

Proposed Amended Rule 1407

Working Group #2

November 9, 2017



Summary of Working Group #1

- Rule development process
- Current Rule 1407 requirements
- Potentially affected facilities
- Breakdown of furnace data
- Site visits and surveys





Purpose and Applicability

- Purpose
 - Reduce emissions of:
 - Current 1407: Arsenic, cadmium, and nickel
 - PAR 1407: Include hexavalent chromium
- Applicability
 - Current 1407: Non-ferrous metal melting operations
 - PAR 1407: Include ferrous metal melting operations

Stainless Steel

- Chromium
 - Stainless steel contains 10.5-28% chromium
 - At high temperatures, hexavalent chromium can be formed from the oxidation of chromium¹
- Nickel
 - The majority of the stainless steels contain 8-10% nickel



¹ <https://www.osha.gov/SLTC/hexavalentchromium/>

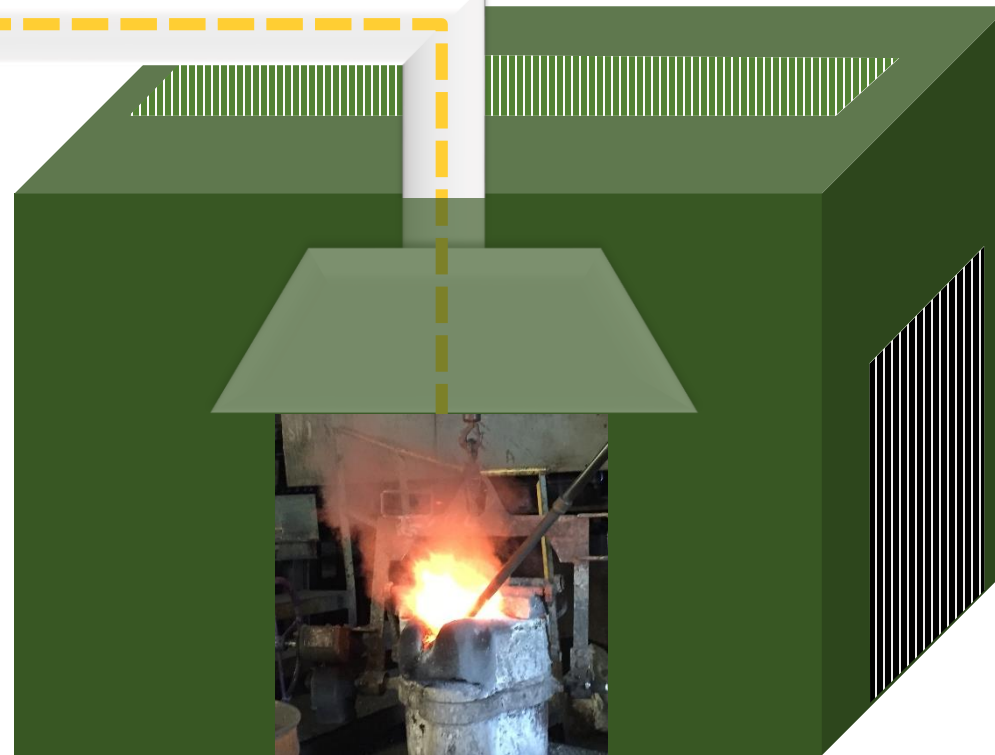
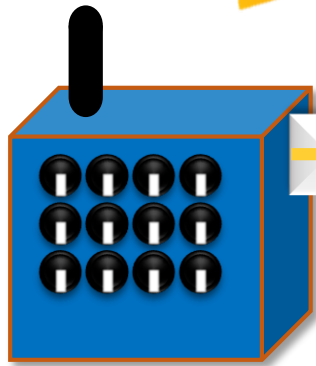
Hexavalent Chromium

- Hexavalent chromium was identified as a carcinogenic toxic air contaminant in 1986 by the California Air Resources Board
- Can occur as an aerosol or particulate matter in the air
- Exposure to hexavalent chromium can cause both cancer and non-cancer health effects
 - Inhalation over a long period time increases risk of lung and nasal cancer
 - Non-cancer effects include irritation of nose, throat and lungs including nasal sores and perforation of the membrane separating the nostrils

PAR 1407 Control Approach

Point Source Controls

Point source pollution controls to reduce metal particulate emissions at source

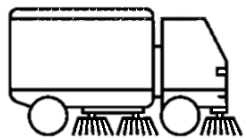


Total Enclosure

Building enclosure, with minimal openings for ingress and egress to contain fugitive metal particulate emissions

Housekeeping

Housekeeping provisions to minimize fugitive metal particulates from becoming airborne



Requirements – Point Source

- Current 1407
 - Vent all emission points to an emission collection system ducted to a control device that reduces the particulate emissions by 99%
- PAR 1407 – Initial Concepts
 - Deliberating between basing requirements on emission of specific toxics or emission of particulates
 - Considering the option to meet either control efficiency or mass emission rate



Requirements – Source Tests

- Current 1407
 - One-time source test to determine control efficiency of the particulate control device
 - SCAQMD Method 5.2 – Determination of Particulate Matter Emissions from Station Sources Using Heated Probe and Filter
 - Alternative method approved by Executive Officer
 - Executive Officer may require additional source testing periodically or when the process is changed
- PAR 1407 – Initial Concepts
 - Proposing periodic source testing

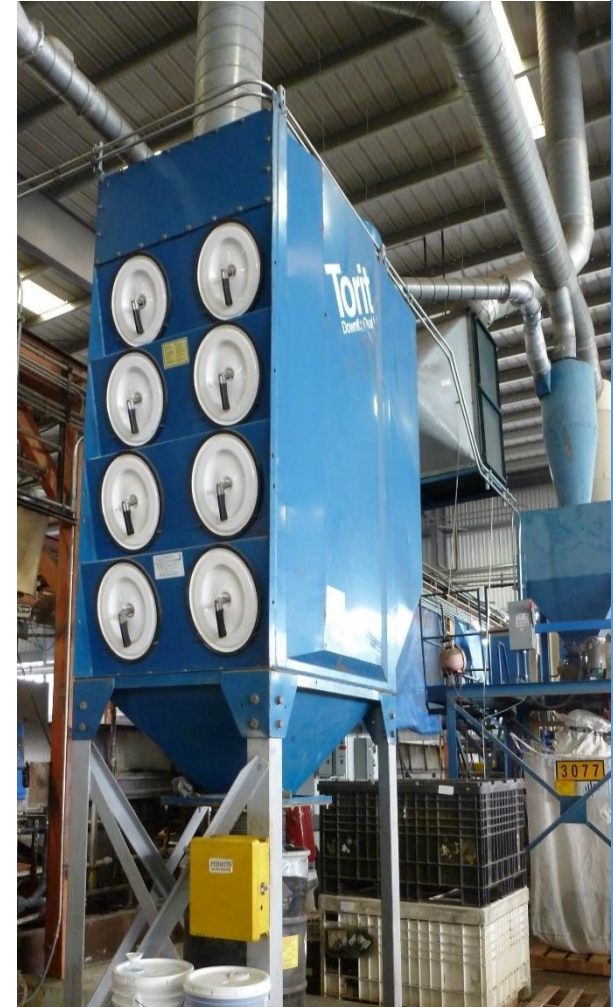
Control Efficiency vs Mass Emission

Source Test Requirement	Control Efficiency	Mass Emission
Testing at Inlet	Yes	No
Testing at Outlet	Yes	Yes
Low Inlet at Source	No	Yes

- Source Testing
 - Control efficiency requires testing the inlet and outlet
 - Mass emission requires testing only the outlet (cost savings)
- Low Inlet Source
 - Mass emission is easier to verify than control efficiency
- Mass emission provides a more absolute amount of a specific compound that will be allowed from a point source

Emission Control Device Monitoring

- Current 1407
 - Requires maintenance plan and use of measuring devices
- PAR 1407 will remove maintenance plan and instead enhance current parametric monitoring
 - Monitoring of key parameters can identify operational issues of air pollution control equipment
 - More continuous status of operating conditions
 - Indication that emissions are not well controlled
 - Alert the operator of operational issues or needed maintenance on the pollution control equipment



Emission Control Device Monitoring – Flow Meter

- Current 1407
 - Flow meter to indicate air velocity in the duct leading to or from the control device
- PAR 1407
 - Flow meter with continuous data acquisition system to monitor the air velocity in the duct
 - Smoke test once every three months to demonstrate capture efficiency

Emission Control Device Monitoring – Pressure Gauge

- Current 1407
 - Magnehelic or light sensitive gauge with an alarm system to indicate the pressure drop
- PAR 1407
 - Gauge with a continuous data acquisition system to monitor the pressure drop across the filter
 - Source test required if the pressure across the filter is not maintained

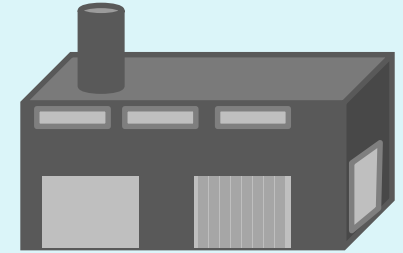
Emission Control Device Monitoring – Broken Bag Detector

- Current 1407
 - Broken bag detector to sound an alarm if there are broken/damaged filter media or leaks
- PAR 1407
 - Bag Leak Detection System (Rule 1155) to continuously monitor bag leakage and failures

Total Enclosures

- Current 1407
 - No requirements for metal melting operations to occur inside a building enclosure
- PAR 1407
 - Proposing all metal melting operations be conducted in a total enclosure
 - Building Enclosures
 - Provides a secondary containment of fugitive emissions
 - Prevents exposure to the elements
 - Minimizes cross-draft

Total Enclosure



- Permanent containment structure
- Completely enclosed with floors, walls and a roof
- Limited openings to allow access and egress of people and vehicles
 - Minimize openings using automatic roll-up doors, plastic strip curtains, etc. to:

Housekeeping Requirements



- Current 1407
 - Housekeeping Plan submitted with the Compliance Plan which specifies how housekeeping measures will minimize fugitive emissions
- PAR 1407
 - Remove Housekeeping Plan and incorporate specific provisions similar to those in other recently amended rules
 - Designed to minimize fugitive dust in and around building enclosures where metal melting processes are located
 - Fugitive dust that accumulates on surfaces can become airborne potentially exposing surrounding land uses



Ambient Air Monitoring

- Current 1407
 - No provisions for ambient air monitoring
- PAR 1407
 - Will not include provisions for mandatory or an on-ramp for ambient monitoring
 - Ambient monitoring for Rule 1407 facilities to be addressed in Proposed Rule 1480
- Proposed Rule 1480 – Toxics Monitoring
 - Ambient monitoring of toxic air contaminants





Current 1407 Exemptions

- Small Quantity
- Metal or Alloy Purity
- Aluminum
 - Clean aluminum scrap
 - Aluminum scrap furnaces
 - Aluminum pouring
- Rule 1420 – Emissions Standard for Lead
- Control Devices for Fugitive Emissions

Small Quantity Exemption

- Current 1407
 - Melts less than one ton per year of all non-ferrous metals; or
 - Using formula and Exemption Limits listed in Table I
- PAR 1407
 - Retain an exemption for total metal melted
 - Reassess one ton per year threshold
 - Reassess need for formula and Exemption Limits in Table I

Metal or Alloy Purity Exemption

- Current 1407
 - Furnaces that do not melt scrap (except for clean aluminum scrap or rerun scrap); and
 - Metal or alloy melted must have less than 0.004% cadmium and 0.002% arsenic
- PAR 1407
 - Reassess percentage limit for cadmium and arsenic
 - Include percentage limit for hexavalent chromium and nickel

Aluminum Exemptions

- Current 1407
 - Clean aluminum scrap or mixture of clean aluminum scrap or aluminum ingots to produce extrusion billets
 - Combustion chamber in a reverberatory aluminum furnace constructed with a charging well
 - Aluminum pouring equipment
- PAR 1407
 - Reassess aluminum exemptions

Exemption for Rule 1420 – Emissions Standard for Lead

- Current 1407
 - Exempt from control efficiency requirement if meets Rule 1420 requirements
- PAR 1407
 - Make consistent with new Rule 1420 requirements
 - Additional rule exemptions?

Exemption for Control Devices for Fugitive Emissions

- Current 1407
 - Devices used solely to control fugitive emissions
- PAR 1407
 - Remove exemption for control devices for fugitive emissions
 - Ensure that fugitive emission control devices are operated and maintained at approved control efficiencies



Schedule

South Coast
AQMD

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|-------------------------------|----------------|
| • Site Visits | Ongoing |
| • Additional Working Groups | TBD |
| • Public Workshop | February 2018 |
| • Stationary Source Committee | March 16, 2018 |
| • Set Hearing | April 6, 2018 |
| • Public Hearing | May 4, 2018 |



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