April 8, 2013

Mr. Dean Metcalf
Alternate Designated Representative
Southwestern Public Service Company
Harrington Station
P.O. Box 1261
Amarillo, TX 79105-1261

Re: Petition to Validate Emissions Data Following the Replacement of an Umbilical Line, for Unit 063B at the Harrington Station (Facility ID (ORISPL) 6193)

Mr. Metcalf:

The United States Environmental Protection Agency (EPA) has reviewed the October 11, 2011 petition and the November 9, 2011 petition addendum submitted by Southwestern Public Service Company (SPSC) under 40 CFR 75.66 in which SPSC requested permission to validate certain nitrogen oxides (NO_x), sulfur dioxide (SO_2), and carbon dioxide (CO_2) emissions data following an umbilical line replacement on Unit 063B[1] at the Harrington Station (ORISPL 6193). Specifically, SPSC seeks validation of emissions data recorded for the hours following expiration of the allowed window for completion of post-replacement Relative Accuracy Test Audits (RATAs) and prior to the late completion of the RATAs. EPA denies the petition, for the reasons presented below.

Background

SPSC owns and operates Harrington Station (Harrington), which is located in Potter County, Texas. Harrington Unit 063B is a 340 MW coal-fired boiler equipped with low-NO_x burner technology and overfire air. According to SPSC, Unit 063B is subject to the Acid Rain Program and to the Clean Air Interstate Rule (CAIR) SO_2 and Annual NO_x Trading Programs. Therefore, SPSC is required to continuously monitor and report SO_2, NO_x, and CO_2 emissions and heat input for Unit 063B in accordance with 40 CFR Part 75. To meet the Part 75 monitoring requirements, SPSC has installed and certified SO_2, NO_x, CO_2, and stack gas volumetric flow rate continuous emission monitoring systems (CEMS). The SO_2, NO_x, and CO_2 CEMS are hot-wet extractive systems. A sample of the stack gas is continuously transported to the gas analyzers by means of a heated umbilical line.

In the October 11, 2011 petition, SPSC states that the umbilical line on Unit 063B was replaced during a unit outage in May 2011. The replacement of an umbilical line in any type of CEMS can affect the measured SO_2, NO_x, and CO_2 concentrations. For example, a leak in the replacement line could dilute the sample gas. An additional potential example concerns

[1] The petition and petition addendum refer to Unit 063B as "Unit 3."

umbilical line replacement in a hot-wet extractive CEMS, where moisture could condense at "cold spots" in the replacement line and scrub out a portion of the SO_2 in the sample gas. In either example, the result would be a reduction in the concentrations of pollutants measured at the gas analyzers and a consequent potential underreporting of emissions.

According to § 75.20(b), "[w]henever the owner or operator makes a replacement, modification, or change in a certified continuous emission monitoring system or continuous opacity monitoring system that may significantly affect the ability of the system to accurately measure or record the SO_2 or CO_2 concentration, stack gas volumetric flow rate, NO_x emission rate, NO_x concentration, percent moisture, or opacity, or to meet the requirements of § 75.21 or appendix B to this part, the owner or operator shall recertify the continuous emission monitoring system or continuous opacity monitoring system, according to the procedures in this paragraph." Section 75.20(b) then identifies certain events that require recertification and provides that in cases not requiring recertification "any other tests that are necessary to ensure continued proper operation of the monitoring system … shall be performed as diagnostic tests rather than as recertification tests." The same section further provides that "[w]hen the data validation procedures of paragraph (b)(3) of this section are applied in this manner, replace the word "recertification" with the word "diagnostic." Thus, following any CEMS component replacement that may significantly affect the ability of the CEMS to accurately measure or record pollutant concentrations or other data, appropriate tests are required either as part of a recertification procedure or on a diagnostic basis, and the provisions of § 75.20(b)(3) apply to those tests.

Section 75.20(b)(3) specifies various requirements that "shall apply to all CEMS recertifications and diagnostic testing." Section 75.20(b)(3)(ii) requires performance of probationary calibration error tests after the CEMS modification has been completed in order to initiate a period of conditional data validation. Section 75.20(b)(3)(iv) provides that RATAs, if required, must be performed within 720 consecutive unit operating hours of the probationary calibration error tests. Section 75.20(b)(3)(v) requires that all tests must be performed "hands-off." Section 75.20(b)(3)(viii) provides that when a required RATA is not performed within the 720-unit-operating-hour period but is subsequently passed ("hands-off") on the first attempt, "data from the monitoring system shall be invalidated from the hour of expiration of the recertification [or diagnostic] test period until the hour of completion of the late test."

Section 75.20(b) does not directly identify what, if any, specific tests should be performed when a CEMS umbilical line is replaced. However, EPA has addressed this issue for the most common types of CEMS in guidance in the October 2003 "Part 75 Emissions Monitoring Policy Manual."[2] This manual provides guidance regarding tests that generally should be performed after various events in order to assure the quality of the subsequent data. Policy Manual Question 13.21 recommends that following the permanent replacement of an umbilical line at either a dilution-extractive CEMS or a dry-extractive CEMS, the gas monitors served by the umbilical line should undergo calibration error tests, cycle time tests (or alternative system response checks), and RATAs.

[2] Question 13.21 of the October 2003 Part 75 Emissions Monitoring Policy Manual is listed as Question 12.10 in the May 2012 Draft Part 75 Emissions Monitoring Policy Manual available at http://www.epa.gov/airmarkets/emissions/monitoring.html.

In the October 11, 2011 petition, SPSC states that the umbilical line on Unit 063B was replaced during a unit outage from May 12, 2011, hour 11 through May 19, 2011, hour 21. After the unit came back on line, SPSC performed and passed probationary calibration error tests of the gas monitors on May 20, 2011, to initiate a period of conditional data validation, as provided in § 75.20(b)(3)(ii). Cycle time tests of the monitors were then performed and passed within 168 unit operating hours after the probationary calibration error tests, in accordance with § 75.20(b)(3)(iv), and, although not included among the tests recommended in the Policy Manual for an umbilical line replacement, linearity checks were also performed and passed within this time period. However, RATAs of the monitoring systems were not completed within 720 unit operating hours after the probationary calibration error tests.

Upon discovery of the failure to perform RATAs within the 720-unit-operating-hour window established under § 75.20(b)(3)(iv), consistent with § 75.20(b)(3)(viii) SPSC invalidated NO_x, SO_2, and CO_2 emissions data from June 20, 2011, hour 16 until RATAs were successfully completed on July 30, 2011, hour 20. The RATAs were passed on the first attempt without making any adjustments to the systems (i.e., "hands off). [3] SPSC now requests that the data recorded by the SO_2, NO_x, and CO_2 CEMS between June 20, 2011, hour 16 and July 30, 2011, hour 20 be considered valid because the RATAs were passed "hands-off" on the first attempt and all other required quality assurance tests of the CEMS were performed and passed on schedule.

EPA's Determination

Following the replacement of a heated umbilical line on Harrington Unit 063B, SPSC failed to complete RATAs of the unit's SO_2, NO_x, and CO_2 monitoring systems within 720 unit operating hours after initiating a period of conditional data validation.

As discussed above, the replacement of a CEMS umbilical line is a change that can significantly affect the ability of the CEMS to accurately measure and record pollutant concentrations. The owner or operator is therefore required to perform appropriate tests (for either recertification or diagnostic purposes) pursuant to § 75.20(b). Because replacement of an umbilical line in any type of CEMS can introduce measurement bias, EPA believes that RATAs are generally an appropriate type of test to perform following such a replacement. This view is consistent with the guidance provided in the October 2003 Part 75 Emissions Monitoring Policy Manual, which lists RATAs among the recommended diagnostic tests for umbilical line replacements for both dilution-extractive CEMS and dry-extractive CEMS. EPA is unaware of any facts that would suggest that RATAs should not be required following the umbilical line replacement for the hot-wet extractive CEMS at Unit 063B; indeed, SPSC has not challenged the appropriateness of performing RATAs. Accordingly, based on the potential for the Unit 063B umbilical line replacement to introduce bias into the data measured and recorded by the CEMS, EPA determines that, pursuant to § 75.20(b), RATAs were required following the Unit 063B umbilical line replacement.

[3] The bias adjustment factors (BAFs) for the SO_2 and NO_x CEMS were originally calculated as 1.000, but the SO_2 BAF was subsequently corrected to 1.038 in SPSC's November 9, 2011 addendum to the October 11, 2011 petition.

Because RATAs were required under § 75.20(b), the timing and other requirements of § 75.20(b)(3) apply. Specifically, pursuant to § 75.20(b)(3)(iv), in order to quality-assure the data from the Unit 063B CEMS following the umbilical line replacement, SPSC was required to perform the RATAs within the 720-unit-operating-hour period following the required probationary error calibration tests. Further, in this circumstance, when the RATAs required following a diagnostic test event were not performed within the allowed window but were subsequently passed on the first attempt, § 75.20(b)(3)(viii) expressly provides that data from the monitoring systems must be invalidated from the hour of expiration of the 720-unit-operating-hour window until the hour of completion of the late tests.

In view of the express provision in § 75.20(b)(3)(viii), EPA denies SPSC's petition to validate the SO_2, NO_x, and CO_2 data recorded at Unit 063B in the time period extending from June 20, 2011, hour 16 (hour of expiration of the 720-unit-operating-hour window) through July 30, 2011, hour 20 (hour of successful completion of the RATAs). Invalidation of these data is based solely on SPSC's failure to perform the required RATAs of the CEMS within the window of time specified in § 75.20(b)(3)(iv) and reflects no conclusion as to the quality of the data recorded between "hour 721" and the hour of completion of the RATAs. The Agency notes that the recertification and diagnostic test deadlines in § 75.20(b)(3)(iv) were developed to encourage sources to complete all required testing in a timely manner.

EPA's determination relies on the accuracy and completeness of SPSC's October 11, 2011 petition and the November 9, 2011 addendum, and is appealable under 40 CFR Part 78. If you have any questions regarding this determination, please contact Travis Johnson at johnson.travis@epa.gov or (202) 343-9018. Thank you for your continued cooperation.

Sincerely,

/s/
Reid P. Harvey, Director
Clean Air Markets Division

cc: Joyce Johnson, EPA Region VI
John Smith, TCEQ
Travis Johnson, CAMD