Proposed Rule 1147.2
NOx Reductions from Metal Processing Equipment

Proposed Amended Rule 1147
NOx Reductions from Miscellaneous Sources

Proposed Amended Rule 1100
Implementation Schedule for NOx Facilities

Working Group #1
May 16, 2019
3:00 PM
Conference Room GB

Teleconferencing Information
1-719-359-9722
Participant Passcode: 363034
Agenda

- Background
- Overview of Rule Development Process
- Overview of Rule 1147
- Proposed Rule 1147.2
- Equipment Data
Background

- 2016 Air Quality Management Plan
  - Control Measure CMB-05 and adopting Resolution called for further NOx reductions from an assessment of the RECLAIM program, including:
    - A 5 ton per day NOx reduction to be achieved no later than 2025; and
    - Sunsetting the RECLAIM program and transitioning to a command-and-control regulatory structure that requires Best Available Retrofit Control Technology (BARCT) level controls

- 2017 – AB 617
  - Applicable to facilities in the state greenhouse gas cap and trade program
  - Develop BARCT implementation schedule by 1/1/2019
  - BARCT implementation by 12/31/2023
    - Prioritize older, higher polluting units
Approach to Rule 1147 Equipment

- Current Rule 1147 applies to a wide variety of combustion equipment
  - For example: Ovens, afterburners, remediation units, incinerators, heated process tanks, spray booths, calciners, and furnaces
- Staff is proposing to remove certain equipment categories from Rule 1147 and to regulate those categories under separate source-specific rules
  - Approach allows for a more detailed and inclusive technology assessment on the source-specific category
  - Better ensures emission limits reflect current Best Available Retrofit Control Technology (BARCT)
  - RECLAIM equipment was not included when Rule 1147 emission limits were established (Rule 1147 was adopted in 2008)
Development of Rule 1147 Series of Rules

- Proposing to remove three equipment categories from Rule 1147 and develop the following rules:
  - PR 1147.1 – Large Miscellaneous Combustion Equipment
  - PR 1147.2 – Metal Processing Equipment
  - PR 1147.3 – Equipment at Aggregate Facilities
- This rulemaking will focus on Proposed Rule 1147.2
- Amendments to Rule 1147 are needed:
  - Remove equipment categories that will be regulated under Proposed Rules 1147.1, 1147.2, and 1147.3
  - Remove exemptions for RECLAIM facilities for remaining Rule 1147 equipment
  - Amendments to Rule 1147 may be needed as each Rule 1147 series rule is adopted
General Approach

- Proposed Rule 1147.2 will address metal heat treating, metal melting furnaces, and metal pots
  - Other categories may be added during the rule development process
- Rule 1147 will be amended to remove equipment categories covered under Rule 1147.2
Initial Concept for Proposed Rule 1147.2

- Initial scope of Proposed Rule 1147.2 would include metal melting and heat treating combustion equipment
- Objective is to reduce NOx emissions
- Equipment from RECLAIM facilities were not considered when emission limits were established under Rule 1147
- Proposed Rule 1147.2 will provide
  - A more focused BARCT analysis on metal processing combustion equipment
  - An opportunity to better coordinate other implementation dates for rules under development (such as Proposed Amended Rule 1407 and Proposed Rule 1407.1)
Overview of Rule Development Process
## Overview of Rule Development Process

<table>
<thead>
<tr>
<th>Monthly Working Group Meetings</th>
<th>Public Workshop</th>
<th>Stationary Source Committee Meeting</th>
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<tbody>
<tr>
<td></td>
<td>Preliminary Draft Rule Language and Preliminary Draft Staff Report</td>
<td>Generally 6 weeks before Public Hearing</td>
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</table>
Key Elements of Rule Development Process

Data Gathering and Assessment
- Gather technical and cost information
- Conduct site visits
- Develop initial universe of sources

BARCT Assessment
- Conduct technology assessment
- Perform cost-effectiveness analysis for possible emission standards

Rule Concepts and Proposed Rule Language
- Definitions
- Proposed emission standards and other requirements
- Monitoring, Reporting, and Recordkeeping
- Exemptions
Working Group Meetings

- Working group meetings held throughout the rule development process and open to the public
- Objective is to build consensus and work through issues
- Comprised of stakeholders including industry, environmental groups, community members, and agencies
- Stakeholders provide direct input to staff on key elements of proposed rule
- Assists staff in understanding
  - Key issues and concerns
  - Industry terms, industry practices, etc.
  - Applicable technologies
Data Gathering and Assessment

- Data gathering begins well before the first Working Group Meeting
- Identification of facilities and equipment to establish the universe of affected sources
- Evaluation of existing data such as:
  - Emissions data which can include annual emissions reporting, source tests, and ambient monitoring
  - SCAQMD permit data
  - Site visits
- Other information that may be needed
  - Facility specific information – obtained by surveys, rulemaking team, or inspectors
  - Emissions data
  - Pollution control technologies
  - Cost information

Data Gathering and Assessment

- Gather technical and cost information
- Conduct site visits
- Develop initial universe of sources
Data Gathering and Assessment – Site Visits

- Primary objective of the site visits are to better educate staff on the variety of operations
- Provides opportunity to
  - Observe actual operations
  - Meet facility operators
  - Better understand unique circumstances
  - Collect operational information from operator
  - Obtain NOx emission estimates utilizing handheld NOx analyzer
- Staff visits a range of sites to provide a complete overview of the affected sources
Data Gathering and Assessment – Facility Equipment Survey

- Objective of the survey is to collect operational information about equipment type, size, fuel, usage, pollution controls, and emissions data
- Information is needed to assess the number and type of equipment and pollution controls
- Information is also used to estimate cost impacts associated with proposed rule
- On March 22, 2019, surveys were mailed out to RECLAIM and non-RECLAIM facilities that may be subject to Proposed Rule 1147.2
Rule 1147 Facility Equipment Survey

- Approximately 366 out of 2944 total surveys have been received (~12% return)
  - 21 out of 243 surveys sent to facilities with metal processing equipment have been received (~9% return)
- Received requests from survey recipients to allow additional time for completion
  - Survey deadline has been extended from April 26, 2019 to June 14, 2019
- Survey can be electronically accessed
BARCT Assessment

- California Health and Safety Code Section 40406 defines BARCT as:
  - “...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 source.”
- Technology assessment conducted periodically to review newest technology and update limits
- BARCT assessment includes a cost-effectiveness analysis
  - Must adhere to California Health and Safety Code Section 40920.6

BARCT Assessment

- Conduct technology assessment
- Perform cost-effectiveness analysis for possible emission standards
*BARCT analysis is conducted for each equipment category and fuel type
Development of Staff Proposal

Rule Concepts and Proposed Rule Language

- Definitions
- Proposed emission standards and other requirements
- Monitoring, Reporting, and Recordkeeping
- Exemptions

- Rule concepts are presented in Working Group Meetings
- Developing rule concepts and draft proposed rule language is an iterative process with stakeholder input
- Preliminary draft rule language and Preliminary Draft Staff Report are released no later than 75 days before the Public Hearing
Stakeholder Input Opportunities

- Meetings with Organizations (Industry, Environmental, Community)
- Individual Facility Meetings
- Working Group Meetings
- Written Comments (Letters and Electronic Mail)
- Public Comment at Public Workshops, Stationary Source Committee, and Public Hearing
Additional Tips for Stakeholder Input

- Stakeholder input provided throughout the rulemaking process – *Early input encouraged*

- *All input is needed* – Technical suggestions, compliance challenges, community concerns, etc.

- *Goal is a rule that meets air quality objectives and that all facilities can comply with*
Overview of Rule 1147
(Provisions for Metal Processing Equipment)
Rule 1147 Overview

- Rule 1147 was adopted in 2008 and amended in 2011 and 2017
- Applies to manufacturers, distributors, retailers, installers, owners, and operators of combustion equipment
- Establishes NOx emission limits for well over 20 equipment categories that are:
  - $\geq 325,000$ Btu/hour;
  - Not regulated under a Regulation XI rule for NOx; and
  - Require a South Coast AQMD permit
- Establishes either a 30 or 60 ppm NOx concentration limit based on the equipment type, fuel type, and process temperature
  - Compliance dates are based on manufacture date, combustion system modification/replacement, or unit replacement/relocation
Rule 1147 – 2011 and 2017 Amendments

2011 Amendment
- Delayed implementation up to two years
- Provided additional compliance flexibility

2017 Amendment
- Based on a Rule 1147 Technology Assessment
  - Delayed compliance for small and low emission units
  - Increased the NOx emission limit for certain equipment categories
  - Exempted units < 325,000 Btu/hr from NOx emission limits
Current Rule 1147 Limits for Metal Processing Equipment

<table>
<thead>
<tr>
<th>Gaseous Fuel-Fired Equipment</th>
<th>Process Temperature</th>
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<tbody>
<tr>
<td>Metal Heat Treating, Metal Melting Furnace, Metal Pot, or Tar Pot</td>
<td>≤ 800°F</td>
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<tr>
<td></td>
<td>60 ppm</td>
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<table>
<thead>
<tr>
<th>Liquid Fuel-Fired Equipment</th>
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<tbody>
<tr>
<td>All liquid fuel-fired Units</td>
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* NOx limit corrected to 3% oxygen, by volume on a dry basis
Proposed Rule 1147.2
NOx Reductions from Metal Processing Equipment
Initial Concepts for Developing Applicability

- Metal Melting Furnace
  - An apparatus in which metal in a container is brought to a liquid state
  - Does not include any apparatus in which the metal is heated but does not reach a molten state

- Metal Heat Treating Furnace
  - An apparatus which applies heat to a solid metal in order to alter the physical or chemical properties
    - Improves workability for further processing, alters microstructure to achieve desired mechanical properties (strength, hardness, toughness, ductility, and corrosion resistance), or alters surface chemistry
  - Does not include any apparatus in which heating and cooling occur incidentally during other processes, such as welding or grinding

- Seeking stakeholder input on applicability
Developing the Universe of Sources

- Universe of sources is the potential list of equipment that will be applicable to Proposed Rule 1147.2
- Two Rule 1147 categories used as starting point:
  - Metal melting furnaces
  - Heat treating furnaces, including forging furnaces
- Metal melting and heat treating furnaces are broad categories that include a variety of different furnaces
- Excluded the following equipment
  - Combustion equipment that processes metal coated parts
    - Does not alter the physical or chemical properties of the metal and instead processes the coating (e.g. coating, curing, drying, and baking)
  - Electric furnaces
    - No combustion emissions
- Considering including equipment that is currently exempt pursuant to Rule 219
### Types of Metal Melting and Heat Treating Furnaces

<table>
<thead>
<tr>
<th>Metal Melting Furnaces</th>
<th>Metal Heat Treating Furnaces</th>
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<tbody>
<tr>
<td>• Crucible</td>
<td>• Annealing</td>
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<tr>
<td>• Reverberatory</td>
<td>• Homogenizing</td>
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<tr>
<td>• Cupola</td>
<td>• Tempering</td>
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<tr>
<td>• Pot</td>
<td>• Aging</td>
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<tr>
<td>• Vacuum</td>
<td>• Hardening</td>
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<tr>
<td>• Kettle</td>
<td>• Extruding</td>
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<tr>
<td>• Billet Oven</td>
<td>• Holding</td>
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<tr>
<td>• Immersion</td>
<td>• Galvanizing</td>
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<td></td>
<td>• Forging</td>
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<td></td>
<td>• Reheating</td>
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<td>• Pre-heat</td>
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• Precious Metals Reclamation
Equipment Not Proposed for Inclusion

- Curing Ovens
- Burn-Off Furnaces/Ovens
- Drying Ovens
- Baking Ovens
- Graphitization & Carbonization Furnaces
- Chemical Vapor Deposition Furnaces
- Heated Spray Booths

- Electric Induction Furnaces
- Electric Arc Furnaces
Identifying Facilities

- A variety of resources were used to identify facilities that are potentially affected by Proposed Rule 1147.2
- South Coast AQMD databases were used to identify facilities with metal melting or metal heat treat furnaces
- Since South Coast AQMD databases only include facilities with one or more permitted sources
  - Internet searches were conducted to identify facilities that may have unpermitted Proposed Rule 1147.2 units
## Potentially Applicable Equipment

### South Coast AQMD Databases

**Industry Codes (SIC and NAICS Codes)**
- Foundries, smelters, die-casters, heat treaters, extruders, mills, and forging facilities

**Equipment Categories**
- Heat treating furnace, furnace, oven, and heater

**Other South Coast AQMD Metal Related Source-Specific Rules**
- Rules 1147, 1407, 1420, and 1430, and Proposed Rules 1407.1 and 1435

### Web Search

For facilities located in the South Coast AQMD conducting metal processing activities with no permitted equipment
Equipment Data
Equipment Data Review

- Equipment data obtained through South Coast AQMD Databases
  - Permit Database
  - Source Test Database
  - Compliance Database
  - 2017 Annual Emission Report
- Considerations
  - Many pieces of equipment are Rule 219-exempt
    - Equipment inventory is underrepresented
    - Equipment does not have a NOx rule or permit emission limit
  - Initial data to be updated as more surveys and site visit information becomes available
Facility and Equipment Breakdown*

- ~132 Facilities
  - ~22 RECLAIM Facilities
    - ~330 pieces of equipment
  - ~110 Non-RECLAIM Facilities
    - ~300 pieces of permitted equipment
    - ~80 pieces of unpermitted equipment

*Initial data, will be updated as more information becomes available
## Rule Development Schedule

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>Site Visits</td>
<td>Ongoing</td>
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<tr>
<td>Next Working Group Meeting</td>
<td>June 2019</td>
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<tr>
<td>Public Workshop</td>
<td>September 2019</td>
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<tr>
<td>Set Hearing</td>
<td>October 4, 2019</td>
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<tr>
<td>Public Hearing</td>
<td>November 1, 2019</td>
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## Contacts

<table>
<thead>
<tr>
<th>PR 1147.2</th>
<th>PAR 1147</th>
<th>RECLAIM Questions</th>
<th>General Questions</th>
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<tbody>
<tr>
<td><strong>James McCreary</strong></td>
<td><strong>Shawn Wang</strong></td>
<td><strong>Kevin Orellana</strong></td>
<td><strong>Susan Nakamura</strong></td>
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<tr>
<td>Assistant Air Quality Specialist</td>
<td>Air Quality Specialist</td>
<td>Program Supervisor</td>
<td>Assistant Deputy Executive Officer</td>
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<td>909-396-3319</td>
<td>909-396-3492</td>
<td>909-396-3105</td>
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<tr>
<td><strong>Uyen-Uyen Vo</strong></td>
<td><strong>Gary Quinn, P.E.</strong></td>
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<tr>
<td>Program Supervisor</td>
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<tr>
<td><strong>Mike Morris</strong></td>
<td><strong>Michael Krause</strong></td>
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<td>Planning and Rules Manager</td>
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