Preparing Your Emissions Data Today for Enforcement Tomorrow

Presented to the Environmental Federation of Oklahoma (EFO) 26th Annual Meeting by ALL4 Inc.

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October 4, 2017
Your environmental compliance is clearly our business.

Agenda

- Frame the discussion with NextGen
- Getting your continuous monitoring system (CMS) “house” in order
- Recommendations
Frame the Discussion with NextGen
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Five NextGen Components

- Regulation and Permit Design
- Advanced Monitoring
- **Electronic Reporting**
- Transparency
- Innovative Enforcement
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CEDRI – Compliance and Emissions Data Reporting Interface (aka electronic reporting)


Introduced and required through regulation and CEDRI system developments and updates

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### Electronic Reporting

#### CEDRI Stats

Total number of reports submitted by Part and Subpart are found below (as of May 05, 2017).

<table>
<thead>
<tr>
<th>Part</th>
<th># of Report Submissions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2014</td>
</tr>
<tr>
<td>60</td>
<td>38</td>
</tr>
<tr>
<td>62</td>
<td>0</td>
</tr>
<tr>
<td>63</td>
<td>2,144</td>
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<tr>
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Who Cares?

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<ExcessEmissionsUnits>Days</ExcessEmissionsUnits>
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    <StartupShutdownRollingAverage/>
    <ComplianceRollingAverage>24</ComplianceRollingAverage>
  </CEMSSummary>

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- WebFIRE – U.S. EPA's online database for CEDRI reports
  - Allows for registration and email notification when reports are submitted
  - Batch downloads
  - https://www.epa.gov/electronic-reporting-air-emissions/webfire

Who Cares?
Transparency

- Regulations require site specific monitoring plans to contain:
  - Algorithms used to reduce the measured data into the reportable form of the standard and to calculate the applicable averages [§63.671(b)(4)(i)]
  - Written procedures for excluding data [§63.671(b)(4)(ii)-(iii)]

- State agencies requiring similar during permitting efforts
Innovative Enforcement

- Greater transparency leads to crowd sourcing
- Increased scrutiny includes NGOs
- Certain States require their own electronic reporting:
  - Automated reviews of data versus permit limits
  - State system calculates compliance averages
  - Automated fines/NOVs/enforcement
Questions We Commonly Hear

- Are we collecting the appropriate and quality data?
- Is there consistency in how my data is generated, recorded, and calculated (across time, facilities, pollutants, monitor type, etc.)?
- How well have we documented our approach? Is it defensible?
- Have there been changes to regulations that affect CMS?
- Is my publicly available data consistent with what we have submitted?
- Is our reasonable inquiry sufficient?
Getting Your CMS House In Order
“Your CMS House”

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Objective of the CMS House

- The ultimate objective of a successful CMS program ("House") is to allow the Certifying Official to confidently sign the following statement:

  - "I certify, based on a **reasonable inquiry** of the persons responsible for preparing this report that the information provided is, to the best of my knowledge and belief **true, accurate, and complete**."
Each member of a successful house functions to provide:

- Valid CMS data
- Quality-assured CMS data
- Minimal downtime
- No exceedance
Instrumentation & Operations

- **Instrumentation:**
  - Day-to-day generation of valid, quality assured data
  - Minimizing downtime resulting from invalid data
  - Recordkeeping

- **Operations:**
  - Compliance with emission standards or operating limits
  - Recordkeeping

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Environmental & Management

- **Environmental:**
  - Provides the “Why” and approves the “How”
  - CMS program oversight & management
  - Reporting

- **Management:**
  - Certifies after reasonable inquiry
What We Are Finding

- Dated procedures missing the “why” and “how”
- Antiquated, undocumented, unknown systems
- Little understanding of data management (e.g., validation and averaging)

Examples:
- Lack of documented regulatory interpretations
- “We have a DAHS, we’re good”
- Systems (new and old) that have never been verified
- Black box mentality
What We Are Doing

- Auditing and verifying the CMS data and DAHS:
  - Good/Bad Data, validation, averaging, reporting
- Implementing changes
- Testing the changes
- Verifying all information being reported
- Implementing reasonable inquiry processes
- Involving internal and external legal council
An orderly CMS house results in:

- Improved accuracy
- Improved consistency
- Improved efficiency

A confident reasonable inquiry, including:

- Systems
- Procedures
- Understanding
- Documentation
Recommendations
Map It Out

Measured Data

Validation

Calculation

Compliance Demonstration

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Establish a data management program that:

- Interprets regulatory requirements and decisions (the “why”)
- Provides the structure needed to generate compliance reports (the “how”) – Including systems and procedures
- Documents what’s going on inside your DAHS
- Is well understood
- Is well documented
Ensure data is tagged appropriately

- Data collected by CMS (when subject to monitoring) can **ONLY** be good/bad
- Status/reason/monitoring codes used to differentiate good/bad data
- If you are not excluding bad data, you are not in compliance
- DAHS programming will NOT automatically invalidate/validate for all scenarios
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Data Validation Example

- Data Validation gone wrong!
  - PA 30-calendar day average example
    - 18 valid hours for valid daily average
    - 23 valid daily averages for valid 30-day

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How much data needs to be valid for my compliance average to be useable?

- Hourly
  - 1 valid point in each quadrant?
  - 75% valid segments?
  - 2 valid points separated by 15 minutes for QA/QC activities?

- 3-hour average
  - 1 of 3? 2 of 3? 3 of 3?

- 30 Day Average:
  - Operating or calendar days?
  - Block or rolling?
  - 1 of 30 days? 23 of 30 days? 720 hours?
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<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Value</th>
<th>Units</th>
<th>Process Code</th>
<th>Monitoring Code</th>
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<td>8.01</td>
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<td>Valid</td>
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<td>Valid</td>
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<td>10.07</td>
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</table>
### PC MACT Example

- **PC MACT THC Emission Limit for an Existing Kiln**

<table>
<thead>
<tr>
<th>If your source is</th>
<th>And the operating mode is:</th>
<th>And if is located at:</th>
<th>Your emissions limits are:</th>
<th>And the units of the emissions limit are:</th>
<th>The oxygen correction factor is:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing kiln</td>
<td>Normal operation</td>
<td>Major or area source</td>
<td>PM(^1) 0.07 D/F(^2) 0.2 Mercury 55 THC(^3)(^4) 24</td>
<td>lb/ton clinker ng/dscm (TEQ) lb/MM tons clinker ppmvd</td>
<td>NA. 7 percent. NA. 7 percent.</td>
</tr>
</tbody>
</table>

\(^3\) Measured as propane.

\(^4\) Any source subject to the 24 ppmvd THC limit may elect to meet an alternative limit of 12 ppmvd for total organic HAP.

- THC Emission Limit = 24 ppmvd @ 7% O\(_2\) (measured as propane) during normal operation
PC MACT Example

- THC Emission Limit = 24 ppmvd @ 7% O$_2$ (measured as propane) 30-operating day average (operating day = a day the kiln produces clinker) rolling by one day excluding startup (from start of fuel firing to either 120 minutes of continuous kiln feed or feed rate > 60% kiln design, whichever is first) and shutdown (end of kiln feed to end of kiln rotation) Average of hourly emissions over the previous 30-operating days Using valid data that meets QA/QC requirements

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Takeaways

- Electronic data → Transparency → Innovative Enforcement
- Understand your tolerance to risk
- Get your CMS house in order
Questions?

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