PROPOSED AMENDED RULES 1147, 1100, & PROPOSED RULE 1147.1
WORKING GROUP MEETING #1

FEBRUARY 28, 2019
SCAQMD
DIAMOND BAR, CA

AGENDA

- Background
- Initial Concepts of PAR 1147, 1100 and PR 1147.1
- Approach for BARCT Determination
- Potential impacted Universe for PAR 1147 and PR 1147.1
- Facility Equipment Survey
- Other Rule 1147 Activities
- Next Steps
BACKGROUND – RECLAIM TRANSITION

- In March 2017, the SCAQMD adopted the 2016 AQMP
  - Control measure CMB-05 requires the RECLAIM program to transition to a command-and-control structure
  - Requires a 5 ton per day NOx emission reduction to be achieved with Best Available Retrofit Control Technology (BARCT) as soon as feasible and no later than 2025
- In July 2017, Assembly Bill 617 was signed by the Governor
  - Requires expedited BARCT implementation for facilities in the state greenhouse gas cap and trade program by December 31, 2023

BACKGROUND – RULE DEVELOPMENT

Information Gathering
  
Initial Objective and Scope

Develop Rule Concepts

Develop Rule Language for Proposed Amended Rule
BACKGROUND – STAKEHOLDER INPUT

- Stakeholder input is a key element throughout the rule development process.
- Staff encourages early input from all stakeholders – opportunities for input provided throughout the rulemaking process.
- Goal is a proposal that all facilities can comply with and that meets the objectives of the proposed amended rule.
- Staff encourages facilities to meet with staff to discuss any concerns – unique situations, clarification of provisions, etc.
  - Stakeholders with unique equipment are encouraged to schedule site visits with staff.

BACKGROUND – RULE 1147 SERIES

Rule 1147 Series

- Proposed Amended Rule 1147
- Proposed Rule 1147.1*
- Proposed Rule 1147.2*
- Proposed Rule 1147.3*

- Miscellaneous Combustion Equipment
- Large Miscellaneous Combustion Equipment*
- Combustion Equipment Associated with Metal Working Facilities*
- Combustion Equipment Associated with Aggregate Facilities*

*Rulemaking in progress, universe of impacted facilities to be determined at a later date.
BACKGROUND – RULE 1147

- Affects a wide variety of gaseous and liquid fuel fired processes ranging from heated automotive spray booths to heavy manufacturing
- Incorporates two control measures of 2007 Air Quality Management Plan (AQMP):
  1. CMB-01: NOx Reductions from Non-RECLAIM Ovens, Dryers and Furnaces
  2. MCS-01: Facility Modernization
- Rule 1147 technology assessment for small and low emission sources was released in February 2017 and independently reviewed by a third party consultant

Adopted December 2008
Amended July 2017
Proposed Amended Rule 1147
Amended September 2011

BACKGROUND – RULE 1147

Applicability

- Miscellaneous combustion equipment with NOx emissions that require a District permit and are not affected by other District Regulation XI rules
- No minimum or maximum equipment size

Emission Limits

- Emission limits vary dependent on equipment type, fuel type, and process temperature
- Units <325,000 BTU/hr are exempt from rule limits
BACKGROUND – RULE 1147 LIMITS (3% O₂, DRY)

<table>
<thead>
<tr>
<th>Gaseous Fuel-Fired Equipment</th>
<th>Process Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>≤ 800° F</td>
</tr>
<tr>
<td>Asphalt Manufacturing Operation</td>
<td>40 ppm</td>
</tr>
<tr>
<td>Afterburner, Degassing Unit, Remediation Unit, Thermal Oxidizer, Catalytic Oxidizer or Vapor Incinerator</td>
<td>60 ppm</td>
</tr>
<tr>
<td>Burn-off Furnace, Burnout Oven, Incinerator or Crematory or without integrated Afterburner</td>
<td>60 ppm</td>
</tr>
<tr>
<td>Evaporator, Fryer, Heated Process Tank, or Parts Washer</td>
<td>60 ppm</td>
</tr>
<tr>
<td>Metal Heat Treating, Metal Melting Furnace, Metal Pot, or Tar Pot</td>
<td>60 ppm</td>
</tr>
<tr>
<td>Oven, Dehydrator, Dryer, Heater, Kiln, Calciner, Cooker, Roaster, Furnace, or Heated Storage Tank</td>
<td>30 ppm</td>
</tr>
<tr>
<td>Make-Up Air Heater or other Air Heater located outside of building with temperature controlled zone inside building</td>
<td>30 ppm</td>
</tr>
<tr>
<td>Tenter Frame or Fabric or Carpet Dryer</td>
<td>30 ppm</td>
</tr>
<tr>
<td>Other Unit or Process Temperature</td>
<td>30 ppm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Liquid Fuel-Fired Equipment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>All liquid fuel-fired Units</td>
<td>40 ppm</td>
</tr>
</tbody>
</table>

BACKGROUND – RECLAIM BARCT FOR MISC. COMBUSTION EQUIPMENT

- BARCT in the RECLAIM program is used to determine RTC allocations
- Current RECLAIM BARCT emission factors are outlined in Rule 2002
- RECLAIM BARCT can be more stringent than command and control limits
  - RECLAIM equipment is not required to meet RECLAIM BARCT as long as facility emissions are offset by RTC
- Staff will be conducting a more detailed BARCT assessment
BACKGROUND – RECLAIM BARCT FOR MISC. COMBUSTION EQUIPMENT

<table>
<thead>
<tr>
<th>Equipment Type</th>
<th>BARCT Emission Factor</th>
<th>Command and Control Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>≤ 800 °F</td>
</tr>
<tr>
<td>Asphalt Heater, Concrete</td>
<td>0.036 lb/mmbtu</td>
<td>30 ppm</td>
</tr>
<tr>
<td>Delacquering Furnace</td>
<td>0.036 lb/mmbtu</td>
<td>30 ppm</td>
</tr>
<tr>
<td>Iron/Steel Foundry</td>
<td>0.055 lb/mmbtu</td>
<td>45 ppm</td>
</tr>
<tr>
<td>Metal Heat Treating Furnace</td>
<td>0.055 lb/mmbtu</td>
<td>45 ppm</td>
</tr>
<tr>
<td>Metal Forging Furnace (Preheated Combustion Air)</td>
<td>0.055 lb/mmbtu</td>
<td>45 ppm</td>
</tr>
<tr>
<td>Metal Melting Furnaces</td>
<td>0.055 lb/mmbtu</td>
<td>45 ppm</td>
</tr>
<tr>
<td>Other Heater (24F-1)</td>
<td>0.036 lb/mmbtu</td>
<td>30 ppm</td>
</tr>
<tr>
<td>Ovens, Kilns, Calciners, Dryers, Furnaces</td>
<td>0.036 lb/mmbtu</td>
<td>30 ppm</td>
</tr>
<tr>
<td>Steel Hot Plate Furnace</td>
<td>0.055 lb/mmbtu</td>
<td>45 ppm</td>
</tr>
<tr>
<td>Sec. Aluminum</td>
<td>0.055 lb/mmbtu</td>
<td>45 ppm</td>
</tr>
<tr>
<td>Sec. Lead</td>
<td>0.055 lb/mmbtu</td>
<td>45 ppm</td>
</tr>
</tbody>
</table>

BACKGROUND – COMPARISON OF RECLAIM BARCT WITH RULE 1147 FOR MISC. COMBUSTION EQUIPMENT

- RECLAIM BARCT emission factors (in general) are lower or equal to current limits in Rule 1147
- Categories listed under RECLAIM BARCT do not match with categories of Rule 1147
- RECLAIM equipment which does not meet specific Rule 1147 categories will be subject to limits of the “Other Unit or Process Temperature” category
INITIAL CONCEPTS– PAR 1147/PR 1147.1

Rule 1147
- Previously amended in July 2017
- Regulates NOx equipment at various temperatures not regulated under other Regulation XI rules
- Proposing to include references to former RECLAIM facilities and make any changes that will help clarify existing rule implementation

Proposed Rule 1147.1
- To reduce nitrogen oxide emissions from large gaseous and liquid fuel fired combustion equipment
- Applies to units at RECLAIM and non-RECLAIM facilities

INITIAL CONCEPTS – PAR 1100

- Proposed Amended Rule 1100 will:
  - Include compliance schedule for facilities impacted by PAR 1147 and PR 1147.1
  - Coordinate implementation schedules for multiple rules
  - Reference emission limits in applicable BARCT rules

- Compliance schedule under consideration
  - Schedule staggered based on applicable landing rules, number of equipment, mass emissions or other applicable criteria
BARCT REQUIREMENTS

- 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.”

- Health and Safety Code Section 40920.6:
  - Requires evaluation of BARCT prior to adopting rules or regulations

BARCT* ASSESSMENT

*BARCT analysis is conducted for each equipment category and fuel type

- Assessment of SCAQMD Regulatory Requirements
- Assessment of Emission Limits of Existing Units
- Other Regulatory Requirements
- Assessment of Pollution Control Technologies
- Initial BARCT Emission Limit and Other Considerations
- Cost Effectiveness Analysis
- BARCT Emission Limit
BARCT ASSESSMENT APPROACH

- BARCT analysis includes a technology assessment
  - Equipment-specific
  - Fuel-specific
  - Application and usage of unit (capacity, types of uses, etc.)
- Cost effectiveness will consider
  - Incremental cost effectiveness
  - Stranded assets
  - Outliers
  - Recent installation to meet prior NOx reduction commitments

IMPACTED RECLAIM FACILITIES

- Total impacted RECLAIM units: 373
  - Located at 86 facilities
- Top 5 Impacted industries:
  1. Manufacturing (67%)
  2. Service (8%)
  3. Retail Trade (6%)
  4. Public Administration (5%)
  5. Public Transportation (5%)
IMPACTED RECLAIM EQUIPMENT

<table>
<thead>
<tr>
<th>Size Range (MMBtu/hr)</th>
<th># of Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;2</td>
<td>106</td>
</tr>
<tr>
<td>2 to &lt;5</td>
<td>96</td>
</tr>
<tr>
<td>5 to &lt;40</td>
<td>166</td>
</tr>
<tr>
<td>40 to &lt;100</td>
<td>4</td>
</tr>
<tr>
<td>100+</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>373</strong></td>
</tr>
</tbody>
</table>

Meet Rule 1147 Limit: 113 Units

Does Not Meet Rule 1147 Limit: 260 Units

Meet RECLAIM BARCT: 100 Units

Does Not Meet RECLAIM BARCT: 13 Units

FACILITY EQUIPMENT SURVEY

- **Objective:** To identify permit limits and annual usage for existing equipment located in SCAQMD
- Both physical and digital copies will be available for mail-in and email submissions
- Physical copies scheduled to be mailed out to both RECLAIM and non-RECLAIM facilities within one month
  - Digital version will be available on aqmd.gov for email submissions
OTHER RULE 1147 ACTIVITIES

- Certification of additional low-NOx burners for various applications
- Explore possible alternatives to biennial source testing demonstrations for low use (<1 LB/Day NOx) units over 35 years old
- Development of outreach materials:
  - Phase I: Compliance Pamphlets
  - Phase II: Guidance Document

RULE DEVELOPMENT SCHEDULE

Working Group #2
March 2019

Working Group #3
Early May 2019

Working Group #4
Late May 2019

Public Workshop
June 2019

Public Hearing
September 2019
## CONTACTS

<table>
<thead>
<tr>
<th>General RECLAIM Questions</th>
<th>Proposed Amended Rules 1147, 1100 and Proposed Rule 1147.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Gary Quinn, P.E.</td>
<td>• Shawn Wang</td>
</tr>
<tr>
<td>Program Supervisor</td>
<td>Air Quality Specialist</td>
</tr>
<tr>
<td>909-396-3121</td>
<td>909-396-3319</td>
</tr>
<tr>
<td><a href="mailto:gquinn@aqmd.gov">gquinn@aqmd.gov</a></td>
<td><a href="mailto:swang@aqmd.gov">swang@aqmd.gov</a></td>
</tr>
<tr>
<td>• Kevin Orellana</td>
<td>• Gary Quinn, P.E.</td>
</tr>
<tr>
<td>Program Supervisor</td>
<td>Program Supervisor</td>
</tr>
<tr>
<td>909-396-3492</td>
<td>909-396-3121</td>
</tr>
<tr>
<td><a href="mailto:korellana@aqmd.gov">korellana@aqmd.gov</a></td>
<td><a href="mailto:gquinn@aqmd.gov">gquinn@aqmd.gov</a></td>
</tr>
</tbody>
</table>