

Considerations for the Use of Part 75 Data

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Purpose of this Presentation

- ❖ Various state and federal regulations, permits, consent orders, etc. rely on Part 75 reported data for the determination of compliance
- ❖ Current and future air regulatory requirements with a compliance mechanism other than “cap and trade” may rely on or refer to Part 75 electronically reported data
- ❖ Part 75 was developed for a “cap and trade” compliance strategy; however, with certain considerations the data may be appropriate for other programs
- ❖ Suggestions on Part 75 monitoring and reporting to consider when using the data for purposes other than “cap and trade”

Why use Part 75?

- ❖ Part 75 provides a complete electronically reported record of each hour of operation
- ❖ Definitions, reporting instructions, monitoring options, etc. are very prescriptive and standardized to provide a level playing field
- ❖ Part 75 emissions and QA test reports undergo a rigorous level of electronic verification using the ECMPS software provided to the regulated community
- ❖ Part 75 is primarily used for reporting mass emissions but is easily adapted to emission rates on a lb/mmBtu or lb/MWh (gross) basis as necessary

What Elements of Part 75 Should be Considered?

- ❖ Substitute Data
- ❖ Bias Adjustment Factors
- ❖ Diluent Caps
- ❖ F-factors
- ❖ Grace Periods
- ❖ Recertification / Conditional Data
- ❖ Definitions
- ❖ How to handle startups and shutdowns
- ❖ Use of defaults including Low Mass Emissions methodology
- ❖ Policies?

Substitute Data

- ❖ In most instances, substitute data may not be appropriate for compliance purposes other than “cap and trade”
- ❖ Substitute data is not measured data
- ❖ Substitute data becomes increasingly conservative based on percent monitor availability
- ❖ There should be a backstop to address monitor downtime
- ❖ Consider the use of percent monitor availability (PMA) as a means of measuring acceptable data capture
 - PMA must be maintained > 95%?, 90%?
 - Consider PMA on a system (e.g. lb/mmBtu, lb/hr) versus a component (e.g. ppm, %) level
- ❖ Decide and clarify what is and what is not substitute data or calculated data that will be excluded for compliance purposes

What is Substitute Data?

- ❖ When fuel is combusted during an hour and a CEM is unavailable or out of control as the result of a failed QA test or failure to conduct a required QA test, maintenance activities, etc., should be considered substitute data
- ❖ When the range of an analyzer is exceeded should the Part 75 provisions be followed and if so is this value considered valid or substitute?
 - Part 75 requires range exceedances to report 200% of full scale range
 - Partial hour range exceedances?
 - Exclude the entire hour or only the time when the range was exceeded?

Substitute Data

- ❖ Allow the use of a default high range?
 - Part 75 requires 200% of the maximum potential concentration (MPC) to be used for hours when readings exceed the low scale and the option to use a default high range is selected
 - Partial hours above the low scale
- ❖ Consider using Part 75 method of determination codes (MODCs) to identify measured data versus substitute or calculated data to be excluded (see Table 4A in 40 CFR 75.57)

Bias Adjusted Data

- ❖ Part 75 requires the application of a bias adjustment factor (BAF) for certain hourly emissions data to prevent under reporting when a CEM is found to be measuring lower than a reference method during a RATA
 - Not all Part 75 CEM systems require the use of a BAF (e.g. CO₂ %)
- ❖ When applicable, Part 75 requires both an hourly adjusted and non-adjusted emissions data record to be reported
- ❖ Other rules, permit conditions, consent orders, etc. should clearly identify whether adjusted or unadjusted data are to be used for compliance
- ❖ Note that when a CEM is determined to be higher than a reference method a negative (i.e. less than 1.0) BAF is not applied

Diluent Caps

- ❖ Diluent caps are an option in Part 75 to account for startup, shutdown, and other situations when CO₂ hourly values are extremely low or O₂ readings are extremely high
- ❖ Because emission rate data reported in units of lb/mmBtu require a measurement of CO₂ or O₂ to compensate for excess air, the equations used to calculate lb/mmBtu can result in extremely high emission rates during a startup, shutdown, or other activity (See equations F-5, F-6 and section 3.3.4.1 of Appendix F 40 CFR Part 75)
- ❖ Decide if and when diluent caps are allowed
- ❖ If necessary, include a clear prescriptive definition of startup and shutdown

F-factors

- ❖ F-factors are used to calculate emission rates in lb/mmBtu and heat input using a stack gas volumetric flow meter
- ❖ A diluent monitor (CO_2 , or O_2) is used in conjunction with an F-factor to calculate an emission rate (lb/mmBtu) or heat input (mmBtu/hr)
- ❖ An F-factor is based on combustion gases and assumes any diluent present is either created from combustion (CO_2) or excess air (O_2)
- ❖ The calculations to determine an emission rate or heat input may not be accurate if additional CO_2 is generated from a process reaction (e.g. calcination of limestone) or if CO_2 is removed via a chemical process (e.g. post combustion CO_2 removal prior to the monitoring location)
 - Portland cement kilns, circulating fluidized bed boilers
 - Amine scrubbing

Grace Periods

- ❖ Grace periods are used to validate emissions data in certain situations
- ❖ Grace periods may avoid emissions that would be emitted just for the purpose of completing a QA test (i.e. electric demand is low and a unit would otherwise not be operating)
- ❖ Regulations, consent decrees, etc. should indicate how to handle grace periods (i.e. daily, quarterly and annual QA tests)
- ❖ Make sure it is clear if a unit needs to operate and how during various QA tests
 - Does the unit need to be generating electricity or just combusting fuel at typical stack temperature and pressure?
 - Does a particular fuel need to be combusted (e.g. coal or natural gas during a gas RATA or a stack gas volumetric flow RATA)?
 - Does the unit or group of units need to be at a certain operating range (e.g. normal load for a gas RATA)?

Recertification and Conditional Data

- ❖ Part 75 specifies that certain activities performed on CEM systems trigger a recertification event
- ❖ Determine if the activities listed in 40 CFR 75.20(b) in conjunction with the Part 75 CEM Policy Manual question 12.10 sufficiently address and should or should not be used for the types of activities associated with the monitoring systems found in a regulation, permit, consent decree, etc.
- ❖ Allow or not allow the use of the Part 75 conditional data provisions to validate data after certain activities occur and certain QA tests are completed successfully without making additional changes to the CEM system (See 75.20(b)(3))
- ❖ Conditional data prevents excessive loss of data and any required QA tests triggered by an event must be successfully conducted within a specific timeframe (See 75.20(b)(3)(iv))

Definitions

- ❖ Part 75 relies on the definitions found in 40 CFR 72.2
- ❖ Some terms such as like-kind analyzer are further explained in the Part 75 CEM Policy Manual
- ❖ Make sure that definitions are sufficiently prescriptive to eliminate ambiguity and interpretation
- ❖ Part 75 provides descriptions and methods for how to determine the appropriate span, range, MPC, unit operating range, etc.
 - Do the span and range need to be evaluated periodically to determine if they are appropriate?
- ❖ How are calibration gases defined and do they need to be a certain value (e.g. 50-60%, 80-100% of span)

Startup and Shutdown

- ❖ Is a definition of startup and shutdown necessary?
- ❖ Part 75 requires all fuels being combusted at all times to be measured and reported
- ❖ Can diluent caps be used if startup and shutdowns are included when determining compliance?
- ❖ Consider fuels used for ignition purposes only
 - Define ignition
 - Include or exempt emissions?

Use of Defaults and Excepted Monitoring Methods

- ❖ Based on the type of fuel combusted and in some situations operating capacity, Part 75 allows the optional use of excepted monitoring methods in lieu of CEMs
- ❖ The Low Mass Emissions (LME) excepted methodology allows units annual and or ozone season total mass emissions below certain thresholds to determine mass emissions using conservative simplified methods
- ❖ Appendix D and Appendix E are also excepted methodologies for monitoring certain pollutants in lieu of CEMS
- ❖ Decide if these or similar options are acceptable alternatives to CEMS

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