Proposed Amended Rule 1469.1
Spraying Operations Using Coatings Containing Chromium

Working Group Meeting #1
March 4, 2020
10:00 AM
Call in #: (866) 705-2554
Passcode: 275953
Meeting Agenda

• Background
• Rulemaking Process
• Information Gathering
• Existing Rule Provisions and Potential Amendments
• Next Steps
BACKGROUND
Regulatory History

• Rule 1469.1 adopted on March 4, 2005
• Purpose: To reduce hexavalent chromium emissions from the spraying of chromium-containing coatings
• Applicability: All operations where chromium-containing coatings are sprayed
• Chromium-containing coatings are typically used in the aerospace industry
  ◦ Also present in some commercial industries
Point and Fugitive Emission Sources

Point Source
Emissions originate from a fixed point, such as a stack

Fugitive Source
Facility generated emissions which become airborne, excluding exhaust stack emissions

Cross draft
Why are Fugitive Emissions a Concern?

- Fugitive particles can land on surfaces inside and outside of facilities.
- Activities (e.g., foot or vehicular traffic) or wind can disturb these particles, causing them to become airborne.
- Airborne fugitive emissions can impact surrounding areas.
Recent Observations

• Community ambient monitoring found high levels of hexavalent chromium near four metal finishing facilities

• Both point and fugitive emissions from chrome spraying and associated operations identified as potential sources

• Hexavalent chromium emissions were also identified from other metal finishing operations
General Concepts for Proposal to Amend Rule 1469.1

• Ensure pollution controls are properly operated to minimize point source emissions
• Address uncontrolled sources of hexavalent chromium that are associated with chromium spraying operations
• Update and/or add provisions to minimize fugitive emissions
• Update rule requirements based on 2015 Revised OEHHA Guidelines for Estimating Health Risk
Hexavalent Chromium

- Hexavalent chromium is a toxic air contaminant that is a potent carcinogen
- Mainly produced by industrial processes
- Long-term inhalation of hexavalent chromium can increase the risk of developing lung and nasal cancers
RULEMAKING PROCESS
Overview of Rule Development Process

- Information Gathering and Analysis
- Preliminary Draft Rule and Staff Report
- Public Workshop
- Draft Rule and Staff Report
- Public Hearing

Working group and stakeholder meetings continue throughout process
Rule 1469.1 Working Group

• Comprised of stakeholders including industry, environmental groups, community members, and public agencies

• Working group meetings are held throughout the rule development process and open to the public

• Objective
  ◦ Build consensus and work through issues
  ◦ Opportunity for early input
  ◦ Develop a rule that affected facilities can implement

• Assists staff in understanding:
  ◦ Key issues and concerns
  ◦ Industry terms, industry practices, etc.
  ◦ Applicable technologies
Stakeholder Input

- Stakeholders can provide input during working group meetings and throughout the rulemaking process.
- Early input is strongly encouraged to help develop proposed rule amendments and to address issues.
- Working Group Meetings, Individual Meetings, and Site Visits allow stakeholders to dialogue directly with staff and discuss individual issues.
INFORMATION GATHERING
Universe of Facilities

• Approximately 110 facilities in the South Coast Air Basin spray chromium-containing coatings
  ◦ Approximately 280 spray booths
  ◦ Average of 2.5 spray booths per facility

• Greatest concentration of facilities are located in Los Angeles County

• Facility list was compiled by reviewing the South Coast AQMD database, supplemented with:
  ◦ Internet searches
  ◦ Industry association contacts
Site Visits

- Conducted 16 facility site visits
  - 30 paint spray booths observed

- All spray booths were equipped with HEPA or ULPA filters
  - 25 spray booths equipped with HEPA filters
  - 5 spray booths equipped with ULPA filters
Spray Booths

- Properly operated spray booths can minimize fugitive emissions (e.g., using pressure drop gauges to monitor filter status)
- Open-faced spray booths can be subject to cross drafts, resulting in fugitive emissions
- By operating open-faced spray booths within enclosures, cross drafts can be minimized
- Staff observed open-faced spray booths within enclosures as well as enclosed spray booths
Spray Booth Clean-up Activities

- Spray booth surfaces can become laden with dried coatings that can be tracked out by foot or vehicle traffic and become fugitive.
- Proper cleaning techniques can minimize material build-up and reduce the potential for fugitive emissions.
- Rule 1469.1 specifies certain provisions when removing protective floor, wall, or exhaust coverings but a frequency is not specified.
- Staff observed that facilities conduct spray booth clean-up using varying techniques (e.g., use of liners) and frequencies (e.g., based on usage or at regular intervals).
Sanding, Scuffing, and Demasking Activities

- Dried coatings that are sanded and scuffed can be a source of fugitive emissions
- Dried coatings on masking materials that are removed can flake and also be a source of fugitive emissions
- Rule 1469.1 currently does not require that these operations be vented to pollution controls
- Pollution controls can capture particulates and minimize fugitive emissions from sanding, scuffing, and demasking activities
- Staff observed that some facilities use pollution controls such as downdraft tables to control fugitive emissions from these operations
Housekeeping

• Clean-up activities around spray booths or other sources can generate fugitive emissions which can include hexavalent chromium

• Rule 1469.1 requires clean-up activities be conducted in a manner to minimize fugitive emissions but does not specify areas to be cleaned, clean-up procedures, or minimum frequencies

• Staff observed use of different housekeeping techniques (e.g., HEPA vacuum, mopping) and frequencies (e.g., daily procedures)
Paint Racks and Stands

- Dried coatings can accumulate on paint racks and break off during transport.
- Broken off dried coatings can be crushed by foot or vehicular traffic and become fugitive.
- Rule 1469.1 does not establish procedures for the storage and handling of paint racks and stands.
- Staff observed that some facilities store racks and stands indoors or within enclosed spray booths.
Paint Mixing

- Dried paint spilled or dropped from mixing activities can be disturbed and become fugitive emissions
- Rule 1469.1 currently does not specify where paint mixing can occur
- Staff observed some facilities mixing paint within spray booths or other enclosed areas vented to pollution controls
Handling/Storage/Disposal Practices

- Dried coatings on personal protective equipment (PPE) and other materials can become fugitive during handling, storage and disposal activities.
- Rule 1469.1 establishes procedures for removal of spray booth protective floor, wall or exhaust coverings but not for other items with dried coatings.
- Staff observed several practices and procedures for handling, storage, and disposal of materials with dried coatings (e.g., materials collected and transferred to enclosed bag within a spray booth then disposed of in closed container).
Survey

• Staff distributed a survey to facilities via email and mail on 1/31/2020

• Objective is to gather information about equipment, operations, and general industry practice and approach to housekeeping and waste disposal

• 23 surveys returned so far
# Overview of Survey

<table>
<thead>
<tr>
<th>Section</th>
<th>Requested Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Facility Information</td>
<td>General facility information</td>
</tr>
<tr>
<td>B. Coatings Usage</td>
<td>• Amount and types of chromium-containing coatings used&lt;br&gt;• Availability of alternative coatings</td>
</tr>
<tr>
<td>C. Paint Spray Booths</td>
<td>Overview of spray booths that are in use in facilities</td>
</tr>
<tr>
<td>D. Spray Booth Maintenance and Emissions Testing</td>
<td>• Spray booth maintenance procedures.&lt;br&gt;• Tests conducted to determine efficacy</td>
</tr>
<tr>
<td>E. Personal Protective Equipment</td>
<td>Procedures in place for handling contaminated PPE</td>
</tr>
<tr>
<td>F. Demasking Operations</td>
<td>Procedures in place for handling demasking materials</td>
</tr>
<tr>
<td>G. Mechanical Removal of Dried Coatings</td>
<td>Procedures in place to control emissions from scuffing, sanding, or grinding of coated parts</td>
</tr>
</tbody>
</table>
### Overview of Survey (continued)

<table>
<thead>
<tr>
<th>Section</th>
<th>Requested Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H. Racks and Stands</strong></td>
<td>Placement and storage of racks and stands in the facility (typically contaminated with overspray)</td>
</tr>
<tr>
<td><strong>I. Recoating Process</strong></td>
<td>Overview of recoating process for already coated parts</td>
</tr>
<tr>
<td><strong>J. Housekeeping</strong></td>
<td>Cleaning methods and schedules for areas where chromium-containing coatings are present</td>
</tr>
<tr>
<td></td>
<td>• Applies to wet and dried coatings</td>
</tr>
<tr>
<td><strong>K. Storage and Disposal</strong></td>
<td>Storage and disposal procedures for various contaminated materials</td>
</tr>
<tr>
<td><strong>L. Additional or Proactive Control Measures</strong></td>
<td>Additional steps facilities take to prevent and/or control emissions</td>
</tr>
<tr>
<td><strong>M. Plot Plan</strong></td>
<td>Highlight areas of potential fugitive emissions</td>
</tr>
</tbody>
</table>
EXISTING RULE PROVISIONS AND POTENTIAL AMENDMENTS
Purpose - (a)

Applicability - (b)

Definitions - (c)

Purpose

◦ To reduce hexavalent chromium from spray coating operations

Applicability

◦ Any operation in which coatings containing hexavalent chromium are sprayed
◦ Not applicable to thermal spraying operations

Definitions

Potential Amendments

Expand Applicability to include associated activities (demasking/scuffing/grinding)

Move thermal spraying operations to Exemptions

Update Definitions to be consistent with recent rules
Control System Capture Efficiency and Enclosure Standards [paragraph (d)(1)]
- Overspray must be captured
- Inward face velocity standard of 100 fpm
- Exhaust system operation after spraying has ceased

Transfer Efficiency [paragraph (d)(2)]
- Application methods specified

Amend enclosure and capture efficiency requirements to further minimize fugitive emissions and to be consistent with recent toxics rules

Considering building enclosure requirements
Requirements - (d) (continued)

Three compliance options [paragraph (d)(3)]:

Emission limits [subparagraph (d)(3)(A)]
- Applicable only to facilities with no other hexavalent chromium sources except spraying
- Values based on previous OEHHA guidance
- Demonstrated through compliance plan

Pollution control equipment [subparagraph (d)(3)(B)]
- Rated particulate filtration efficiency of 99.97%, for PM >0.3 microns (HEPA)

Cancer risk limits [subparagraph (d)(3)(C)] based on:
- Health Risk Assessment, or
- Risk Reduction Plan, or
- Permit conditions

Evaluate need for compliance options
Focus on pollution control devices as primary compliance approach
Compliance Plan [paragraph (d)(4)]
- By January 1, 2006, facilities complying with emission limits [subparagraph (d)(3)(A)] or cancer risk [subparagraph (d)(3)(C)] must submit detailed facility information

New Control Equipment Submittal [paragraph (d)(5)]
- By July 1, 2006, submit applications for new or modified equipment as specified in compliance plan

Compliance Notification [paragraph (d)(6)]
- By July 1, 2007, notify Executive Officer of compliance option selected
Housekeeping [paragraph (d)(7)]
- Conduct spraying and cleaning in a manner that minimizes fugitive atomized paint particles

- Update/standardize housekeeping requirements to minimize emissions and be consistent with recent air toxics rules
- Add requirements for uncontrolled emission sources (demasking/sanding/scuffing)
Emission Inventory/HRA - (e)
New/Modified Sources - (f)
Source Test Results - (g)

Emission Inventory and Health Risk Assessment
- Applicable to facilities complying with cancer risk [subparagraph (d)(3)(C)]

Addition of New Sources and Modifications to Existing Sources
- Permit applications submitted between January 1, 2006 and July 1, 2007, required to demonstrate the compliance option selected

Source Test Results
- Used to calculate facility emission limit specified by subparagraph (d)(3)(A)

Potential Amendments

Reevaluate applicability of subdivisions (e), (f), and (g)

Considering periodic testing provisions [see potential amendments for subdivision (i)]
Exemptions - (h)

Compliance Test Methods - (i)

Exemptions

◦ Partial exemptions for touch up and repair operation spraying provided activities are not conducted outside of building [paragraph (h)(1)]

Compliance Test Methods

◦ Capture efficiency - Method 204 [paragraph (i)(1)]
◦ Transfer efficiency determinations if alternative application methods are proposed [paragraph (i)(2)]

Potential Amendments

Reevaluate exemptions, add thermal spraying

Considering source test and parametric monitoring methods
Recordkeeping Requirements
- Product purchases/usage [paragraph (j)(1)]
- Air pollution control equipment monitoring [paragraph (j)(2)]

Monitoring Requirements
- Weekly filter and equipment inspections [paragraph (k)(1)]
- Pressure drop monitoring [paragraph (k)(2)]

Reporting Requirements
- Annual report required for facilities complying with emission limits [subparagraph (d)(3)(A)] or cancer risk [subparagraph (d)(3)(C)]
NEXT STEPS
Next Steps

- Hold monthly working group meetings
- Collect/compile survey data
- Continue site visits
- Stationary Source Committee in August
- Governing Board Meeting in October
PAR 1469.1 Staff Contacts

Yunnie Osias  
(909) 396-3219  
yosias@aqmd.gov

Michael Laybourn  
(909) 396-3066  
mlaybourn@aqmd.gov

Jillian Wong  
(909) 396-3176  
jwong1@aqmd.gov

Susan Nakamura  
(909) 396-3105  
snakamura@aqmd.gov