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.

<table>
<thead>
<tr>
<th>Category</th>
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<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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</tr>
</thead>
<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
Comparing Rule 2012 Ch. 2 and Rule 218/218.1-
cont.

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<tbody>
<tr>
<td>NO2 to NO conversion efficiency</td>
<td>Not Specified</td>
<td>Specified</td>
</tr>
</tbody>
</table>

- 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
Comparing Rule 2012 Ch. 2 and Rule 218/218.1-cont.

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

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

- 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 deminimus 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-
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<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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