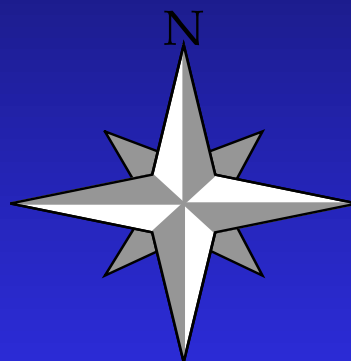


Certification Testing for CEMS

(Plus Other Interesting Items...)



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Eric M. Hallman
Washington, D.C.



Discussion Topics for Today:

- CEMS units
 - ◆ Requirements
- Certification Testing
- Example – Case study for NG unit
- Conclusion





40 CFR 60 Subpart Db:

- Title 40: Protection of Environment
- PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES
- Subpart Db—Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

40 CFR 60 Subpart Db:

- §60.40b Applicability and delegation of authority.
- §60.41b Definitions.
- §60.42b Standard for sulfur dioxide (SO₂).
- §60.43b Standard for particulate matter (PM).
- §60.44b Standard for nitrogen oxides (NO_x).
- §60.45b Compliance and performance test methods and procedures for sulfur dioxide.
- §60.46b Compliance and performance test methods and procedures for particulate matter and nitrogen oxides.
- §60.47b Emission monitoring for sulfur dioxide.
- §60.48b Emission monitoring for particulate matter and nitrogen oxides.
- §60.49b Reporting and recordkeeping requirements

Applicability:

- Steam Generating unit constructed > 6/19/84
 - ◆ Also Modified, Reconstructed
- Coal –
 - ◆ 100-250 mmBtu/hr input; PM & NO_x
 - ◆ >250 mmBtu/hr; PM, NO_x, SO₂
- Oil –
 - ◆ 100-250 mmBtu/hr input; NO_x
 - ◆ >250 mmBtu/hr; PM, NO_x, SO₂
- Gas Only – NO_x
- Electric Utility units not subject to this Subpart

Other Considerations:

- In addition to 40 CFR 60 Subpart Db
- State implemented RACT, BAT, etc
 - ◆ Ex: $\text{NO}_x < 0.10 \text{ lb/mmBtu}$ State RACT Limit
vs 0.20 lb/mmBtu Subpart Db Emission
Limit
 - ◆ Permit requirements will specify





Certification Testing:

- Initial Certification Performance Testing
 - ◆ Within 180 days after initial start-up
- Quarterly Accuracy Determinations
 - ◆ Calibrated Gas Audits (CGA)
 - ◆ Comparison of reference gases to Analyzer
 - ↳ 0, Low, Mid, Span
- Daily Calibration Tests
 - ◆ 0 and Span
- Annual RATA Test

Certification Testing:

- Annual Relative Accuracy Test Audit (RATA)
- Compares data from the CEMS to concurrently collected reference method test data
- Must be conducted annually during the quarter of the initial Performance Test

Example: New Gas Unit

- > 100 mmBtu/hr
- Only NG
 - ◆ Exempt from SO₂ req's in 60.42b(k)(1)
 - ◆ Not subject to PM in 60.43b since coal, oil, wood, or mixtures of fuels not combusted
- Shall comply with NO_x req's including the following:

Example: New Gas Unit (Cont'd)

- 60.44b(a) Standards for NO_x
- 60.44b(h) & 60.46(a) NO_x stds apply at all times including start-up, shut-down, or malfunction
- 60.44b(i) Compliance w/ NO_x emission limits determined on 30 day rolling avg

Example: New Gas Unit (Cont'd)

- Monitoring & Recordkeeping
- 60.48b(1), (c)-(f) CEMS
- 60.48b(g)(2) Monitoring alternative to CEMS
- 60.49b(d)(1) Record fuel amounts for each day and annual capacity factor calculation
- 60.49b(g) Records for units subject to NO_x
- 60.49b(o) Records retention

Example: New Gas Unit (Cont'd)

- Reporting Requirements
- 60.49b(a) Initial start-up notification
- 60.49b(b) Performance test data
- 60.49b(c) Plan for monitoring provisions
- 60.49b(h) Excess emission reports
- 60.49b(i) Reports of information recorded under 60.49b(g)

Conclusion:

- CEMS are a requirement for most new industrial boilers.
- Important to investigate, plan, and install the correct and appropriate equipment.
- Certification testing and required on-going testing is required – plan accordingly!
- Be proactive vs reactive. CEMS can be beneficial in other ways; operational improvement, loop tuning, etc.

Thank You – Questions & Discussions

