
Part 60 vs. Part 75 CEM/DAS for Industrial Boilers

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40 CFR Part 60

- Wide Variety of Combustion Sources
 - Utility Boilers
 - Commercial, Institutional & Industrial Boilers
 - MSW & Waste Fuel Incinerators
 - Refineries
 - Combustion Turbines
- Appendix B - CEMS certification and performance test specifications
- Appendix F - QA/QC rules

40 CFR Part 60

- Requirements **STRONGLY** influenced by individual permit requirements
- Reports filed quarterly, typically on paper
 - Excess Emission Reports
 - Downtime Reports
 - Additional permit or local reports
 - State Specific
 - Electronic - PA, NE, KY
 - EE Format - NJ

40 CFR Part 75

- Part 75 Regulations are in addition to, not in place of Part 60
- Originally applied to Utility sources >25MW
 - SO₂ emission trading program
 - “Acid Rain Program”
- Adapted to NO_x Trading Programs
 - Some with “40 CFR Part 75-like” requirements
 - www.epa.gov/airmarkets/progsreg/noxview.html
- Reports filed quarterly via EDR to EPA

Why CEM

- Clean Air Act
 - Assure SO₂ & NO_x reductions achieved
- Acid Rain & NO_x Budget Programs
 - Market-based approach via trading credits
 - Measure the commodity (SO₂, NO_x) being traded

CEM Regulations

	Part 60	Part 75	N0x Trading
• SO ₂	lb/Mbtu	lb/hr	N/A
• N ₀ x	lb/Mbtu	lb/Mbtu	lb/hr
• Diluent (O ₂ /CO ₂)	%	%	%
• Opacity	%	%	%
• Flow	N/A	scfh(*)	scfh (*)
• CO ₂	N/A	tpd/tpy	N/A

CEM Regulations

	Part 60	Part 75	N0x Trading
• Averaging			
– Time	1 hr.	1 hr	1 hr
– Freq.	4 data pts/hr	4/hr.	4/hr
• Valid data	2 dp/hr	3 dp/hr	3dp/hr
• Data cap.	55%	100%	100%

Missing Data

Part 60

- 100%-55% - None
- <55% - EPA Ref method test

Part 75 and NO_x Trading

- Three tier requirements

100%-95%

95%-90%

<90%

Substitution Criteria for CEM Missing Data Periods

Annual Availability (%) Of Monitoring System	Number of Hours Missing (N)	Value Substituted for Ea Missing Hour
Greater than or equal to 95%	N is less than or equal to 24 hours	Average of the hours recorded before and after missing period.
	N is greater than 24 hours	90 th percentile value recorded in the previous 30 days of service of the before/after value, whichever is greater.
Less than 95% but greater than or equal to 90%	N is less than or equal to 8 hours	Average of the hours recorded before and after missing period.
	N is greater than 8 hours	95 th percentile value recorded in the previous 30 days of service or the before/after value, whichever is greater.
Less than 90%	N is greater than 0 hours	Maximum value recorded in previous 30 days of service

CEM Certification Tests

RATA

	Part 60	Part 75	N0x Trading
SO ₂ /Nox/Dil	Single Load >50% normal RA<20%	Single Load * RA<10%	Single Load * ?
Flow monitor	N/A	3 loads - min-50%,normal, 80%-max RA<15% *-Single load except SO ₂ /N0x concurrent with normal or high flow RATA.	
Bias	No Req't.	Required for each pollutant & flow monitor	

CEM Certification Tests

Linearity & Cal Error

	Part 60	Part 75	N0x Trading
SO ₂ /N0 _x /Dil	None	3 points - low, mid, high <5%	
Cal Error	zero/high 7-day	zero/high 7-day	zero/high 7-day
		Flow Monitor also requires 2 point, 7-day calibration error test	
Cycle/response	15 min.	Same as Part 60	

DAS Tests

Part 60

No Requirements

Part 75

Tests for proper computation and application of missing data procedures, bias, adjustment factors, and hourly averages with EPA audit data.

N0x Trading

QA/QC Procedures

	Part 60	Part 75	N0x Trading
RATA	Annually 1 load	Semi-annual or annual Same as for Certification Test	
Bias	No req't.	Yes, same as Cert. Test	
Lin. Check	No req't.	Yes, same as Cert. Test	
Cal Error	2-pt daily CGA Qtrly	2-pt daily 3-pt CGA Quarterly	
.			
Interference (flow mtr.)	No req't.	Daily check & Qtrly leak/press. transducer check	

Types of CEMS

- Direct Extractive
 - Dry basis analysis
- Dilution Extractive
 - Wet basis analysis
 - Dry basis analysis
- In-situ
 - Wet basis analysis

Mass Emissions

- Fuel Flow Metering
 - Heat Input
 - $\text{NOx lb/Mbtu} \times \text{Mbtu/hr} = \text{NOx lb/hr}$
- Stack Flow Monitor
 - Wet Basis Measurement
 - Location

Help for Your Specific Site

- Air Permit
- Future NO_x Budget/Trading Program
- Local/Regional Regulatory Agency
- Current CEM/DAS Vendor(s)
- Consultant

Specific Considerations

- Type of CEMS
- Fuel Flow vs. Stack Flow Monitoring
- DAS - New System vs. Upgrade
- CEMS Performance & Certification
- CEM/DAS QA/QC Monitoring Plan & Procedures

**Thank you
&
Good Luck**