PROPOSED AMENDED RULES 1146, 1146.1, 1146.2 & PROPOSED RULE 1100
WORKING GROUP #4
Agenda

- Updates on Data Analysis
- Rule Applicability
- CEMS Requirements
- Additional Revisions
Rule 1146 Series Rules

- Rule 1146 series rules – the first set of landing rules
  - Remove RECLAIM exemptions
  - Add provisions for RECLAIM facilities
  - Will address facilities that will be transitioned under an industry specific rule separately
    - Electricity Generating Facilities (EGFs), refineries, metal operations facilities, aggregate facilities
    - Possibly other industries (to be determined)

<table>
<thead>
<tr>
<th>Rule</th>
<th>Applicability</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rule 1146</td>
<td>Boilers, steam generators, and process heaters</td>
<td>≥ 5 million Btu per hour</td>
</tr>
<tr>
<td>Rule 1146.1</td>
<td>Boilers, steam generators, and process heaters</td>
<td>&gt;2 and &lt;5 million Btu per hour</td>
</tr>
<tr>
<td>Rule 1146.2</td>
<td>Natural gas-fired water heaters, boilers, and process heaters</td>
<td>≤ 2 million Btu per hour</td>
</tr>
</tbody>
</table>
Data Analysis

- Staff concluded that facilities with 8 or more Rule 1146 and/or Rule 1146.1 units can meet the NO\textsubscript{x} concentration limits within 3.5 years
  - Despite the larger number of units, they are relatively small in equipment size

- Staff concluded that facilities with 10 or less other units can meet the NO\textsubscript{x} concentration limits within 3.5 years
  - Most units subject to Rule 1147 (Miscellaneous Sources), which is scheduled to be amended in 2019
    - Implementation period is likely to be after Jan. 1, 2021
  - Most facilities (95%) have 5 or less Rule 1146 and/or Rule 1146.1 units
    - Most units to be retrofitted by Jan. 1, 2021

- Staff further analyzed data for facilities with > 10 units of other RECLAIM equipment to:
  - Better understand the emissions from different source types
  - Establish the appropriate compliance schedule for these facilities

*Excludes Rule 1470 equipment
Emissions from Facilities with more than 10 Other Units

NOx Emissions from RECLAIM Facilities in Year 2016

- Dominated by Rule 1147 Emissions
- Dominated by Rule 1110.2 Emissions
- Comparable or borderline comparable (same order of magnitude) emissions

Fabricated Metal Product Manufacturing
Primary Metal Manufacturing
Pipeline Transportation
Textile Mills
Transportation Equipment Manufacturing
Food Manufacturing
## Analysis of Facilities with more than 10 Other Units

- Facilities Dominated by Rule 1147 Emissions

<table>
<thead>
<tr>
<th></th>
<th>Pieces of Rule 1146/1146.1 Unit</th>
<th>Pieces of Rule 1147 Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>5</td>
<td>23</td>
</tr>
<tr>
<td>B</td>
<td>3 (two units eligible for defer compliance)</td>
<td>17</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>D</td>
<td>2 (both at BARCT)</td>
<td>8</td>
</tr>
</tbody>
</table>

- Facilities Dominated by Rule 1110.2 Emissions

<table>
<thead>
<tr>
<th></th>
<th>Pieces of Rule 1146/1146.1 Unit</th>
<th>Pieces of Rule 1110.2 Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>2 (both at BARCT)</td>
<td>10</td>
</tr>
<tr>
<td>F</td>
<td>5 (two units at BARCT)</td>
<td>10</td>
</tr>
</tbody>
</table>

- Facilities with > 10 other units can meet the emission limit within the 3.5 years timeframe
  - ≤ 5 pieces of Rule 1146 series equipment between 3-33 MMBtu/hr
PARs 1146 and 1146.1 Applicability

- PARs 1146 and 1146.1 will apply to RECLAIM facilities
  - Excludes refineries and EGFs
    - To be addressed in industry-specific rules
  - Includes metal and aggregate facilities
    - The industry-specific rules are scheduled to be adopted in 2019
      - Implementation period is likely to be after Jan. 1, 2021
    - Facilities with ≤ 5 pieces of Rule 1146 and/or 1146.1 equipment are required to meet the NOx limit by Jan. 1, 2021 for most units

- List of RECLAIM facilities subject to Rule 1146 series
  - See Attachment 1 (including both BARCT and non-BARCT facilities)
Continuous Emission Monitoring (CEMS) Requirements

- **Continuous Emission Monitoring (CEMS) Applicability Threshold**
  - Evaluated 2015 / 2016 fuel usage data for units ≥ 40 MMBtu/hr at RECLAIM facilities
    - Ten units reported fuel usage between 90 and 200 billion Btu per year
  - Staff has been in communication with EPA regarding aligning the CEMS applicability thresholds to Rule 1146 for facilities transitioning from RECLAIM to command and control
    - Rule 1146 is SIP-approved
    - Staff is recommending that post-RECLAIM facilities to be subject to the same CEMS applicability threshold as non-RECLAIM facilities (200 billion Btu per year)
    - Any modification to MRR approaches would constitute a significant Title V permit revision and would trigger public notification requirements and EPA approval
      - Title V MRR requirements may need to be addressed separately

<table>
<thead>
<tr>
<th></th>
<th>Rule 1146</th>
<th>RECLAIM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Size</strong></td>
<td>40 MMBtu/hr</td>
<td>40 MMBtu/hr</td>
</tr>
<tr>
<td><strong>Fuel Usage</strong></td>
<td>200 Billion Btu per year</td>
<td>90 Billion Btu per year</td>
</tr>
</tbody>
</table>
Recommendations for PARs 1146 and 1146.1

- Maintain existing NOx concentration limits (emission limits still represent BARCT)
- Defer Compliance for units between 2-20 MMBtu/hr if:
  - Unit can demonstrate that NOx concentration is 12 ppm or less
    - Existing provisions allow natural gas units between 2-20 MMBtu/hr permitted at 12 ppm or less may defer compliance until burner(s) replacement (Rule limit = 9 ppm)
- Implementation schedule specified in Proposed Rule 1100
Recommendations for PAR 1146.2

- **Initial Rule Language**
  - RECLAIM facilities with Rule 1146.2 equipment can exit RECLAIM, but will not be subject to end-user limit of 30 ppm for the next 2-3 years
  - **Issues:**
    - Rule 2002 specifies that RECLAIM source equipment meet current command-and-control BARCT rules to exit RECLAIM
    - State law requires BARCT
      - RECLAIM facilities meet BARCT through the cap-and-trade approach
      - Post-RECLAIM facilities need to meet BARCT in command-and-control rules

- **Revised Rule Language (Released with CEQA document on April 3, 2018)**
  - Added a compliance date of December 31, 2023 to address BARCT requirements

- **New staff recommendations**
  - To add a provision to include a commitment to technology assessment by January 1, 2022
    - If BARCT is the same as existing rule requirements (30 ppm), compliance by December 31, 2023
    - If BARCT is less than 30 ppm, a new compliance schedule will be developed

- **Inventory data to be collected through (1) initial determination notifications and (2) annual audit inspections**
Group all equipment subject to Rule 1146 and Rule 1146.1

- Allows for compliance flexibility while ensuring achievement of greatest emission reductions early

Proposing

- 75% of units by heat input for Rule 1146 and 1146.1 units (including BARCT-compliant equipment) by Jan. 1, 2021; 100% of units by heat input by Jan 1, 2022
- Facilities committed to replace existing boilers/heaters (whole units) will be allowed until January 1, 2023 to replace unit
  - Facility must notify SCAQMD that unit will be replaced by 12 months after rule adoption
- Submit a complete permit application by 12 months after rule adoption (leaving ~18-30 months for permit approval, installation & source testing)
Rule Schedule

- Nov 2017 – Mar 2018  Working Group Meetings
- Feb 14, 2018  Public Workshop & CEQA Scoping Meeting
- Feb 28, 2018  Close of Public Comments
- Apr 12, 2018  Additional Working Group Meeting
- Apr 20, 2018  Stationary Source Committee
- May 4, 2018  Set Hearing
- Jun 1, 2018  Public Hearing
Contacts

Kalam Cheung, Ph.D.
Program Supervisor
(909)396-3281
kcheung@aqmd.gov

Gary Quinn, P.E.
Program Supervisor
(909)396-3121
gquinn@aqmd.gov

Kevin Orellana
Program Supervisor
(909)396-3492
korellana@aqmd.gov