

**§ 76.13**

following the day on which the extension approved under paragraph (e)(3) of this section terminates. Compliance shall be determined as specified in part 75 of this chapter using measured values of NO<sub>x</sub> emissions and heat input only for the portion of the year that the emission limit is in effect. If a unit with an approved extension is included in an averaging plan under § 76.11 for year 1997, the unit shall be treated, for the purpose of applying Equation 1 in § 76.11(a)(6) and Equation 2 in § 76.11(d)(1)(ii)(A), as subject to the applicable emission limitation under § 76.5 for the entire year 1997.

**§ 76.13 Compliance and excess emissions.**

Excess emissions of nitrogen oxides under § 77.6 of this chapter shall be calculated as follows:

(a) For a unit that is not in an approved averaging plan:

(1) Calculate EE<sub>i</sub> for each portion of the calendar year that the unit is subject to a different NO<sub>x</sub> emission limitation:

$$EE_i = \frac{(R_{ai} - R_{li}) \times HI_i}{2000} \quad (\text{Equation 3})$$

where:

EE<sub>i</sub> = Excess emissions for NO<sub>x</sub> for the portion of the calendar year (in tons);

$$EE = \frac{\sum_{i=1}^n (R_{ai} \times HI_i) - \sum_{i=1}^n (R_{li} \times HI_i)}{2000} \quad (\text{Equation 5})$$

where:

EE = Excess emissions for NO<sub>x</sub> for the year (in tons);

R<sub>ai</sub> = Actual annual average emission rate for NO<sub>x</sub> for unit i, (in lb/mmBtu), determined according to part 75 of this chapter;

R<sub>li</sub> = Applicable emission limitation for unit i, (in lb/mmBtu), as specified in § 76.5, 76.6, or 76.7;

HI<sub>i</sub> = Actual annual heat input for unit i, mmBtu, determined according to part 75 of this chapter;

n = Number of units in the averaging plan.

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R<sub>ai</sub> = Actual average emission rate for the unit (in lb/mmBtu), determined according to part 75 of this chapter for the portion of the calendar year for which the applicable emission limitation R<sub>i</sub> is in effect;

R<sub>li</sub> = Applicable emission limitation for the unit, (in lb/mmBtu), as specified in § 76.5, 76.6, or 76.7 or as determined under § 76.10;

$$EE = \sum_{i=1}^n EE_i \quad (\text{Equation 4})$$

HI<sub>i</sub> = Actual heat input for the unit, (in mmBtu), determined according to part 75 of this chapter for the portion of the calendar year for which the applicable emission limitation, R<sub>i</sub>, is in effect.

(2) If EE<sub>i</sub> is a negative number for any portion of the calendar year, the EE value for that portion of the calendar year shall be equal to zero (e.g., if EE<sub>i</sub> = -100, then EE<sub>i</sub> = 0).

(3) Sum all EE<sub>i</sub> values for the calendar year:

where:

EE = Excess emissions for NO<sub>x</sub> for the year (in tons);

n = The number of time periods during which a unit is subject to different emission limitations; and

(b) For units participating in an approved averaging plan, when all the requirements under § 76.11(d)(1) are not met,

**§ 76.14 Monitoring, recordkeeping, and reporting.**

(a) A petition for an alternative emission limitation demonstration period under § 76.10(d) shall include the following information:

(1) In accordance with § 76.10(d)(4), the following information:

(i) Documentation that the owner or operator solicited bids for a NO<sub>x</sub> emission control system designed for application to the specific boiler and designed to achieve the applicable emission limitation in § 76.5, 76.6, or 76.7 on

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an annual average basis. This documentation must include a copy of all bid specifications.

(ii) A copy of the performance guarantee submitted by the vendor of the installed NO<sub>x</sub> emission control system to the owner or operator showing that such system was designed to meet the applicable emission limitation in § 76.5, 76.6, or 76.7 on an annual average basis.

(iii) Documentation describing the operational and combustion conditions that are the basis of the performance guarantee.

(iv) Certification by the primary vendor of the NO<sub>x</sub> emission control system that such equipment and associated auxiliary equipment was properly installed according to the modifications and procedures specified by the vendor.

(v) Certification by the designated representative that the owner(s) or operator installed technology that meets the requirements of § 76.10(a)(2).

(2) In accordance with § 76.10(d)(9), the following information:

(i) The operating conditions of the NO<sub>x</sub> emission control system including load range, O<sub>2</sub> range, coal volatile matter range, and, for tangentially fired boilers, distribution of combustion air within the NO<sub>x</sub> emission control system;

(ii) Certification by the designated representative that the owner(s) or operator have achieved and are following the operating conditions, boiler modifications, and upgrades that formed the basis for the system design and performance guarantee;

(iii) Any planned equipment modifications and upgrades for the purpose of achieving the maximum NO<sub>x</sub> reduction performance of the NO<sub>x</sub> emission control system that were not included in the design specifications and performance guarantee, but that were achieved prior to submission of this application and are being followed;

(iv) A list of any modifications or replacements of equipment that are to be done prior to the completion of the demonstration period for the purpose of reducing emissions of NO<sub>x</sub>; and

(v) The parametric testing that will be conducted to determine the reason or reasons for the failure of the unit to achieve the applicable emission limitation and to verify the proper operation

of the installed NO<sub>x</sub> emission control system during the demonstration period. The tests shall include tests in § 76.15, which may be modified as follows:

(A) The owner or operator of the unit may add tests to those listed in § 76.15, if such additions provide data relevant to the failure of the installed NO<sub>x</sub> emission control system to meet the applicable emissions limitation in § 76.5, 76.6, or 76.7; or

(B) The owner or operator of the unit may remove tests listed in § 76.15 that are shown, to the satisfaction of the permitting authority, not to be relevant to NO<sub>x</sub> emissions from the affected unit; and

(C) In the event the performance guarantee or the NO<sub>x</sub> emission control system specifications require additional tests not listed in § 76.15, or specify operating conditions not verified by tests listed in § 76.15, the owner or operator of the unit shall include such additional tests.

(3) In accordance with § 76.10(d)(10), the following information for the operating period:

(i) The average NO<sub>x</sub> emission rate (in lb/mmBtu) of the specific unit;

(ii) The highest hourly NO<sub>x</sub> emission rate (in lb/mmBtu) of the specific unit;

(iii) Hourly NO<sub>x</sub> emission rate (in lb/mmBtu), calculated in accordance with part 75 of this chapter;

(iv) Total heat input (in mmBtu) for the unit for each hour of operation, calculated in accordance with the requirements of part 75 of this chapter; and

(v) Total integrated hourly gross unit load (in MWge).

(b) A petition for an alternative emission limitation shall include the following information in accordance with § 76.10(e)(6).

(1) Total heat input (in mmBtu) for the unit for each hour of operation, calculated in accordance with the requirements of part 75 of this chapter;

(2) Hourly NO<sub>x</sub> emission rate (in lb/mmBtu), calculated in accordance with the requirements of part 75 of this chapter; and

(3) Total integrated hourly gross unit load (MWge).

(c) *Reporting of the costs of low NO<sub>x</sub> burner technology applied to Group 1,*

*Phase I boilers.* (1) Except as provided in paragraph (c)(2) of this section, the designated representative of a Phase I unit with a Group 1 boiler that has installed or is installing any form of low NO<sub>x</sub> burner technology shall submit to the Administrator a report containing the capital cost, operating cost, and baseline and post-retrofit emission data specified in appendix B to this part. If any of the required equipment, cost, and schedule information are not available (e.g., the retrofit project is still underway), the designated representative shall include in the report detailed cost estimates and other projected or estimated data in lieu of the information that is not available.

(2) The report under paragraph (c)(1) of this section is not required with regard to the following types of Group 1, Phase I units:

(i) Units employing no new NO<sub>x</sub> emission control system after November 15, 1990;

(ii) Units employing modifications to boiler operating parameters (e.g., burners out of service or fuel switching) without low NO<sub>x</sub> burners or other emission reduction equipment for reducing NO<sub>x</sub> emissions;

(iii) Units with wall-fired boilers employing only overfire air and units with tangentially fired boilers employing only separated overfire air; or

(iv) Units beginning installation of a new NO<sub>x</sub> emission control system after August 11, 1995.

(3) The report under paragraph (c)(1) of this section shall be submitted to the Administrator by:

(i) 120 days after completion of the low NO<sub>x</sub> burner technology retrofit project; or

(ii) May 23, 1995, if the project was completed on or before January 23, 1995.

#### § 76.15 Test methods and procedures.

(a) The owner or operator may use the following tests as a basis for the report required by § 76.10(e)(7):

(1) Conduct an ultimate analysis of coal using ASTM D 3176-89 (incorporated by reference as specified in § 76.4);

(2) Conduct a proximate analysis of coal using ASTM D 3172-89 (incor-

porated by reference as specified in § 76.4); and

(3) Measure the coal mass flow rate to each individual burner using ASME Power Test Code 4.2 (1991), "Test Code for Coal Pulverizers" or ISO 9931 (1991), "Coal—Sampling of Pulverized Coal Conveyed by Gases in Direct Fired Coal Systems" (incorporated by reference as specified in § 76.4).

(b) The owner or operator may measure and record the actual NO<sub>x</sub> emission rate in accordance with the requirements of this part while varying the following parameters where possible to determine their effects on the emissions of NO<sub>x</sub> from the affected boiler:

(1) Excess air levels;

(2) Settings of burners or coal and air nozzles, including tilt and yaw, or swirl;

(3) For tangentially fired boilers, distribution of combustion air within the NO<sub>x</sub> emission control system;

(4) Coal mass flow rates to each individual burner;

(5) Coal-to-primary air ratio (based on pound per hour) for each burner, the average coal-to-primary air ratio for all burners, and the deviations of individual burners' coal-to-primary air ratios from the average value; and

(6) If the boiler uses varying types of coal, the type of coal. Provide the results of proximate and ultimate analyses of each type of as-fired coal.

(c) In performing the tests specified in paragraph (a) of this section, the owner or operator shall begin the tests using the equipment settings for which the NO<sub>x</sub> emission control system was designed to meet the NO<sub>x</sub> emission rate guaranteed by the primary NO<sub>x</sub> emission control system vendor. These results constitute the "baseline controlled" condition.

(d) After establishing the baseline controlled condition under paragraph (c) of this section, the owner or operator may:

(1) Change excess air levels  $\pm 5$  percent from the baseline controlled condition to determine the effects on emissions of NO<sub>x</sub>, by providing a minimum of three readings (e.g., with a baseline reading of 20 percent excess air, excess air levels will be changed to 19 percent and 21 percent);