New EPA Combustion Regulations and Implications for the Utility Industry

Carrie Yonley, P.E.
Schreiber, Yonley & Associates
St. Louis, Missouri

September 9, 2010
Latest MACT “News”

- First Final “New” NESHAP Rule
  - LLL MACT for cement industry
  - New standards
  - Implementation

- Related Regulatory Changes
What Is in New Rule?

- 40 CFR 63 Subpart LLL Revised
- Rule Applicable to Portland Cement Kilns
- Revamped Standards for Kiln and Main Sources
  - New standards for Hg, THC, HCl
  - Revised standards for PM
  - Continued D/F standards
- Applies During All Operations
  - Normal and Malfunctions
  - Startup & shutdown (separate limits from normal)
What Is in New Rule (con’t)?

- Longer Opacity Readings on Other Regulated Sources
- CEMS and CMS Monitoring Requirements
- New Outside Storage Pile Requirements
- 3 Years Compliance Timeframe

- Companion Rule: Revised NSPS
- Potentially Overlapping Rule: CISWI (Final Expected December 2010)
## Revised LLL MACT Standards

(Pre-publication Version)

<table>
<thead>
<tr>
<th></th>
<th>Previous Standards (existing new)</th>
<th>Existing Kilns (normal/SS)</th>
<th>New Kilns (normal/SS)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PM</strong></td>
<td>0.3 #/ton feed</td>
<td>0.04 #/ton clinker</td>
<td>0.01 #/ton clinker</td>
</tr>
<tr>
<td></td>
<td>~ 0.5 #/ton clinker</td>
<td>0.004 gr/dscf</td>
<td>0.0008 gr/dscf</td>
</tr>
<tr>
<td></td>
<td>~0.04 gr/dscf</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>D/F</strong></td>
<td>0.4 ng/dscm</td>
<td>Same</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or 0.2 ng/dscm</td>
<td>(10°F increase in Temp during SS)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>@&lt;400°F</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

30-day rolling average for normal operations
7-day rolling average for startup-shutdown operations
### Additional MACT Standards

<table>
<thead>
<tr>
<th></th>
<th>Existing Kilns (normal/SS)</th>
<th>New Kilns (normal/SS)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hg</strong></td>
<td>55#/MM ton clinker</td>
<td>21#/MM ton clinker</td>
</tr>
<tr>
<td></td>
<td>10 ug/dscm</td>
<td>4 ug/dscm</td>
</tr>
<tr>
<td><strong>THC</strong></td>
<td></td>
<td>24 ppmvd @ 7% O&lt;sub&gt;2&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24 ppmvd (no O&lt;sub&gt;2&lt;/sub&gt; correction)</td>
</tr>
<tr>
<td><strong>HCl (Major Sources)</strong></td>
<td></td>
<td>3 ppmvd @ 7% O&lt;sub&gt;2&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 ppmvd (no O&lt;sub&gt;2&lt;/sub&gt; correction)</td>
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</tbody>
</table>

30-day rolling average for normal operations
7-day rolling average for startup-shutdown operations
## Companion Rule - NSPS

<table>
<thead>
<tr>
<th>Kiln Standards</th>
<th>Standard Previous to 6/16/08</th>
<th>Construct/Reconstruct/Modify after 6/16/08</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM Opacity</td>
<td>$\leq 0.3$ #/ton dry feed</td>
<td>$\leq 0.01$ #/ton clinker</td>
</tr>
<tr>
<td></td>
<td>$\leq 20%$ (if no CEMS)</td>
<td>None</td>
</tr>
<tr>
<td>$\text{NO}_x$</td>
<td>None</td>
<td>$\leq 1.5$ #/ton clinker</td>
</tr>
<tr>
<td>$\text{SO}_2$</td>
<td>None</td>
<td>$\leq 0.4$ #/ton clinker (or 90% removal across APCD)</td>
</tr>
</tbody>
</table>

30-day rolling averages
Additional Rule Components

- Malfunctions Limits Same as Normal
  - Affirmative defense approach
- CEMs and CMSs Required for Continuous Compliance
  - PM, Hg, THC, HCl (if no wet scrubber)
- Testing - Initial Compliance Test
  - First 30 days of CEMS use
  - 180 days for stack testing
- Operating Plans – O&M, CMS-QA, SOPs
MACT Implementation -- 3 Year Timeline --

- Digest Rule
- Strategy ‘Team’ Meetings
- Collect and Analyze Data
- Conduct Gap Analysis
- Develop Detailed Timeline/Actions
- Evaluate, Order & Install APCD(s) and CEMs
- Permit New Equipment/Update Title V
- Prepare Operating Plans, Recordkeeping System & Train Employees
Compliance Planning Questions

- How Will Compliance with New Rule Impact Operations?
- What New Control Technology May Be Required?
- What Actions Need Accomplished When for 3-year Compliance Timeline?