

OFFICIAL COMPILATION OF CODES, RULES AND REGULATIONS OF THE STATE OF NEW YORK
TITLE 6. DEPARTMENT OF ENVIRONMENTAL CONSERVATION
CHAPTER III. AIR RESOURCES
SUBCHAPTER A. PREVENTION AND CONTROL OF AIR CONTAMINATION AND AIR POLLUTION
SUBPART 220-1: PORTLAND CEMENT PLANTS

(Statutory authority: Environmental Conservation Law §§ 1-0101, 3-0301, 19-0103, 19-0105, 19-0301, 19-0305, 19-0311)

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§220-1.1 Definitions

(a) For the purpose of this Subpart, the general definitions of Part 200 of this Title apply.

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

(1) *Dry process plant.* A portland cement plant where the raw material kiln feed entering the kiln in a powder form has a moisture content of one percent or less by weight.

(2) *Feed to the kiln.* The weight of all materials, excluding fuels and uncombined water, introduced into the kiln during the time when a stack sample is being taken to determine compliance with sections 220-1.2 and 220-1.3 of this Subpart.

(3) *Clinker.* The product of a portland cement kiln from which finished cement is manufactured by milling and grinding.

(4) *Portland cement kiln.* A system, including any solid, gaseous, or liquid fuel combustion equipment, used to calcine and fuse raw materials (including limestone and clay) to produce clinker.

(5) *Portland cement plant.* Any facility manufacturing portland cement by either the wet or dry process.

(6) *Wet process plant.* A portland cement plant where the raw material kiln feed enters the kiln in the form of a water slurry of approximately 30 to 40 percent water by weight.

§220-1.2 Particulate emissions from existing kilns and clinker coolers

Except as provided in section 220-1.3 of this Subpart, no person shall cause or allow emission of particulates to the outdoor atmosphere from a portland cement kiln or clinker cooler in excess of the following emission rates:

(a) for process weight per hour less than or equal to 100,000 pounds, $E = 0.024P^{0.665}$ where E is the emission rate in pounds per hour and P is the process weight per hour; or

(b) for process weight per hour in excess of 100,000 pounds, 0.05 grains per standard cubic foot of gas on a dry basis.

§220-1.3 Particulate emissions from new or modified kilns and clinker coolers

(a) No person will cause or allow emission of particulates to the outdoor atmosphere in excess of 0.30 pounds per ton of feed to the kiln from a portland cement kiln, portland cement kiln with in-line raw mill, and/or related air cleaning device which commenced construction or modification after August 17, 1971.

(b) No person will cause or allow emission of particulates to the outdoor atmosphere in excess of 0.10 pounds per ton of feed to the kiln from a portland cement clinker cooler and/or related air cleaning device which commenced construction or modification after August 17, 1971.

§220-1.4 Opacity limits for portland cement processes

(a) Except as provided in subdivision (b) of this section, no person will cause or allow emissions to the outdoor atmosphere of any material that has an average six-minute opacity of 20 percent or greater, except uncombined water, from a portland cement kiln, portland cement kiln with in-line raw mill, clinker cooler, or any other confined processes at a portland cement plant.

(b) No person will cause or allow emissions to the outdoor atmosphere of any material that has an average six-minute opacity of 10 percent or greater, except uncombined water, from a clinker cooler, raw mill system, finish mill system, raw mill dryer, raw material storage, clinker storage, finished product storage, conveyor transfer points, bagging and bulk loading and unloading systems which commenced construction or modification after August 17, 1971.

(c) Any person who owns or operates an area, parking lot, clinker gallery, railcar loading shed, conveyor tunnel, access road, stockpile, building opening or refuse disposal area, at a portland cement plant that has the potential to emit visible emissions for one continuous hour or longer, must apply corrective measures to eliminate such potential.

§220-1.5 Particulate emissions from dust dumps

(a) The owner or operator of any portland cement dust dump will operate such dust dump in a manner which will minimize the horizontal dimensions of the working face.

(b) In cases where the dump is within 1,500 feet of any receptor, the owner and/or operator must seal the dust dump either by crusting or backfill twice yearly.

(c) If dumping procedures do not provide adequate protection from dust reentrainment, the owner and/or operator must install a windbreak. If visible emissions still reach the property line, the owner and/or operator must precondition the waste dust.

§220-1.6 Gaseous emissions from kiln stacks

(a) The owner or operator of a portland cement kiln may purchase and use fuel with sulfur content exceeding the fuel sulfur limitations required by Subpart 225-1 of this Title, provided that the burning of such fuel will not result in emissions of sulfur compounds (expressed as sulfur dioxide) to the outdoor atmosphere at a rate greater than would result through the use of fuels otherwise mandated by Subpart 225-1.

(b) The owner or operator of a portland cement kiln must submit a reasonably available control technology (RACT) analysis to the department for emissions of oxides of nitrogen (NO_x) from the kiln that proposes a RACT emission limit(s), and identifies the procedures and monitoring equipment to be used to demonstrate compliance with the proposed RACT emission limit(s). The RACT emissions limit(s) shall be expressed in pounds of NO_x per ton of clinker produced.

(1) By December 1, 2010 the owner or operator of a portland cement kiln that was in operation prior to the effective date of this Subpart must submit a RACT analysis, and an application for a permit modification in accordance with the provisions of Subpart 201-6 of this Title unless the existing NO_x control equipment and emission limit(s) are determined to be RACT. RACT, as approved by the department, must be implemented by July 1, 2012.

(2) The owner or operator of a portland cement kiln that was not in operation prior to the effective date of this Subpart must submit a RACT analysis prior to start up of the kiln. RACT, as approved by the department, must be implemented upon start up.

(3) RACT analyses must include the available NO_x control technologies, the projected effectiveness of the technologies considered, the costs for installation and operation for each of the technologies, and the technology and the appropriate emission limit(s) selected as RACT considering the costs for installation and operation of the technology. For a portland cement kiln that was in operation prior to the effective date of this Subpart and for which the existing NO_x control equipment has been determined to not be RACT, the RACT analysis must also include a schedule for installation of control equipment.

(4) Approved RACT determinations will be submitted by the department to the United States Environmental Protection Agency for approval as separate State Implementation Plan revisions.

(c) The owner or operator of a portland cement kiln may opt to comply with subdivision (b) of this section and section 220-1.7(c) of this Subpart by shutting down the kiln. An owner or operator choosing this option shall submit an application for a federally enforceable permit modification by December 1, 2010 wherein the owner or operator commits to permanently shut down the kiln by July 1, 2012.

§220-1.7 Source monitoring, recordkeeping and reporting

(a) The owner or operator of a portland cement kiln or clinker cooler must maintain a file of daily clinker production rates, kiln feed rates, and any particulate emission measurements. The production and feed rates must be summarized monthly. The records and summary must be retained for at least five years following the date of such records and summaries and must be made available for inspection by the department during normal business hours.

(b) The owner or operator of a portland cement kiln at a dry process plant or clinker cooler at either a dry or wet process plant, subject to section 220-1.4 (a) or (b) of this Subpart, must install, maintain, calibrate daily, and operate a device, approved by the department, for continuously measuring and recording the opacity of emissions from such kiln or clinker cooler. If two or more kilns are vented through a single stack, an opacity monitor in the common stack would satisfy the requirements of this subdivision. Records of opacity must be retained for at least five years following the date on which they are made.

(c) The owner or operator of a portland cement kiln shall demonstrate compliance with the NO_x RACT emission limit(s) established in section 220-1.6(b) of this Subpart by measuring NO_x emissions with a continuous emissions monitoring system (CEMS). The CEMS shall comply with the requirements of subdivision (d) of this section or with equivalent requirements approved by the department. Any approved equivalent CEMS requirements will be

submitted by the department to the United States Environmental Protection Agency for approval as separate State Implementation Plan revisions.

(d) *CEMS requirements.*

(1) The owner or operator of a portland cement kiln shall install, calibrate, evaluate, operate, and maintain a CEMS, in accordance with the provisions of 40 CFR part 75, for measuring NO_x at locations approved in the CEMS certification protocol under paragraph (3) of this subdivision, and shall record the output of the system.

(2) As part of its application for a permit or permit modification, the owner or operator of a portland cement kiln shall submit for department approval a CEMS monitoring plan that complies with the provisions of 40 CFR part 75, subpart F.

(3) The owner or operator of a portland cement kiln shall submit for department approval a CEMS certification protocol at least 60 days prior to CEMS certification testing. The certification protocol shall include the location of and specifications for each instrument or device, as well as procedures for calibration, operation, data evaluation, and data reporting.

(4) The procedures in subparagraphs (i) through (v) of this paragraph shall be used for determining compliance with the NO_x RACT emission limit established under section 220-1.6(b) of this Subpart.

(i) The owner or operator of a portland cement kiln shall determine compliance daily on a 30 day rolling average basis. The 30 day rolling averages shall be calculated by dividing 30 day total NO_x emissions by 30 day total clinker production. Only days when the kiln operates shall be included in the 30 day rolling averages.

(ii) Along with any specific additional data requirements mandated by the department for a particular portland cement kiln, annual re-certifications, quarterly accuracy, and daily calibration drift tests shall be performed in accordance with 40 CFR part 75, subpart C.

(iii) When NO_x emissions data are not obtained because of CEMS downtime, or for periods when no valid CEMS data is available, the owner or operator of a portland cement kiln shall use 40 CFR part 75, subpart D, data substitution procedures.

(5) In addition to the requirements of subparagraphs (i) through (iii) of this paragraph, the owner or operator of a portland cement kiln shall comply with the CEMS recordkeeping and reporting requirements of 40 CFR part 75, subparts F and G.

(i) The owner or operator of a portland cement kiln shall notify the department of the planned initial start-up date of any new CEMS.

(ii) Emissions, monitoring, and operating parameter records or measurements required by this Subpart and any additional parameters required by the department shall be maintained for at least five years and made available to the department upon request.

(iii) On a semi-annual basis, the owner or operator of a portland cement kiln shall tabulate and summarize applicable emissions, monitoring, and operating parameter measurements recorded during the preceding six months, and submit these records to the department. These records shall be submitted in a format acceptable to the department and shall include:

(a) the 30 day rolling average NO_x emissions as specified under paragraph (4) of this subdivision;

(b) identification of the operating hours when NO_x emissions data are not included in a calculation of the 30 day rolling average emissions and the reasons for not including that data;

(c) a comparison of the NO_x emissions to the NO_x RACT emissions limit(s);

(d) type and amount of fuel burned on a daily basis and the as burned heat content of the fuel;

(e) the total daily NO_x emissions and total daily clinker production; and

(f) the results of CEMS accuracy assessments as required by 40 CFR part 75, appendix A and B and any additional data quality information required by the department.

(e) Protocols, reports, summaries, schedules, and any other information required to be submitted to the department under provisions of this Subpart must be sent (in either hardcopy or electronically) as follows:

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

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

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TITLE 6. DEPARTMENT OF ENVIRONMENTAL CONSERVATION
CHAPTER III. AIR RESOURCES
SUBCHAPTER A. PREVENTION AND CONTROL OF AIR CONTAMINATION AND AIR POLLUTION
SUBPART 227-2 REASONABLY AVAILABLE CONTROL TECHNOLOGY (RACT) FOR MAJOR
FACILITIES OF OXIDES OF NITROGEN (NOX)

(Statutory authority: Environmental Conservation Law, Sections 1-0101, 3-0301, 19-0103, 19-0105, 19-0301, 19-0303, 19-0305, 19-0311)

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§227-2.1 Applicability

(a) The provisions of this Subpart apply to major facilities of NO_x that contain any of the following types of emission sources:

- (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 installations

(b) Any provision of this Part that applies to an emission source or facility shall also apply to the owners and operators of such emission source or facility.

§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 and Part 201 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) *Forced outage.* An unplanned component failure that requires the source or major electrical inter-tie (345 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.

(3) *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.

(4) *Mid-size boiler.* A boiler with a maximum heat input capacity greater than 25 million Btu per hour and equal to or less than 100 million Btu per hour.

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

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

(7) *Shutdown.* The permanent removal from service of an emission source as evidenced by either a permit condition or provision prohibiting the emission source from further operation, the surrender of the emission source's permit, or the complete deletion of mention of the emission source from the permit of the major facility of which it had formerly been a part with no authorization for operation of the emission source appearing in any other permit.

(8) *Small boiler.* A boiler with a maximum heat input capacity equal to or greater than one million Btu per hour and equal to or less than 25 million Btu per hour.

(9) *Small combustion turbine.* A combustion turbine with a maximum heat input capacity less than 10 mmBtu per hour.

(10) *Small stationary internal combustion engine.* A stationary internal combustion engine with a maximum mechanical output rating of less than 200 brake horsepower in any severe ozone nonattainment area and less than 400 brake horsepower in the remainder of the State.

(11) *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.

(12) *System.* As used in the term *system averaging plan*, a combination of operating emission sources that are located within the same ozone nonattainment area. A system may consist of multiple emission sources at multiple facilities having different owners and/or operators.

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

(14) *Weighted average permissible emission rate.* The average emission rate of all operating emission sources in a system averaging plan where the emission rate of the emission sources in operation is equivalent to the emission rate achieved if each emission source operated in compliance with the most stringent permissible emission rate applicable to that emission source.

§227-2.3 Application and permitting requirements

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

(b) By January 1, 2012, a facility must submit to the department either a complete application for a permit or a RACT analysis that explains why the control technology the facility currently employs should still be considered RACT for that source. Any permit application must include any new requirements (for example, emission limits, monitoring, and record keeping requirements) and a RACT analysis that explains how the facility intends to comply with the provisions of this Subpart. Facilities that submit a complete application but are unable to meet their specific RACT compliance date may request an extension (up to but not exceeding one year) of their RACT compliance date from the department. This request must set forth the reason(s) why the source will be unable to meet their RACT compliance date and suggest an alternative RACT compliance date. This request is subject to department review and approval and must be submitted to the administrator for approval as a separate State Implementation Plan (SIP) revision.

(c) Any case-by-case RACT proposal made pursuant to the provisions of sections 227-2.4 or 227-2.5 of this Subpart that is approved by the department will be recorded in the relevant major facility permit as the applicable NOx RACT requirements, and must be submitted to the administrator for approval as a separate SIP revision.

§227-2.4 Control requirements

RACT requirements applicable to a particular emission source may fall into one of two categories - presumptive RACT limits (which may be complied with by direct application of emission limits on the emission source, the use of flexibility mechanisms such as switching fuels or participation in a system averaging plan, or a commitment to shut down the emission source) or case-by-case RACT determinations. Presumptive RACT limits are category-wide requirements. Presumptive RACT limits are based on capabilities that are general to an emission source category. However, for some categories of emission sources, presumptive RACT limits may not be attainable at every individual emission source. Case-by-case RACT determinations consider the technological and economic circumstances of the individual emission source.

(a) *Very large boilers.* The owner or operator of a very large boiler must comply with either the relevant presumptive RACT emission limit 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.

(i) prior to July 1, 2014 (pounds NO_x per million Btu):

<i>Fuel Type</i>	<i>Tangential</i>	<i>Wall</i>	<i>Cyclone</i>	<i>Stokers</i>
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

(ii) on or after July 1, 2014 (pounds NO_x per million Btu):

<i>Fuel Type</i>	<i>Tangential</i>	<i>Wall</i>	<i>Cyclone</i>	<i>Fluidized Bed</i>
Gas Only	0.08	0.08	na	na
Gas/Oil	0.15	0.15	0.20	na
Coal Wet Bottom	0.12	0.12	0.20	na
Coal Dry Bottom	0.12	0.12	na	0.08

¹This emission limit is 0.33 pounds per million Btu when at least 25 percent of the total content of the fuel combusted, on a Btu basis, includes other solid fuels (for example, tire-derived fuel, waste wood).

(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 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 relevant presumptive RACT emission limit 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.

(i) prior to July 1, 2014 (pounds per million Btu):

<i>Fuel Type</i>	<i>Emission Limit</i>
Gas Only	0.20
Gas/Oil	0.30
Pulverized Coal	0.50
Coal (Overfeed Stoker)	0.30 ¹

¹This emission limit is 0.33 pounds per million Btu when at least 25 percent of the total content of the fuel combusted, on a Btu basis, includes other solid fuels (for example, tire-derived fuel, waste wood).

(ii) on or after July 1, 2014 (pounds NO_x per million Btu):

Fuel Type	Emission Limit
Gas only	0.06
Gas/Oil	0.15
Pulverized Coal	0.20
Coal	0.08 ²

² This emission limit also applies to fluidized bed boilers that combust other solid fuels (for example, tire-derived fuel, waste wood) that constitute no more than 30 percent of the total fuel content on a Btu basis.

Compliance with these emission limits must be determined with a one hour average unless the owner or operator chooses to use a CEMS under the provisions of section 227-2.6(b) of this Subpart.

(2) For large boilers fired primarily with fuels not listed above, the owner or operator must submit 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 relevant presumptive RACT emission limit of paragraph (1) of this subdivision or a case-by-case RACT determination pursuant to paragraph (2) of this subdivision, as applicable.

(1) Emission limits.

(i) prior to July 1, 2014 (pounds NO_x per million Btu)

<i>Fuel Type</i>	<i>Emission Limit</i>
Gas Only	0.10
Distillate Oil/Gas	0.12
Residual Oil/Gas	0.30

(ii) on or after July 1, 2014 (pounds NO_x per million Btu):

Fuel Type	Emission Limit
Gas only	0.05
Distillate Oil/Gas	0.08
Residual Oil/Gas	0.20

Compliance with these emission limits must be determined with a one hour average unless the owner or operator chooses to use a CEMS under the provisions of section 227-2.6(b) of this Subpart.

(2) For mid-size boilers fired primarily with fuels not listed above, the owner or operator must submit 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.

(d) *Small boilers, small combustion turbines, and small stationary internal combustion engines.* The owner or operator of a small boiler, small combustion turbine, or small stationary internal combustion engine 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 that the department may require.

(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 relevant presumptive RACT emission limit 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:

- (i) 50 parts per million on a dry volume basis (ppmvd), corrected to 15 percent oxygen, for sources designed to burn gaseous fuels (gaseous fuels include, but are not limited to, natural gas, landfill gas, and digester gas) only; and
- (ii) 100 ppmvd, corrected to 15 percent oxygen, for sources capable of firing distillate oil or more than one fuel.

Compliance with these emission limits must be determined with a one hour average during the ozone season and a 30-day average during the non-ozone season unless the owner or operator chooses to use a CEMS under the provisions of section 227- 2.6(b) of this Subpart.

(2) For combined cycle combustion turbines:

- (i) prior to July 1, 2014, 42 ppmvd, corrected to 15 percent oxygen, when firing gas; and
- (ii) prior to July 1, 2014, 65 ppmvd, corrected to 15 percent oxygen, when firing oil.

For facilities that have 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 unless the owner or operator chooses to use a CEMS under the provisions of section 227-2.6(b) of this Subpart.

(3) For combustion turbines fired primarily with fuels not listed in paragraph (2) of this subdivision that operate prior to July 1, 2014, and for all combustion turbines that operate after July 1, 2014, the owner or operator must submit 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 either having a maximum mechanical output rating equal to or greater than 200 brake horsepower in a severe ozone nonattainment area or having a maximum mechanical output rating equal to or greater than 400 brake horsepower outside a severe ozone nonattainment area must comply with one of the emission limits in paragraph (1), (2), or (3) of this subdivision or a case-by-case RACT determination made pursuant to paragraph (4) of this subdivision, as applicable:

- (1) For internal combustion engines fired solely with natural gas: 1.5 grams per brake horsepower-hour.
- (2) For internal combustion engines fired with landfill gas or digester gas (solely or in combination with natural gas): 2.0 grams per brake horsepower-hour.
- (3) For internal combustion engine fired with distillate oil (solely or in combination with other fuels): 2.3 grams per brake horsepower-hour.

Compliance with these emission limits must be determined with a one hour average unless the owner or operator chooses to use a CEMS under the provisions of section 227- 2.6(b) of this Subpart.

(4) For stationary internal combustion engines fired primarily with fuels not listed above, the owner or operator must submit 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.

(5) Any stationary internal combustion engine may rely on an emission limit that reflects a 90 percent or greater NO_x reduction from the engine's actual 1990 baseline emissions, if such emissions baseline exists.

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

(g) *Other combustion installations.* The owner or operator of a major facility of NO_x that contains an emission source that is not specifically addressed in this Subpart and is of an emission source type not regulated under Part 212, 214, 216, 219, 220, or 224 of this Title and which has an emission rate potential of at least 3 pounds per hour and actual emissions in the absence of control equipment of at least 15 pounds per day must comply with the case-by-case RACT determination made pursuant to this subdivision. The owner or operator must submit 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.

§227-2.5 Compliance options

With the exception of the compliance options described in subdivisions (c) and (d) 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 any owner or operator of a major facility of NO_x to meet the control requirements of section 227-2.4 of this Subpart but are not of the type that require the additional approval of the administrator as a separate SIP revision.

(a) *Fuel switching option.* The owner or operator of an emission 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 emission 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 an emission source subject to this Subpart may apply to have the emission source included in a system averaging plan. Every system averaging plan must have the following characteristics:

(1) The system averaging plan must employ a weighted average permissible emission rate.

(2) Averaging of emissions from sources within the severe ozone nonattainment area with those outside the severe ozone nonattainment area is not allowed.

(3) In the event of a forced outage, the weighted average permissible emission rate must be adjusted to account for the emission 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 emission source which was subject to the forced outage and the cause of such outage;

(ii) a demonstration that the emission 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 emission sources included in the system averaging plan, or other requirements of the permit; and

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

(4) Every owner or operator of an emission source participating in the system averaging plan is liable for any and all violations of the provisions of this Subpart by any owner or operator of any emission source participating in the system averaging plan.

(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 emission source specific emission limit. Economic or technical feasibility must be demonstrated through an analysis that includes, at a minimum, an evaluation of the use of fuel switching the use of a system averaging plan, and implementation of any available control technologies (including, for example, selective catalytic reduction).

(d) *Shutdown of an emission source.* An owner or operator of an existing emission source may opt to comply with this Subpart by shutting down the emission source. The intent to shut down must be recorded as part of a federally enforceable permit modification prior to January 1, 2012, wherein the owner or operator commits to permanently shut down the emission source prior to December 31, 2014.

§227-2.6 Testing, monitoring, and reporting requirements

(a) The owner or operator of each emission source must verify NO_x emissions by performing the applicable testing or monitoring 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 large boiler, NO_x emissions must be

(i) measured in accordance with emission test requirements described in subdivision (c) of this section, or

(ii) monitored with a CEMS as described in subdivision (b) of this section or with an equivalent monitoring system approved by the department.

- (3) For any mid-size boiler, NO_x emissions must be
- (i) measured in accordance with the emission test requirements described in subdivision (c) of this section, or
 - (ii) monitored with a CEMS as described in subdivision (b) of this section or with an equivalent monitoring system approved by the department.
- (4) 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.
- (5) 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
- (i) measured in accordance with the emission test requirements described in subdivision (c) of this section, or
 - (ii) monitored with a CEMS as described in subdivision (b) of this section or with an equivalent monitoring system approved by the department.
- (6) For any stationary internal combustion engine, NO_x emissions must be
- (i) measured in accordance with the emission test requirements as described in subdivision (c) of this section, or
 - (ii) monitored with a CEMS as described in subdivision (b) of this section or with an equivalent monitoring system approved by the department.
- (7) For any emission 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 the department has determined is consistent with the applicable requirements for emission sources regulated under this Subpart that have comparable heat input ratings.

(b) *CEMS requirements.*

- (1) The owner or operator of an emission source that monitors NO_x emissions with a CEMS or equivalent monitoring system must submit for department approval:
- (i) a CEMS plan as part of its application for a permit or permit modification if a CEMS has already been installed, or if a CEMS is in the process of being procured or installed;
 - (ii) a 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 plan for a monitoring system that is equivalent to a CEMS.
- (2) The owner or operator of an emission source that monitors NO_x emissions with a CEMS must submit for department approval a CEMS certification protocol at least 60 days prior to compliance testing. The certification protocol must include the location of and specifications for each instrument or device, as well as procedures for calibration, operation, data evaluation, and data reporting.
- (3) The owner or operator of an emission source that monitors NO_x emissions with a CEMS 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 relevant NO_x emission limit under section 227- 2.4 of this Subpart:

(i) With the exception of emission sources subject to paragraph (a)(4) of this section, the owner or operator of an emission source 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. Facilities that are subject to 40 CFR part 75 will calculate their NO_x emission rate using part 75 monitoring requirements. Facilities that are not subject to 40 CFR part 75 may calculate their NO_x emission rate using either 40 CFR part 60, appendix A, method 19 or 40 CFR part 75. 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 emission sources other than combustion turbines; 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 AM to 12:00 AM 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 AM to 1:00 AM and continuing through until the last period 11:00 PM to 12:00 AM; or, starting with the period 12:00 PM to 1:00 PM and continuing through the last period 11:00 AM to 12:00 PM. 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 an emission source subject to paragraph (a)(4) 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 AM to 1:00 AM, 1:00 AM to 2:00 AM, 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 part 60, 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) Along with any specific additional data requirements mandated by the department for a particular emission source, annual recertifications, quarterly accuracy, and daily calibration drift tests must be performed in accordance with 40 CFR part 60, appendix F or 40 CFR part 75, as applicable.

(vii) When NO_x emissions 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 part CFR 75 may use 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 an emission source must notify the department of the planned initial start-up date of any new CEMS.

(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 (in either hardcopy or electronically) 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 five years and made available to the department upon request.

(iv) Following each calendar quarter, the owner or operator must tabulate and summarize applicable emissions, 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_x emission rate, and the summation of the emission sources included in a system averaging plan). These records must be submitted to the department within 30 days following the end of each calendar quarter in a format acceptable to the department and must include:

(a) the average NO_x emission rates as specified under paragraph (3) of this subdivision. (With the exception of emission sources subject to paragraph (a)(4) of this Section, emission sources are to record and tabulate block hourly average emission rates, but do not need to included the block hourly average emission rates 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 an emission source 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.

(c) *Emission test requirements.* The owner or operator of an emission 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) follow the procedures set forth in Part 202 of this Title and use 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:

(i) for large and mid-size boilers, use method 7, 7E, or 19 from 40 CFR part 60, appendix A;

(ii) for simple cycle combustion turbines or regenerative combustion turbines, use method 20 from 40 CFR part 60, appendix A;

(iii) for combined cycle combustion turbines, use method 7, 7E, 19 or 20 from 40 CFR part 60, appendix A;

(iv) for stationary internal combustion engines, use method 7, 7E, or 19 from 40 CFR part 60, appendix A;

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