§ 60.4380 How are excess emissions and monitor downtime defined for NO\textsubscript{X}?

For the purpose of reports required under §60.7(c), periods of excess emissions and monitor downtime that must be reported are defined as follows:

(a) For turbines using water or steam to fuel ratio monitoring:

1. An excess emission is any unit operating hour for which the 4-hour rolling average steam or water to fuel ratio, as measured by the continuous monitoring system, falls below the acceptable steam or water to fuel ratio needed to demonstrate compliance with §60.4320, as established during the performance test required in §60.8. Any unit operating hour in which no water or steam is injected into the turbine when a fuel is being burned that requires water or steam injection for NO\textsubscript{X} control will also be considered an excess emission.

2. A period of monitor downtime is any unit operating hour in which water or steam is injected into the turbine, but the essential parametric data needed to determine the steam or water to fuel ratio are unavailable or invalid.

3. Each report must include the average steam or water to fuel ratio, average fuel consumption, and the combustion turbine load during each excess emission.

(b) For turbines using continuous emission monitoring, as described in §§60.4335(b) and 60.4345:

1. An excess emission is any unit operating period in which the 4-hour or 30-day rolling average NO\textsubscript{X} emission rate exceeds the applicable emission limit in §60.4320. For the purposes of this subpart, a “4-hour rolling average NO\textsubscript{X} emission rate” is the arithmetic average of the average NO\textsubscript{X} emission rate in ppm or ng/cm\textsuperscript{3} (lb/MWh) measured by the continuous emission monitoring equipment for a given hour and the three unit operating hours immediately preceding that unit operating hour. Calculate the rolling average if a valid NO\textsubscript{X} emission rate is obtained for at least 3 of the 4 hours. For the purposes of this subpart, a “30-day rolling average NO\textsubscript{X} emission rate” is the arithmetic average of all hourly NO\textsubscript{X} emission data in ppm or ng/cm\textsuperscript{3} (lb/MWh) measured by the continuous emission monitoring equipment for a given day and the twenty-nine unit operating days immediately preceding that unit operating day. A new 30-day average is calculated each unit operating day as the average of all hourly NO\textsubscript{X} emissions rates for the preceding 30 unit operating days if a valid NO\textsubscript{X} emission rate is obtained for at least 75 percent of all operating hours.

2. A period of monitor downtime is any unit operating hour in which the data for any of the following parameters are either missing or invalid: NO\textsubscript{X} concentration, CO\textsubscript{2} or O\textsubscript{2} concentration, fuel flow rate, steam flow rate, steam temperature, steam pressure, or megawatts. The steam flow rate, steam temperature, and steam pressure are only required if you will use this information for compliance purposes.

3. For operating periods during which multiple emissions standards apply, the applicable standard is the average of the applicable standards during each hour. For hours with multiple emissions standards, the applicable limit for that hour is determined based on the condition that corresponded to the highest emissions standard.

(c) For turbines required to monitor combustion parameters or parameters that document proper operation of the NO\textsubscript{X} emission controls:

1. An excess emission is a 4-hour rolling unit operating hour average in which any monitored parameter does not achieve the target value or is outside the acceptable range defined in the parameter monitoring plan for the unit.

2. A period of monitor downtime is a unit operating hour in which any of the required parametric data are either not recorded or are invalid.

§ 60.4385 How are excess emissions and monitoring downtime defined for SO\textsubscript{2}?

If you choose the option to monitor the sulfur content of the fuel, excess emissions and monitoring downtime are defined as follows:

(a) For samples of gaseous fuel and for oil samples obtained using daily sampling, flow proportional sampling, or sampling from the unit’s storage tank, an excess emission occurs each
unit operating hour included in the period beginning on the date and hour of any sample for which the sulfur content of the fuel being fired in the combustion turbine exceeds the applicable limit and ending on the date and hour that a subsequent sample is taken that demonstrates compliance with the sulfur limit.

(b) If the option to sample each delivery of fuel oil has been selected, you must immediately switch to one of the other oil sampling options (i.e., daily sampling, flow proportional sampling, or sampling from the unit’s storage tank) if the sulfur content of a delivery exceeds 0.05 weight percent. You must continue to use one of the other sampling options until all of the oil from the delivery has been combusted, and you must evaluate excess emissions according to paragraph (a) of this section. When all of the fuel from the delivery has been burned, you may resume using the as-delivered sampling option.

(c) A period of monitor downtime begins when a required sample is not taken by its due date. A period of monitor downtime also begins on the date and hour of a required sample, if invalid results are obtained. The period of monitor downtime ends on the date and hour of the next valid sample.

§ 60.4390 What are my reporting requirements if I operate an emergency combustion turbine or a research and development turbine?

(a) If you operate an emergency combustion turbine, you are exempt from the NO\textsubscript{X} limit and must submit an initial report to the Administrator stating your case.

(b) Combustion turbines engaged by manufacturers in research and development of equipment for both combustion turbine emission control techniques and combustion turbine efficiency improvements may be exempted from the NO\textsubscript{X} limit on a case-by-case basis as determined by the Administrator. You must petition for the exemption.

§ 60.4395 When must I submit my reports?

All reports required under §60.7(c) must be postmarked by the 30th day following the end of each 6-month period.

PERFORMANCE TESTS

§ 60.4400 How do I conduct the initial and subsequent performance tests, regarding NO\textsubscript{X}?  

(a) You must conduct an initial performance test, as required in §60.8. Subsequent NO\textsubscript{X} performance tests shall be conducted on an annual basis (no more than 14 calendar months following the previous performance test).

(1) There are two general methodologies that you may use to conduct the performance tests. For each test run:

(i) Measure the NO\textsubscript{X} concentration (in parts per million (ppm)), using EPA Method 7E or EPA Method 20 in appendix A of this part. For units complying with the output based standard, concurrently measure the stack gas flow rate, using EPA Methods 1 and 2 in appendix A of this part, and measure and record the electrical and thermal output from the unit. Then, use the following equation to calculate the NO\textsubscript{X} emission rate:

\[ E = \frac{1.194 \times 10^{-7} \times (\text{NO}_\text{X})_{\text{avg}} \times Q_{\text{std}}}{P} \]  

Where:

\(E = \text{NO}_\text{X} \text{ emission rate, in lb/MWh} \)

\(1.194 \times 10^{-7} = \text{conversion constant, in lb/dscf/ppm} \)

\((\text{NO}_\text{X})_{\text{avg}} = \text{average NO}_\text{X} \text{ concentration for the run, in ppm} \)

\(Q_{\text{std}} = \text{stack gas volumetric flow rate, in dscf/hr} \)

\(P = \text{gross electrical and mechanical energy output of the combustion turbine, in MW} \) (for simple-cycle operation), for combined-cycle operation, the sum of all electrical and mechanical output from the combustion and steam turbines, or, for combined heat and power operation, the sum of all electrical and mechanical energy output from the steam turbines.