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POLLUTION CONTROL BOARD

NOTICE OF PROPOSED RULES

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SUBTITLE B: AIR POLLUTION
CHAPTER I: POLLUTION CONTROL BOARD
SUBCHAPTER C: EMISSION STANDARDS AND LIMITATIONS
FOR STATIONARY SOURCES

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NITROGEN OXIDES EMISSIONS
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Authority: Implementing Sections 9.9 and 10 and authorized by Sections 27 and 28.5 of the Environmental Protection Act [415 ILCS 5/9.9, 10, 27 and 28.5 (2004)].

Source: Adopted as Chapter 2: Air Pollution, Rule 207: Nitrogen Oxides Emissions, R71-23, 4 PCB 191, April 13, 1972, filed and effective April 14, 1972; amended at 2 Ill. Reg. 17, p. 101, effective April 13, 1978; codified at 7 Ill. Reg. 13609; amended in R01-9 at 25 Ill. Reg. 128, effective December 26, 2000; amended in R01-11 at 25 Ill. Reg. 4597, effective March 15, 2001; amended in R01-16 and R01-17 at 25 Ill. Reg. 5914, effective April 17, 2001; amended in R07- at ____ Ill. Reg. _____, effective _____.

SUBPART A: GENERAL PROVISIONS

Section 217.101 Measurement Methods

Measurement of nitrogen oxides must be according to:

- a) The phenol disulfonic acid procedure method, 40 CFR 60, Appendix A, Method 7, as incorporated by reference in Section 217.104(1999);
- b) Continuous emissions monitoring pursuant to 40 CFR 75, as incorporated by reference in Section 217.104(1999); and
- c) Determination of Nitrogen Oxides Emissions from Stationary Sources (Instrumental Analyzer Procedure), 40 CFR 60, Appendix A, Method 7E, as incorporated by reference in Section 217.104;(1999).
- d) Monitoring with portable monitors pursuant to ASTM D6522-00, as incorporated by reference in Section 217.104; and
- e) How do I conduct the initial and subsequent performance tests (for turbines).

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regarding NO_x pursuant to 40 CFR 60.4400, as incorporated by reference in Section 217.104 .

(Source: Amended at ____ Ill. Reg. _____, effective _____)

Section 217.102 Abbreviations and Units

a) The following abbreviations are used in this Part:

ASTM	American Society for Testing and Materials
<u>Bbtu</u>	British thermal unit (60°F)
<u>bhp</u>	brake horsepower
<u>CEMS</u>	continuous emissions monitoring system
EGU	Electrical Generating Unit
<u>dscf</u>	dry standard cubic feet
<u>g/bhp-hr</u>	grams per brake horsepower-hour
kg	kilogram
kg/MW-hr	kilograms per megawatt-hour; usually used as an hourly emission rate
lb	pound
NO_x	Nitrogen Oxides
lbs/mmBbtu	pounds per million btu; usually used as an hourly emission rate
Mg	megagram or metric tonne
<u>mm</u>	million
<u>mmBbtu</u>	million British thermal units
mmBbtu/hr	million British thermal units per hour
MWe	megawatt of electricity
MW	megawatt; one million watts
MW-hr	megawatt-hour
<u>NATS</u>	<u>NO_x Allowance Tracking System</u>
<u>NO₂</u>	nitrogen dioxide
<u>NO_x</u>	nitrogen oxides
<u>O₂</u>	oxygen
<u>psia</u>	<u>pounds per square inch absolute</u>
peoc	potential electrical output capacity PTE potential to emit
ppm	parts per million
ppmv	parts per million by volume
T	English ton
<u>TPY</u>	<u>tons per year</u>

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- b) The following conversion factors have been used in this Part:

English	Metric
2.205 lb	1 kg
1 T	0.907 Mg
1 lb/T	0.500 kg/Mg
Mmbtu/hr	0.293 MW
1 lb/mmBbtu	1.548 kg/MW-hr
<u>1 mmBtu/hr</u>	<u>0.293 MW</u>
<u>1 mmBtu/hr</u>	<u>393 bhp</u>

(Source: Amended at ____ Ill. Reg. _____, effective _____)

Section 217.104 Incorporations by Reference

The following materials are incorporated by reference. These incorporations do not include any later amendments or editions.

- a) The phenol disulfonic acid ~~procedures~~method, as published in 40 CFR 60, Appendix A, Method 7 ~~(2000)~~(1999);
- b) 40 CFR 96, subparts B, D, G, and H (1999);
- c) 40 CFR §§ 96.1 through 96.3, 96.5 through 96.7, 96.50 through 96.54, 96.55 (a) & (b), 96.56 and 96.57 (1999);
- d) 40 CFR ~~60, 72, 75 & 76~~ ~~(2006)~~(1999);
- e) Alternative Control Techniques Document---- NO_x Emissions from Cement Manufacturing, EPA-453/R-94-004, U. S. Environmental Protection Agency-Office of Air Quality Planning and Standards, Research Triangle Park, N.C. 27711, March 1994;
- f) Section 11.6, Portland Cement Manufacturing, AP-42 Compilation of Air Emission Factors, Volume 1: Stationary Point and Area Sources, U.S. Environmental Protection Agency-Office of Air Quality Planning and Standards, Research Triangle Park, N. C. 27711, revised January 1995;
- g) 40 CFR § 60.13 ~~(2001)~~(1999); and

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- h) 40 CFR 60, Appendix A, Methods ~~3A, 7, 7A, 7C, 7D, and 7E, 19, and 20~~ (2000)(1999);
- i) ASTM D6522-00, Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers (2000);
- k) Standards of Performance for Stationary Combustion Turbines, 40 CFR 60, Subpart KKKK, 60.4400 (2006); and
- l) Compilation of Air Pollutant Emission Factors: AP-42, Volume I: Stationary Point and Area Sources (2000), USEPA.

(Source: Amended at ____ Ill. Reg. _____, effective _____)

SUBPART Q: STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES
AND TURBINES

Section 217.386 Applicability

- a) A stationary reciprocating internal combustion engine or turbine that meets the criteria in subsection (a)(1) or (a)(2) of this Section is an affected unit and is subject to the requirements of this Subpart Q.
 - 1) The engine at nameplate capacity is rated at equal to or greater than 500 bhp output; or
 - 2) The turbine is rated at equal to or greater than 3.5 MW (4,694 bhp) output at 14.7 psia, 59°F, and 60 percent relative humidity.
- b) Notwithstanding subsection (a) of this Section, an engine or turbine will not be an affected unit and is not subject to the requirements of this Subpart Q, if the engine or turbine is or has:
 - 1) Used as an emergency or standby unit as defined by 35 Ill. Adm. Code 211.1920;
 - 2) Used for research or for the purposes of performance verification or testing;

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- 3) Used to control emissions from landfills, where at least 50 percent of the heat input is gas collected from a landfill;
 - 4) Used for agricultural purposes including the raising of crops or livestock that are produced on site, but not associated businesses like packing operations, sale of equipment or repair;
 - 5) A nameplate capacity rated at less than 1500 bhp (1118 kW) output, mounted on a chassis or skids, designed to be moveable, and moved to a different source at least once every 12 months; or
 - 6) Regulated under Subpart W or a subsequent federal NO_x Trading program for electrical generating units.
- c) If an exempt unit ceases to fulfill the criteria specified in subsection (b) of this Section, the owner or operator must notify the Agency in writing within 30 days after becoming aware that the exemption no longer applies and comply with the control requirements of this Subpart Q.
- d) The requirements of this Subpart Q will continue to apply to any engine or turbine that has ever been subject to the control requirements of Section 217.388, even if the affected unit ceases to fulfill the rating requirements of subsection (a) of this Section or becomes eligible for an exemption pursuant to subsection (b) of this Section.

Section 217.388 Control and Maintenance Requirements

On and after the applicable compliance date in Section 217.392, an owner or operator of an affected unit must inspect and maintain affected units as required by subsection (d) of this Section and comply with either the applicable emissions concentration as set forth in subsection (a) of this Section, or the requirements for an emissions averaging plan as specified in subsection (b) of this Section or the requirements for operation as a low usage unit as specified in subsection (c) of this Section.

- a) The owner or operator must limit the discharge from an affected unit into the atmosphere of any gases that contain NO_x to no more than:
 - 1) 150 ppmv (corrected to 15 percent O₂ on a dry basis) for spark-ignited rich-burn engines;
 - 2) 210 ppmv (corrected to 15 percent O₂ on a dry basis) for spark-ignited

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lean-burn engines, except for existing spark-ignited Worthington engines that are not listed in Appendix G;

- 3) 365 ppmv (corrected to 15 percent O₂ on a dry basis) for existing spark-ignited Worthington engines that are not listed in Appendix G;
 - 4) 660 ppmv (corrected to 15 percent O₂ on a dry basis) for diesel engines;
 - 5) 42 ppmv (corrected to 15 percent O₂ on a dry basis) for gaseous fuel-fired turbines; and
 - 6) 96 ppmv (corrected to 15 percent O₂ on a dry basis) for liquid fuel-fired turbines.
- b) The owner or operator must comply with the requirements of the applicable emissions averaging plan as set forth in Section 217.390.
- c) The owner or operator must operate the affected unit as a low usage unit pursuant to subsection (c)(1) or (c)(2) of this Section. Low usage units are not subject to the requirements of this Subpart Q except for the requirements to inspect and maintain the unit pursuant to subsection (d) of this Section, and retain records pursuant to Sections 217.396(b) and (c). Only one of the following exemptions may be utilized at a particular source:
- 1) The potential to emit (PTE) is no more than 100 TPY NO_x aggregated from all engines and turbines located at the source that are not otherwise exempt pursuant to Section 217.386(b), and not complying with the requirements of subsection (a) or (b) of this Section and the NO_x PTE limit is contained in a federally enforceable permit; or
 - 2) The aggregate bhp-hr/MW-hr from all affected units located at the source that are not exempt pursuant to Section 217.386(b), and not complying with the requirements of subsection (a) or (b) of this Section, are less than or equal to the bhp-hrs and MW-hrs operation limit listed in subsection (c)(2)(A) and (c)(2)(B) of this Section. For units not located at a natural gas transmission compressor station or storage facility that drive a natural gas compressor station, the operation limits of subsections (c)(2)(A) and (B) of this Section must be contained in a federally enforceable permit.
 - A) 8 mm bhp-hrs or less on an annual basis for engines; and

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- B) 20,000 MW-hrs or less on an annual basis for turbines.
- d) The owner or operator must inspect and perform periodic maintenance on the affected unit, in accordance with a Maintenance Plan that documents:
 - 1) For a unit not located at natural gas transmission compressor station or storage facility either:
 - A) The manufacturer's recommended inspection and maintenance of the applicable air pollution control equipment, monitoring device, and affected unit; or
 - B) If the original equipment manual is not available or substantial modifications have been made that require an alternative procedure for the applicable air pollution control device, monitoring device, or affected unit, the owner or operator must establish a plan for inspection and maintenance in accordance with what is customary for the type of air pollution control equipment, monitoring device, and affected unit.
 - 2) For a unit located at a natural gas compressor station or storage facility, the operator's maintenance procedures for the applicable air pollution control device, monitoring device, and affected unit.

Section 217.390 Emissions Averaging Plans

- a) An owner or operator of certain affected units may comply through an emissions averaging plan.
 - 1) The unit or units that commenced operation before January 1, 2002, may be included in an emissions averaging plan as follows:
 - A) Units located at a single source or at multiple sources in Illinois, so long as the units are owned by the same company or parent company where the parent company has working control through stock ownership of its subsidiary corporations. A unit may be listed in only one emissions averaging plan;
 - B) Units that have a compliance date later than the control period for which the averaging plan is being used for compliance; and

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- C) Units which the owner or operator may claim as exempt pursuant to Section 217.386(b) but does not claim exempt. For as long as such a unit is included in an emissions averaging plan, it will be treated as an affected unit and subject to the applicable emission concentration limits, testing, monitoring, recordkeeping and reporting requirements.
- 2) The following types of units may not be included in an emissions averaging plan:
 - A) Units that commence operation after January 1, 2002, unless the unit replaces an engine or turbine that commenced operation on or before January 1, 2002, or it replaces an engine or turbine that replaced a unit that commenced operation on or before January 1, 2002. The new unit must be used for the same purpose as the replacement unit. The owner or operator of a unit that is shutdown and replaced must comply with the provisions of Section 217.396(d)(3) before the replacement unit may be included in an emissions averaging plan.
 - B) Units which the owner or operator is claiming are exempt pursuant to Section 217.386(b) or as a low usage unit pursuant to Section 217.388(c).
- b) An owner or operator must submit an emissions averaging plan to the Agency by the applicable compliance date set forth in Section 217.392. The plan must include, but is not limited to:
 - 1) The list of affected units included in the plan by unit identification number and permit number.
 - 2) A sample calculation demonstrating compliance using the methodology provided in subsection (f) of this Section for both the ozone season and calendar year.
- c) An owner or operator may amend an emissions averaging plan only once per calendar year. An amended plan must be submitted to the Agency by May 1 of the applicable calendar year. If an amended plan is not received by the Agency by May 1 of the applicable calendar year, the previous year's plan will be the applicable emissions averaging plan.

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- d) Notwithstanding subsection (c) of this Section, an owner or operator, and the buyer, if applicable:
- 1) Must submit an updated emissions averaging plan or plans to the Agency within 60 days, if a unit that is listed in an emissions averaging plan is sold or taken out of service.
 - 2) May amend its emissions averaging plan to include another unit within 30 days of discovering that the unit no longer qualifies as an exempt unit pursuant to Section 217.386(b) or as a low usage unit pursuant to Section 217.388(c).
- e) An owner or operator must:
- 1) Demonstrate compliance for both the ozone season (May 1 through September 30) and the calendar year (January 1 through December 31) by using the methodology and the units listed in the most recent emissions averaging plan submitted to the Agency pursuant to subsection (b) of this Section; the higher of the monitoring or test data determined pursuant to Section 217.394; and the actual hours of operation for the applicable control period;
 - 2) Notify the Agency by October 31 following the ozone season, if compliance cannot be demonstrated for that ozone season; and
 - 3) Submit to the Agency by January 31 following each calendar year, a compliance report containing the information required by Section 217.396(d)(4).
- f) The total mass of actual NO_x emissions from the units listed in the emissions averaging plan must be equal to or less than the total mass of allowable NO_x emissions for those units for both the ozone season and calendar year. The following equation must be used to determine compliance:

$$N_{\text{act}} \leq N_{\text{all}}$$

Where:

$$N_{\text{act}} = \sum_{i=1}^n EM_{\text{act}(i)}$$

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- $N_{\text{all}} = \sum_{i=1}^n EM_{\text{all}(i)}$
 $N_{\text{act}} =$ Total sum of the actual NO_x mass emissions from units included in the averaging plan for each fuel used (lbs per ozone season and calendar year).
 $N_{\text{all}} =$ Total sum of the allowable NO_x mass emissions from units included in the averaging plan for each fuel used (lbs per ozone season and calendar year).
 $EM_{\text{all}(i)} =$ Total mass of allowable NO_x emissions in lbs for a unit as determined in subsection (g)(2), (g)(3), (g)(4), (g)(5), or (g)(6) of this Section.
 $EM_{\text{act}(i)} =$ Total mass of actual NO_x emissions in lbs for a unit as determined in subsection (g)(1), (g)(3), (g)(5) or (h) of this Section.
 $i =$ Subscript denoting an individual unit and fuel used.
 $n =$ Number of different units in the averaging plan.

g) For each unit in the averaging plan, and each fuel used by a unit, determine actual and allowable NO_x emissions using the following equations, except as provided for in subsection (h) of this Section:

1) Actual emissions must be determined as follows:

$$EM_{\text{act}(i)} = E_{\text{act}(i)} \times H_i$$

$$E_{\text{act}(i)} = \frac{\sum_{j=1}^m C_{d(\text{act}(j))} \times F_d \times \left(\frac{20.9}{20.9 - \%O_{2d(j)}} \right)}{m}$$

2) Allowable emissions must be determined as follows:

$$EM_{\text{all}(i)} = E_{\text{all}(i)} \times H_i$$

$$E_{\text{all}(i)} = \frac{\sum_{j=1}^m C_{d(\text{all}(j))} \times F_d \times \left(\frac{20.9}{20.9 - \%O_{2d(j)}} \right)}{m}$$

Where:

$EM_{\text{act}(i)} =$ Total mass of actual NO_x emissions in lbs for a unit.

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- $EM_{all(i)}$ = Total mass of allowable NO_x emissions in lbs for a unit.
- E_{act} = Actual NO_x emission rate (lbs/mmBtu) calculated according to the above equation.
- E_{all} = Allowable NO_x emission rate (lbs/mmBtu) calculated according to the above equation.
- H = Heat input (mmBtu/ozone season or mmBtu/year) calculated from fuel flow meter and the heating value of the fuel used.
- $C_{d(act)}$ = Actual concentration of NO_x in lb/dscf ($ppmv \times 1.194 \times 10^{-7}$) on a dry basis for the fuel used. Actual concentration is determined on each of the most recent test run or monitoring pass performed pursuant to Section 217.394, whichever is higher.
- $C_{d(all)}$ = Allowable concentration of NO_x in lb/dscf (allowable emission limit in ppmv specified in Section 217.388(a), except as provided for in subsection (g)(6) of this Section, if applicable. multiplied by 1.194×10^{-7}) on a dry basis for the fuel used.
- F_d = The ratio of the gas volume of the products of combustion to the heat content of the fuel (dscf/mmBtu) as given in the table of F Factors included in 40 CFR 60, Appendix A, Method 19 or as determined using 40 CFR 60, Appendix A, Method 19.
- $\%O_{2d}$ = Concentration of oxygen in effluent gas stream measured on a dry basis during each of the applicable test or monitoring runs used for determining emissions, as represented by a whole number percent, e.g., for 18.7% O_{2d} , 18.7 would be used.
- i = Subscript denoting an individual unit and the fuel used.
- j = Subscript denoting each test run or monitoring pass for an affected unit for a given fuel.
- m = The number of test runs or monitoring passes for an affected unit using a given fuel.

- 3) For a replacement unit that is electric-powered, the allowable NO_x emissions from the affected unit that was replaced should be used in the averaging calculations and the actual NO_x emissions for the electric-powered replacement unit ($EM_{(i)act\ elec}$) are zero. Allowable NO_x emissions for the electric-powered replacement are calculated using the actual total bhp-hrs generated by the electric-powered replacement unit on

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an ozone season and on an annual basis multiplied by the allowable NO_x emission rate in lb/bhp-hr of the replaced unit.

The allowable mass of NO_x emissions from an electric-powered replacement unit ($EM_{(i)all\ elec}$) must be determined by multiplying the nameplate capacity of the unit by the hours operated during the ozone season or annually and the allowable NO_x emission rate of the replaced unit ($E_{all\ rep}$) in lb/mmBtu converted to lb/bhp-hr. For this calculation the following equation should be used:

$$EM_{all\ elec(i)} = bhp \times OP \times F \times E_{all\ rep(i)}$$

Where:

- $EM_{all\ elec(i)}$ = Mass of allowable NO_x emissions from the electric-powered replacement unit in pounds per ozone season or calendar year.
- bhp = Nameplate capacity of the electric-powered replacement unit in brake-horsepower.
- OP = Operating hours during the ozone season or calendar year.
- F = Conversion factor of 0.0077 mmBtu/bhp-hr.
- $E_{all\ rep(i)}$ = Allowable NO_x emission rate (lbs/mmBtu) of the replaced unit.
- i = Subscript denoting an individual electric unit and the fuel used.

- 4) For a replacement unit that is not electric, the allowable NO_x emissions rate used in the above equations set forth in subsection (g)(2) of this Section must be either:
- A) Prior to the applicable compliance date for the replaced unit pursuant to Section 217.392, the higher of the actual NO_x emissions as determined by testing or monitoring data or the applicable uncontrolled NO_x emissions factor from Compilation of Air pollutant emission Factors: AP-42, Volume I: Stationary Point and Area Sources, as incorporated by reference in Section 217.104 for the unit that was replaced; or
 - B) On and after the applicable compliance date for the replaced unit pursuant to Section 217.392, the applicable emissions concentration for the type of unit that replaced pursuant to Section

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217.388(a).

- 5) For a unit that is replaced with purchased power, the allowable NO_x emissions rate used in the above equations set forth in subsection (g)(2) of this Section must be the emissions concentration as set forth in Section 217.388(a) or subsection (g)(6) of this Section, when applicable, for the type of unit that was replaced. For owners or operators replacing units with purchased power, the annual hours of operations that must be used are the calendar year hours of operation for the unit that was shutdown averaged over the three-year period prior to the shutdown. The actual NO_x emissions for the units replaced by purchased power (EM_{(i)act}) are zero. These units may be included in any emissions averaging plan for no more than five years beginning with the calendar year that the replaced unit is shut down.
- 6) For units that have a later compliance date, allowable emissions rate used in the above equations set forth in subsection (g)(2) of this Section must be:
 - A) Prior to the applicable compliance date pursuant to Section 217.392, the higher of the actual NO_x emissions as determined by testing or monitoring data, or the applicable uncontrolled NO_x emissions factor from Compilation of Air Pollutant Emission Factors: AP-42, Volume I: Stationary Point and Areas Sources, as incorporated by reference in Section 217.104; and
 - B) On and after the units applicable compliance date pursuant to Section 217.392, the applicable emissions concentration for that type of unit pursuant to Section 217.388(a).
- h) For units that use CEMS the data must show that the total mass of actual NO_x emissions determined pursuant to subsection (h)(1) of this Section is less than or equal to the allowable NO_x emissions calculated in accordance with the equations in subsections (f) and (h)(2) of this Section for both the ozone season and calendar year. The equations in subsection (g) of this Section will not apply.
- 1) The total mass of actual NO_x emissions in lbs for a unit (EM_{act}) must be the sum of the total mass of actual NO_x emissions from each affected unit using CEMS data collected in accordance with 40 CFR 60 or 75, or alternate methodology that has been approved by the Agency or USEPA

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and included in a federally enforceable permit.

- 2) The allowable NO_x emissions must be determined as follows:

$$EM_{(all)} = \sum_{i=1}^m (Cd_i * flowstack_i * 1.194 \times 10^{-7})$$

Where:

EM _{all(i)}	=	Total mass of allowable NO _x emissions in lbs for a unit.
Flow _i	=	Stack flow (dscf/hr) for a given stack.
Cd _i	=	Allowable concentration of NO _x (ppmv) specified in Section 217.388(a) of this subpart for a given stack. (1.194 x 10 ⁻⁷) converts to lb/dscf).
j	=	subscript denoting each hour operation of a given unit.
m	=	Total number of hours of operation of a unit.
i	=	Subscript denoting an individual unit and the fuel used.

Section 217.392 Compliance

- a) An owner or operator of an affected unit may not operate that unit unless it meets the applicable concentration limit in Section 217.388(a), or is included in an emissions averaging plan pursuant to Section 217.388(b), or meets the low usage requirements pursuant to Section 217.388(c), and complies with all other applicable requirements of this Subpart Q by the earliest applicable date listed below:
- 1) On and after May 1, 2007, an owner or operator of an affected engine listed in Appendix G may not operate the affected engine unless the requirements of this Subpart Q are met or the affected engine is exempt pursuant to Section 217.386(b);
 - 2) On and after January 1, 2009, an owner or operator of an affected unit and that is located in Cook, DuPage, Aux Sable Township and Goose Lake Township in Grundy, Kane, Oswego Township in Kendall, Lake, McHenry, Will, Jersey, Madison, Monroe, Randolph Township in Randolph, or St. Clair County, and is not listed in Appendix G may not operate the affected unit unless the requirements of this Subpart Q are met or the affected unit is exempt pursuant to Section 217.386(b);
 - 3) On and after January 1, 2011, an owner or operator of an affected engine

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with a nameplate capacity rated at 1500 bhp or more, and affected turbines rated at 5 MW (6,702 bhp) or more that is not subject to subsection (a)(1) or (a)(2) of this Section, may not operate the affected unit unless the requirements of this Subpart Q are met or the affected unit is exempt pursuant to Section 217.386(b); or

- 4) On and after January 1, 2012, an owner or operator of an affected engine with a nameplate capacity rated at less than 1500 bhp or an affected turbine rated at less than 5 MW (6,702 bhp) that is not subject to subsection (a)(1), (a)(2) or (a)(3) of this Section, may not operate the affected engine or turbine unless the requirements of this Subpart Q are met or the affected unit is exempt pursuant to Section 217.386(b).
- b) Owners and operators of an affected unit may use NO_x allowances to meet the compliance requirements in Section 217.388 as specified below. A NO_x allowance is defined as an allowance used to meet the requirements of a NO_x trading program administered by USEPA where one allowance is equal to one ton of NO_x emissions.
- 1) NO_x allowances may only be used under the following circumstances:
 - A) An anomalous or unforeseen operating scenario inconsistent with historical operations for a particular ozone season or calendar year that causes an emissions exceedance.
 - B) To achieve compliance no more than twice in any rolling five-year period.
 - C) For a unit that is not listed in Appendix G.
 - 2) The owner or operator of the affected unit must surrender to the Agency one NO_x allowance for each ton or portion of a ton of NO_x by which actual emissions exceed allowed emissions. For noncompliance with a seasonal limit, a NO_x ozone season allowance must be used. For noncompliance with the emissions concentration limits in Section 217.388(a) or an annual limitation in an emissions averaging plan, only a NO_x annual allowance may be used.
 - 3) The owner or operator must submit a report documenting the circumstances that required the use of NO_x allowances and identify what actions will be taken in subsequent years to address these circumstances

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and must transfer the NO_x allowances to the Agency's federal NO_x retirement account. The report and the transfer of allowances must be submitted by October 31 for exceedances during the ozone season and March 1 for exceedances of the emissions concentration or the annual emission averaging plan limits. The report must contain the NATS serial numbers of the NO_x allowances.

Section 217.394 Testing and Monitoring

- a) An owner or operator of an engine or turbine must conduct an initial performance test pursuant to subsection (c)(1) or (c)(2) of this Section as follows:
 - 1) By May 1, 2007, for affected engines listed in Appendix G. Performance tests must be conducted on units listed in Appendix G, even if the unit is included in an emissions averaging plan pursuant to Section 217.388(b).
 - 2) By the applicable compliance date as set forth in Section 217.392, or within the first 876 hours of operation per calendar year, whichever is later:
 - A) For affected units not listed in Appendix G that operate more than 876 hours per calendar year; and
 - B) For units that are not affected units that are included in an emissions averaging plan and operate more than 876 hours per calendar year.
 - 3) Once within the five-year period after the applicable compliance date as set forth in Section 217.392:
 - A) For affected units that operate fewer than 876 hours per calendar year; and
 - B) For units that are not affected units that are included in an emissions averaging plan and that operate fewer than 876 hours per calendar year
- b) An owner or operator of an engine or turbine must conduct subsequent performance tests pursuant to subsection (c)(1) or (c)(2) of this Section as follows:

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- 1) For affected engines listed in Appendix G and all units included in an emissions averaging plan, once every five years. Testing must be performed in the calendar year by May 1 or within 60 days of starting operation, whichever is later;
 - 2) If the monitored data shows that the unit is not in compliance with the applicable emissions concentration or emissions averaging plan, the owner or operator must report the deviation to the Agency in writing within 30 days and conduct a performance test pursuant to subsection (c) of this Section within 90 days of the determination of noncompliance; and
 - 3) When in the opinion of the Agency or USEPA, it is necessary to conduct testing to demonstrate compliance with Section 217.388, the owner or operator of a unit must, at his or her own expense, conduct the test in accordance with the applicable test methods and procedures specified in this Section 217.394 within 90 days of receipt of a notice to test from the Agency or USEPA.
- c) Testing Procedures:
- 1) For an engine: The owner or operator must conduct a performance test using Method 7 or 7E of 40 CFR 60, Appendix A, as incorporated by reference in Section 217.104. Each compliance test must consist of three separate runs, each lasting a minimum of 60 minutes. NO_x emissions must be measured while the affected unit is operating at peak load. If the unit combusts more than one type of fuel (gaseous or liquid) including backup fuels, a separate performance test is required for each fuel.
 - 2) For a turbine: The owner operator must conduct a performance test using the applicable procedures and methods in 40 CFR 60.4400, as incorporated by reference in Section 217.104.
- d) Monitoring: Except for those years in which a performance test is conducted pursuant to subsection (a) or (b) of this Section, the owner or operator of an affected unit or a unit included in an emissions averaging plan must monitor NO_x concentrations annually, once between January 1 and May 1 or within the first 876 hours of operation per calendar year, whichever is later. If annual operation is less than 876 hours per calendar year, each affected unit must be monitored at least once every five years. Monitoring must be performed as follows:
- 1) A portable NO_x monitor and utilizing method ASTM D6522-00, as

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incorporated by reference in Section 217.104, or a method approved by the Agency must be used. If the engine or turbine combusts both liquid or gaseous fuels as primary or backup fuels, separate monitoring is required for each fuel.

- 2) NO_x and O₂ concentrations measurements must be taken three times for a duration of at least 20 minutes. Monitoring must be done at highest achievable load. The concentrations from the three monitoring runs must be averaged to determine whether the affected unit is in compliance with the applicable emissions concentration or emissions averaging plan as specified in Section 217.388.
- e) Instead of complying with the requirements of subsections (a), (b), (c) and (d) of this Section, an owner or operator may install and operate a CEMS on an affected unit that meets the applicable requirements of 40 CFR 60, subpart A, and Appendix B, incorporated by reference in Section 217.104, and complies with the quality assurance procedures specified in 40 CFR 60, Appendix F, or 40 CFR 75 as incorporated by reference in Section 217.104, or an alternate procedure as approved by the Agency or USEPA in a federally enforceable permit. The CEMS must be used to demonstrate compliance with the applicable emissions concentration or emissions averaging plan only on an ozone season and annual basis.

Section 217.396 Recordkeeping and Reporting

- a) Recordkeeping. The owner or operator of a unit included in an emissions averaging plan or an affected unit that is not exempt pursuant to Section 217.386(b) and is not subject to the low usage exemption of Section 217.388(c) must maintain records that demonstrate compliance with the requirements of this Subpart Q which include, but are not limited to:
 - 1) Identification, type (e.g., lean-burn, gas-fired), and location of each unit.
 - 2) Calendar date of the record.
 - 3) The number of hours the unit operated on a monthly basis, and during each ozone season.
 - 4) Type and quantity of the fuel used on a daily basis.
 - 5) The results of all monitoring performed on the unit and reported

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deviations.

- 6) The results of all tests performed on the unit.
 - 7) The plan for performing inspection and maintenance of the units, air pollution control equipment, and the applicable monitoring device pursuant to Section 217.388(d).
 - 8) A log of inspections and maintenance performed on the unit's air emissions, monitoring device, and air pollution control device. These records must include, at a minimum, date, load levels and any manual adjustments along with the reason for the adjustment (e.g., air to fuel ratio, timing or other settings).
 - 9) If complying with the emissions averaging plan provisions of Sections 217.388(b) and 217.390 copies of the calculations used to demonstrate compliance with the ozone season and annual control period limits, noncompliance reports for the ozone season, and ozone and annual control period compliance reports submitted to the Agency.
 - 10) Identification of time periods for which operating conditions and pollutant data were not obtained by either the CEMS or alternate monitoring procedures including the reasons for not obtaining sufficient data and a description of corrective actions taken.
 - 11) Any NO_x allowance reconciliation reports submitted pursuant to Section 217.392(e).
- b) The owner or operator of an affected unit that is complying with the low usage provisions of Section 217.388(c), must:
- 1) For each unit complying with Section 217.388(c)(1), maintain a record of the NO_x emissions for each calendar year; or
 - 2) For each unit complying with Section 217.388(c)(2), maintain a record of bhp or MW hours operated each calendar year.
- c) The owner or operator of an affected unit or unit included in an emissions averaging plan must maintain the records required by subsections (a) and (b) of this Section for a period of five-years at the source at which the unit is located. The records must be made available to the Agency and USEPA upon request.

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- d) Reporting requirements:
- 1) The owner or operator must notify the Agency in writing 30 days and five days prior to testing pursuant to Section 217.394(a) and:
 - A) If after the 30-days notice for an initially scheduled test is sent, there is a delay (e.g., due to operational problems) in conducting the performance test as scheduled, the owner or operator of the unit must notify the Agency as soon as possible of the delay in the original test date, either by providing at least seven days prior notice of the rescheduled date of the performance test, or by arranging a new test date with the Agency by mutual agreement;
 - B) Provide a testing protocol to the Agency 60 days prior to testing; and
 - C) Not later than 30 days after the completion of the test, submit the results of the test to the Agency.
 - 2) Pursuant to the requirements for monitoring in Section 217.394(d), the owner or operator of the unit must report to the Agency any monitored exceedances of the applicable NO_x concentration from Section 217.388(a) or (b) within 30 days of performing the monitoring.
 - 3) Within 90 days of permanently shutting down an affected unit or a unit included in an emissions averaging plan, the owner or operator of the unit must withdraw or amend the applicable permit to reflect that the unit is no longer in service.
 - 4) If demonstrating compliance through an emissions averaging plan:
 - A) By October 31 following the applicable ozone season, the owner or operator must notify the Agency if he or she cannot demonstrate compliance for that ozone season; and
 - B) By January 30 following the applicable calendar year, the owner or operator must submit to the Agency a report that demonstrates the following:
 - i) For all units that are part of the emissions averaging plan,

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- the total mass of allowable NO_x emissions for the ozone season and for the annual control period;
- ii) The total mass of actual NO_x emissions for the ozone season and annual control period for each unit included in the averaging plan;
 - iii) The calculations that demonstrate that the total mass of actual NO_x emissions are less than the total mass of allowable NO_x emissions using equations in Sections 217.390(f) and (g); and
 - iv) The information required to determine the total mass of actual NO_x emissions and the calculations performed in subsection (d)(4)(B)(iii) of this Section.
- 5) If operating a CEMS, the owner or operator must submit an excess emissions and monitoring systems performance report in accordance with the requirements of 40 CFR 60.7(c) and 60.13, or 40 CFR 75 incorporated by reference in Section 217.104, or an alternate procedure approved by the Agency or USEPA and included in a federally enforceable permit.
- 6) If using NO_x allowances to comply with the requirements of Section 217.388, reconciliation reports as required by Section 217.392(b)(3).

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APPENDIX G: EXISTING RECIPROCATING INTERNAL COMBUSTION ENGINES
AFFECTED BY NO_x SIP CALL

Plant ID	Point ID	Segment
ANR Pipeline Co. – Sandwich		
093802AAF	E-108	1
Natural Gas Pipeline Co. of America 8310		
027807AAC	730103540041	1
Natural Gas Pipeline Co. of America Sta 110		
073816AAA	851000140011	1
073816AAA	851000140012	2
073816AAA	851000140013	3
073816AAA	851000140014	4
073816AAA	851000140041	1
073816AAA	851000140051	1
Northern Illinois Gas Co. - Stor Stat 359		
113817AAA	730105440021	1
113817AAA	730105440031	1
113821AAA	730105430021	1
113821AAA	730105430051	1
Panhandle Eastern Pipe Line Co.-Glenarm		
167801AAA	87090038002	1
167801AAA	87090038004	1
167801AAA	87090038005	1
Panhandle Eastern Pipeline - Tuscola St		
041804AAC	73010573009	9
041804AAC	73010573010	10
041804AAC	73010573011	11
041804AAC	73010573012	12
041804AAC	73010573013	13

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Panhandle Eastern Pipeline Co.		
149820AAB	7301057199G	3
149820AAB	7301057199I	1
149820AAB	7301057199J	1
149820AAB	7301057199K	1
Panhandle Eastern Pipeline Co.-Glenarm		
167801AAA	87090038001	1
Phoenix Chemical Co.		
085809AAA	730700330101	1
085809AAA	730700330102	2
085809AAA	730700330103	3