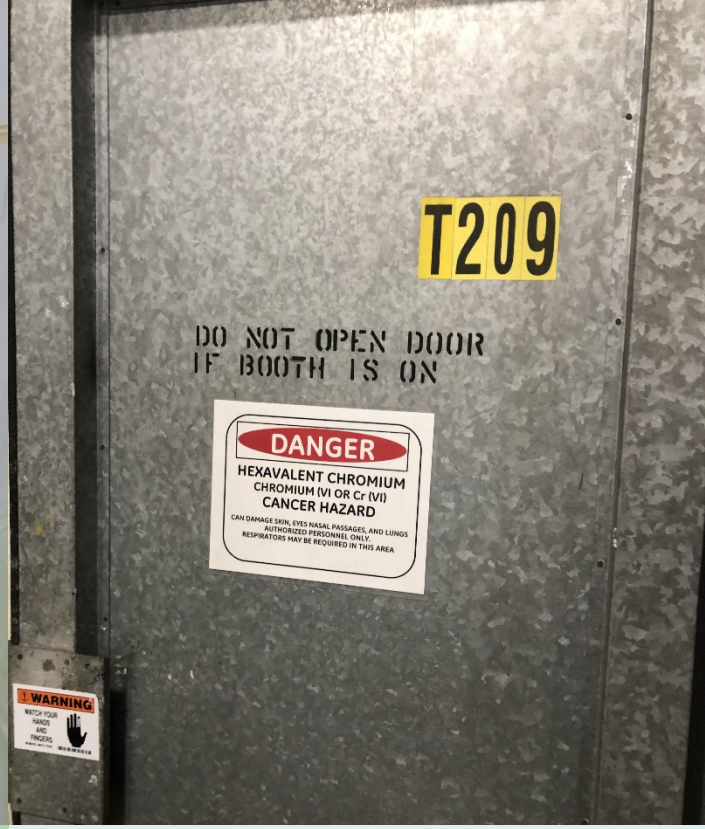


Proposed Amended Rule 1469.1

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

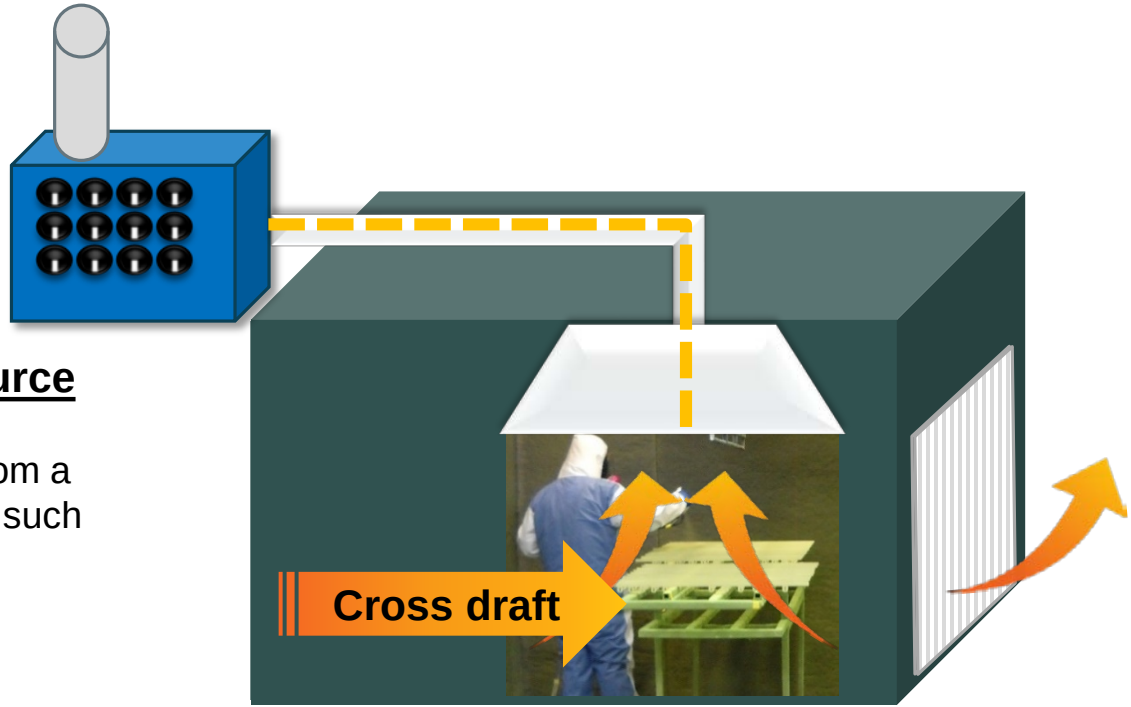
BACKGROUND

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

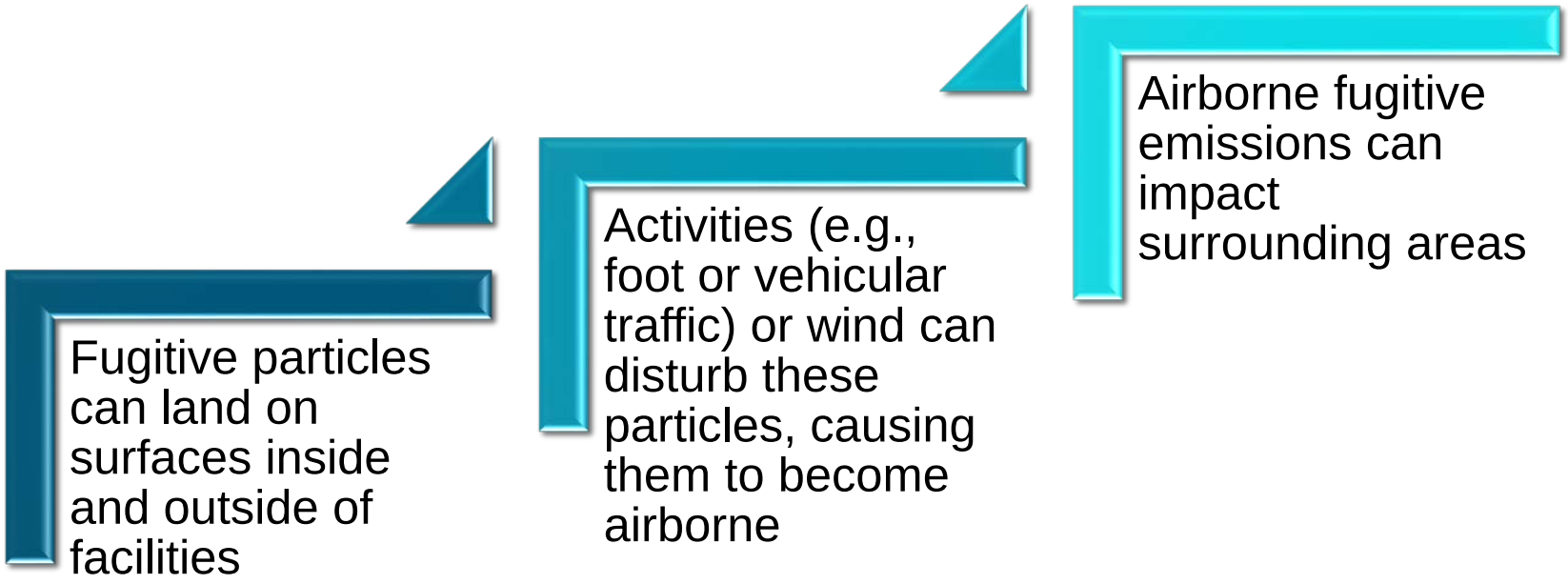
Point and Fugitive Emission Sources

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



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

Why are Fugitive Emissions a Concern?



Recent Observations

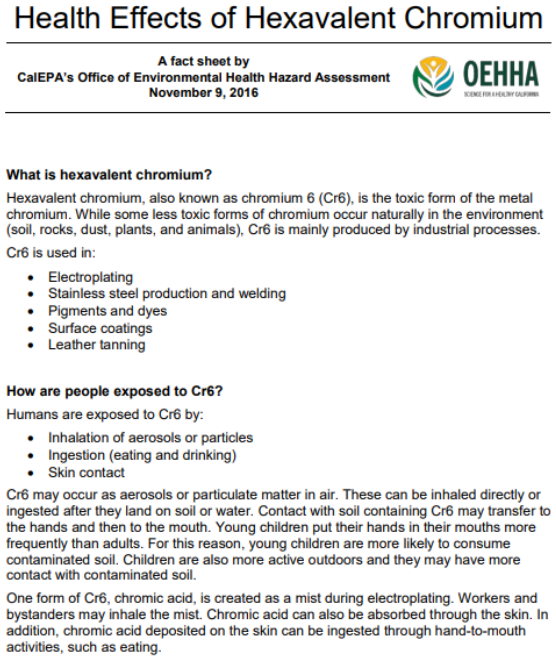
- Community ambient monitoring found high levels of hexavalent chromium near four metal finishing facilities
- Both point and fugitive emissions from chrome spraying and associated operations identified as potential sources
- Hexavalent chromium emissions were also identified from other metal finishing 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



Health Effects of Hexavalent Chromium

A fact sheet by
CalEPA's Office of Environmental Health Hazard Assessment
November 9, 2016

OEHHA

What is hexavalent chromium?

Hexavalent chromium, also known as chromium 6 (Cr6), is the toxic form of the metal chromium. While some less toxic forms of chromium occur naturally in the environment (soil, rocks, dust, plants, and animals), Cr6 is mainly produced by industrial processes.

Cr6 is used in:

- Electroplating
- Stainless steel production and welding
- Pigments and dyes
- Surface coatings
- Leather tanning

How are people exposed to Cr6?

Humans are exposed to Cr6 by:

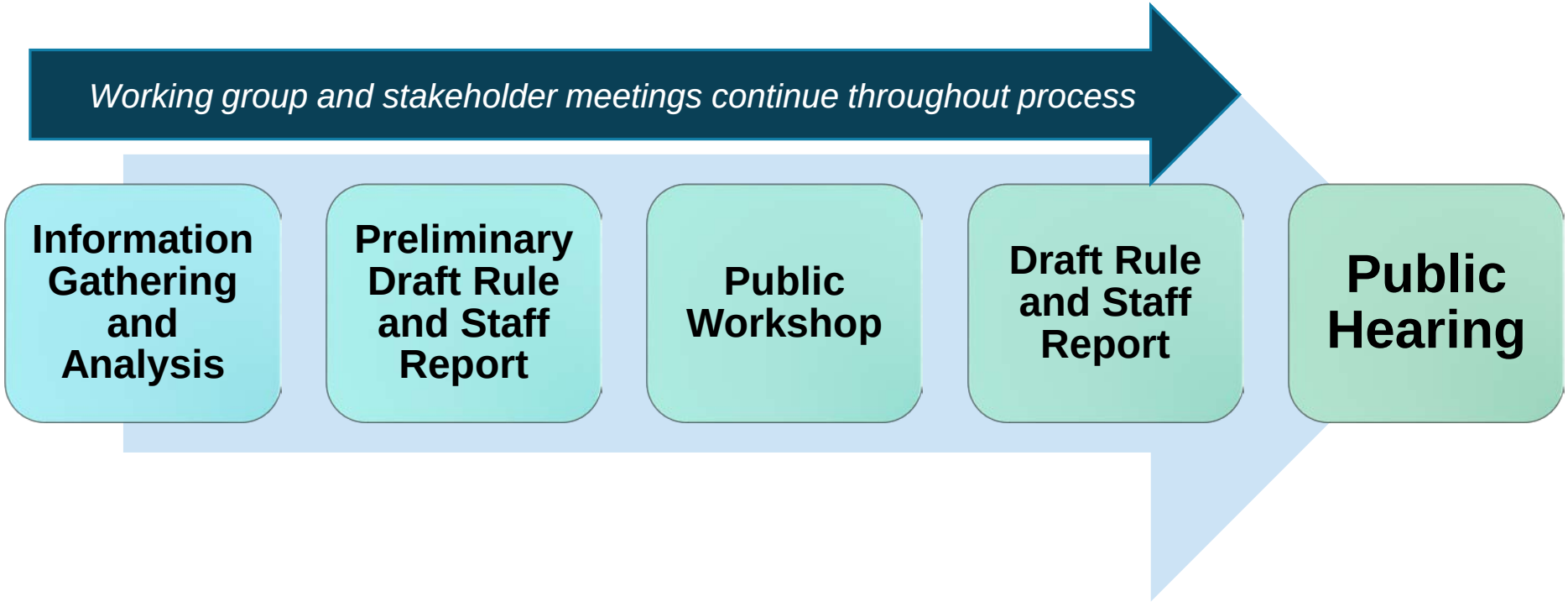
- Inhalation of aerosols or particles
- Ingestion (eating and drinking)
- Skin contact

Cr6 may occur as aerosols or particulate matter in air. These can be inhaled directly or ingested after they land on soil or water. Contact with soil containing Cr6 may transfer to the hands and then to the mouth. Young children put their hands in their mouths more frequently than adults. For this reason, young children are more likely to consume contaminated soil. Children are also more active outdoors and they may have more contact with contaminated soil.

One form of Cr6, chromic acid, is created as a mist during electroplating. Workers and bystanders may inhale the mist. Chromic acid can also be absorbed through the skin. In addition, chromic acid deposited on the skin can be ingested through hand-to-mouth activities, such as eating.

RULEMAKING PROCESS

Overview of Rule Development Process

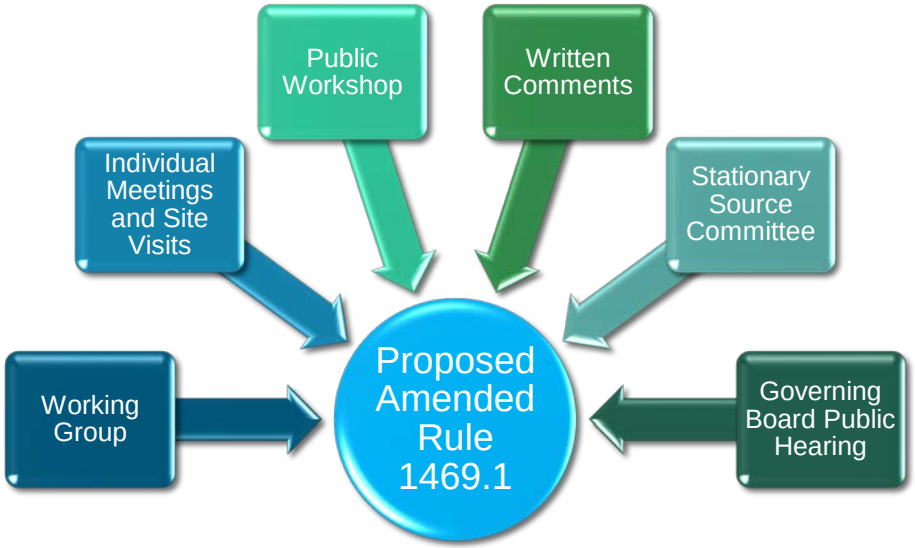


Rule 1469.1 Working Group

- 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

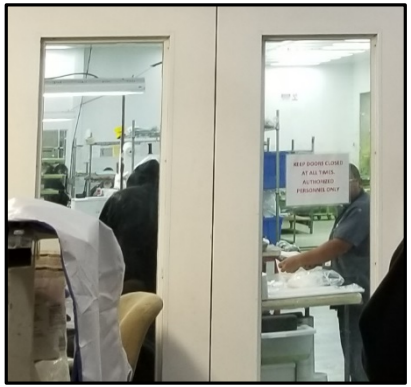
Universe of Facilities

- 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

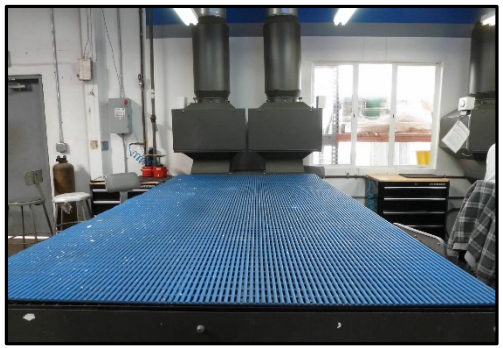


- Properly operated spray booths can minimize fugitive emissions (e.g., using pressure drop gauges to monitor filter status)
- Open-faced spray booths can be subject to cross drafts, resulting in fugitive emissions
- By operating open-faced spray booths within enclosures, cross drafts can be minimized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

Spray Booth Clean-up Activities

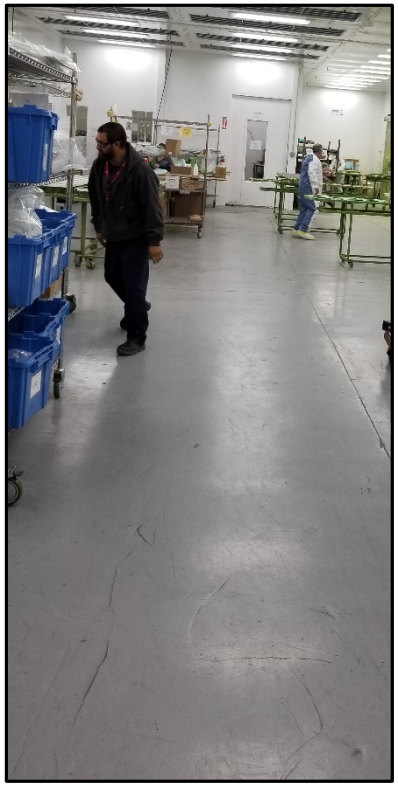
- Spray booth surfaces can become laden with dried coatings that can be tracked out by foot or vehicle traffic and become fugitive
- Proper cleaning techniques can minimize material build-up and reduce the potential for fugitive emissions
- Rule 1469.1 specifies certain provisions when removing protective 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)

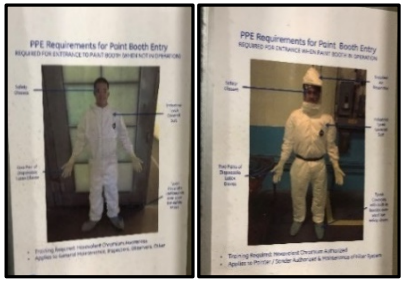
Paint Racks and Stands

- 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

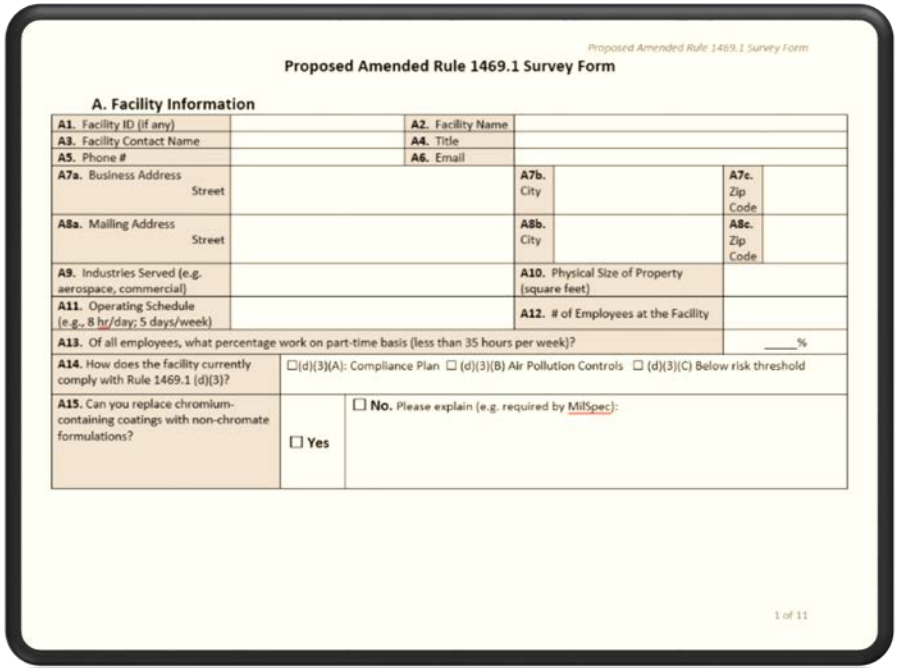
Handling/Storage/Disposal Practices



- 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



Proposed Amended Rule 1469.1 Survey Form

Proposed Amended Rule 1469.1 Survey Form

A. Facility Information

A1. Facility ID (if any)		**A2.** Facility Name			
A3. Facility Contact Name		**A4.** Title			
A5. Phone #		**A6.** Email			
A7a. Business Address Street		**A7b.** City		**A7c.** Zip Code	
A8a. Mailing Address Street		**A8b.** City		**A8c.** Zip Code	
A9. Industries Served (e.g. aerospace, commercial)		**A10.** Physical Size of Property (square feet)			
A11. Operating Schedule (e.g., 8 hr/day; 5 days/week)		**A12.** # of Employees at the Facility			
A13. Of all employees, what percentage work on part-time basis (less than 35 hours per week)?					____%
A14. How does the facility currently comply with Rule 1469.1 (d)(3)?	☐(d)(3)(A): Compliance Plan ☐ (d)(3)(B) Air Pollution Controls ☐ (d)(3)(C) Below risk threshold				
A15. Can you replace chromium-containing coatings with non-chromate formulations?	☐ Yes	☐ **No.** Please explain (e.g. required by MilSpec):			

1 of 11

Overview of Survey

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

Overview of Survey *(continued)*

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

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

Requirements (d)

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

Potential Amendments

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

Potential Amendments

Evaluate need for compliance options

Focus on pollution control devices as primary compliance approach

Requirements - (d) *(continued)*

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

Potential Amendments

Reevaluate applicability of paragraphs (d)(4), (d)(5), and (d)(6)

Requirements - (d) *(continued)*

Housekeeping [paragraph (d)(7)]

- Conduct spraying and cleaning in a manner that minimizes fugitive atomized paint particles

Potential Amendments

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 - (j)
Monitoring - (k)
Reporting - (l)

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

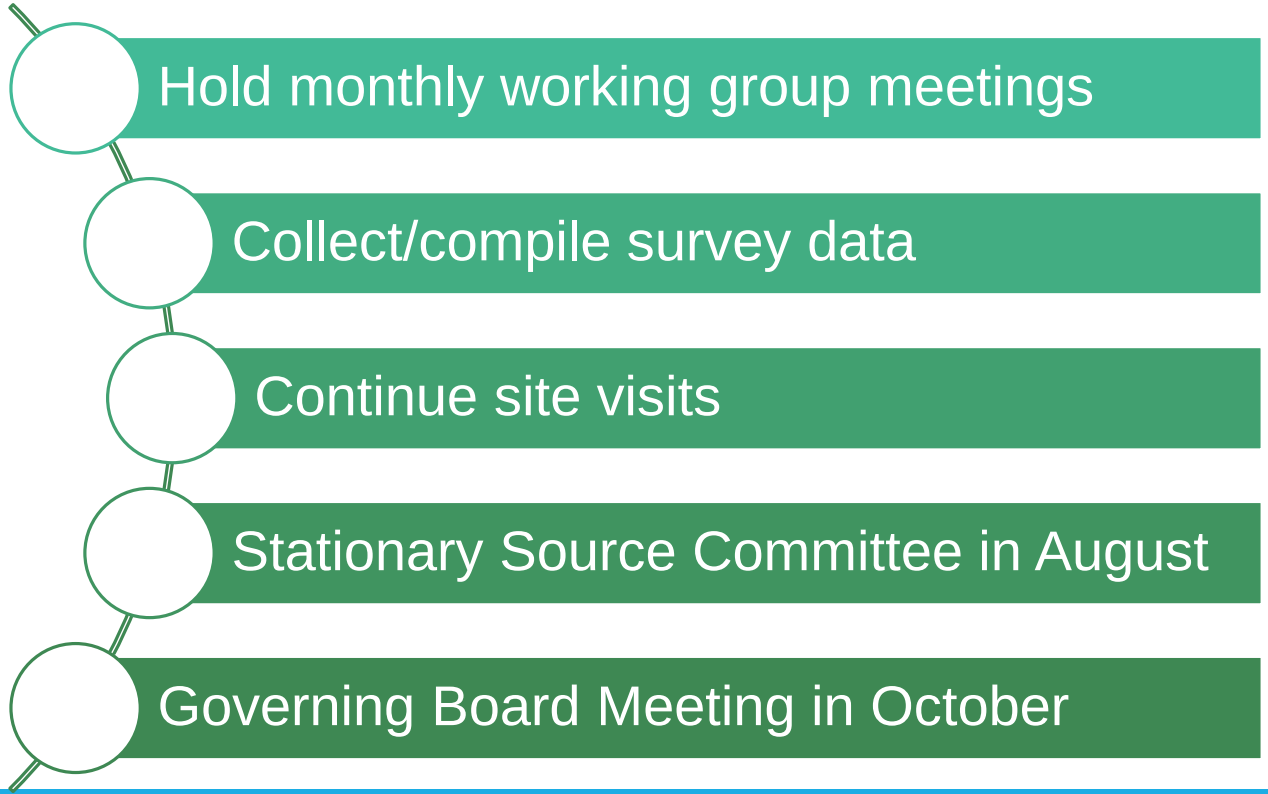
- Annual report required for facilities complying with emission limits [subparagraph (d)(3)(A)] or cancer risk [subparagraph (d)(3)(C)]

Potential Amendments

Reevaluate control device monitoring and testing requirements

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

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