Requirements for Continuous Emission Monitoring

Proposed Amended Rules (PAR) 218 and 218.1

Working Group Meeting #2

May 2, 2019
9:30 am

South Coast AQMD Headquarters
Diamond Bar, California
Agenda

- Background
- Approach
- Comparing current requirements for RECLAIM and non-RECLAIM CEMS
- Identifying monitoring requirements for further analysis
- Survey
Background
Background

In March 2017, the South Coast AQMD adopted the 2016 AQMP
- Control measure CMB-05 requires the RECLAIM program to transition to a command-and-control structure
- Requires a 5 ton per day NOx emission reduction to be achieved with Best Available Retrofit Control Technology (BARCT) as soon as feasible and no later than 2025

In July 2017, Assembly Bill 617 was signed by the Governor
- Requires expedited BARCT implementation for facilities in the state greenhouse gas cap and trade program by December 31, 2023
- Places priority on higher polluting units
Current monitoring, reporting, and recordkeeping (MRR) requirements on CEMS are defined by:
- Rule 218 and 218.1 for non-RECLAIM facilities
- Rule 2012 Chapter 2 for RECLAIM facilities

Landing Rules provide temporary MRR solution on CEMS for facilities exiting RECLAIM

PAR 218 and 218.1 would apply to
- Non-RECLAIM facilities; and
- Facilities that have exited RECLAIM
Approach
## PAR 218/218.1 Approach

### Rule 2012 MRR Categories of Requirements

- CEMS Monitoring
- Super Compliant Facilities
- Fuel meter/Timer for Fuel Use  
  - non-Major Source
- Source Test and Tuning  
  - non-Major Source
- Reporting - CEMS
- Reporting - Others
- Recordkeeping - CEMS
- Recordkeeping - Others

### PAR 218/218.1 MRR Categories of Requirements
PAR 218/218.1 Approach

Rule 2012 MRR Categories of Requirements

- CEMS Monitoring
- Super Compliant Facilities
- Fuel meter/Timer for Fuel Use _ non-Major Source
- Source Test and Tuning _ non-Major Source
- Reporting - CEMS
- Reporting - Others
- Recordkeeping - CEMS
- Recordkeeping - Others

PAR 218/218.1 MRR Categories of Requirements

- CEMS Monitoring
- Reporting - CEMS
- Recordkeeping - CEMS
Approach for PAR 218 and 218.1

Compare rule structure, general focus, and each requirement for Rule 2012 and Rule 218/218.1

Identify requirements that are not specified by either Rule 2012 or Rule 218/218.1; and requirements that have different requirements by those Rules

Assess, harmonize or revise the requirements for key subjects (Part 60 and Part 75 CEMS would also be referenced)
PAR 218/218.1 Approach

Current Rule 218

Current Rule 218.1

Rule 2012 Protocol, Chapter 2 and related rule sections

Amended Rules 218 and 218.1
Rule Comparisons
### Comparing Rule 2012 Ch. 2 and Rule 218/218.1

<table>
<thead>
<tr>
<th>Category</th>
<th>2012 Chapter 2</th>
<th>218/218.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitored pollutant</td>
<td>NOx</td>
<td>Any pollutants (common ones are NOx, SOx, CO, and total sulfur)</td>
</tr>
<tr>
<td>Semi Continuous Emission Monitoring System (SCEMS) (including time-shared CEMS)</td>
<td>Not specified, except for time-shared CEMS</td>
<td>Specified</td>
</tr>
</tbody>
</table>

Under Consideration:
- PAR 218/218.1 would continue to apply to all pollutants, but the focus of this amendment will be NOx
- Time-shared CEMS would continue to be included in the SCEMS definition
- SCEMS, other than time-shared CEMS, are for sulfur that are mostly installed in refineries
  - The requirement would be retained in PAR 218/218.1
## Comparing Rule 2012 Ch. 2 and Rule 218/218.1 - cont.

<table>
<thead>
<tr>
<th>Category</th>
<th>2012 Chapter 2</th>
<th>218/218.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>The concept of “new” and “existing” CEMS with different requirements</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

The requirement for “existing” CEMS is obsolete and can be removed from PAR 218/218.1
Comparing Rule 2012 Ch. 2 and Rule 218/218.1 - cont.

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<thead>
<tr>
<th>Category</th>
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</thead>
<tbody>
<tr>
<td>Emission calculation and data handling (i.e. valid data, data averaging method, Missing Data Procedure, alternative data acquisition at CEMS out of control)</td>
<td>Specified</td>
<td>Not specified</td>
</tr>
</tbody>
</table>

- **Missing Data Procedure is not needed for concentration based Command-and-Control Rules**
- **Valid data, data averaging method (averaging method specified by any landing rule supersedes), and alternative data acquisition should be specified in PAR 218/218.1**
Comparing Rule 2012 Ch. 2 and Rule 218/218.1 - cont.

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<tr>
<th>Category</th>
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<tbody>
<tr>
<td>Certified Gas Audit (CGA)</td>
<td>Not specified</td>
<td>Specified</td>
</tr>
</tbody>
</table>

Rule 218/218.1 Certified Gas Audit requirement is comparable to that in 40 CFR part 60 and Part 75
Specified in Rule 218/218.1, but not in Rule 2012

However, test for NO2 to NO conversion efficiency is required in CEMS certification guidance document, and it is performed in practice for both Rule 218/218.1 and Rule 2012 sources

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<tbody>
<tr>
<td>NO2 to NO conversion efficiency</td>
<td>Not Specified</td>
<td>Specified</td>
</tr>
</tbody>
</table>
## Comparing Rule 2012 Ch. 2 and Rule 218/218.1- cont.

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<tr>
<th>Category</th>
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<tbody>
<tr>
<td>Calibration gas</td>
<td>• EPA Certified Gas (Protocol 1 gas)*</td>
<td>• EPA Certified Gas (Protocol 1 gas)</td>
</tr>
<tr>
<td></td>
<td>• National Institute of Standards and Technology/EPA approved standard reference materials</td>
<td>• Alternative certification protocol upon approval</td>
</tr>
<tr>
<td></td>
<td>• Certified reference materials</td>
<td></td>
</tr>
</tbody>
</table>

* Certified according to “EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards,” September 1997, EPA 600/R-97/121 or any subsequent version published by EPA

- Names and references to documents need to be clarified
  - Requirements between 2012 and 218/218.1 are essentially the same

- South Coast AQMD CEMS certification guidance document
  - Use of National Institute of Standards and Technology/EPA approved certified reference material, standard reference material, or Protocol 1 calibration gases certified by the vendor to be within 2 percent of the label value

- Consolidation of guidance documents is likely needed
Comparing Rule 2012 Ch. 2 and Rule 218/218.1- cont.

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<tbody>
<tr>
<td>Data availability</td>
<td>Specified</td>
<td>Specified (Different than Rule 2012)</td>
</tr>
</tbody>
</table>

- Current Rule 218/218.1 may need more specifications on valid data and daily availability
- Due to the discretion on interpreting the rule language, Rule 2012 data availability could be over 100%
- 40 CFR 75.32 definition on data availability could be referenced
Comparing Rule 2012 Ch. 2 and Rule 218/218.1-
cont.

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<tr>
<td>Threshold for lowest data availability</td>
<td>No</td>
<td>Yes (may require recertification if below 95%)</td>
</tr>
</tbody>
</table>

- Retain data availability threshold in 218/218.1
- Will re-visit details for corrective actions when below threshold
Comparing Rule 2012 Ch. 2 and Rule 218/218.1-cont.

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</tr>
</thead>
<tbody>
<tr>
<td>Full Span Range (FSR)</td>
<td>• Set all data points within 10-95% of the range</td>
<td>• Set all data points within 10-95% of the range; and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Air contaminant Full Span Range between 150% and 200% of the concentration limit, or an approved value but not lower than 120% of the concentration limit</td>
</tr>
</tbody>
</table>

With concentration limit being established for facilities exiting RECLAIM, their Full Span Range should be aligned up with Rule 218/218.1 requirements.
Comparing Rule 2012 Ch. 2 and Rule 218/218.1 - cont.

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<tr>
<td>Relative Accuracy Test Audit (RATA) frequency</td>
<td>Semi-annual, but may be reduced to annual if all RAs 7.5% or lower</td>
<td>Annual</td>
</tr>
</tbody>
</table>

- Annual or semi-annual for PAR 218/218.1?
- Should PAR 218/218.1 retain the incentive of reducing test frequency at a low Relative Accuracy (RA) value?
### Comparing Rule 2012 Ch. 2 and Rule 218/218.1 - cont.

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| Relative accuracy deminimus for analyzers | - NOx 1.0 ppm (if NOx less than 5.0 ppm)  
- O2/CO2 1.0% (if O2/CO2 less than 5.0%)  
- Deminimus standard is an alternative to regular relative accuracy standard only when the monitored value is below a threshold | - NOx 1.0 ppm  
- O2 1.0%  
- SOx 2.0 ppm  
- CO 2.0 ppm  
- Reduced sulfur compounds 4.0 ppm  
- Deminimus standard is an alternative to regular relative accuracy standard with no threshold on the monitored value |

Should the deminimus be lowered for low emission limit units (e.g., turbines at 2 or 2.5 ppm NOx)?

Should a threshold on the monitored value be required to use deminumus standard?
Comparing Rule 2012 Ch. 2 and Rule 218/218.1 - cont.

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<tbody>
<tr>
<td>Strip chart recorder (paperless) and Data Acquisition System (DAS)</td>
<td>Both are required</td>
<td>DAS is required and strip chart is an option</td>
</tr>
</tbody>
</table>

- With DAS, Strip chart recorder (paperless) would remain as an option
Comparing Rule 2012 Ch. 2 and Rule 218/218.1-cont.

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<tbody>
<tr>
<td>Reporting excess emissions</td>
<td>Required for Title V and not for non-Title V facilities</td>
<td>Yes for both Title V and non-Title V</td>
</tr>
</tbody>
</table>

RECLAIM facilities report all mass emissions, and thus excess emissions have been counted but reported in a different manner especially by non-Title V facilities

Under consideration: The requirement for reporting excess emissions would be retained in PAR 218/218.1, and other regulations (e.g., Title V and Part 60) may be referenced if any enhancement is needed
## Comparing Rule 2012 Ch. 2 and Rule 218/218.1 - cont.

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<tbody>
<tr>
<td>Quality assurance test report submittal</td>
<td>Specified</td>
<td>Not Specified</td>
</tr>
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</table>

- Test report submittal should be specified in PAR 218/218.1 for all pollutant similar to 2012
- In practice RECLAIM facilities submit test report summary by Electronic Data Reporting (EDR)
CEMS Survey
CEMS Survey

- A survey will be sent to every facility owner or operator that potentially operates a CEMS
- Expect to be sent prior to the third PAR 218/218.1 Working Group meeting
- The form would also be posted on the South Coast AQMD webpage
- Collected information would facilitate this rulemaking
CEMS Survey Questions - Tentative

- Total CEMS in the facilities (at this location and all other South Coast AQMD locations)

For each CEMS at this location:
- Latest CEMS certification date
- Is it Alternative CEMS (a.k.a. ACEMS or PEMS)
- Is it a Semi-continuous Emission Monitoring System (SCEMS)
- CEMS monitored parameters
- CEMS manufacturer & Vendor, contractor
- CEMS preventive maintenance (in-house or by contractor (name of the contractor))

Other than fixed (clock) hourly average, is the CEMS emission data also averaged in other ways (e.g. rolling average by 1-hour or 3-hour and etc.)
CEMS Survey Questions - Tentative

Equipment and emissions monitored by this CEMS:
- Equipment (pollution source) (ID and Appl)
- Control Device (ID and Appl)
- Capacity of the equipment
- Fuel
- NOx emission limit in the permit
- Applicable Landing Rule
- NOx emission limit proposed in the landing rule
- Actual NOx emission rate and the source of data
- NOx analyzer span range
- Future plan for equipment change (retrofit/replacement/others) (In order to comply with landing rule emission limit/other reasons)
Next Steps

- Next Working Group Meeting – May 28, 2019
- Public Workshop – 3rd Quarter 2019
- Set Hearing – September 6, 2019
- Public Hearing – October 4, 2019
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Rule 1110.2

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