

2/11/2013

Anthony Sayers
Designated Representative
Northern Indiana Public Service Company
801 E. 86th Avenue
Merrillville, IN 46410

Re: Petition for Relief from RATA Requirements for the Bypass Stack at the Bailly Electric Generating Station (Facility ID (ORISPL) 995)

Dear Mr. Sayers:

The United States Environmental Protection Agency (EPA) has reviewed the May 30, 2012 petition submitted under 40 CFR 75.66 by Northern Indiana Public Service Company (NIPSCO) requesting permission to temporarily report emissions data obtained from continuous emission monitoring systems (CEMS) installed on the bypass stack at the Bailly Electric Generating Station without performing periodic relative accuracy test audits (RATAs) of those CEMS. EPA denies the request to report emissions data obtained from CEMS for which required RATAs have not been performed but approves a methodology for the reporting of non-CEMS data if necessary, as discussed below.

Background

NIPSCO owns and operates two coal-fired boilers, Units 7 and 8, at the Bailly Electric Generating Station (Bailly), which is located in Porter County, Indiana. Bailly Units 7 and 8 have design heat input capacities of 1638 and 3374 mmBtu/hr, respectively. These units are subject to the Acid Rain Program, the Clean Air Interstate Rule (CAIR) Annual Trading Programs for sulfur dioxide (SO₂) and nitrogen oxides (NO_x), and the CAIR Ozone Season NO_x Trading Program. Therefore, NIPSCO is required to continuously monitor and report SO₂, NO_x, and carbon dioxide (CO₂) emissions and heat input for these units in accordance with 40 CFR Part 75.

Units 7 and 8 have a common flue gas desulfurization (FGD) system to reduce SO₂ emissions and are individually equipped with selective catalytic reduction (SCR) systems to control NO_x emissions. During normal operation of the units, flue gases from both units are routed through the FGD and the main exhaust stack, known as common stack CS001. However, according to NIPSCO, during unit startup it is necessary to bypass the FGD and to send the flue gases from the unit undergoing startup through the bypass stack, known as common stack CS002. The SCR units are located upstream of the bypass stack; therefore, when CS002 is used and the SCR units are operating properly, the NO_x emissions during the bypass are controlled.

To meet the emission monitoring requirements of Part 75, NIPSCO has installed and certified SO₂, NO_x, CO₂, and stack gas volumetric flow rate monitoring systems at CS001 and CS002. Part 75 requires RATAs of each CEMS to be performed for initial certification and for on-going quality-assurance.¹ The quality-assurance RATAs must be done either semiannually (i.e., once every two successive “QA operating quarters”²) or annually (i.e., once every four successive QA operating quarters), depending on the results obtained in the previous tests. Part 75 allows the owner or operator to use calendar quarters that do not qualify as QA operating quarters to extend the interval between successive RATAs up to a maximum of eight calendar quarters, at which point a RATA must be performed either by the end of the eighth calendar quarter or within a grace period of 720 operating hours³ following that quarter. If the RATA is not performed by the end of the grace period, data from the CEMS become invalid and remain invalid until a subsequent RATA is performed and passed.

On July 22, 2011, NIPSCO entered into a consent decree with the United States and the State of Indiana that, among other things, limits the use of bypass stack CS002 at Bailly to unit startup and prohibits the FGD from being bypassed for any other reason.⁴ The consent decree also requires NIPSCO to “use CEMS in accordance with the procedures of 40 C.F.R. Part 75” to determine emission rates for purposes of the consent decree. However, according to NIPSCO, in order to properly perform a RATA of the bypass stack CEMS, flue gases would have to be temporarily routed through the bypass stack for ten hours with the units operating at normal load (i.e., not during startup), which would be inconsistent with the prohibition on routing of emissions to the bypass stack outside startup hours. In view of this perceived inconsistency, NIPSCO submitted a petition to EPA on May 30, 2012, requesting permission to temporarily (until June 2016) report emission data values obtained from the CEMS on bypass stack CS002 without conducting the RATAs that would otherwise be required under Part 75.

In the May 30, 2012 petition, NIPSCO asserts that the CEMS on CS0002 are capable of collecting reliable data even without the required Part 75 RATAs because a comprehensive quality assurance/quality control (QA/QC) program for the bypass stack CEMS has been developed and implemented. Maintenance activities on the CEMS are recorded in an electronic logbook and include daily inspections of the monitoring system components; calibration of the CEMS on each day that the bypass stack is used; quarterly preventive maintenance on the umbilical line, sample probes and analyzers; and quarterly linearity checks of the gas monitors. NIPSCO also maintains an on-site spare parts inventory. According to NIPSCO, certain (unnamed) federal government personnel believe that RATAs of the bypass stack CEMS are not necessary to validate data from those CEMS for purposes of the consent decree.

¹ See § 75.20(c), section 6.5 of Appendix A, and section 2.3 of Appendix B.

² A “QA operating quarter,” as defined in 40 CFR 72.2, is a calendar quarter in which the unit operates for at least 168 hours.

³ For common stack CS002, the length of the grace period is 720 “stack operating hours,” where a stack operating hour is a clock hour in which flue gases flow through the stack and exit to the atmosphere. See 40 CFR 72.2 and Part 75, Appendix B, section 2.3.3.

⁴ NIPSCO notes that on rare occasions, a malfunction of the main stack or FGD servicing may necessitate temporary use of the bypass stack, but only for a few hours at a time.

NIPSCO acknowledges in its petition that Part 75 provides alternatives to the use of CEMS for bypass stacks. Sections 75.16(c)(3) and 75.17(d) allow units with main stack and bypass stack configurations to install CEMS only on the main stack and to report maximum potential values of SO₂ concentration and NO_x emission rate during bypass hours.⁵ (EPA further notes that in cases where a unit is capable of combusting multiple fuels, § 75.16(c)(3) also allows the use of fuel-specific values for maximum potential SO₂ concentration in hours when the unit burns only one of those fuels.) However, NIPSCO asserts that the non-CEMS option is not feasible for CS002 because the consent decree requires NIPSCO to “use CEMS in accordance with ... Part 75” to demonstrate compliance with the emission limits specified in the decree. Further, according to NIPSCO, assuming CEMS monitoring of bypass stack emissions is required for purposes of the consent decree, implementing the unmonitored bypass stack option for purposes of the Acid Rain Program and CAIR would be burdensome and would result in inconsistent emissions reporting for CS002 -- i.e., reporting CEMS data to satisfy the requirements of the consent decree while reporting maximum potential values for the Acid Rain Program and CAIR.

EPA’s Determination

EPA reviewed the quality assurance test history for CS002 and found that the most recent RATAs of the bypass stack CEMS were performed in the second quarter of 2010, prior to the effective date of the consent decree. All of the CEMS passed the tests and qualified for the “annual” RATA frequency. Therefore, in accordance with sections 2.3.1.1 and 2.3.1.2 of Part 75, Appendix B, the deadline for the next RATAs would be either four QA operating quarters or eight calendar quarters (whichever occurred first) after the quarter of the previous tests. To determine the exact RATA deadline, EPA examined the operating history of CS002 in the eight calendar quarters following the second quarter of 2010, and found only one QA operating quarter in that time interval (i.e., the fourth quarter of 2010). Therefore, the Agency concluded that the deadline for performing the next RATAs was eight calendar quarters after the quarter of the previous tests -- i.e., the second quarter of 2012. However, NIPSCO did not perform the required normal load RATAs in the second quarter of 2012 because of the prohibition in the July 22, 2011 consent decree on routing emissions to the bypass stack outside startup hours.

Although NIPSCO was unable to complete RATAs of the bypass stack CEMS by the June 30, 2012 deadline, data from the CEMS did not become invalid at that point. In accordance with section 2.3.3 of Part 75, Appendix B, the tests could still be performed and passed within a grace period of 720 operating hours without invalidation of data. The electronic data report (EDR) for CS002 for the third quarter of 2012 indicates that the bypass stack was not used at all in that quarter; therefore, as of September 30, 2012, the grace period had not yet started. The EDR for CS002 for the fourth quarter of 2012 indicated that the bypass stack was used for 62 hours, so that as of December 31, 2012, there were still 658 operating hours remaining in the

⁵ In cases such as Bailly Units 7 and 8, where the NO_x emission controls are upstream of the bypass stack, the maximum controlled NO_x emission rate (MCR) could be reported instead of the maximum potential NO_x emission rate (MER), provided that the emission controls are documented to be working properly. See § 75.17(d)(2).

grace period.

With the exception of the third quarter of 2012 (when CS002 was not used at all), the bypass stack was used for about 60 hours in each of the six calendar quarters immediately preceding 2013. EPA notes that if this pattern of use were to continue in subsequent calendar quarters (starting with the first quarter of 2013), the grace period would not expire for approximately eleven calendar quarters -- i.e., until the fourth quarter of 2015 -- although it might expire earlier or later than that, depending on the actual usage of the bypass stack.

In view of these considerations, EPA denies the specific relief sought in NIPSCO's May 30, 2012 petition but approves a methodology for reporting of non-CEMS data, if necessary, which is presented below. EPA does not agree with NIPSCO's assertion that periodic RATAs are not needed to quality-assure the data from the bypass stack monitoring systems for purposes of the Acid Rain Program and CAIR. EPA views proper and timely performance of RATAs as important for ensuring the integrity of all reported CEMS data. EPA therefore denies NIPSCO's request to report emissions data from the CEMS at stack CS002 after the end of the grace period in the absence of RATAs of those CEMS.

The Agency is persuaded that the provisions of the July 22, 2011 consent decree restricting use of the bypass stack to periods of unit startup prevent normal load levels from being attained during bypass hours, thereby making it infeasible to perform representative RATAs that meet Part 75 requirements. However, EPA believes that the flexibility provided in Part 75 for monitoring of bypass stack emissions is adequate to address NIPSCO's data reporting obligations under the Acid Rain Program and CAIR. First, if NIPSCO's future usage of the bypass stack is consistent with recent past usage, it is possible that the grace period for performance of the next RATAs will extend through the entire period for which NIPSCO has requested relief, and that data from the bypass stack CEMS could therefore be reported as valid in accordance with Part 75 throughout this period without any additional RATAs of those CEMS. Second, if NIPSCO continues to have a need to use the bypass stack without performing additional RATAs after the grace period expires, §§ 75.16(c)(3) and 75.17(d) provide the option to report bypass stack emissions using non-CEMS data for purposes of the Acid Rain Program and CAIR in a manner that is not unduly burdensome. Below, EPA sets out conditions to facilitate NIPSCO's use of this non-CEMS reporting option should it become necessary.

Methodology for Reporting of Bypass Stack Emissions

In light of EPA's findings and conclusions, the methodology for reporting emissions from bypass stack CS002 at Bailly shall be as follows:

- (1) NIPSCO is temporarily exempted from performing RATAs of the CEMS installed on bypass stack CS002 at the Bailly Electric Generating Station, for as long as the provisions of the July 22, 2011 consent decree restricting use of the bypass stack to periods of unit startup remain in effect.
- (2) NIPSCO shall continue to report quality-assured data from the bypass stack CEMS

for the remainder of the 720-operating-hour grace period that began in the fourth quarter of 2012. The standard missing data routines in § 75.33 shall be used to provide substitute data for any monitoring system outages during the grace period.

- (3) For each hour of bypass stack operation after the grace period expires, NIPSCO shall report substitute data for all monitored parameters (i.e., for SO₂ concentration, NO_x emission rate, CO₂ concentration, and stack gas flow rate) as follows:
- If any coal is combusted at a unit whose emissions are being routed to the bypass stack during the hour, the maximum potential SO₂ concentration (MPC) for coal combustion, as defined in the electronic monitoring plan, and the CO₂ MPC for coal combustion, as defined in the electronic monitoring plan, shall be reported, in each case using a method of determination code (MODC) of “12”.
 - If natural gas is the only fuel combusted at any unit whose emissions are being routed to the bypass stack during the hour, a fuel-specific SO₂ MPC for natural gas of 15 ppm⁶ and the diluent cap value of 5.0% CO₂ shall be reported, in each case using a MODC of “55”.
 - For any hour in which the SCR systems on all units whose emissions are being routed to the bypass stack during that hour are documented to be working properly, the maximum controlled NO_x emission rate⁷ (MCR), in lb/mmBtu, shall be reported, using a MODC of “13”.
 - For any hour in which the SCR system on any unit whose emissions are being routed to the bypass stack during that hour is not documented to be operating properly, the maximum potential NO_x emission rate (MER), in lb/mmBtu, shall be reported, using a MODC of “12”.
 - For all hours, the volumetric flow rate that would be substituted for data from the flow monitor installed on CS001 if data from that flow monitor were missing for the hour shall be reported, using a MODC of “55”.
- (4) Manual entry of the substitute data values and MODC codes in paragraph (3) above is permitted.
- (5) If the provisions of the July 22, 2011 consent decree limiting the use of CS002 to periods of unit startup are rescinded at any time, NIPSCO shall perform RATAs of

⁶ This MPC value is based on the maximum sulfur content for “very low sulfur fuel,” as defined in 40 CFR 72.2 (i.e., 0.05 weight percent sulfur).

⁷ The maximum controlled NO_x emission rate (MCR) is calculated in the same way as the maximum potential NO_x emission rate (MER), except that the maximum expected NO_x concentration (MEC) is used in the equation instead of the maximum potential NO_x concentration (MPC). See Part 75, Appendix A, section 2.1.2.1(b).

the bypass stack CEMS within 168 stack operating hours after the date and hour on which those consent decree provisions expire. Substitute data shall continue to be reported in accordance with paragraph (3) above until the RATAs have been successfully completed.

EPA's determination relies on the accuracy and completeness of NIPSCO's May 30, 2012 petition and is appealable under 40 CFR Part 78. If you have any questions regarding this determination, please contact Louis Nichols at (202) 343-9008 or by e-mail at Nichols.Louis@epa.gov. Thank you for your continued cooperation.

Sincerely,

/s/

Reid P. Harvey, Director
Clean Air Markets Division

cc: Jerome W. MacLaughlin, DOJ
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