Proposed Amended Rule 1110.2
Emissions from Gaseous- and Liquid- fueled Engines and
Proposed Amended Rule 1100
Implementation Schedule for NOx Facilities

WORKING GROUP MEETING NO. 3
February 6, 2019
South Coast AQMD Headquarters – Room GB

Agenda

- Review of Working Group Meeting #2
- Status of Rule Development
- Comparison of CEMS Requirements
- Remote Radio Transmission Towers’ Permitting Exemption
- Next Steps and Proposed Schedule
Summary of Working Group Meeting #2

- Review of rules – Rules 1110.2 & 1470
- Revised universe and equipment
- BARCT overview
- Regulatory comparison of Rule 1110.2 with other air districts
- Distribution of RECLAIM engines
  - Emission levels
  - Fuel type
  - Rated horsepower
- Assessment of emission limits for existing equipment
- Survey questionnaire
Status of Rule Development

Meetings with Organizations (Industry, Environmental, Community)
Individual Facility Meetings/Site Visits
Working Group Meetings
Stakeholder Input
Comment Letters
Public Comment at Public Workshop(s) and Public Hearing
Status of Rule Development

• Received survey questionnaire responses from RECLAIM and non-RECLAIM facilities
• Reviewed 3 Comment Letters
• Scheduled site visits with affected facilities

Survey Questionnaire
Survey Questionnaire

- Sent to affected sources – RECLAIM (25) and non-RECLAIM (426)
- Information used to update existing equipment information
  - Prime vs emergency status
  - Equipment no longer used or sold
  - Change of ownership/operator
- Information also used to develop/complete equipment inventory for cost analysis

Responses from RECLAIM and non-RECLAIM

- 25 RECLAIM sites / 426 non-RECLAIM sites
- 76.0% response from RECLAIM sites
- 30.3% response from non-RECLAIM sites
Survey Summary – Non-RECLAIM Facilities

• Emergency engines coded as prime engines
• Several facilities no longer have equipment
• Portable diesel engines used as wood chippers or concrete pumping
• Tier 1 portable engines in operation (review ATCM applicability)
• Stationary prime engines used in water pumping activities
• Few cogen units in operation, but many others reported out of service

Survey Summary – RECLAIM Facilities

Changes to original universe of RECLAIM facilities affected by PAR 1110.2
• Two sites – equipment decommissioned and out of service
• One site – equipment transferred from PAR 1110.2 to PAR 1146
• One site – equipment permitted for testing purposes and then shipped out of state
Survey Summary – RECLAIM Facilities (Cont.)

Changes to original universe of RECLAIM engines
• Initial universe contained 98 engines
• 76 remain in the universe
  • 14 comply with current R1110.2 limit of 11 ppmv NOx
  • 62 would not currently comply with limit

PAR 1110.2 – Working Group Meeting No. 3

Survey Summary – RECLAIM Facilities (Cont.)

<table>
<thead>
<tr>
<th>Distribution of Engines versus Emission Levels (update)</th>
<th>No. of Engines</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than or equal to 11</td>
<td>14</td>
</tr>
<tr>
<td>&gt;11 - &lt;50</td>
<td>23</td>
</tr>
<tr>
<td>50 - &lt;100</td>
<td>13</td>
</tr>
<tr>
<td>100 - &lt;200</td>
<td>7</td>
</tr>
<tr>
<td>200 - &lt;500</td>
<td>12</td>
</tr>
<tr>
<td>500+</td>
<td>7</td>
</tr>
</tbody>
</table>

Emission Levels - RECLAIM ICEs

PAR 1110.2 – Working Group Meeting No. 3
Survey Summary – RECLAIM Facilities (Cont.)

### Distribution of Engines Greater than 11 ppm NOx

<table>
<thead>
<tr>
<th>Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rich Burn</td>
<td>8</td>
</tr>
<tr>
<td>Lean Burn</td>
<td>54</td>
</tr>
</tbody>
</table>

![Distribution of Engines - Greater than 11 ppm NOx](image)

PAR 1110.2 – Working Group Meeting No. 3

Site Visits
Site Visits

- San Diego Gas and Electric – Moreno Valley
- So Cal Gas Company
  - Aliso Canyon
  - Honor Rancho
  - Playa del Rey
- Snow Summit
- Miller Coors

Any facility that wants us to visit them, please let us know.

Review of Comment Letters
### Review of Comment Letters

<table>
<thead>
<tr>
<th>Issue</th>
<th>Industry Comment</th>
<th>Staff Response</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sampling Protocol</strong></td>
<td>Include EPA Method 18 to test for VOCs</td>
<td>• Only EPA Method 25.1 is supported by SCAQMD Source Testing for diesel-fueled emissions testing</td>
</tr>
<tr>
<td><strong>CEMS Applicability</strong></td>
<td>Modify Rule 1110.2 CEMS requirements to match RECLAIM – large sources</td>
<td>• Modifying Rule 1110.2 towards RECLAIM may be considered backsliding</td>
</tr>
<tr>
<td><strong>Limited use provision</strong></td>
<td>Consider different emissions limits for diesel ICEs that operate less than 2,190 hours per year</td>
<td>• At a minimum, diesel engines should be at Tier 4 limits</td>
</tr>
<tr>
<td><strong>Accessibility Issues</strong></td>
<td>Request consideration for equipment at high elevations with limited infrastructure</td>
<td>• Staff is considering different options</td>
</tr>
</tbody>
</table>

---

### Review of Comment Letters

<table>
<thead>
<tr>
<th>Issue</th>
<th>Industry Comment</th>
<th>Staff Response</th>
</tr>
</thead>
</table>
| **Sampling time for source testing** | Reduce sampling time during source testing from 30 minutes to 5 minutes | • Sampling may be conducted in smaller canisters – time of sampling dependent on size  
• Lowering to 5 minutes may produce non-representative samples  
• Lowering to 15 minutes may be allowed based on operational considerations |
| **Data smoothing**           | Increase averaging time from 15 minutes to 1 hour for compliance determination | • Past review of similar requests indicated that increasing the averaging time may not solve all of the issues  
• In addition, increasing averaging time may mask significant emissions or out-of-compliance situations |
Current Regulations

SCAQMD Regulatory Requirements

Currently, SCAQMD Rule 1110.2 requires that all non-RECLAIM stationary, non-emergency internal combustion engines comply with the following emissions standards for any gaseous or liquid fuel:

- 11 ppmv\(^1\) NOx
- 30 ppmv\(^1\) VOC
- 250 ppmv\(^1\) CO

These emission limits have been in effect within our District since 2011

\(^1\)Parts per million by volume, corrected to 15% oxygen on a dry basis and averaged over 15 minutes
Federal Standards

Current U.S. EPA Non-Road and Stationary Emissions Regulations Tier 4 Final - NOx
75 – 750 hp 0.30 g/bhp-hr 27 ppm\textsuperscript{1,2}
> 750 hp 0.50 g/bhp-hr 45 ppm\textsuperscript{1,2}

At a minimum, new diesel engines must meet these emission limits

\textsuperscript{1}Parts per million by volume, corrected to 15% oxygen on a dry basis and averaged over 15 minutes
\textsuperscript{2}Conversion from g/bhp-hr to ppm based on 40% thermal efficiency

Airborne Toxic Control Measure

• The State Airborne Toxic Control Measure (ATCM) contains a schedule for the retirement of older portable diesel-fueled engines
• On 1/1/2020, portable Tier-1 engines rated at 50 hp and greater will be prohibited engines from operating in California
• Designated low use engines operating less than 200 hours per year exempted
Airborne Toxic Control Measure

- ATCM for diesel particulate matter from portable engines (≥ 50 bhp) prohibits engines from operating in California on or after the dates listed below
- New replacements must meet Federal standards (Tier 4 Final)

<table>
<thead>
<tr>
<th>Engine Certification</th>
<th>Engines rated 50 to 750 bhp</th>
<th>Engines rated &gt;750 bhp</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Large Fleet</td>
<td>Small Fleet</td>
</tr>
<tr>
<td>Tier 1</td>
<td>1/1/2020</td>
<td>1/1/2020</td>
</tr>
<tr>
<td>Tier 2 built prior to 1/1/2009</td>
<td>1/1/2022</td>
<td>1/1/2023</td>
</tr>
<tr>
<td>Tier 2 built on or after 1/1/2009</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Tier 3 built prior to 1/1/2009</td>
<td>1/1/2025</td>
<td>1/1/2027</td>
</tr>
<tr>
<td>Tier 3 built on or after 1/1/2009</td>
<td>1/1/2027</td>
<td>1/1/2029</td>
</tr>
<tr>
<td>Tier 1, 2, and 3 flexibility engines</td>
<td>Dec. 31 of the year 17 years after the date of manufacture</td>
<td>This provision shall not apply to any engine operation before the effective date of this regulation</td>
</tr>
</tbody>
</table>

BARCT Approach
BARCT Technology Assessment Approach

- Assessment of SCAQMD regulatory requirement
- Other regulatory requirements
- Assessment of emission limits for existing units
- Assessment of pollution control technologies

Assessment of Pollution Control Technologies

- Assessment of SCAQMD regulatory requirement
- Other regulatory requirements
- Assessment of emission limits for existing units
- Assessment of pollution control technologies
Comparison between 1110.2 and RECLAIM For CEMS

**CEMS Requirements: Engine Applicability**

- Under Rule 1110.2, engines ≥ 1000 bhp require CEMS
- Under RECLAIM, Major NOx sources not Large sources require CEMS
  - Major NOx source – engines ≥ 1,000 bhp and operating > 2,190 hours per year
  - Large NOx source – engines rated:
    - ≥ 1,000 bhp and operating < 2,190 hours per year; or
    - ≥ 200 bhp but <1,000 bhp and operating > 2,190 hours per year.
CEMS Requirements: Facility Applicability

- Under Rule 1110.2, there is a facility constraint determining if CEMS is required
  - Combined rating ≥ 1500 bhp at the same location
  - Combined fuel usage ≥ 16 x 10^9 BTUs per year (HHV)
  - Engines < 500 bhp or permitted as a backup or having restricted use are not counted in the combined rating
- Under RECLAIM, no equivalent facility constraint

CEMS Requirements: Impact of Sunsetting RECLAIM

Summary

- 6 RECLAIM facilities with an on-site aggregate horsepower rating ≥ 1500 hp would require CEMS under Rule 1110.2
- 24 engines affected
- Staff believes that changing Rule 1110.2 to match RECLAIM represents backsliding on MRR
Radio Transmission Towers’ Permit Exemption

History

- Rule 219 exempts from permitting diesel, prime engines rated less than 100 bhp used exclusively at remote two-way radio transmission towers where no utility, electricity or natural gas is available within ½ mile radius
- Engines found to operate greater than 500 hours
- Rule 1110.2 does not exempt engines from emissions limits

Considerations

- Provide explicit exemption for emission limits
- Require compliance
- Establish phase-out schedule
Schedule

Next Steps and Proposed Rule Schedule

- On-going working group meetings
- Public workshop 1st Quarter 2019
- Public hearing September 2019
Contacts

Staff Contacts

Please contact the following SCAQMD staff members with any questions or comments

- **Michael Morris**
  Planning and Rules Manager
  (909) 396-3282
  mmorris@aqmd.gov

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

- **Rodolfo Chacon**
  Air Quality Specialist
  (909) 396-2726
  rchacon@aqmd.gov