
305	Same	Removed expired dates and sections that have expired.
306	Same	Revised section references.
401	Same	Revised language to include coating removers, surface preparation and cleanup materials for rule consistency.
402	Same	Revised section references.
403	Same	Revised section references.
404	Same	Revised section references.
407	Same	Revised section references.
501	Same	Added section reference.
501.1	Same	Clarified in section 501.1.a that requirement is applicable to coating removers and surface preparation and cleanup materials, in addition to the coatings. Revised section references.
501.2	Same	Revised section references.
501.3	Same	Clarified that requirement is applicable to coating removers and surface preparation and cleanup material in addition to coatings. Revised section references.

NEW SECTION NUMBER	EXISTING SECTION NUMBER	PROPOSED CHANGES
501.5	Same	Removed expired date and section that has expired.
502.5	Same	Revised section reference.
502.7	N/A	Added EPA test method to determine the solids content for coatings.
502.8	502.7	Section renumbered.

APPENDIX C
COMMENTS AND RESPONSES

Public Workshop for Rules 101, 451 and 459
September 16, 2010, 2:00 PM

Attendees:

Allen Cripe, CalTrans
Brad Gacke, SMUD
Brett Hayes, Hayes Brothers Collision
Brittany Marcotte, Nestle Waters North America
Bryon Theis, 3M
Cerlut Fre, Sherwin Williams
Clifford Waters, Sherwin-Williams
Dale Schell, Jims Color Corner
Dan Porreau, Lyondell Basell
Danny Nunez, Finish Masters
Dave Fisher, Morrison Paint Supply
Dave Harshbarger, MAC's Distribution
David Luer, MAC's Distribution
David M'Clune, California Autobody Association
David Roznowski, Lyondell Basell
Debra Wynne, Original Paint
Dennis Barkman, Colors On Parade
Deran Berggne, Terry's Paint
Eric Cooc, Precision Autobody
George Contos, Blomberg Window
Glenn Galbaugh, DuPont Company
Grey Calhorn, Finish Master
Jason Kowen, Spies Hecker
Jeanette Duncan, Ellis & Ellis Sign Systems
Jeremy Tiner, Warehouse Paint
Jim Brett, CalTrans
Jim Cropper, CARB
Josh Cox, Jerry's Paint
June Livingston, BERC
Kelly Hitt, Nestle Waters North America
Kendall McCane, Jerry's Paint
Kevin Holley, MAC's Distribution
Kevin Thompson, Thompson Sales
Larry Medrano, PBE Inc
Lisa Dobeck, Caltrans
Mark McCleskey, Jerry's Paint
Mark Tavianini, CARB
Matt Stevens, Shanahan's Autobody
Mike Veney, Sherwin Williams
Pat Newcomb, Jerry's Paint
Pat Stickle, Angel Warehouse
Peter Bezech, California Autobody Association
Phil Brown, PPG Industries
Rich Mott, Jerry's Paint
Rick Hays, MAC's Distribution
Robert Blair, Finish Mater
Shane Whitcomb, Ellis & Ellis Sign Systems
Stan Brecetu, 3M
Steve Nesbitt, PCL
Terry Klemin, Matrix
Todd Everitt, Valspar Refinish
Tom Walther, Jims Color Corner
Vern Heffner, City of Sacramento Fleet Management

Oral Comments From the Public Workshop

Note: A combined workshop was held for proposed amendments to Rule 451, Rule 101 and Rule 459. Only comments pertaining to the proposed amendments to Rule 451 are shown below. Other comments made during the public workshop will be added in the Staff Report for Rule 101 or the Staff Report for Rule 459.

Comment #1 Why is the definition of "pretreatment wash primer" in Rule 451 limited to no more than 12 percent solids by weight? The 12 percent weight content restriction is not feasible and no products are available.

Response: The solids content proposed to be added to the definition of "pretreatment

wash primer" is consistent with the CTG. However, in response to this comment and similar written comments from two coating manufacturers, Staff is now proposing to add to Rule 451 the category "etching filler," which is a category contained in the CTG. The CTG states "etching filler" is defined as a coating which contains at 0.5% acid by weight and less than 23% solids by weight, and is used instead of pretreatment wash primer followed by a primer. This effectively splits the current pretreatment wash primer category (which has no limit on solids content) into two categories, depending on the solids content. The VOC limits for pretreatment wash primer and etching filler in Rule 451 are the same: 420 g/l for both air-dried and baked coatings. The CTG limits for these categories are 420 g/l for both air-dried and baked coatings. A test method to determine the solids content of coatings was added as Section 502.7.

Comment #2 Why is the weight percent solids for pretreatment wash primer in the proposed amendments to Rule 451 different in the proposed amendments to Rule 459? Rule 459 limits the solid content to no more than 16 percent by weight, which is feasible.

Response: The solids content of no more than 16% solids by weight in the definition of Pretreatment Coating is feasible to meet the proposed VOC limit of 660 grams per liter according the CARB's Suggested Control Measure for Automotive Coatings. The current limit in Rule 451 for pretreatment wash primer is 420 grams per liter which is consistent with the CTG. Staff is not proposing to raise the solids content for pretreatment wash primers. However, Staff is proposing to add the coating category, etching filler, to Rule 451. See response to comment #1.

Comment #3 The proposed amendments to Rule 451 prohibit atomization of cleanup materials. Does this affect gun cleaners?

Response: The CTG recommended that equipment cleaning be performed without atomizing the cleaning solvent with all spent solvents captured in closed containers. However, the CTG did not recommend VOC content limits for these cleaning solvents. Rule 451 currently limits the VOC for cleanup and surface preparation materials to no more than 25 g/l. Staff discussed this issue with EPA. EPA responded that the 25 g/l requirement for cleanup and surface preparation materials would be considered an equivalent control to the prohibition of atomizing cleanup and surface preparation materials. Staff is no longer proposing to prohibit atomization of cleanup and surface preparation materials. Therefore, the proposed amendments will not affect gun cleaners.

Comment #4 Can an operator put cleanup and surface preparation materials in a spray bottle and use it? If the alternative is to pour cleanup or surface preparation material on a towel or rag, then this method will likely create spillage which will result in more VOC emissions.

Response: See response to comment #3. Staff is no longer proposing to prohibit atomization of cleanup and surface preparation materials. Therefore,

operators can use any method or technique for cleaning operations or surface preparation as long as the VOC content of the cleanup or surface preparation material is no more than 25 g/l.

Comment #5 Regarding the stripper limit in Rules 451 and 459, can the District allow for a low use exemption for stripper exceeding the 200 g/l limit? For products that meet the EPA's NESHAP (HHHHHH), these products have higher limits than the 200 g/l limit.

Response: The 200 g/l VOC limit for strippers is contained in the current, SIP-approved version of Rule 451. Adding a low use exemption would be a relaxation to the rule requirements. Facilities using strippers that contain methylene chloride must also comply with the National Emission Standards for Hazardous Pollutants for paint stripping (40 CFR Part 63, Subpart HHHHHH) as appropriate. Strippers that meet the 200 g/l VOC limit but don't contain methylene chloride are currently available.

Written Comments from Lyondell Basell

Comment #6: Lyondell Basell requests that Tertiary Butyl Acetate (TBAc) be exempted for coatings in Rule 451. TBAc is an excellent solvent for industrial coatings including those listed in several categories in Rule 451. The cancer risk associated with using TBAc was based on a rodent tumor endpoint that has no relevance to human health since humans do not produce the protein responsible for tumor formation. Therefore, there is no reason to believe that TBAc used in Rule 451 will pose any chronic risk to humans.

Response: The proposed changes to the VOC limits will not impact any sources in the District. Coating products are available on the market that comply with the VOC limits specified in the rule. At this time, it is not necessary to exempt TBAc as a VOC for the purpose of complying with limits in Rule 451. No specific exemption for TBAc is proposed to be included in Rule 451. However, further evaluation of TBAc will be done as part of the revisions to Rule 101, General Provisions and Definitions, to be considered in the first quarter of 2011.

Comment #7: Lyondell requests that the AQMD propose an exemption for TBAc in Rule 451. This will greatly reduce the flammability risks and emissions associated with cleaning and gun-flushing with acetone-based cleaners and coatings.

Response: See response to Comment #6. The current VOC limit of 25 g/l for cleaning materials was established in the September 2008 amendments for Rule 451 and went into effect in September 2009. Since the effective date of this requirement, coating facilities in Sacramento have been using acetone for their cleaning operations. Staff is not aware of any flammability problems associated with its use. Sources in the South Coast AQMD have been using primarily acetone to comply with the 25 g/l VOC limit for solvents that took effect in 2003, with no significant adverse effects.

Written Comments from PPG Industries

Comment #8: PPG suspects the pretreatment wash primer definition is patterned after SCAMQD Rule 1107. PPG asks that if the District chooses to follow the precedent set by SCAQMD that they also include a relating coating type, etching filler. Both of these coatings typically use the same resin chemistries and are intended to be applied directly to metal for corrosion resistance. We propose that either the 12% solid maximum limit be withdrawn from the definition of Pretreatment Coating or the Etching Filler coating type be added to Rule 451.

Response: To be consistent with the CTG and SCAQMD Rule 1107, Staff is proposing to add the coating category "etching filler" to Rule 451. See response to comment #1.

Written Comments from DuPont Performance Coatings

Comment #9 There is inconsistency between the definitions of "pretreatment wash primer" in the proposed amendments to Rule 451 and "pretreatment coating" in proposed amendments to Rule 459. For all intent purposes, the coating types are synonymous. We would request that the current definition of Pretreatment Coating be retained as expressed in Rule 459, that is, 0.5% acid by weight and no more than 16% solids by weight.

Response: See response to comment #2.