Environmental Protection Agency

§ 60.4350 How do I use data from the continuous emission monitoring equipment to identify excess emissions?

For purposes of identifying excess emissions:

(a) All CEMS data must be reduced to hourly averages as specified in §60.13(b).

(b) For each unit operating hour in which a valid hourly average, as described in §60.4345(b), is obtained for both NO\textsubscript{X} and diluent monitors, the data acquisition and handling system must calculate and record the hourly NO\textsubscript{X} emission rate in units of ppm or of operation (sampling, analyzing, and data recording) for each 15-minute quadrant of the hour, to validate the hour. For partial unit operating hours, at least one valid data point must be obtained with each monitor for each quadrant of the hour in which the unit operates. For unit operating hours in which required quality assurance and maintenance activities are performed on the CEMS, a minimum of two valid data points (one in each of two quadrants) are required for each monitor to validate the NO\textsubscript{X} emission rate for the hour.

(c) Each fuel flowmeter shall be installed, calibrated, maintained, and operated according to the manufacturer’s instructions. Alternatively, with state approval, fuel flowmeters that meet the installation, certification, and quality assurance requirements of appendix D to part 75 of this chapter are acceptable for use under this subpart.

(d) Each watt meter, steam flow meter, and each pressure or temperature measurement device shall be installed, calibrated, maintained, and operated according to manufacturer’s instructions.

(e) The owner or operator shall develop and keep on-site a quality assurance (QA) plan for all of the continuous monitoring equipment described in paragraphs (a), (c), and (d) of this section. For the CEMS and fuel flow meters, the owner or operator may, with state approval, satisfy the requirements of this paragraph by implementing the QA program and plan described in section 1 of appendix B to part 75 of this chapter.

§ 60.4345 What are the requirements for the continuous emission monitoring system equipment, if I choose to use this option?

If the option to use a NO\textsubscript{X} CEMS is chosen:

(a) Each NO\textsubscript{X} diluent CEMS must be installed and certified according to Performance Specification 2 (PS 2) in appendix B to this part, except the 7-day calibration drift is based on unit operating days, not calendar days. With state approval, Procedure 1 in appendix F to this part is not required. Alternatively, a NO\textsubscript{X} diluent CEMS that is installed and certified according to appendix A of part 75 of this chapter is acceptable for use under this subpart. The relative accuracy test audit (RATA) of the CEMS shall be performed on a lb/MMBtu basis.

(b) As specified in §60.13(e)(2), during each full unit operating hour, both the NO\textsubscript{X} monitor and the diluent monitor must complete a minimum of one cycle

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(b) As specified in §60.13(e)(2), during each full unit operating hour, both the NO\textsubscript{X} monitor and the diluent monitor must complete a minimum of one cycle

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(c) Each fuel flowmeter shall be installed, calibrated, maintained, and operated according to the manufacturer’s instructions. Alternatively, with state approval, fuel flowmeters that meet the installation, certification, and quality assurance requirements of appendix D to part 75 of this chapter are acceptable for use under this subpart.

(d) Each watt meter, steam flow meter, and each pressure or temperature measurement device shall be installed, calibrated, maintained, and operated according to manufacturer’s instructions.

(e) The owner or operator shall develop and keep on-site a quality assurance (QA) plan for all of the continuous monitoring equipment described in paragraphs (a), (c), and (d) of this section. For the CEMS and fuel flow meters, the owner or operator may, with state approval, satisfy the requirements of this paragraph by implementing the QA program and plan described in section 1 of appendix B to part 75 of this chapter.

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(b) As specified in §60.13(e)(2), during each full unit operating hour, both the NO\textsubscript{X} monitor and the diluent monitor must complete a minimum of one cycle
lb/MMBtu, using the appropriate equation from method 19 in appendix A of this part. For any hour in which the hourly average \( O_2 \) concentration exceeds 19.0 percent \( O_2 \) (or the hourly average \( CO_2 \) concentration is less than 1.0 percent \( CO_2 \)), a diluent cap value of 19.0 percent \( O_2 \) or 1.0 percent \( CO_2 \) (as applicable) may be used in the emission calculations.

(c) Correction of measured \( NO_x \) concentrations to 15 percent \( O_2 \) is not allowed.

(d) If you have installed and certified a \( NO_x \) diluent CEMS to meet the requirements of part 75 of this chapter, states can approve that only quality assured data from the CEMS shall be used to identify excess emissions under this subpart. Periods where the missing data substitution procedures in subpart D of part 75 are applied are to be reported as monitor downtime in the excess emissions and monitoring performance report required under §60.7(c).

(e) All required fuel flow rate, steam flow rate, temperature, pressure, and megawatt data must be reduced to hourly averages.

(f) Calculate the hourly average \( NO_x \) emission rates, in units of the emission standards under §60.4320, using either ppm for units complying with the concentration limit or the following equation for units complying with the output-based standard:

1. For simple-cycle operation:

\[
E = \frac{(NO_x)_h}{P} \times (HI)_h \quad (Eq. 1)
\]

Where:
- \( E \) = hourly \( NO_x \) emission rate, in lb/MWh,
- \( (NO_x)_h \) = hourly \( NO_x \) emission rate, in lb/MMBtu,
- \( (HI)_h \) = hourly heat input rate to the unit, in MMBtu/h, measured using the fuel flowmeter(s), e.g., calculated using Equation D-15a in appendix D to part 75 of this chapter, and
- \( P \) = gross energy output of the combustion turbine in MW.

2. For combined-cycle and combined heat and power complying with the output-based standard, use the following equation:

\[
E = \frac{(NO_x)_m}{BL \times AL} \quad (Eq. 4)
\]

Where:
- \( E \) = \( NO_x \) emission rate in lb/MWh,
- \( (NO_x)_m \) = \( NO_x \) emission rate in lb/h,
- \( BL \) = manufacturer’s base load rating of turbine, in MW, and
- \( AL \) = actual load as a percentage of the base load.

(g) For simple cycle units without heat recovery, use the calculated hourly average emission rates from paragraph (f) of this section to assess excess emissions on a 4-hour rolling average basis, as described in §60.4380(b)(1).

(h) For combined cycle and combined heat and power units with heat recovery, use the calculated hourly average
§ 60.4355 How do I establish and document a proper parameter monitoring plan?

(a) The steam or water to fuel ratio or other parameters that are continuously monitored as described in §§ 60.4335 and 60.4340 must be monitored during the performance test required under § 60.8, to establish acceptable values and ranges. You may supplement the performance test data with engineering analyses, design specifications, manufacturer’s recommendations and other relevant information to define the acceptable parametric ranges more precisely. You must develop and keep on-site a parameter monitoring plan which explains the procedures used to document proper operation of the NO\textsubscript{X} emission controls. The plan must:

1. Include the indicators to be monitored and show there is a significant relationship to emissions and proper operation of the NO\textsubscript{X} emission controls,

2. Pick ranges (or designated conditions) of the indicators, or describe the process by which such range (or designated condition) will be established,

3. Explain the process you will use to make certain that you obtain data that are representative of the emissions or parameters being monitored (such as detector location, installation specification if applicable),

4. Describe quality assurance and control practices that are adequate to ensure the continuing validity of the data,

5. Describe the frequency of monitoring and the data collection procedures which you will use (e.g., you are using a computerized data acquisition over a number of discrete data points with the average (or maximum value) being used for purposes of determining whether an exceedance has occurred), and

6. Submit justification for the proposed elements of the monitoring. If a proposed performance specification differs from manufacturer recommendation, you must explain the reasons for the differences. You must submit the data supporting the justification, but you may refer to generally available sources of information used to support the justification. You may rely on engineering assessments and other data, provided you demonstrate factors which assure compliance or explain why performance testing is unnecessary to establish indicator ranges. When establishing indicator ranges, you may choose to simplify the process by treating the parameters as if they were correlated. Using this assumption, testing can be divided into two cases:

(i) All indicators are significant only on one end of range (e.g., for a thermal incinerator controlling volatile organic compounds (VOC) it is only important to insure a minimum temperature, not a maximum). In this case, you may conduct your study so that each parameter is at the significant limit of its range while you conduct your emissions testing. If the emissions tests show that the source is in compliance at the significant limit of each parameter, then as long as each parameter is within its limit, you are presumed to be in compliance.

(ii) Some or all indicators are significant on both ends of the range. In this case, you may conduct your study so that each parameter that is significant at both ends of its range assumes its extreme values in all possible combinations of the extreme values (either single or double) of all of the other parameters. For example, if there were only two parameters, A and B, and A had a range of values while B had only a minimum value, the combinations would be A high with B minimum and A low with B minimum. If both A and B had a range, the combinations would be A high and B high, A low and B low, A high and B low, A low and B high. For the case of four parameters all having a range, there are 16 possible combinations.

(b) For affected units that are also subject to part 75 of this chapter and that have state approval to use the low mass emissions methodology in § 75.19 or the NO\textsubscript{X} emission measurement methodology in appendix E to part 75, you may meet the requirements of this paragraph by developing and keeping...