

2.125 Sulfur Dioxide Emissions from Electric Utility Steam Generating Plants

2.125.1 Applicability and Definition of Affected Facility

- (a) This source category applies to affected facilities covered by the Georgia Rules for Air Quality Control (Georgia Rule) 391-3-1-.02(2)(uuu).

2.125.2 Compliance and Performance Test Procedures

- (a) After the initial performance test required under Section 1.2 of this text, compliance with the percentage reduction requirements under Georgia Rule 391-3-1-.02(2)(uuu) is based on the average emission rate for 30 successive boiler operating days. A separate performance test is completed at the end of each boiler operating day after the initial performance test, and a new 30-day percent reduction for Sulfur Dioxide (SO<sub>2</sub>) is calculated to show compliance with the standard. The 30-day rolling average shall be defined as the average percent reduction of SO<sub>2</sub> for all of the operating hours for the preceding 30 boiler operating days. The operating hours specified in Georgia Rule 391-3-1-.02(2)(uuu)(4) shall not be included in the 30-day rolling average.
- (b) For the initial performance test required under Section 1.2 of this text, compliance with the percent reduction requirements under 391-3-1-.02(2)(uuu) is based on the percent reduction for the first 30 successive boiler operating days following each of the applicable effective dates specified in Georgia Rule 391-3-1-.02(2)(uuu) 1 and 2. The initial performance test is the only test in which at least 30 days prior notice is required unless otherwise specified by the Director. The initial performance test is to be scheduled so that the first boiler operating day of the 30 successive boiler operating days is completed by the by the effective date of Georgia Rule 391-3-1-.02(2)(uuu).
- (c) Compliance with applicable SO<sub>2</sub> percent reduction requirements is determined based on the average inlet and outlet SO<sub>2</sub> emission rates for the 30 successive boiler operating days.
- (d) If an owner or operator has not obtained the minimum quantity of emission data as required under Section 2.125.3(d), compliance of the affected facility with emission requirements under Georgia Rule 391-3-1-.02(2)(uuu) for the day on which the 30-day period ends may be determined by the Director by following the applicable procedures in Section 12.7 of Method 19 of Appendix A of this text.

2.125.3 Emission Monitoring

- (a) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a CEMS, and record the output of the system, for measuring SO<sub>2</sub> emissions as follows:
  - (1) Sulfur Dioxide emissions are monitored at both the inlet and outlet of the SO<sub>2</sub> control device.

- (2) An "as fired" fuel monitoring system (upstream of coal pulverizers) meeting the requirements of Method 19 of Appendix A of this text may be used to determine potential SO<sub>2</sub> emissions in place of a continuous SO<sub>2</sub> emission monitor at the inlet to the SO<sub>2</sub> control device as required under paragraph 2.125.3(a)(1) of this section.
  - (3) If the owner or operator has installed and certified a SO<sub>2</sub> continuous emissions monitoring system (CEMS) according to the requirements of 40 CFR 75.20(c)(1)\* and Appendix A to Part 75\* of 40 CFR, and is continuing to meet the ongoing quality assurance requirements of 40 CFR 75.21\* and Appendix B to 40 CFR Part 75\*, that CEMS may be used to meet the requirements of this section, provided that a Carbon Dioxide (CO<sub>2</sub>) or Oxygen (O<sub>2</sub>) continuous monitoring system is installed, calibrated, maintained and operated at the same location, according to paragraph (b) of this section.
  - (4) The owner or operator of an affected facility may apply to the Director for approval of an alternative monitoring requirements to demonstrate compliance with the emission standards in Georgia Rule 391-3-1-.02(2)(uuu).
- (b) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a CEMS, and record the output of the system, for measuring the O<sub>2</sub> or CO<sub>2</sub> content of the flue gases at each location where SO<sub>2</sub> emissions are monitored.
  - (c) The CEMS under paragraphs (a) and (b) of this section are operated and data recorded during all periods of operation of the affected facility including periods of startup, shutdown, malfunction or emergency conditions, except for CEMS breakdowns, repairs, calibration checks, and zero and span adjustments and any period allowed under Georgia Rule 391-3-1-.02(2)(uuu)(4). A removal efficiency of zero shall be used during any bypass period not allowed under Georgia Rule 391-3-1-.02(uuu)(4).
  - (d) The owner or operator shall obtain emission data for at least 75 percent of all operating hours for each 30 successive boiler operating days. If this minimum data requirement cannot be met with a CEMS, the owner or operator shall supplement emission data with other monitoring systems approved by the Director or the reference methods and procedures described in paragraph (f) of this section.
  - (e) The 1-hour averages required under Section 1.4(h) of this text are expressed in ng/J (lb/MMBTU) heat input and used to calculate the average emission rates under Georgia Rule 391-3-1-.02(2)(uuu). The 1-hour averages are calculated using the data points required under Section 1.4(h)(2) of this text.
  - (f) When it becomes necessary to supplement CEMS data to meet the minimum data requirements in paragraph (d) of this section, the owner or operator shall use the reference methods and procedures as specified in this paragraph. Acceptable alternative methods and procedures are given in paragraph (h) of this section.
- (1) Method 6 of Appendix A of this text shall be used to determine the SO<sub>2</sub> concentration at the same location as the SO<sub>2</sub> monitor. Samples shall be

taken at 60-minute intervals. The sampling time and sample volume for each sample shall be at least 20 minutes and 0.020 dscm (0.71 dscf). Each sample represents a 1-hour sample.

- (2) The emission rate correction factor, integrated bag sampling, and analysis procedure of Method 3B of Appendix A of this text shall be used to determine the O<sub>2</sub> or CO<sub>2</sub> concentration at the same location as the O<sub>2</sub> or CO<sub>2</sub> monitor. Samples shall be taken for at least 30 minutes in each hour. Each sample represents a 1-hour average.
  - (3) The procedures in Method 19 of Appendix A of this text shall be used to compute each 1-hour average concentration in ng/J (lb/MMBTU) heat input.
- (g) The owner or operator shall use methods and procedures in this paragraph to conduct monitoring system performance evaluations under Section 1.4(c) of this text and calibration checks under Section 1.4(d) of this text. Acceptable alternative methods and procedures are given in paragraph (h) of this section.
- (1) Methods 3B and 6 of Appendix A of this text shall be used to determine the O<sub>2</sub> and SO<sub>2</sub> concentrations, respectively.
  - (2) SO<sub>2</sub> shall be used for preparing the calibration gas mixtures (in Nitrogen, as applicable) under Performance Specification 2 of Appendix B of this text.
  - (3)
    - (i) For affected facilities burning fossil fuel, alone or in combination with non-fossil fuel and that is not required to follow the requirements of 40 CFR Part 75\*, the span value of the SO<sub>2</sub> CEMS at the inlet to the SO<sub>2</sub> control device is 125 percent of the maximum estimated hourly potential emissions of the fuel fired, and the outlet of the SO<sub>2</sub> control device is 50 percent of the maximum estimated hourly potential emissions of the fuel fired.
    - (ii) For facilities that are required to meet the requirements of 40CFR Part 75\*, the span values for the inlet and outlet SO<sub>2</sub> CEMS shall be determined according to 40 CFR Part 75\*.
- (h) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:
- (1) For Method 6 of Appendix A of this text, Method 6A or 6B (whenever Methods 6 and 3 or 3B of Appendix A of this text data are used) or 6C of Appendix A of this text maybe used. Each Method 6B of Appendix A of this text sample obtained over 24 hours represents 24 1-hour averages. If Method 6A or 6B of Appendix A of this text is used under paragraph (g) of this section, the following conditions apply; these conditions do not apply under paragraph (f) of this section.
    - (i) During emergency conditions, an affected facility with a malfunctioning flue gas desulfurization system may be operated if SO<sub>2</sub> emissions are minimized by operating all operable flue gas desulfurization system modules, and bringing back into operation

any malfunctioned module as soon as repairs are completed.

- (2) For Method 3 of Appendix A of this text, Method 3A or 3B of Appendix A of this text may be used if the sampling time is 1 hour.
  - (3) For Method 3B of Appendix A of this text, Method 3A of Appendix A of this text may be used.
- (i) The owner or operator shall prepare and submit to the Director for approval a unit-specific monitoring plan for each monitoring system, at least 45 days before commencing certification testing of the monitoring systems. The owner or operator shall comply with the requirements in the plan. The plan must address the requirements in (i)(1) through (6) of this section:
- (1) Installation of the CEMS sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of the exhaust emissions (*e.g.*, on or downstream of the last control device);
  - (2) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems;
  - (3) Performance evaluation procedures and acceptance criteria (*e.g.*, calibrations, relative accuracy test audits (RATA), etc.);
  - (4) Ongoing operation and maintenance procedures in accordance with the general requirements of Section 1.4 of this text or 40 CFR Part 75\* (as applicable); and
  - (5) Ongoing recordkeeping and reporting procedures in accordance with the requirements of this section.
- (j) (1) Except as provided for under paragraphs (j)(2), (j)(3), and (j)(4) of this section, the SO<sub>2</sub>, CO<sub>2</sub>, and O<sub>2</sub> CEMS required under paragraphs (a) and (b) of this section shall be installed, certified, and operated in accordance with the applicable procedures in Performance Specification 2 or 3 in Appendix B of this text or in according to the procedures in Appendices A and B to 40 CFR Part 75\*. Daily calibration drift assessments and quarterly accuracy determinations shall be done in accordance with Procedure 1 in Appendix F to this text. A data assessment report (DAR) shall be prepared according to Section 7 of Procedure 1 in Appendix F of this text and shall be maintained on site and available for inspection or submittal to the Director. Only CD assessments that do not meet the applicable accuracy specification and the subsequent acceptable CD assessments must be reported in the DAR. The owner or operator may elect to implement the following alternative data accuracy procedures:
- (2) As an alternative to meeting the requirements of paragraph (j)(1) of this section, an owner or operator may elect to implement the following alternative data accuracy assessment procedures. For all required CO<sub>2</sub> and

O<sub>2</sub> CEMS and for SO<sub>2</sub> CEMS with span values greater than 100 ppm, the daily calibration error test and calibration adjustment procedures described in Sections 2.1.1 and 2.1.3 of 40 CFR Part 75 Appendix B\* may be followed instead of the CD assessment procedures in Procedure 1, Section 4.1 of Appendix F of this text. If this option is selected, the data validation and out-of-control provisions in Sections 2.1.4 and 2.1.5 of Appendix B to 40 CFR Part 75\* shall be followed instead of the excessive CD and out-of-control criteria in Procedure 1, Section 4.3 of Appendix F of this text.

- (3) As an alternative to meeting the requirements of paragraph (j)(1) of this section, and owner or operator may elect to implement the following alternative data accuracy assessment procedures. For all required CO<sub>2</sub> and O<sub>2</sub> CEMS and for SO<sub>2</sub> CEMS with span values greater than 30 ppm, quarterly linearity checks may be performed in accordance with Section 2.2.1 of Appendix B to 40 CFR Part 75\*, instead of performing the cylinder gas audits (CGAs) described in Procedure 1, Section 5.1.2 of Appendix F of this text. If this option is selected: The frequency of the linearity checks shall be as specified in Section 2.2.1 of Appendix B to 40 CFR Part 75\*; the applicable linearity specifications in Section 3.2 of Appendix A to 40 CFR Part 75\* shall be met; the data validation and out-of-control criteria in Section 2.2.3 of Appendix B to 40 CFR Part 75\* shall be followed instead of the excessive audit inaccuracy and out-of-control criteria in Procedure 1, Section 5.2 of Appendix F of this text; and the grace period provisions in Section 2.2.4 of Appendix B to 40 CFR Part 75\* shall apply.
- (4) As an alternative to meeting the requirements of paragraph (j)(1) of this section, and owner or operator may elect to implement the following alternative data accuracy assessment procedures. For SO<sub>2</sub>, CO<sub>2</sub>, and O<sub>2</sub> CEMS, RATAs may be performed in accordance with Section 2.3 of Appendix B to 40 CFR Part 75\* instead of following the procedures described in Procedure 1, Section 5.1.1 of Appendix F to this text. If this option is selected: The frequency of each RATA shall be as specified in Section 2.3.1 of Appendix B to 40 CFR Part 75\*; the applicable relative accuracy specifications shown in Figure 2 in Appendix B to 40 CFR Part 75 shall be met; the data validation and out-of-control criteria in Section 2.3.2 of Appendix B to 40 CFR Part 75\* shall be followed instead of the excessive audit inaccuracy and out-of-control criteria in Procedure 1, Section 5.2 of Appendix F of this text; and the grace period provisions in Section 2.3.3 of Appendix B to 40 CFR Part 75\* shall apply. For the purposes of data validation under this Section, the relative accuracy specification shall be no greater than 20 percent of the mean value of the reference method test data on a lb/MMBTU basis for SO<sub>2</sub>;
- (5) If the owner or operator elects to implement the alternative data assessment procedures described in paragraphs (j)(2) through (j)(4) of this section, each data assessment report shall include a summary of the results of all of the RATAs, linearity checks, CGAs, and all failed and subsequently passed calibration error or drift assessments required by paragraphs (j)(2) through (j)(4).

2.125.4 Compliance Determination Procedures and Methods

(a) In conducting the performance tests required in Section 1.2 of this text, the owner or operator shall use as reference methods and procedures the methods in Appendix A of this text or the methods and procedures as specified in this section, except as provided in Section 1.2(b) of this text.

(b) The owner or operator shall determine compliance with the SO<sub>2</sub> standards in Georgia Rule 391-3-1-.02(2)(uuu) as follows:

(1) The percent of potential SO<sub>2</sub> emissions (%P<sub>s</sub>) to the atmosphere shall be computed using the following equation:

$$\%P_s = \frac{(100 - \%R_f)(100 - \%R_g)}{100}$$

Where:

%P<sub>s</sub> = Percent of potential SO<sub>2</sub> emissions, percent;  
%R<sub>f</sub> = Percent reduction from fuel pretreatment, percent; and  
%R<sub>g</sub> = Percent reduction by SO<sub>2</sub> control system, percent.

(2) The procedures of Method 19 of Appendix A of this text may be used to determine percent reduction (%R<sub>f</sub>) of sulfur by such processes as fuel pretreatment (physical coal cleaning, hydrodesulfurization of fuel oil, etc.), coal pulverizers, and bottom and fly ash interactions. This determination is optional.

(3) The procedures in Method 19 of Appendix A of this text shall be used to determine the percent SO<sub>2</sub> reduction (%R<sub>g</sub>) of any SO<sub>2</sub> control system. Alternatively, a combination of an "as fired" fuel monitor and emission rates measured after the control system, following the procedures in Method 19 of Appendix A of this text, may be used if the percent reduction is calculated using the average emission rate from the SO<sub>2</sub> control device and the average SO<sub>2</sub> input rate from the "as fired" fuel analysis for 30 successive boiler operating days.

(4) The appropriate procedures in Method 19 of Appendix A of this text shall be used to determine the emission rate.

(5) The CEMS in 2.125.3(a) and (b) shall be used to determine the concentrations of SO<sub>2</sub> and CO<sub>2</sub> or O<sub>2</sub>.

2.125.5 Reporting Requirements

(a) The following information shall be maintained for each 24-hour period:

(1) Calendar date.

- (2) Percent reduction of the potential combustion concentration of SO<sub>2</sub> for each 30 successive boiler operating days; reasons for non-compliance with the emissions standards; and description of corrective actions taken.
  - (3) Identification of the boiler operating days for which pollutant or diluent data have not been obtained by an approved method for at least 75 percent of the hours of operation of the facility; justification for not obtaining sufficient data; and description of corrective actions taken.
  - (4) Identification of the times when emissions data have been excluded from the calculation of average emission rates because of startup, shutdown, or other reasons, and justification for excluding data for reasons other than startup or shutdown conditions.
  - (5) Identification of "F" factor used for calculations, method of determination, and type of fuel combusted.
  - (6) Identification of times when hourly averages have been obtained based on manual sampling methods.
  - (7) Identification of the times when the pollutant concentration exceeded full span of the CEMS.
  - (8) Description of any modifications to CEMS which could affect the ability of the CEMS to comply with Performance Specifications 2 or 3.
  - (9) Results of any daily calibration error tests or quarterly accuracy assessment as required under Section 2.125.3(j) that does not meet the applicable accuracy specification and the subsequent acceptable daily calibration error test or quarterly accuracy assessment.
- (b) The owner or operator of any affected facility subject to the continuous monitoring requirements under Section 2.125.3 shall submit a quarterly report containing the information recorded under paragraph (a) of this section. All quarterly reports shall be postmarked by the 60<sup>th</sup> day following the end of each calendar quarter.
- (c) If the minimum quantity of emissions data as required by §2.125.4 is not obtained for any 30 successive boiler operating days, the following information obtained under the requirements of §2.125.2(d) is reported to the Director for that 30-day period.
- (1) The number of hourly averages available for outlet emission rates ( $n_o$ ) and inlet emission rates ( $n_i$ ), as applicable.
  - (2) The standard deviation of hourly averages for outlet emission rates ( $s_o$ ) and inlet emission rates ( $s_i$ ), as applicable.
  - (3) The lower confidence limit for the mean outlet emission rate ( $E_o^*$ ) and the upper confidence limit for the mean inlet emission rate ( $E_i^*$ ), as applicable.
  - (4) The applicable potential combustion concentration.

- (5) The ratio of the upper confidence limit for the mean outlet emission rate ( $E_o^*$ ) and the allowable emission rate ( $E_{std}$ ), as applicable.
- (d) For any periods for which SO<sub>2</sub> emissions data are not available, the owner or operator of the affected facility shall submit a signed statement indicating if any changes were made in operation of the emission control system during the period of data unavailability. Operations of the control system and affected facility during periods of data unavailability are to be compared with operation of the control system and affected facility before and following the period of data unavailability.
- (e) The owner or operator of the affected facility shall submit a signed statements indicating whether:
- (1) The required CEMS calibration, span, and drift checks or other periodic audits have or have not been performed as specified.
  - (2) The data used to show compliance was or was not obtained in accordance with approved methods and procedures of this text and is representative of plant performance.
  - (3) The minimum data requirements have or have not been met; or, the minimum data requirements have not been met for errors that were unavoidable.
  - (4) Compliance with the standards has or has not been achieved during the reporting period.
- (f) The owner or operator of an affected facility shall submit any 30-day rolling average percent reduction less than that specified in Georgia Rule 391-3-1-.02(2)(uuu)1. or 2., as applicable, along with the Part 70 quarterly reports submitted to the Director. The owner or operator of an affected facility shall also submit the written reports required under this section along with the Part 70 quarterly reports submitted to the Director.
- (g) The owner or operator of an affected facility shall submit results of each RATA required under Section 2.125.3(j) within 60 days of the completion of RATA.

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\* Code of Federal Regulations, 40 CFR Part 75

\*\* Code of Federal Regulations, 40 CFR Part 60