Proposed Amended Rules

Rule 361: Boilers, Steam Generators, and Process Heaters (Between 2 – 5 MMBtu/hr)

Rule 342: Boilers, Steam Generators, and Process Heaters (5 MMBtu/hr and greater)

Community Advisory Council
Santa Barbara County
Air Pollution Control District

Timothy Mitro
Air Quality Engineer
May 1, 2019
Outline of the Presentation

1) Amendments to the Rules per the 2016 Ozone Plan
   – Ozone Plan Rule Schedule
   – Rule 361 Proposed Changes
   – Rule 342 Proposed Changes
   – Emission Reductions and Cost-Effectiveness

2) Amendments to the Rules per Assembly Bill 617 – BARCT
   (Best Available Retrofit Control Technology)

3) Rule Development Timeline
Boiler Source Category

“Boiler” means any external combustion equipment that is used to produce steam or to heat water.

Rule 361: 2 – 5 MMBtu/hr

Rule 342: 5+ MMBtu/hr
2016 Ozone Plan

- Santa Barbara County is Nonattainment-Transitional for the state ozone standard.
  - District is required to adopt all feasible measures.
  - The 2016 Ozone Plan has a commitment to amend Rule 361 and Rule 342.
  - Rules were expected to be adopted in 2018.
  - Delayed due to adoption of AB 617 and impact to rules.
Rule 361 – Background

• Adopted in January 2008

• Rule 361 applies to units rated between 2 – 5 MMBtu/hr

• Approximately 150 units in the District at 45 stationary sources
  – Located at hospitals, schools, oil & gas facilities

• Current Emission Standards
  – New or modified units: 30 ppm NOx
  – Existing units: 30 ppm NOx by January 2020
## Rule 361 – Proposed Amendments

**Emission Limits for Units Installed On or After January 1, 2020**

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>NOx Limit (ppm at 3% O&lt;sub&gt;2&lt;/sub&gt;)</th>
<th>CO Limit (ppm at 3% O&lt;sub&gt;2&lt;/sub&gt;)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Gas or Field Gas: non-atmospheric</td>
<td>9</td>
<td>400</td>
</tr>
<tr>
<td>Natural Gas or Field Gas: atmospheric</td>
<td>12</td>
<td>400</td>
</tr>
<tr>
<td>Landfill Gas</td>
<td>25</td>
<td>400</td>
</tr>
<tr>
<td>Digester Gas</td>
<td>15</td>
<td>400</td>
</tr>
<tr>
<td>Liquefied Petroleum Gas</td>
<td>20</td>
<td>400</td>
</tr>
<tr>
<td>All other fuels</td>
<td>30</td>
<td>400</td>
</tr>
</tbody>
</table>

- Required upon installation – not a retrofit requirement.
- Limits are comparable to:
  - South Coast AQMD Rule 1146.1 Adopted in 2008
  - San Joaquin Valley APCD Rule 4307 Adopted in 2008
  - Ventura County APCD Rule 74.15.1 Adopted in 2015
Rule 342 – Background

• Adopted in March 1992

• Rule 342 applies to units rated at 5 MMBtu/hr and greater

• Approximately 60 units in the District at 22 stationary sources
  – Located at hospitals, oil & gas facilities, and manufacturing facilities

• **Current Emission Standards**
  – Gaseous fired units:  30 ppm NOx
  – Non-gaseous fired units:  40 ppm NOx
## Rule 342 – Proposed Amendments

### Emission Limits for Units Installed On or After January 1, 2020

<table>
<thead>
<tr>
<th>Rated Heat Input (million Btu/hr)</th>
<th>Fuel Type</th>
<th>NOx Limit (ppm at 3% O&lt;sub&gt;2&lt;/sub&gt;)</th>
<th>CO Limit (ppm at 3% O&lt;sub&gt;2&lt;/sub&gt;)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 - 20</td>
<td>Gaseous, except LFG/digester</td>
<td>9</td>
<td>400</td>
</tr>
<tr>
<td>&gt; 20</td>
<td>Gaseous, except LFG/digester</td>
<td>7</td>
<td>400</td>
</tr>
<tr>
<td>≥ 5</td>
<td>Landfill Gas</td>
<td>25</td>
<td>400</td>
</tr>
<tr>
<td>≥ 5</td>
<td>Digester Gas</td>
<td>15</td>
<td>400</td>
</tr>
<tr>
<td>≥ 5</td>
<td>Non-gaseous</td>
<td>40</td>
<td>400</td>
</tr>
<tr>
<td>≥ 5</td>
<td>Multiple Fuels</td>
<td>weighted avg</td>
<td>400</td>
</tr>
</tbody>
</table>

- Required upon installation - not a retrofit requirement.
- Limits are comparable to:
  - South Coast AQMD Rule 1146 Adopted in 2008
  - San Joaquin Valley APCD Rule 4320 Adopted in 2008
Rule 361 & 342 – Other Changes

• Added new definitions
  – **Rule 361**: Fuel Types, Startup and Shutdown, Atmospheric Unit
  – **Rule 342**: Fuel Types, Startup and Shutdown, Modification

• Reorganized sections and removed obsolete language

• Tune-up Procedures
  – **Rule 361**: References the South Coast AQMD Combustion Gas Periodic Monitoring Protocol (May 1, 2009)
  – **Rule 342**: Added Natural Draft tune-up procedure
• **Emission Reductions**
  – Reduces NOx by approx. 16 tons per year at full implementation.
  – Reductions will occur with unit turnover.

• **Cost-Effectiveness**
  – Includes capital costs and operation & maintenance costs

<table>
<thead>
<tr>
<th>Unit Size (MMBtu/hr)</th>
<th>Cost-Effectiveness ($/ton NOx)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>$20,800</td>
</tr>
<tr>
<td>5</td>
<td>$14,700</td>
</tr>
<tr>
<td>10</td>
<td>$19,700</td>
</tr>
<tr>
<td>20</td>
<td>$16,000</td>
</tr>
<tr>
<td>50</td>
<td>$12,000</td>
</tr>
</tbody>
</table>
AB 617 Industrial Sources

- Windset Farms
- PCEC: Orcutt Hill
- ERG: Cat Canyon West
- Imerys
- ExxonMobil: POPCO
- ExxonMobil: Las Flores Canyon
AB 617 BARCT Rule Schedule

• **January 1, 2019:** All districts that are nonattainment need to adopt an expedited rule development schedule that implements Best Available Retrofit Control Technology (BARCT) by the earliest feasible date.

• BARCT requirements apply to each *Industrial Source* subject to the state Cap & Trade program.
  – Greater than 25,000 metric tons of greenhouse gases (GHGs).
  – There are six AB 617 Industrial Sources located in SB County.

• Rule 361 and Rule 342 identified on the District’s BARCT rule development schedule, as adopted in Dec. 2018.
AB 617 BARCT Emission Limits

• “BARCT” means an emission limitation that is based on the **maximum degree** of reduction achievable, taking into account environmental, energy, and economic impacts.

### Rule 361 & Rule 342 – BARCT

<table>
<thead>
<tr>
<th>Rated Heat Input (million Btu/hr)</th>
<th>Fuel Type</th>
<th>NOx Limit (ppm at 3% O₂)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between 2 – 5</td>
<td>Natural Gas/Field Gas: atmospheric</td>
<td>12</td>
</tr>
<tr>
<td>Between 2 – 5</td>
<td>Natural Gas/Field Gas: non-atmospheric</td>
<td>9</td>
</tr>
<tr>
<td>5 – 20</td>
<td>Gaseous, except LFG/digester</td>
<td>9</td>
</tr>
<tr>
<td>&gt; 20</td>
<td>Gaseous, except LFG/digester</td>
<td>7</td>
</tr>
</tbody>
</table>

**Meeting these standards will require some units to be retrofitted.**
Rule 361 – BARCT Amendments

- Affected units:

<table>
<thead>
<tr>
<th>AB 617 Industrial Source</th>
<th>Device Name</th>
<th>Rated Heat Input (MMBtu/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERG</td>
<td>Process Heater #1 &amp; #2</td>
<td>4.8</td>
</tr>
<tr>
<td></td>
<td>Heater Treater</td>
<td>4.9</td>
</tr>
<tr>
<td>Imerys</td>
<td>Package Boiler</td>
<td>3.8</td>
</tr>
</tbody>
</table>

- Existing requirement: 30 ppm NOx by January 1, 2020

- Proposed revisions require BARCT (9 or 12 ppm NOx) no later than 1 year after rule adoption.

- ATC permit required 3 months after rule adoption.
Rule 342 – BARCT Amendments

• Affected units:

<table>
<thead>
<tr>
<th>AB 617 Industrial Source</th>
<th>Device Name</th>
<th>Rated Heat Input (MMBtu/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windset Farms</td>
<td>Boilers #1 - 6</td>
<td>38.4 - 42.7</td>
</tr>
<tr>
<td>Imerys</td>
<td>Main Boiler</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Standby Boiler</td>
<td>15.5</td>
</tr>
<tr>
<td>POPCO</td>
<td>Boiler A &amp; B</td>
<td>41</td>
</tr>
<tr>
<td>PCEC</td>
<td>Portable Steam Generator</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>SG-100, 300, 400</td>
<td>62.5</td>
</tr>
<tr>
<td>ERG</td>
<td>Steam Generator #1 &amp; 2</td>
<td>85</td>
</tr>
</tbody>
</table>

• Proposed revisions require BARCT (9 or 7 ppm NOx) no later than Dec 31, 2023.

• Windset Farms’ CO₂ dosing process
  – Alternative emission limits: 30 ppm NOx & 10 ppm CO at 3% O₂
Rule Development Timeline

• **March 14, 2019:** Public Workshop

• **March 28, 2019:** Provide written comments

• **May 1, 2019:** Community Advisory Council

• **Tentative - June 20, 2019:** Board Hearing
  – 30-day public notice required prior to the Board Hearing
  – Public comments can be submitted prior to or at the hearing
Next Steps

• Questions and Discussion

• CAC Consideration and Recommendation

• Bring the Rule Package to the District Board