SUBPART 227-2

REASONABLY AVAILABLE CONTROL TECHNOLOGY (RACT) FOR OXIDES OF NITROGEN (NO_x)

Historical Note

Subpart (§§ 227-2.1—227-2.6) filed Jan. 19, 1994 eff. 30 days after filing.

§ 227-2.1 Applicability.

(a) The provisions of this Subpart apply to owners or operators of the following types of major stationary sources of NO_x:

(1) very large boilers;

(2) large boilers;

(3) mid-size boilers;

(4) small boilers;

(5) combustion turbines;

(6) stationary internal combustion engines; and

(7) other combustion sources.

Historical Note

Sec. filed Jan. 19, 1994; amds. filed: Feb. 3, 1999; Jan. 12, 2004 eff. 30 days after filing. Amended (a).

§ 227-2.2 Definitions.

(a) To the extent that they are not inconsistent with the specific definitions in subdivision (b) of this section, the general definitions of Part 200 of this Title apply.

(b) For the purpose of this Subpart, the following definitions apply:

(1) *Actual 1990 baseline emissions.* An emissions baseline established from 1990 actual emissions as reported in response to the department's survey of major facilities.

(2) *Boiler.* A device that combusts fuel and produces steam or heats water or any other heat transfer medium.

(3) *Combined cycle combustion turbine.* Any combustion turbine which recovers heat from exhaust gases in order to heat water or generate steam.

(4) *Combustion turbine.* A stationary combustion engine which operates with a rotary motion.

(5) *Commence commercial operation.* To have begun to produce steam, gas, other heated medium, or mechanical energy used to power a mechanical device or generate electricity for sale or use.

(6) *Continuous emissions monitoring system (CEMS) certification protocol.* Emissions testing procedures which demonstrate compliance with requirements for system accuracy and precision.

(7) *Emergency power generating stationary internal combustion engine.* A stationary internal combustion engine that operates as a mechanical or electrical power source only when

the usual supply of power is unavailable, and operates for no more than 500 hours per year. The 500 hours of annual operation for the engine include operation during emergency situations, routine maintenance, and routine exercising (*e.g.*, test firing the engine for one hour a week to ensure reliability). Stationary internal combustion engines used for peak shaving generation are not emergency power generating stationary internal combustion engines.

(8) *Forced outage.* An unplanned component failure that requires the source or major electrical inter-tie (34.5 kV or greater) be removed from service immediately or before the next weekend. Such failures must not include those attributable to improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error.

(9) *Large boiler.* A boiler with a maximum heat input capacity greater than 100 million Btu per hour and equal to or less than 250 million Btu per hour.

(10) *Lean burn internal combustion engine.* Any stationary internal combustion engine that is operated so that the amount of oxygen in the engine exhaust is 1.0 percent or more, by volume on a dry basis.

(11) *Low NO_x burner.* A burner designed to reduce flame turbulence by the mixing of fuel and air and by establishing fuel-rich zones for initial combustion, thereby reducing the formation of NO_x.

(12) *Mid-size boiler.* A boiler with a maximum heat input capacity greater than 50 million Btu per hour and equal to or less than 100 million Btu per hour.

(13) *Peaking combustion turbine.* A combustion turbine used intermittently to produce energy during periods of extremely high (*i.e.*, peak) power demand.

(14) *Preliminary continuous emissions monitoring system plan.* A document which includes, but is not limited to, source identification, source description, a description of the control technology, the applicable regulations, the type of monitor, a monitoring system flow diagram, a description of the data system, and a sample calculation for compliance.

(15) *Regenerative combustion turbine.* Any combustion turbine which recovers heat from the turbine exhaust gases to preheat combustion air.

(16) *Rich burn internal combustion engine.* Any stationary internal combustion engine that is not a lean burn internal combustion engine.

(17) *Simple cycle combustion turbine.* Any combustion turbine which does not recover heat from the turbine exhaust gases.

(18) *Small boiler.* A boiler with a maximum heat input capacity greater than 20 million Btu per hour (10 million Btu per hour for coal and residual oil-fired sources in the severe ozone nonattainment area) and equal to or less than 50 million Btu per hour.

(19) *System.* As used in the term *system averaging*, a combination of sources regulated under this Title which are owned or operated by the same person, provided that the person holds department operating permits for each source.

(20) *Stationary internal combustion engine.* Any internal combustion engine of either the reciprocating or rotary type whose uses may include, but are not limited to, the generation of electric power, pumping gases and liquids, and compressing air for pneumatic machinery.

(21) *Tune-up.* Adjustments made to a boiler in accordance with procedures supplied by the manufacturer (or an approved specialist) to optimize the combustion efficiency.

(22) *Very large boiler.* A boiler with a maximum heat input capacity greater than 250 million Btu per hour.

(23) *Weighted average allowance emission rate.* The average emission rate of all operating sources in a system averaging plan where the mass emission rate of the sources in operation is equivalent to the mass emission rate achieved with each source operating in compliance with the most stringent applicable emission limit.

Historical Note

Sec. filed Jan. 19, 1994; amds. filed: Feb. 3, 1999; May 4, 2001 as emergency measure, expired 90 days after filing; Aug. 3, 2001 as emergency measure, expired 90 days after filing;

Nov. 2, 2001 as emergency measure, expired 90 days after filing; repealed, new filed Jan. 12, 2004 eff. 30 days after filing.

§ 227-2.3 Application and permitting requirements.

(a) Every facility containing a source subject to this Subpart must have or obtain a permit pursuant to Subpart 201-6 of this Title.

(1) By July 1, 2004, the owner or operator of any source that is subject to the control requirements of section 227-2.4(f) of this Subpart that take effect on April 1, 2005 or any source that previously received a case-by-case RACT determination under section 227-2.5(c) of this Subpart, must submit both an updated version of the compliance plan and an updated version of the operating plan.

(2) The owner or operator of any source that becomes newly subject to this Subpart must submit, along with the facility's permit application or request for a permit modification pursuant to Part 201 of this Title, a compliance plan and an operating plan.

(b) *Compliance plan.* The compliance plan must describe the measures that will be implemented to achieve compliance with this Subpart for the source and include a schedule showing the timing of implementation of the measures. Daily, annual or 30-day caps on emissions are not a compliance option. Once approved by the department, the description of compliance measures and the schedule for their implementation will be made part of the terms and conditions of the facility's permit. For any source that is anticipated to be subject to the control requirements of section 227-2.4(f) of this Subpart that take effect on April 1, 2005, if the compliance measures entail the permanent shutdown of the source, the modification, surrender, or planned expiration of the permit must assure that the source is shutdown no later than April 1, 2005.

(c) *Operating plan.* The operating plan must include:

(1) a summary of the applicable standards and requirements of this Subpart and how this facility will comply, including any system averaging and any higher specific source emission rates that may apply; and

(2) descriptions of the following:

(i) the combustion process, including the procedures for the control of NO_x emissions;

(ii) procedures for monitoring source operating parameters;

(iii) procedures for ash handling;

(iv) procedures for monitoring emissions;

(v) procedures for reporting and recordkeeping;

(vi) any operating manual for the source; and

(vii) the names and titles of operating personnel and, if applicable, their qualifications (*e.g.*, licenses, certificates, education, training courses completed).

(d) Except for any source that is subject to the control requirements of section 227-2.4(f) of this Subpart that take effect on April 1, 2005 or any source that previously received a case-by-case RACT determination under section 227-2.5(c) of this Subpart, any owner or operator of a source subject to this Subpart that previously submitted compliance and operating plans in compliance with an earlier version of this Subpart is exempt from the requirements of this section.

Historical Note

Sec. filed Jan. 19, 1994; amd. filed Feb. 3, 1999; repealed, new filed Jan 12, 2004 eff. 30 days after filing.

§ 227-2.4 Control requirements.

RACT requirements applicable to a particular source may fall into one of two categories - presumptive RACT limits (which are often set as emission limits but also take other forms) or case-by-case RACT determinations. Presumptive RACT limits are category-wide requirements. Presumptive RACT limits are based on capabilities which are general to a source category. However, for some categories of sources, presumptive RACT limits may not be attainable at

every individual source. Case-by-case RACT determinations consider the technological and economic circumstances of the individual source. Each case-by-case determination which establishes RACT requirements in a source's permit must be submitted to the administrator as a separate State Implementation Plan revision.

(a) *Very large boilers.* The owner or operator of a very large boiler must comply with either the presumptive RACT emission limits of paragraph (1) of this subdivision or a case-by-case RACT determination made pursuant to paragraph (2) of this subdivision, as applicable.

(1) Emission limits.

(Pounds NO_x per million Btu)

	Boiler Configuration			
	Tangential	*Wall*	*Cyclone*	*Stokers*
Fuel Type				
Gas Only	0.20	0.20	na	na
Gas/Oil	0.25	0.25	0.43	na
Coal Wet Bottom	1.00	1.00	0.60	na
Coal Dry Bottom	0.42	0.45	na	0.30[1]

[1] This emission limit is 0.33 pound per million Btu when at least 25 percent other solid fuels (*e.g.* tire-derived fuel, waste wood), on a Btu basis, are utilized.

Compliance with these emission limits must be determined on a 24-hour heat input-weighted average basis in accordance with the provisions of section 227-2.6(a)(1) of this Subpart. From October 1st to April 30th, a 30-day rolling heat input-weighted average may be used to demonstrate compliance.

(2) For very large boilers having configurations other than those listed above or which are fired primarily with fuels not listed above, the owner or operator must submit, as part of the compliance plan required under section 227-2.3(a) and (b) of this Subpart, a proposal for RACT to be implemented that includes descriptions of:

(i) the available NO_x control technologies, the projected effectiveness of the technologies considered, and the costs for installation and operation for each of the technologies; and

(ii) the technology and the appropriate emission limit selected as RACT considering the costs for installation and operation of the technology.

(b) *Large boilers.* The owner or operator of a large boiler must comply with either the presumptive RACT emission limits of paragraph (1) of this subdivision or a case-by-case RACT determination made pursuant to paragraph (2) of this subdivision, as applicable.

(1) Emission limits.

(Pounds per million Btu)

Fuel Type	*Emission Limit*
Gas Only	0.20
Gas/Oil	0.30
Pulverized Coal	0.50
Coal (Overfeed Stoker)	0.30[2]

[2] This emission limit is 0.33 pound per million Btu when at least 25 percent other solid fuels (*e.g.*, tire-derived fuel, waste wood), on a Btu basis, are utilized.

Compliance with these emission limits must be determined with a one hour average in accordance with the provisions of section 227-2.6(a)(3) of this Subpart unless the owner or

operator chooses to utilize a CEMS under the provisions of section 227-2.6(a)(2) of this Subpart. If a CEMS is utilized, the requirements of section 227-2.6(b) of this Subpart apply, including the use of a 24-hour averaging period.

(2) For large boilers fired primarily with fuels not listed above, the owner or operator must submit, as part of the compliance plan required under section 227-2.3(a) and (b) of this Subpart, a proposal for RACT to be implemented that includes descriptions of:

(i) the available NO_x control technologies, the projected effectiveness of the technologies considered, and the costs for installation and operation for each of the technologies; and

(ii) the technology and the appropriate emission limit selected as RACT considering the costs for installation and operation of the technology.

(c) *Mid-size boilers.* The owner or operator of a mid-size boiler must comply with the presumptive RACT technology provisions of subparagraph (1)(i) or (ii) of this subdivision, the presumptive RACT emission limits of paragraph (2) of this subdivision, or a case-by-case RACT determination pursuant to subparagraph (1)(iii) or (iv) of this subdivision, as applicable.

(1) (i) Boilers fired with natural gas, distillate oil or a combination of these fuels must utilize approved low NO_x burners.

(ii) Boilers fired primarily with residual oil must utilize approved low NO_x burners and flue gas recirculation utilizing at least 10 percent recirculation.

(iii) For boilers fired primarily with fuels not listed in subparagraphs (i) and (ii) of this paragraph, the owner or operator must submit, as part of the compliance plan required under section 227-2.3(a) and (b) of this Subpart, a proposal for RACT to be implemented that includes descriptions of:

(*a*) the available NO_x control technologies, the projected effectiveness of the technologies considered, and the costs for installation and operation for each of the technologies; and

(*b*) the technology and the appropriate emission limit selected as RACT considering the costs for installation and operation of the technology.

(iv) For those boilers where physical constraints make it impossible or impractical to implement the requirements of subparagraph (i), (ii) or (iii) of this paragraph or paragraph (2) of this subdivision, the owner or operator must submit, as part of the compliance plan required under section 227-2.3(a) and (b) of this Subpart, a proposal for RACT to be implemented that includes a clear and convincing technical demonstration of such constraints and descriptions of:

(*a*) the available NO_x control technologies, the projected effectiveness of the technologies considered, and the costs for installation and operation for each of the technologies; and

(*b*) the technology and the appropriate emission limit selected as RACT considering the costs for installation and operation of the technology.

(2) Emission limits.

(Pounds per million Btu)

Fuel Type	*Emission Limit*
Gas Only	0.10
Distillate Oil	0.12
Residual Oil	0.30

Compliance with these emission limits must be determined with a one hour average in accordance with the provisions of section 227-2.6(a)(4) of this Subpart unless the owner or operator chooses to utilize a CEMS under the provisions of section 227-2.6(a)(2) of this Subpart. If a CEMS is

utilized, the requirements of section 227-2.6(b) of this Subpart apply, including the use of a 24 hour averaging period.

(d) *Small boilers.* The owner or operator of a small boiler must annually perform a tune-up and maintain, in a permanently bound log book, or other format approved in writing by the department, the following information:

(1) the date of the last tune-up;

(2) the name, title and affiliation of the person who made the adjustments; and

(3) any other information which the department may require as a condition of approval of its permit.

(e) *Combustion turbines.* The owner or operator of a combustion turbine with a maximum heat input rate of 10 million Btu per hour or greater must comply with either the presumptive RACT emission limits in paragraph (1) or (2) of this subdivision or a case-by-case RACT determination pursuant to paragraph (3) of this subdivision, as applicable:

(1) For simple cycle and regenerative combustion turbines (with regard to peaking combustion turbines that operate fewer than 500 hours during the period of October 1st to April 30th, the emission limits in subparagraphs (i) and (ii) of this paragraph are applicable only during the period May 1st through September 30th):

(i) 50 parts per million on a dry volume basis (ppmvd), corrected to 15 percent oxygen, for sources designed to burn gas only; and

(ii) 100 ppmvd, corrected to 15 percent oxygen, for sources capable of firing multiple fuels.

Compliance with these emission limits must be determined with a one hour average in accordance with section 227-2.6(a)(6) of this Subpart unless the owner or operator chooses to utilize a CEMS under the provisions of section 227-2.6(a)(2) of this Subpart. If a CEMS is utilized, the requirements of section 227-2.6(b) of this Subpart apply, including the use of a 24-hour averaging period.

(2) For combined cycle combustion turbines:

(i) 42 ppmvd, corrected to 15 percent oxygen, when firing gas; and

(ii) 65 ppmvd, corrected to 15 percent oxygen, when firing oil.

For sources with a duct burner, compliance will be based on the combination of the turbine and the duct burner when both fire, and the turbine alone when not duct-firing.

Compliance with these emission limits must be determined with a one hour average in accordance with section 227-2.6(a)(5) or (6) of this Subpart. Sources determining compliance under section 227-2.6(a)(6) of this Subpart may opt to utilize a CEMS under the provisions of section 227-2.6(a)(2) of this Subpart. If a CEMS is utilized, the requirements of section 227-2.6(b) of this Subpart apply, including the use of a 24-hour averaging period.

(3) For combustion turbines firing primarily with fuels not listed above, the owner or operator must submit, as part of the compliance plan required in under section 227-2.3(a) and (b) of this Subpart, a proposal for RACT to be implemented that includes descriptions of:

(i) the available NO_x control technologies, the projected effectiveness of the technologies considered, and the costs for installation and operation for each of the technologies; and

(ii) the technology and the appropriate emission limit selected as RACT considering the costs for installation and operation of the technology.

(f) *Stationary internal combustion engines.* The owner or operator of a stationary internal combustion engine of 200 horsepower or larger in the severe ozone nonattainment area, and 400 horsepower in the rest of the State, that provides primary power or is used for peak shaving generation, must comply with one of the following emission limits, as applicable:

(1) For rich burn internal combustion engines:

(i) 2.0 grams per brake horsepower-hour through March 31, 2005; and

(ii) 1.5 grams per brake horsepower-hour beginning April 1, 2005.

(2) For lean burn internal combustion engines:

(i) spark-ignited sources firing gas:

(*a*) 3.0 grams per brake horsepower-hour through March 31, 2005; and

(*b*) 1.5 grams per brake horsepower-hour beginning April 1, 2005;

(ii) compression ignition sources:

(*a*) 9.0 grams per brake horsepower-hour through March 31, 2005; and

(*b*) 2.3 grams per brake horsepower-hour beginning April 1, 2005;

(iii) sources firing landfill gas or digester gas:

(*a*) 9.0 grams per brake horsepower-hour through March 31, 2005; and

(*b*) 2.0 grams per brake horsepower-hour beginning April 1, 2005.

Compliance with these emission limits must be determined with a one hour average in accordance with section 227-2.6(a)(7) of this Subpart unless the owner or operator chooses to utilize a CEMS under the provisions of section 227-2.6(a)(2) of this Subpart. If a CEMS is utilized, the requirements of section 227-2.6(b) of this Subpart apply, including the use of a 24-hour averaging period.

(3) Any internal combustion engine may utilize an emission limit which reflects a 90 percent or greater NO_x reduction from the engine's actual 1990 baseline emissions, if such emissions baseline exists.

(4) Emergency power generating stationary internal combustion engines, and engine test cells at engine manufacturing facilities that are utilized for either research and development purposes, reliability testing, or quality assurance performance testing are exempt from the requirements of this subdivision.

(g) *Other combustion sources.* The owner or operator of a major stationary source of NO_x or a combustion installation that is part of a facility that is a major stationary source of NO_x, that is not addressed by a specific subdivision of this section, and is of a source-type not regulated under Part 212, 214, 216, 219, 220 or 224 of this Title, must comply with the case-by-case RACT determination made pursuant to this subdivision. The owner or operator must submit, as part of the compliance plan required under section 227-2.3(a) and (b) of this Subpart, a proposal for RACT to be implemented that includes descriptions of:

(1) the available NO_x control technologies, the projected effectiveness of the technologies considered, and the costs for installation and operation for each of the technologies;

(2) the technology and the appropriate emission limit selected as RACT considering the costs for installation and operation of the technology; and

(3) testing, monitoring and reporting procedures.

A case-by-case RACT determination is required neither for combustion installations with an emission rate potential for NO_x of less than 3.0 pounds per hour and actual emissions in the absence of control equipment of less than 15.0 pounds per day nor for combustion installations that are similar to those sources regulated under subdivisions (d), (e) and (f) of this section and that comply with the appropriate presumptive RACT limit.

Historical Note

Sec. filed Jan. 19, 1994; amds. filed: Feb. 3, 1999; Jan. 26, 2000; May 4, 2001 as emergency measure, expired 90 days after filing; Aug. 3, 2001, expired 90 days after filing; Nov. 2, 2001 as emergency measure, expired 90 days after filing; Jan. 12, 2004 eff. 30 days after filing.

§ 227-2.5 Compliance options.

With the exception of the compliance option established in subdivision (c) of this section, the compliance options established below do not involve case-by-case RACT determinations with the need to individually select an appropriate technology and/or alternative emission limit. As such, these options provide flexibility to owners and operators of major stationary sources of NO_x to

meet the NO_x RACT requirements but are not of the type that require the additional approval of the administrator as separate State Implementation Plan revisions.

(a) *Fuel switching option.* The owner or operator of a source subject to this Subpart may commit to burning a cleaner fuel, between May 1st and September 30th of each year. Fuel switching must result in quantifiable annual NO_x emissions equal to or less than the NO_x emissions expected if the source complied with the applicable presumptive RACT emission limits set forth in section 227-2.4 of this Subpart.

(b) *System averaging plan.* The owner or operator of a source subject to this Subpart may apply to have the source included in a system averaging plan which employs a weighted average allowable emission rate.

(1) This averaging may include all sources at a facility or sources within a system, including but not limited to boilers, combustion turbines, and stationary internal combustion engines. In the event of a forced outage, the weighted average allowable emission rate must be adjusted to account for the source or major electrical inter-tie (345 kV or greater) not in operation as a result of the forced outage. The adjusted emission rate will be deemed in compliance for the period of the forced outage.

In the event of a forced outage, the facility owner or operator must, within 30 days thereafter, submit a written report to the department which describes why the outage was unavoidable and includes the following:

(i) a contemporaneous operating log signed by the responsible official identifying the location of the source which was subject to the forced outage and the cause of such outage;

(ii) a demonstration that the source was being properly operated at the time the outage occurred;

(iii) a demonstration that, during the outage, the facility owner or operator took all reasonable steps to minimize emissions from the operating sources included in the averaging scheme, or other requirements of the permit; and

(iv) a proposed repair or replacement schedule for the subject source or a proposed revised system averaging plan.

The facility owner or operator must take any additional steps required by specific provisions in the permit to address the effect of forced outages on the system average.

(2) Averaging of emissions from sources within the severe ozone nonattainment with those outside the severe ozone nonattainment area is not allowed unless greater control is placed on those sources in the severe ozone nonattainment area.

(c) For those sources for which the owner or operator demonstrates that the applicable presumptive RACT emission limit in section 227-2.4 of this Subpart is not economically or technically feasible, the owner or operator can request the department to set a higher source specific emission limit. Economic or technical feasibility must include, but is not limited to the evaluation of fuel switching, selective catalytic reduction or system averaging as compliance options. This alternative RACT emission limit must be approved by the department and by the administrator as a revision to the State Implementation Plan.

Historical Note

Sec. filed Jan. 19, 1994; amds. filed: Feb. 3, 1999; Jan. 26, 2000; Jan. 12, 2004 eff. 30 days after filing.

§ 227-2.6 Testing, monitoring, and reporting requirements.

(a) *Applicability.* The owner or operator of each source must verify NO_x emissions by performing the applicable testing procedure detailed below:

(1) For any very large boiler, NO_x emissions must be measured with a CEMS as described in subdivision (b) of this section or with an equivalent monitoring system approved by the department.

(2) For any other combustion installation covered by this subdivision, except those covered under paragraph (5) of this subdivision, NO_x emissions may be measured with a CEMS or with an equivalent monitoring system approved by the department in lieu of the monitoring requirements as described in subdivision (b) of this section.

(3) For any large boiler, NO_x emissions must be measured in accordance with emission test requirements described in subdivision (c) of this section.

(4) For any mid-size boiler complying with the presumptive RACT emission limits in section 227-2.4(c)(2) of this Subpart, NO_x emissions must be measured in accordance with the emission test requirements described in subdivision (c) of this section.

(5) For any combined cycle combustion turbine having a maximum heat input rate greater than 250 million Btu per hour, NO_x emissions must be measured with a CEMS as described in subdivision (b) of this section.

(6) For any simple cycle, regenerative combustion turbine and any combined cycle combustion turbine having a maximum heat input rate of 250 million Btu per hour or less, NO_x emissions must be measured in accordance with the emission test requirements described in subdivision (c) of this section.

(7) For any stationary internal combustion engine, NO_x emissions must be measured in accordance with the emission test requirements as described in subdivision (c) of this section.

(8) For any NO_x source subject to section 227-2.4(g) of this Subpart, NO_x emissions must be measured pursuant to a testing, monitoring, and reporting protocol that has been proposed by the owner or operator and is consistent with the applicable requirements for sources regulated under this Subpart that have comparable heat input ratings. The proposed protocol is subject to approval by the department and the administrator.

(b) *CEMS requirements.* (1) The owner or operator of a source subject to paragraph (a)(1), (2) or (5) of this section that is obligated to submit a compliance plan required under section 227-2.3(a) and (b) of this Subpart must submit for department approval:

(i) a preliminary CEMS plan as part of the compliance plan if it has a CEMS in place, or are in the process of procuring or installing a CEMS;

(ii) a preliminary CEMS plan at least 180 days prior to equipment installation. The department will notify the owner or operator of the acceptability of the plan at least 60 days prior to equipment installation if it is not covered under subparagraph (i) of this paragraph; or

(iii) a proposed equivalent monitoring plan.

(2) The owner or operator of a source subject to paragraph (a)(1), (2) or (5) of this section that is obligated to submit a compliance plan required under section 227-2.3(a) and (b) of this Subpart must submit a CEMS certification protocol at least 60 days prior to compliance testing. The location of and specifications for each instrument or device, as well as procedures for calibration, operation, data evaluation and data reporting, must be approved by the department.

(3) The owner or operator of a source subject to paragraph (a)(1), (2) or (5) of this section must install, calibrate, maintain, and operate a CEMS for measuring NO_x at locations approved in the CEMS certification protocol under paragraph (2) of this subdivision, and must record the output of each such system. The following procedures and test methods must be used for determining compliance with the appropriate NO_x emission limit under section 227-2.4 of this Subpart:

(i) The owner or operator of a source subject to paragraphs (a)(1) and (2) of this section must:

(*a*) calculate all 24-hour daily heat input-weighted average NO_x emission rates from block hourly arithmetic emission rate averages calculated by the CEMS and expressed in terms of pounds of NO_x per million Btu;

(*b*) demonstrate compliance with the appropriate emission limit under section 227-2.4 of this Subpart by using a CEMS for measuring NO_x and calculating a 24-hour daily heat input-weighted average NO_x emission rate using 40 CFR part 60, Appendix A, Method 19 for nonturbine sources. A 30-day rolling heat input-weighted average emission rate may be used to demonstrate compliance with the appropriate emission limit under section 227-2.4 of this Subpart from October 1st to April 30th for nonturbine sources; and

(*c*) determine the 24-hour daily heat input-weighted average NO_x emission rate based on the heat input-weighted average of the block hourly arithmetic average emission rates

during each 24-hour daily period from 12:00 midnight to 12:00 midnight the following day using CEMS data. The block hourly heat input-weighted average emission rate must be calculated for each one-hour period starting with the period 12:00 midnight to 1:00 a.m. and continuing through until the last period 11:00 p.m. to 12:00 midnight; or, starting with the period 12:00 noon to 1:00 p.m. and continuing through the last period 11:00 a.m. to 12:00 noon. The 30-day rolling heat input-weighted average must be the average of the 24-hour daily heat input-weighted NO_x emission rate.

(ii) The owner or operator of a source subject to paragraph (a)(5) of this section must calculate:

(*a*) block hourly arithmetic average emission rates using data points generated by CEMS and expressed in terms of parts per million on a dry volume basis, corrected to 15 percent oxygen; and

(*b*) block hourly arithmetic average emission rates for the periods starting 12:00 midnight to 1:00 a.m., 1:00 a.m. to 2:00 a.m., and so on.

(iii) At a minimum, valid CEMS data must be obtained for 90 percent of the operating hours in each calendar quarter that the subject facility is operating.

(iv) All valid CEMS data must be used in calculating emission rates even if the minimum data requirements of subparagraph (iii) of this paragraph are not met.

(v) The procedures under 40 CFR 60.13, Appendix B, Performance Specification 2; and any additional criteria specified by the department must be followed for the installation, evaluation, and operation of the CEMS.

(vi) Annual recertifications, quarterly accuracy and daily calibration drift tests must be performed in accordance with 40 CFR part 60, Appendix F. CEM sources subject to 40 CFR part 75 and/or Part 204 of this Title must follow the procedures in those programs, and any additional data requirements determined appropriate by the department.

(vii) When NO_x emission data are not obtained because of CEMS downtime, emission data shall be obtained by using the 90th percentile value of all CEMS NO_x emission data collected over the last 180 days. Alternatively the owner or operator of a facility subject to CFR part 75 and/or Part 204 of this Title may utilize 40 CFR part 75 data substitution procedures for periods when no valid CEMS data is available.

(4) CEMS recordkeeping and reporting requirements. (i) The owner or operator of a source subject to paragraphs (a)(1), (2) and (5) of this section who applies for a permit pursuant to section 227-2.3 of this Subpart must notify the department of the planned initial start-up date.

(ii) Protocols, reports, summaries, compliance plans and schedules, and any other information required to be submitted to the department under provisions of this Subpart must be sent as follows:

(*a*) one copy to the Division of Air Resources, New York State Department of Environmental Conservation, 625 Broadway, Albany, NY 12233; and

(*b*) one copy to the regional air pollution control engineer at the appropriate regional office of the department.

(iii) Emissions, monitoring, and operating parameter records or measurements required by this Subpart, quarterly and annual summaries, and any additional parameters required by the department must be maintained for at least three years and made available upon department request within 10 working days.

(iv) Following each calendar quarter, the owner or operator of a source subject to paragraphs (a)(1), (2) and (5) of this section, must tabulate and summarize applicable emission, monitoring, and operating parameter measurements recorded during the preceding three months (including but not limited to type and amount of fuel burned on a daily basis, heat content of the fuel, total heating value of the fuel consumed on a daily basis, the actual NO_x emission rate, the allowable NO_xemission rate, and the summation of the sources

included in the averaging scheme). These records must be submitted within 30 days following the end of each calendar quarter in a format acceptable to the department, and include:

(*a*) the average NO_x emission rates as specified under paragraph (b)(3) of this section. (For sources covered under paragraphs [a][1] and [2] of this section, block hourly average emission rates are to be recorded and tabulated, but do not need to be included in the quarterly summaries);

(*b*) identification of the operating hours when NO_x emissions data are not included in the calculation of the average emission rate and the reasons for not including that data; and

(*c*) the results of accuracy assessments as required by 40 CFR part 60, Appendix F and any additional data quality information required by the department.

(v) The owner or operator of a source subject to paragraphs (a)(1), (2) and (5) of this section must submit the initial compliance test data, the performance evaluation of the CEMS found in 40 CFR part 60, Appendix B, and the maximum heat input capacity.

(5) CEMS requirements for sources subject to 40 CFR part 75 and/or Part 204 of this Title. The owner or operator of a source (except those subject to the requirements of section 227-2.6(b)(3)(vii) of this subdivision) subject to the Acid Rain Program monitoring (40 CFR part 75) and/or the NO_x Budget Trading Program (Part 204 of this Title) must follow the procedures specified in those programs in order to demonstrate compliance with this Subpart. The owner or operator must, by using the methods described in clause (3)(i)(*b*) of this subdivision, determine compliance with emission rates that are calculated and reported as 24-hour daily averages.

(c) *Emission test requirements.* The owner or operator of a source required to conduct an emission test under subdivision (a) of this section must:

(1) submit a compliance test protocol to the department for approval at least 30 days prior to emission testing. The conditions of the testing and the locations of the sampling devices must be acceptable to the department; and

(2) utilize the following procedures set forth in 40 CFR part 60, Appendix A or any other method acceptable to the department and the administrator for determining compliance with the appropriate NO_x limit in section 227-2.4 of this Subpart, and must, in addition, follow the procedures set forth in Part 202 of this Title:

(i) for large and mid-size boilers, utilize Method 7, 7E, or 19 from 40 CFR part 60, Appendix A or another reference method approved by the department;

(ii) for simple cycle combustion turbines, utilize Method 20 from 40 CFR part 60, Appendix A or another reference method approved by the department;

(iii) for combined cycle combustion turbines, utilize Method 7, 7E, 19 or 20 from 40 CFR part 60, Appendix A or another reference method approved by the department;

(iv) for stationary internal combustion engines, utilize Method 7, 7E, or 19 from 40 CFR part 60, Appendix A or another reference method approved by the department;

(3) submit a compliance test report containing the results of the emission test to the department no later than 60 days after completion of the emission test.

Historical Note

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