WORKING GROUP MEETING #6
PROPOSED AMENDED RULE 1407
CONTROL OF EMISSIONS OF ARSENIC, CADMIUM AND NICKEL FROM NON-CHROMIUM METAL MELTING OPERATIONS

August 30, 2018

SCAQMD Headquarters

Diamond Bar, CA

Agenda

- Summary of Working Group Meeting (WGM) #5
- Discussion of unresolved issues from WGM #5
  - Methods of controlling arsenic emissions
- Continuation of rule concepts to address:
  - Exemptions
  - Building Enclosures and Cross-Draft Minimization
  - Housekeeping
- Rule development schedule

Summary of Working Group Meeting #5

- Overview of rule development process and schedule, including key milestones
- PAR 1407 to address non-chromium metal melting operations
- Discussed concepts for PAR 1407
  - Purpose and Applicability
  - Exemptions
  - Definitions
  - Point Source Controls
  - Emission Control Device Monitoring
  - Source Test Requirements
  - Source Test Methodology

Rule Concepts - Overview

- Rule concepts provided to promote discussion
- Stakeholder input and further information can change concepts as they are developed into rule language
- General approach will focus on measures used in recent toxic rules that address toxic metal particulate emissions, including fugitive emissions

Point Source Requirements

PAR 1407 Point Source Initial Concepts Summary of Issues Discussed

Issues Discussed at Last Working Group Meeting	Follow-Up
▪ Requirements to control toxic air contaminants with minimum control efficiency of 99% • Similar to recently-approved toxic rules	None
▪ Recommending initial source test to demonstrate 99% control efficiency ▪ Can allow use of outlet mass emission rate based on initial source test for subsequent source tests	None
▪ Control of arsenic emissions • Reference to recent source test of lead furnace that determined dry filter media (like baghouse) may not be effective for arsenic control • Stakeholder requested link to actual test referenced in presentation	Additional information provided in Slide # 8
▪ Require that capture systems meet design criteria and ventilation velocities outlined in Industrial Ventilation Manual	None

Point Source Requirements – Background Information for Arsenic

- Elemental arsenic and arsenic compounds, including arsenic trioxide (As_2O_3) are toxics and are subject to regulation
- Physical properties indicate that arsenic (element) can convert from solid to vapor at temperatures as low as 1137 degrees F
  - Well below typical furnace operating temperatures
- Arsenic may oxidize to As_2O_3 which vaporizes even at room temperature; [boiling point (As_2O_3) ≃ 869 degrees F]
- Arsenic emissions will likely need to be controlled by some type of vapor control device
  - Lead facility improved arsenic controls to >99% by retrofitting with HEPA and wet scrubber to provide secondary filtration for existing baghouse system

Point Source Requirements – Background Information for Arsenic *(Continued)*

- Recent source test (report issue date 10/17/2013) of lead furnace operations determined that dry filter media (like baghouse) less effective for arsenic vapor control
  - http://www.aqmd.gov/docs/default-source/exide/exide-sourcetestaug-sept.pdf?sfvrsn=2
  - Refer to pages 5, and 15 through18
- Owners or operators will be required to control arsenic, cadmium and nickel emissions by a minimum of 99%
  - Rule amendment is not requiring mandatory use of a wet scrubber; however stakeholders should be aware of vapor control issue

Exemptions

Low Throughput Exemption – Current Rule 1407

- Rule currently exempts operations subject to Rule 1420 from point source requirements
- Rule also exempts metal melting operations from most of the requirements of the rule based on:
  - Low throughput: facilities that melt ≤ 1 ton per year

Concepts for Low Throughput Exemption – PAR 1407

- Operations that melt ≤ 1 ton per year of raw materials will only be required to maintain records to demonstrate low process rates
- Staff is proposing a limited exemption for facilities processing ≤ 100 tons per year of raw materials provided the following toxic air contaminant limits are maintained
  - Arsenic < 0.0005 lb/hr
  - Cadmium < 0.018 lb/hr; and
  - Nickel < 0.02 lb/hr
  - Facilities that qualify for limited exemption would only be subject to periodic source testing, housekeeping, building enclosure, and recordkeeping requirements

Metal or Alloy Purity Exemption - Current Rule 1407

Rule currently exempts facilities or furnaces that melt a metal or alloy from most of the requirements of the rule based on:

- Purity: < 0.004 percent cadmium and < 0.002 percent arsenic

Metal or Alloy Purity Exemption – PAR 1407

- PAR 1407 will maintain the current purity limits and include two additional requirements to qualify for the exemption
  - Nickel content <0.07% by weight; and
  - The amount of raw materials processed limited to ≤ 100 tons per month
- Facilities that qualify for purity exemption would only be subject to housekeeping, enclosure, and recordkeeping requirements

Building Enclosure Requirements

Building Enclosures - Overview

- Building enclosure consists of a permanent containment structure, completely enclosed with a floor, walls and a roof to prevent exposure to the elements, with limited openings to allow access
  - A room within a building with a floor, walls, and a roof is also an enclosure
- Benefits of building enclosures:
  - Provides a secondary containment of fugitive emissions
  - Minimizes cross drafts
  - Optimizes the collection efficiency of control devices

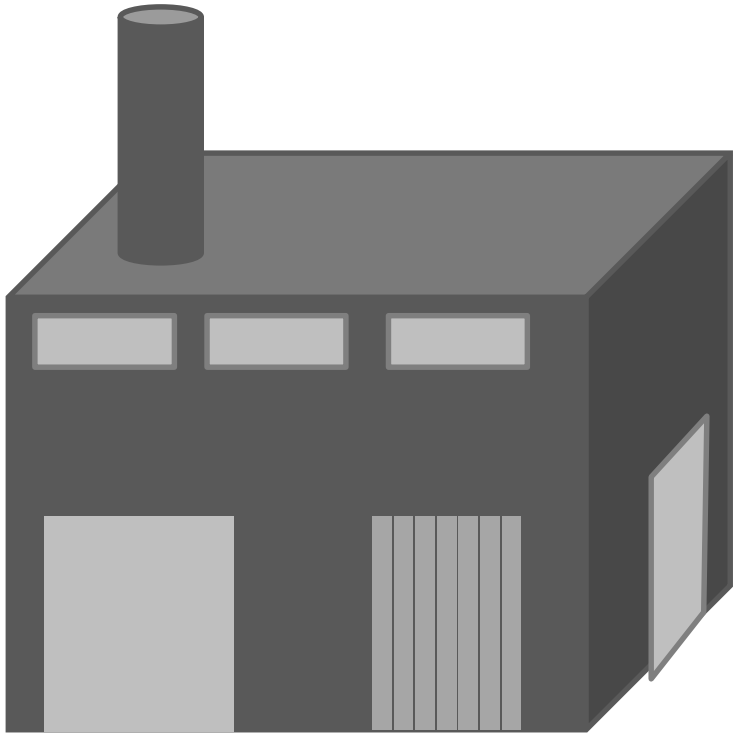
Building Enclosures – Current Rule 1407

- Rule 1407 currently does not have provisions that require that metal melting operations be conducted within a building enclosure

Building Enclosures – PAR 1407

- Require the use of building enclosures for areas where metal melting, grinding, and cutting operations are conducted
- Require building enclosure openings that open to the exterior and are on opposite ends, not be opened simultaneously, except for the passage of people, equipment or vehicles and for a maximum of two hours daily

Cross Draft Minimization – PAR 1407



- Acceptable methods to minimize cross-draft conditions:
  - Closing openings, except when moving parts, people, vehicles, or equipment through the openings
  - Automated roll-up doors;
  - Overlapping plastic strip curtains;
  - Vestibules;
  - Airlock system; or
  - Alternative methods approved by the Executive Officer that meet the same objective to minimize cross-draft conditions

Building Enclosure Maintenance – PAR 1407

- Inspect any enclosure at least once a calendar month for breaches that could result in fugitive dust
- Repair breaches within 72 hours of discovery
  - Owner or operator may request extension (beyond 72 hours) by calling 1-800-CUT-SMOG

Building Enclosures Conflicts – PAR 1407

- Executive Officer notification required if any of the enclosure methods (such as automatic roll-up doors, vestibules, etc.) or opposite end opening restriction is shown to conflict with requirements of following agencies:
  - Federal OSHA
  - California OSHA
  - Municipal codes or other agency requirements
- Executive Officer notification due:
  - Within 30 days after date of rule adoption for facilities or operations existing before date of rule adoption
  - Prior to initial start-up for all other operations

Housekeeping

Housekeeping Requirements - Overview

- Housekeeping provisions are designed to minimize fugitive dust in and around building enclosures where metal melting operations are located
- Fugitive metal dust that accumulates on surfaces can become airborne and potentially expose surrounding land uses
- PAR 1407 housekeeping provisions will be more comprehensive than current Rule 1407 and will be largely based on provisions included in other toxic rules that have been recently amended or adopted (Rules 1420, 1420.1, 1420.2 and 1430)

Housekeeping Requirements - Current Rule 1407

Rule 1407 currently includes the following housekeeping provisions that are designed to prevent release of fugitive emissions:

- Dust-forming materials including dross, ash or feed materials shall be limited to enclosed storage areas
- Material collected by particulate matter control equipment shall be discharged into closed containers and completely sealed
- Surfaces that are subject to foot and vehicular traffic shall be vacuumed, wet mopped or otherwise maintained

Housekeeping Requirements - PAR 1407

- PAR 1407 will maintain the housekeeping provisions included in current Rule 1407 – with added specificity and consistency with other recently adopted toxic rules
- Require the use an approved cleaning method including:
  - Wet wash
  - Wet mop
  - Damp cloth
  - Low pressure spray nozzle
  - HEPA vacuum
  - Other alternative method as approved by the Executive Officer

Housekeeping Areas - PAR 1407

Weekly use of an approved cleaning method is required where:

- Metal melting operations are conducted
- Metal-containing wastes from housekeeping activities are stored, disposed of, recovered or recycled and material collected from particulate matter control devices; and
- Grinding or metal cutting operations are conducted

Additional Housekeeping Requirements - PAR 1407

- Prohibit the use of compressed air or dry sweeping for housekeeping or other cleaning activities
- Require quarterly cleaning of collection vents, openings and ducting of each control device associated with metal melting operations
- Require transport of materials capable of generating fugitive dust, including slag, dross or any other metal-containing waste generated from housekeeping, and construction and maintenance, within a closed conveyor system or in sealed leak-proof containers

Comparison: Current Rule 1407 and PAR 1407 - Housekeeping

Requirement	Current Rule 1407	PAR 1407
Proper storage of dust-forming material	Yes	Yes
Weekly use of approved cleaning method on surfaces subject to vehicular or foot traffic	Yes	Yes
Weekly use of approved cleaning method on floors within close proximity to metal grinding and cutting operations	No Provision	Yes
Prohibit use of compressed air or dry sweeping for housekeeping or other cleaning activities	No Provision	Yes
Quarterly cleaning of collection vents, openings and ducting of each control device associated with metal melting operations	No Provision	Yes
Transport materials capable of generating fugitive dust in sealed leak-proof containers	No Provision	Yes
Monthly inspection of all building enclosures for breaches that could result in fugitive metal dust emissions	No Provision	Yes

Next Steps

Action	Target Dates
Next Working Group Meeting	September 2018
Public Workshop	September 2018
Stationary Source Committee	October 19, 2018
Set Hearing	November 2, 2018
Public Hearing	December 7, 2018

Contact Information

Rule Contact:

Ken Ellis
(909) 396-2457
kellis@aqmd.gov

Mike Morris
(909) 396-3292
mmorris@aqmd.gov