

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)
)
STATIONARY RECIPROCATING) **R07-**
INTERNAL COMBUSTION) **(Rulemaking - Air)**
ENGINES AND TURBINES:)
AMENDMENTS TO 35 ILL.)
ADM. CODE SECTION 201.146,)
AND PARTS 211 AND 217)

STATEMENT OF REASONS

The Illinois Environmental Protection Agency (“Illinois EPA” or “Agency”) hereby submits this Statement of Reasons to the Illinois Pollution Control Board (“Board”) pursuant to Sections 9.9, 10, 27, and 28.5 of the Environmental Protection Act (“Act”) (415 ILCS 5/9.9, 10, 27 and 28.5) and 35 Ill. Adm. Code 102.304(b), in support of the attached proposed amendments. Included in this proposal are amendments to 35 Ill. Adm. Code Parts 201.146, 211, and 217 (Subparts A and Q). This proposal amends the most recent versions of Parts 201, 211 and 217, as found on the Board's website. The purpose of this proposal is to reduce intra- and interstate transport of nitrogen oxides (“NO_x”) emissions on an annual basis (January 1 through December 31) and on an ozone season basis (May 1 through September 30) of each year, through the adoption of the rules reducing NO_x emissions from stationary reciprocating internal combustion engines and turbines.

This proposal is intended to satisfy Illinois’ obligations under the United States Environmental Protection Agency’s (“USEPA”) NO_x State Implementation Plan (“SIP”) Call Phase II. Exhibit A. The proposed new Subpart is also intended to address, in part, Illinois’ obligation to meet certain requirements under the federal Clean Air Act (“CAA”), 42 U.S.C. §

7401, *et seq.*, specifically the requirements for reasonable further progress (“RFP”), reasonably available control technology (“RACT”), rate-of-progress (“ROP”), and attainment demonstrations for the 8-hour ozone and PM_{2.5} National Ambient Air Quality Standards (“NAAQS”). As part of Illinois’ effort to develop a comprehensive attainment strategy, Illinois EPA has proposed and plans to propose reasonable and cost effective NO_x control on all major source sectors, because it is a primary precursor to ozone and particulate matter.

This statewide approach to NO_x control is consistent with the rulemaking now pending with the Board addressing the requirements for the Clean Air Interstate Rule (“CAIR”) (PCB R06-26) which addresses NO_x emissions from utility boilers. However, based upon USEPA’s modeling, not only are reductions from the CAIR not sufficient to insure attainment in Illinois of the PM_{2.5} NAAQS, such reductions will not occur soon enough for PM_{2.5} attainment (the second phase of CAIR will not be implemented until 2015). Control of engines and turbines is an important and necessary part of Illinois attainment strategy for PM_{2.5}. The Illinois EPA intends to apply this approach to seek reasonable NO_x controls on all major source sectors in future related rulemakings.

The Illinois EPA has been working with its counterparts in nearby states to develop attainment demonstrations for both of its nonattainment areas. In the Lake Michigan region, the modeling demonstrations are being performed by the Lake Michigan Air Directors Consortium (“LADCO”). For the Metro-East/St.Louis area, the Illinois EPA has been working with the State of Missouri. The LADCO modeling, while it is not yet complete because the base year is being changed, has also shown that the reductions from the implementation of CAIR are not enough for Illinois’ two nonattainment areas to reach attainment of the PM_{2.5} NAAQS. LADCO has prepared a summary of recent modeling that describes the role of NO_x emissions in causing

ozone, PM_{2.5} and regional haze problems in the Midwest and has identified a number of candidate control measures. TSD at 21. LADCO's assessment demonstrates that NO_x emissions from sources throughout Illinois, both in nonattainment areas and in attainment areas, contribute to ozone and PM_{2.5} formation. *Id.* Hence, the Illinois EPA has proposed in this rulemaking that NO_x reductions be required at the same level as that required by Phase II for turbines and engines that are not subject to Phase II. In addition, the Illinois EPA is planning on proposing that NO_x RACT level emission controls be implemented statewide on major stationary sources. These NO_x reductions are needed for PM_{2.5} attainment, which is a regional pollutant not just affected by NO_x emissions within a local (nonattainment) area.

While some affected owners and operators of engines and turbines have objected to the parts of the proposal that go beyond Phase II and nonattainment area RACT requirements, reductions from these emissions sources are needed for the attainment demonstration which is due April 2008. Section 110 of the CAA requires that measures included in all State Implementation Plans ("SIP") and SIP revisions be fully adopted. The attainment demonstrations for ozone and PM_{2.5} will revise Illinois' SIP. The Board has already fully adopted rules implementing the multi-pollutant standard ("MPS") (PCB R06- 25) and is in the process of adopting rules for the combined pollutant standard ("CPS") (PCB R06-26). Both of these provisions will provide, for those power plants electing to comply with these provisions, more stringent and earlier control of NO_x and SO₂ emissions, than is provided for under CAIR. The Illinois EPA will shortly be proposing NO_x RACT level of emission controls statewide for the major stationary source categories, including power plants that do not opt-in to either the MPS or CPS. Finally, Illinois EPA is developing and will propose SO₂ RACT level of emissions control statewide. For all these reasons, the statewide approach to NO_x control is appropriate.

II. BACKGROUND

The CAA establishes a comprehensive program for controlling and improving the nation's air quality through both state and federal regulation. Under Sections 108 and 109 of the CAA, USEPA is charged with identifying air pollutants that endanger the public health and welfare, and with formulating the National Ambient Air Quality Standards ("NAAQS") that specify the maximum permissible concentrations of those pollutants in the ambient air. 42 U.S.C. 7408-7409. USEPA has promulgated NAAQS for various pollutants, including 8-hour ozone and PM_{2.5}. 40 CFR 50. Pursuant to Section 107(a) of the CAA, states are given primary responsibility for ensuring that the ambient air quality meets the NAAQS for the identified pollutants. 42 U.S.C. 7407(a).

A. 8-Hour Ozone NAAQS

On July 18, 1997, USEPA promulgated revised primary and secondary ozone NAAQS that increased the averaging period for the ozone standard from 1-hour to 8-hour and lowered the concentration for violations from 0.12 to 0.08 parts per million ("ppm").¹ USEPA has identified volatile organic material ("VOM") and NO_x as the primary precursors responsible for the formation of ozone. Specifically, Illinois has two areas (greater Chicago and Metro East/St. Louis) consisting of 12 counties or partial counties that were designated as not attaining the 8-hour ozone standard.² The designations were effective on June 15, 2004. 69 *Fed. Reg.* 23858, 23898 (April 30, 2004).

¹The newly revised standard is the 3-year average of the fourth highest daily maximum 8-hour average ozone concentration may not exceed 0.08 ppm. 62 *Fed. Reg.* 38856 (July 18, 1997).

² The two areas (greater Chicago and Metro East/St. Louis) were designated as moderate nonattainment for ozone. The greater Chicago nonattainment area, for purposes of the 8-hour ozone standard, consists of the following counties and partial counties: Cook County, DuPage County, Grundy County (partial- Aux Sable and Goose Lake townships), Kane County, Kendall County (partial- Oswego Township), Lake County, McHenry County and Will County. The Metro East/St. Louis nonattainment area for purposes of the 8-hour ozone standard, consists of the following counties: Jersey County, Madison County, Monroe County, and St. Clair County. 40 CFR 81.314.

USEPA has classified the two nonattainment areas in Illinois as moderate. Moderate nonattainment areas are required to submit attainment demonstrations by June 15, 2007, addressing how the State will achieve the 8-hour ozone standard by the attainment date of June 15, 2009, which is within six years of the effective date of the nonattainment designations. The attainment demonstrations will revise the State's SIP for ozone.

B. PM_{2.5} NAAQS

On July 18, 1997, USEPA also added a new 24-hour and a new annual NAAQS for fine particles, using as the indicator particles with aerodynamic diameters smaller than a nominal 2.5 micrometers,³ termed PM_{2.5}. 62 *Fed. Reg.* 38652 (July 18, 1997). USEPA has determined that, in addition to direct particulate matter, that NO_x, SO₂, volatile organic compounds ("VOCs"), carbon and ammonia are precursors to the formation of PM_{2.5}. States are required to address NO_x and sulfur dioxide ("SO₂") only, unless modeling demonstrates a need to control VOCs and/or ammonia. This proposal only addresses NO_x. 70 *Fed. Reg.* 65984, 65999 (November 1, 2005).

USEPA has designated two areas in Illinois (greater Chicago and Metro East/St. Louis), consisting of 12 counties or partial counties within Illinois, as not attaining the PM_{2.5} standard.⁴ 70 *Fed. Reg.* 944, 968 (January 5, 2005). The designations became effective on April 5, 2005. The attainment demonstration is due April 5, 2008, and the attainment date for most areas is April 5, 2010, based on air quality data from 2007 through 2009. States may be granted up to a

³ On January 17, 2006, USEPA proposed to amend the NAAQS for PM_{2.5}. 71 *Fed. Reg.* 2620.

⁴ USEPA listed the areas of greater Chicago and Metro East /St. Louis as areas that did not attain the PM_{2.5} standard. The Chicago nonattainment area, for purposes of the PM_{2.5} standard, consists of the following counties/partial counties: Cook County, DuPage County, Grundy County (partial- Aux Sable and Goose Lake Townships), Kane County, Kendall County (partial- Oswego Township), Lake County, McHenry County and Will County. The St. Louis/Metro East nonattainment area, for purposes of the PM_{2.5} standard, consists of the following counties/partial counties: Madison County, Monroe County, Randolph County (partial- Baldwin Township) and St. Clair County. 40 CFR 81.314.

five-year extension of the attainment date with a demonstration showing that it is impractical for the state to attain within five years and that the state is making generally linear progress toward attainment. 70 *Fed. Reg.* 65984, 66003 (November 1, 2005).

C. Clean Air Act Planning and Emission Control Requirements

The proposed new Subpart also is intended to address, in part, Illinois EPA's obligation to meet certain requirements under the CAA. These requirements include: Part D, Subpart 1 of the CAA, adoption of control strategies necessary to demonstrate attainment of the fine PM_{2.5} and 8-hour ozone NAAQS in the greater Chicago moderate nonattainment area and the Metro East/St. Louis moderate nonattainment area; Part D, Subpart 2 of the CAA, adoption of control strategies necessary to demonstrate attainment of 8-hour ozone NAAQS for the greater Chicago nonattainment area and Metro East/St. Louis nonattainment areas; and Sections 172 and 182 of the CAA, adoption of RACT measures, and RFP and ROP requirements.–

D. NO_x SIP Call

This proposal is intended to satisfy Illinois' obligations under USEPA's NO_x SIP Call Phase II. Subparts T, U, and W of Part 217, addressing Phase I, were adopted by the Board on December 21, 2000, March 1, 2001, and April 5, 2001, respectively. Subparts T, U, and W regulate NO_x emissions from large cement kilns, industrial boilers and utilities boilers, respectively. Illinois was required to regulate these sources pursuant to the NO_x SIP Call. 63 *Fed. Reg.* 57356 (October 27, 1998). Subparts U and W implement the NO_x Trading Program in Illinois to reduce ozone transport, meeting Illinois' obligations pursuant to Sections 110(a)(2) and 126 of the CAA.

On April 21, 2004, USEPA promulgated a rule responding to the court's ruling in *Michigan v. EPA* (213 F.3d 663 (DC Cir. 2000)), 69 *Fed. Reg.* 21603 (April 21, 2004). Most

importantly, the rule sets the control limit for large natural gas-fired stationary internal combustion engines at 82 percent and for diesel and dual fuel stationary internal combustion engines at 90 percent. It also set the date for states required to submit Phase II SIPs as April 1, 2005. States required to submit Phase II SIPs included those states required to address the NO_x budget for stationary internal combustion engines. States are required to implement the controls for stationary internal combustion engines no later than May 1, 2007.

In November 2005, Illinois and other states received notification that USEPA had found a failure to submit a SIP addressing the Phase II requirements. Exhibit B. On February 8, 2006, USEPA published the findings of failure to submit Phase II SIPs, but it has not yet published a federal implementation plan for Phase II or started a Section 179 sanctions clock. *71 Fed. Reg.* 6347 (February 8, 2006).

III. AUTHORITY FOR RULEMAKING

A. Section 9.9 of the Act

Section 9.9(b) of the Act requires Illinois EPA to propose and the Board to adopt regulations for the control of NO_x emissions from stationary internal combustion engines.

B. Section 10 of the Act

Section 10(A) of the Act provides the Board's general authority for rulemaking addressing air pollution:

The Board, pursuant to procedures prescribed in Title VII of this Act, may adopt regulations to promote the purposes of this Title. Without limiting the generality of this authority, such regulations may among other things prescribe . . . ambient air quality standards . . . emissions standards . . . standards for issuance of permits . . .

415 ILCS 5/10(A). It is pursuant to this Section, and Sections 9.9, 27, and 28.5 of the Act, that Illinois EPA is submitting this regulatory proposal. As discussed above, not only are the proposed regulations necessary to meet the State's obligations under the NO_x SIP Call, they are

also necessary to meet the State's obligations under the CAA to attain the two new NAAQS: 8-hour ozone and PM_{2.5}. With respect to ozone and PM_{2.5}, and as noted above, USEPA has identified emissions of NO_x as a precursor to ozone and PM_{2.5} formation in the atmosphere. As part of the steps needed for Illinois to demonstrate attainment and to meet RFP requirements for the 8-hour ozone and the PM_{2.5} NAAQS, Illinois EPA must adopt and implement regulations for control of NO_x emissions that meet these federal requirements, including implementation of RACT for large sources of NO_x in nonattainment areas.

C. Section 28.5 of the Act

This regulatory proposal is properly submitted to the Board under Section 28.5 of the Act as a fast-track rulemaking proceeding. Section 28.5 of the Act "shall apply solely to the adoption of rules proposed by Illinois EPA and required to be adopted by the State under the Clean Air Act as amended by the Clean Air Act Amendments (CAAA)." 415 ILCS 5/28.5(a). A fast-track rulemaking proceeding is:

a proceeding to promulgate a rule that the CAAA requires to be adopted. For purposes of this Section, 'requires to be adopted' refers only to those regulations or parts of regulations for which the United States Environmental Protection Agency is empowered to impose sanctions against the State for failure to adopt such rules.

415 ILCS 5/28.5(c). Further, Section 28.5(d) of the Act provides, "When the CAAA requires rules other than identical in substance rules to be adopted, upon request by Illinois EPA, the Board shall adopt rules under fast-track rulemaking requirements." 415 ILCS 5/28.5(d).

Illinois EPA meets the criteria set forth by Section 28.5 of the Act. This Section provides in pertinent part:

(a) This Section shall apply solely to the adoption of rules proposed by the Agency and required to be adopted by the State under the Clean Air Act as amended by the Clean Air Act Amendments of 1990 (CAAA).

* * *

(c) For purposes of this Section, a “fast-track” rulemaking proceeding is a proceeding to promulgate a rule that the CAAA requires to be adopted. For purposes of this Section, “requires to be adopted” refers only to those regulations or parts of regulations for which the United States Environmental Protection Agency is empowered to impose sanctions against the State for failure to adopt such rules. All fast-track rules must be adopted under procedures set forth in this Section, unless another provision of this Act specifies the method for adopting a specific rule.

415 ILCS 5/28.5. Section 28.5 of the Act provides that it applies solely to the adoption of rules proposed by Illinois EPA that are required to be adopted by the State under the CAAA. The phrase “requires to be adopted” refers to rules for which the USEPA is empowered to impose sanctions against the State for failure to adopt such rules. Section 28.5 of the Act also states that a fast-track rulemaking must be for rules other than “identical in substance” rules. Illinois EPA’s rulemaking proposal here meets all the criteria of Section 28.5.

Illinois EPA's regulatory proposal to require Phase II is clearly required to be adopted by the CAA. The NO_x SIP Call was promulgated under Section 110(a)(2)(D) of the CAA, which requires states to develop SIPs to ensure that emissions from a source or group of sources do not significantly contribute to nonattainment, or interfere with maintenance, of a NAAQS in other states. In addition to meeting the requirements of Section 110(a)(2)(D) of the CAA, adoption of the Phase II rules and NO_x emission control regulations for engines and turbines, are also necessary for the State to meet the requirements of Sections 172 and 182 of the CAA for submitting attainment demonstrations, RACT, and RFP. If a state fails to submit plans as required for the NO_x SIP Call Phase II, attainment demonstrations, RACT, or RFP, USEPA has the authority to impose a Federal Implementation Plan (“FIP”) pursuant to its authority under Section 110(c)(1) of the CAA.

Another component of Section 28.5 of the Act concerns the criteria that the rule that is required to be adopted must subject the State to sanctions from USEPA if the State fails to adopt

such rule. Pursuant to Section 179, two different sanctions are available to USEPA should Illinois EPA fail to adopt rules that would allow for the submission of an approvable SIP: 1) the loss of highway funds; and 2) the increase in the emissions offset requirement for New Source Review to 2:1.

USEPA triggers “sanctions” by making a finding of substantial inadequacy under Section 110(k)(5) of the CAA known as a “SIP Call.” Such a finding is made whenever USEPA finds that a State has a plan for any area is substantially inadequate to attain or maintain the relevant NAAQS. By its very tenor, a plan that fails to demonstrate attainment would be substantially inadequate and would trigger Section 179 sanctions:

(a) State Failure.--For any implementation plan or plan revision required under this part (or required in response to a finding of substantial inadequacy as described in section 110(k)(5)), if the Administrator—

* * *

(3)(A) determines that a State has failed to make any submission as may be required under this Act, other than one described under paragraph (1) or (2), including an adequate maintenance plan, or has failed to make any submission, as may be required under this Act, other than one described under paragraph (1) or (2), that satisfies the minimum criteria established in relation to such submission under section 110(k)(1)(A)....

42 U.S.C. 7509(a). As discussed *supra*, without these regulations, Illinois will not be able to submit a plan that would demonstrate attainment or meet RACT or ROP requirements for the PM_{2.5} or 8-hour ozone NAAQS.

Not only will Illinois need the reductions from the State’s rule to implement the federal Clean Air Interstate Rule (“CAIR”) to attain these NAAQS, it will need additional reductions as well. The Board has determined in the past that regulations adopted in order to obtain the reductions needed for attainment demonstrations and meeting other requirements under Section 182 of the CAA warranted the use of Section 28.5 of the Act to avoid sanctions. Further, the

Board has the authority to adopt regulations to avoid sanctions for a failure to meet the requirements of Section 172 of the CAA as it is also contained in Part D of the CAA. *See*, In the Matter of: 15% ROP Plan Control Measures for VOM Emissions-Part II Marine Vessel Loading: Amendments 35 Ill. Adm. Code Parts 211, 218 and 219, R94-15, October 25, 1994; and In the Matter of: Visible and Particulate Matter Emissions-Conditional Approval and Clean Up Amendments to 35 Ill. Adm. Code Parts 211 and 212, R96-5, May 22, 1996. Thus, through past practice and as confirmed by relevant case law, the Board has recognized that failure to adopt regulations proposed for the purposes of meeting the requirements of Part D of the CAA would satisfy the requirements for a Section 28.5 rulemaking.

The remaining criterion as set out in Section 28.5 of the Act is that the subject rulemaking not be an identical in substance proposal. Subpart Q is being proposed to meet three federal CAA requirements and does not mirror any federal guidance or rule. Hence, Illinois EPA's proposal is not identical in substance. For all these reasons, this rulemaking properly appears before the Board under the fast-track provisions of Section 28.5 of the Act as all described criteria of that section have been met.

IV. GEOGRAPHIC REGIONS AND SOURCES AFFECTED

The geographic region subject to "Subpart Q: Stationary Reciprocating Internal Combustion Engines and Turbines" is the entire State of Illinois. The proposed regulations are expected to affect existing and new units as described below. There are 28 existing engines that were identified by the NO_x SIP Call that will be subject to Subpart. TSD at 7.1. Existing NO_x SIP Call engines were those identified as emitting one ton a day or more in 1995. In Illinois, 28 engines were identified, 25 at gas pipeline facilities and three at a chemical manufacturing company. The NO_x SIP Call engines are listed in proposed Appendix G. Other engines that will

be affected by this proposal are those that are rated at 500 bhp or greater. There are 1,200 engines rated at or greater than 1,500 bhp, and 175 engines rated between 500 bhp and 1,500 bhp. Of these, 202 of the larger engines are potentially impacted as are 44 of the smaller engines. Turbines that will be affected are those rated at 3.5 MW or greater. TSD at 7.2 and 7.3. There are 205 turbines rated at 3.5 MW or greater. Of these, 36 are expected to be affected by the rule. TSD at 7.2.

V. PURPOSE AND EFFECT OF THE PROPOSAL

As discussed below, this proposal has been prepared to meet portions of several obligations of Illinois under the CAA; namely, reductions necessary to assist the State in reaching attainment of the PM_{2.5} and 8-hour ozone NAAQS, NO_x RACT for large engines and turbines located in the two nonattainment areas for both NAAQS, RFP, and Phase II of the NO_x SIP Call.

A. Reductions needed for attainment of the NAAQS

Both USEPA's findings and the Lake Michigan Air Directors Consortium ("LADCO") modeling confirm that existing control programs will not be enough to provide for attainment of the 8-hour and PM_{2.5} NAAQS in Illinois. As such, additional reductions of NO_x emissions from sources in attainment and nonattainment areas will be necessary. TSD at 2.5. Nonattainment is shown in the Chicago area for both 8-hour ozone and PM_{2.5}, and in the Metro-East/St. Louis area for PM_{2.5}, even with implementation of CAIR. By 2010, CAIR does not provide significant reductions beyond those provided for in the NO_x SIP Call. Although modeling work is ongoing, sufficient modeling has been conducted thus far by USEPA, LADCO, and the Illinois EPA to justify this proposal to require reductions in NO_x emissions statewide, including sources (engines, turbines, and other NO_x emission sources) located in attainment areas as part of

Illinois' plan to attain the 8-hour ozone and PM_{2.5} NAAQS in Illinois, even prior to the full implementation to CAIR.

The proposed regulations will, when fully implemented in 2012, reduce NO_x emissions statewide by approximately 17,869 tons per year and 7,540 tons per ozone control season. TSD at 8.3. This equates to a 65 percent NO_x reduction annually and a 55 percent NO_x emission reduction in the ozone season. TSD at 8.4.

B. NO_x RACT

States are required to submit SIPs addressing RACT for precursors of ozone, which includes NO_x. Major sources in moderate nonattainment areas are defined as those that have the potential to emit 100 tons or more of NO_x in a nonattainment area. States are also required to submit SIPs addressing RACT for precursors of PM_{2.5}, which includes NO_x. While USEPA has not yet finalized the guidance for implementing the PM_{2.5} NAAQS, its proposal indicates that the RACT requirement will apply to 100 ton sources, and may include smaller units as well. The applicability includes such units. The NO_x control levels proposed are considered reasonable, attainable and cost-effective. TSD at 6.3.

C. NO_x SIP Call Phase II

The NO_x SIP Call Phase II specifically requires affected states to meet a NO_x budget that represents 82 percent control of large stationary internal combustion engines. The proposal would control these engines reducing base emissions by 5,422 tons per ozone season to 1,196 tons per ozone season. TSD at 8.1. This meets the NO_x SIP Call Phase II requirements.

VI. TECHNICAL FEASIBILITY AND ECONOMIC REASONABLENESS

Emissions of NO_x from stationary internal combustion engines are not currently regulated in the State of Illinois. Only turbines rated at 250 mmBtu/hr are regulated pursuant to 35 Ill.

Adm. Code 217.

Subpart Q is expected to reduce NO_x emissions by 17,869 tons per year and 7,540 tons per ozone season beginning in 2012. TSD at 8.3. Illinois EPA's staff has determined that affected engines and turbines can meet the requirements of proposed Subpart Q through a combination of control techniques such that compliance is both technically feasible and economically reasonable. Control techniques for reducing NO_x emissions from engines include air/fuel ratio adjustments, low emission combustion ("LEC"), prestratified charge and non-selective catalytic reduction. Gas turbines can use water/steam injection, dry low NO_x combustors as control strategies. Both engines and turbines can use selective catalytic reduction ("SCR"). Reductions from the engine technologies range from 10 to 40 percent for air/fuel ratio adjustments to 70 to 90 percent for LEC. Reductions from the turbine technologies range from 70 to 90 percent for the water/steam injection to 60 to 90 percent for low NO_x combustors. TSD at 4.9.

Based on USEPA's Alternative Control Techniques ("ACT") document, with which Illinois EPA staff agrees, there are a number of control options available which achieve the control levels proposed in this rulemaking in the range of unit sizes affected. Cost effectiveness for large NO_x SIP call engines ranged from \$522 per ton of NO_x reduced by gas-fired engines to \$1,000 per ton of NO_x reduced by oil-fired engines. TSD at 5.1. The cost effectiveness for retrofitting engines ranges from \$496 to \$2,436 per ton of NO_x reduced and for turbines ranges from \$712 to \$2,189 per ton of NO_x reduced in 2004 dollars. TSD at 5.2.

In addition, Illinois EPA's staff found that the levels proposed in this rule were consistent with rules promulgated in other states. Typical NO_x RACT limits range from 105 to 210 ppm for gas-fired rich- and lean-burn engines. The size cut-off for engines required to control NO_x

emissions ranges from 50 bhp to 500 bhp. In addition, several states have promulgated rules limiting NO_x emissions from turbines. TSD at 6.2. Texas, New York, New Jersey, and California South Coast all have regulatory requirements for smaller turbines.

VII. COMMUNICATION WITH INTERESTED PARTIES

Illinois EPA held three general meetings (August 25, 2005, October 5, 2005, and November 14, 2005) to which owners and operators of affected units and environmental groups were invited. At least three additional meetings were held at the request of particular groups or companies affected by this proposal.

Throughout the development of the rule, Illinois EPA has received extensive comments. These amendments are being proposed after representatives of industry and environmental groups have had an opportunity to review the proposed changes, discuss any issues and provide comments to Illinois EPA. The areas in which the parties have reached agreement are the applicability level for engines and turbines, use of an emissions averaging plan as a method of compliance, use of continuous emissions monitoring system (“CEMS”) in lieu of certain testing and monitoring requirements, the exemptions, the frequency of testing, treatment of low usage units (e.g., by bhp-hr/MW-hr and treatment of sources with NO_x emissions of less than 100 tons per year), and the use of NO_x allowances to address unexpected noncompliance issues. The areas where the parties have not reached agreement include the statewide applicability of the rule. However, the Illinois EPA is proceeding with the proposal because the overall benefit of the rule outweighs the detriment of further delay. The Illinois EPA has presented and discussed with the stakeholders the need for statewide reductions of NO_x emissions from sources located in both attainment and nonattainment areas in order to achieve the 8-hour and PM_{2.5} NAAQS. The Illinois EPA has also addressed some concerns raised by these parties by including averaging

and low usage provisions in the proposal, as well as, stretching the compliance schedule.

VIII. ILLINOIS EPA'S PROPOSAL

35 Ill. Adm. Code 201: SUBPART C: PROHIBITIONS

Section 201.146 Exemptions from State Permit Requirements

Illinois EPA is proposing to amend subsection (i) of this Section to reflect the requirement that an engine or turbine required to comply with the requirements of Subpart Q must obtain a permit. In addition, the heading of the exemption is being amended to reflect that the criteria of the exemption apply to both engines and turbines and the exemption for turbines is being clarified as it does not apply to engines.

35 Ill. Adm. Code 211: SUBPART B: DEFINITIONS

Illinois EPA is proposing to add four definitions and amend the definition for emergency/standby unit to Part 211.

Section 211.740 Brakehorsepower (rated-bhp)

Illinois EPA is proposing to add a definition for brakehorsepower. This definition is needed to define which engines will be subject to the requirements of Subpart Q.

Section 211.1740 Diesel Engine

Illinois EPA is proposing to add a definition for "diesel engine." This definition is needed to define what level of control the affected engine will be subject to pursuant to the requirements of Subpart Q.

Section 211.1920 Emergency or Standby Unit

Illinois EPA is proposing to amend the definition of "emergency or standby unit." This definition is being amended to clarify that the exemption from the requirements of Subpart Q for "emergency or standby unit(s)" is limited to circumstances unrelated to the unit being used to

supplement power capacity and that testing the unit or verifying the unit's readiness for use does not disqualify the unit as an emergency or standby unit.

Section 211.3300 Lean-Burn Engine

Illinois EPA is proposing to add a definition for "lean-burn engine." This definition is needed to define what level of control the affected engine will be subject to pursuant to the requirements of Subpart Q.

Section 211.5640 Rich-Burn Engine

Illinois EPA is proposing to add a definition for "rich-burn engine." This definition is needed to define what level of control an affected engine will be subject to pursuant to the requirements of Subpart Q.

35 Ill. Adm. Code 217: SUBPART A: GENERAL PROVISIONS

Section 217.101 Measurement Methods

Illinois EPA is proposing two types of amendments to this Section. First, it is proposing to strike the date that USEPA last updated the applicable methods. The dates for these methods will be included in the Section 217.104: Incorporations by Reference. Second, it is also proposing is to add a method for monitoring NO_x using portable monitors.

Section 217.102 Abbreviations and Units

Illinois EPA is proposing to add the abbreviations and conversion factors used in Subpart Q and to correct the alphabetical order of the existing list.

Section 217.104 Incorporations by Reference

Illinois EPA is proposing to update the incorporations by reference, except for 40 CFR 96, add the American Society Testing and Methods ("ASTM") for portable monitors, and test methods for NO_x emissions from engines and turbines.

**PART 217: SUBPART Q: STATIONARY RECIPROCATING INTERNAL
COMBUSTION ENGINES AND TURBINES**

Section 217.402 Applicability

Subsection (a) provides that the requirements of the Subpart apply to stationary reciprocating internal combustion engines rated 500 bhp and above, and turbines rated 3.5 MW and above. Subsection (b) provides that certain engines and turbines that meet the rating requirements of subsection (a) be exempt from the requirements of the Subpart. Proposed exemptions include units meeting the definition for emergency and standby; units used for research or performance verification; units that control gas from a landfill, where 50 percent or more of the heat input is gas from a landfill; units used for agricultural purposes, e.g., raising livestock and crops, but not for associated businesses; portable units; and units that are regulated by Subpart W or other federal NO_x trading program.

Subsection (c) provides that if a unit ceases to meet the exemption criteria, the owner or operator must notify Illinois EPA within 30 days of becoming aware that the unit is no longer exempt and comply with the requirements of the Subpart. Subsection (d) provides that if an affected unit has ever been subject to the control requirements of the Subpart, it will remain subject to the requirements even if it ceases to meet the rating criteria or becomes eligible for an exemption.

Section 217.388 Control and Maintenance Requirements

In this Section, Illinois EPA is proposing control and maintenance requirements. Subsection (a) provides separate concentration limits for engine and turbines by type and fuel used. Subsection (b) provides that owners and operators be allowed the option of complying with an emissions averaging plan instead of concentration limits. Subsection (c) provides that

certain low usage units be exempt from the requirement to comply with the concentration limits if the aggregate usage of the units meets certain limits and is contained in a federally enforceable permit, unless the unit is located at a gas transmission compression station or storage facility. The aggregate usage from all such units at the source that are not otherwise exempt and are not complying with the control requirements of the Subpart must be less than 5 mm bhp-hrs for engines or 20,000 MW-hrs or less for turbines. The aggregate for each type of unit, e.g., engines or turbines, is calculated separately. Subsection (d) requires owners and operators to perform periodic maintenance. Maintenance and inspection must be done in accordance with a maintenance plan based on the manufacturer's recommendations, unless the unit is located at a gas transmission compressor station or storage facility. Owners and operators of such units may use the procedures contained in the applicable air pollution permit. In addition, if the original equipment manual is not available, the maintenance and inspection shall be done in accordance with what is customary for the type of unit and air pollution control equipment.

Section 217.390 Emissions Averaging Plans

This Section provides that owners and operators may comply with an emissions averaging plan in lieu of meeting the specified concentration limit for each affected unit set forth in Section 217.388. Subsection (a)(1) describes the types of units that may be included in an emissions averaging plan. These units include: any unit located in Illinois as long as the units are owned by the same company or parent company and are not included in more than one plan; units that have a compliance date later than the control period for which the averaging plan is being used for compliance; and units that could be claimed as exempt pursuant to Section 217.386(b). If an exempt unit is included in an emissions averaging plan, it will be treated as an

affected unit with respect to concentration limits, testing, monitoring, recordkeeping and reporting requirements.

Subsection (a)(2) describes the types of units that may not be included in an emissions averaging plan. Two types of affected units may not be included in averaging plans: 1) units that commence operation on or after January 1, 2002, unless the unit replaces a unit that commenced operation prior to this date or is a unit that replaced an engine or turbine that replaced a unit that commenced operation prior to this date, and the unit is used for the same purpose; and 2) units that the owner or operator is claiming as exempt.

Subsection (b) provides the requirements for submitting an emissions averaging plan. The owner or operator must submit the emissions averaging plan by the applicable compliance date. The plan must include a list of affected units by unit identification and a sample calculation demonstrating compliance using the methodology provided in subsection (f). Subsection (c) limits amendment of the emissions averaging plan to once a year. If an amendment for a calendar year is going to be submitted, it must be submitted no later than May 1 of the applicable year; otherwise, the plan from the previous year will be the applicable plan. Subsection (d) requires that if an affected unit included in a plan is sold or taken out of service, the owner or operator, and the buyer, if applicable, must submit an updated emissions averaging plan within 60 days of the occurrence. Subsection (d) also allows an owner or operator to amend its emissions averaging plan if a unit no longer qualifies as exempt or low usage, so long as the plan is submitted within 30 days of discovery.

Subsection (e) requires an owner or operator to demonstrate compliance on both the ozone season and calendar year basis. Compliance is demonstrated using the methodology in subsection (f) using the most recent monitoring data or test results. Owners and operators are

also required to notify Illinois EPA by October 31 following the ozone season if they cannot demonstrate compliance for that ozone season. Finally, owners and operators must submit a compliance report by January 31 following the applicable calendar year.

Subsection (f) provides the averaging formula that must be used to demonstrate compliance. The total mass of actual NO_x emissions from all affected units included in the emissions averaging plan must be less than the total mass of allowable NO_x emissions for the same units. Subsections (g)(1) and (g)(2) provide formulas for determining a unit's actual and allowable emissions by fuel type. Subsection (g)(3) provides a specific formula for electric replacement units. Subsection (g)(4) provides a formula for non-electric replacement units. Subsection (g)(5) provides a formula for units that have been replaced through the purchase of power and limits the use of purchased power to five years. Subsection (g)(6) provides criteria for determining the allowable emissions for units with a later compliance date. Subsection (h) provides conditions for units using CEMS in lieu of stack testing and portable monitoring.

Section 217.398 Compliance

Subsection (a) provides four different compliance dates. Subsection (a)(1) requires that engines subject to the NO_x SIP Call, as listed in Appendix G, comply by May 1, 2007. Subsection (a)(2) requires that units located in either of the 8-hour ozone or PM_{2.5} nonattainment areas comply by January 1, 2009. Subsection (a)(3) requires that engines and turbines located outside of the two nonattainment areas and rated at 1,500 bhp or more, or five MW or more comply by January 1, 2011. Subsection (a)(4) requires that the smaller engines and turbines comply by January 1, 2012.

Subsection (b) provides that owners and operators may use NO_x allowances to meet the compliance requirements of Section 217.388 if they meet certain criteria. Subsection (b)(1)

provides that use is limited to circumstances where all of the following conditions have been met. First, noncompliance must be due to unforeseen circumstances. Second, allowances may be used no more than twice in any five-year rolling period. Finally, allowances may not be used for a unit listed in Appendix G. Subsection (b)(2) provides that the correct type of NO_x allowances must be used, e.g., an annual allowance for an exceedance of an annual limit and an ozone season allowances for an exceedance of a seasonal limit. Subsection (b)(3) provides that the owner or operator must submit a report documenting the circumstances that required the use of allowances and the actions that will be taken to address these circumstances. In addition, the report must contain the NO_x Allowance Tracking System (“NATS”) serial numbers of the allowances.

Section 217.394 Testing and Monitoring

Subsection (a) provides that affected units conduct a compliance test by the applicable compliance date. Subsection (a)(1) provides that engines listed in Appendix G must be tested by May 1, 2007. Subsection (a)(2) provides that affected units and units included in emissions averaging plans be tested by the applicable compliance date in Section 217.392 or within the first 876 hours of operation. Subsection (a)(3) provides that units that operate less than 876 hours per calendar year be tested once within the five-year period after the compliance date.

Subsection (b) provides the requirements for performing subsequent tests. Subsection (b)(1) provides that units listed in Appendix G and units in an emissions averaging plan must be tested once every five years and that testing must be done by May 1 or within 60 days of starting operation, whichever is later. Subsection (b)(2) provides that if monitoring data shows that the unit is not in compliance, the owner or operator must notify Illinois EPA within 30 days of the finding that the unit is not in compliance with the applicable concentration limit or emissions

averaging plan and the unit must also be tested. Finally, subsection (b)(3) provides that Illinois EPA or USEPA may require testing to demonstrate compliance at the owner or operator's expense.

Subsection (c) provides the testing procedures. Owners and operators of engines must use Method 7 or 7E or 40 CFR 60, Appendix E. Each test must consist of three runs and be at least 60 minutes long. If a unit combusts more than one type of fuel, a separate test is required for each type of fuel. Owners and operators of turbines must comply with the testing provisions of 40 CFR 60.4400.

Subsection (d) provides that owners and operators of affected units perform annual monitoring to determine compliance, except in years in which a compliance test is performed or for units that operate less than 876 hours per calendar year and then only once every five years. Monitoring must be completed each year by May 1 or within 60 days of starting operation for that calendar year. Measurements of NO_x and O₂ concentrations must be taken three times for a duration of at least 20 minutes while the unit is operating at the highest achievable load.

Subsection (e) provides that units equipped with a CEMS meeting the applicable requirements of 40 CFR 60, subpart A and Appendix B, or alternate procedures as approved by Illinois EPA or USEPA in a federally enforceable permit, not be required to comply with the compliance testing and annual monitoring requirements of this Section. Compliance will be required on an ozone season and calendar year basis.

Section 217.396 Recordkeeping and Reporting

Subsection (a) provides that owners and operators of affected units that are not exempt and not low usage units maintain records that demonstrate compliance with the Subpart.

Subsection (b) provides that owners and operators of low usage units maintain either records of

NO_x emissions for the calendar year or bhp or MW hours operated for the calendar year, as applicable. Subsection (c) provides that owner's and operator's records be maintained for five years.

Subsection (d) provides that owners or operators report the following: notification prior to testing; a testing protocol; and the test results. In addition, owners and operators are required to report: monitored exceedances; permanent shutdowns of affected units; if demonstrating compliance through an emissions averaging plan, notification of failure to comply with the ozone season plan, if applicable, and an annual compliance report; if using a CEMS, an excess emissions and monitoring systems report; and if using NO_x allowances to comply, a reconciliation report.

Appendix G Large Existing Reciprocating Internal Combustion Engines

In Appendix G, Illinois EPA is proposing to add a list of the NO_x SIP Call engines based on how the unit is listed in the most recent permit issued or construction permit application submitted.

IX. CONCLUSION

For the reasons stated above, Illinois EPA hereby submits this regulatory proposal and respectfully requests that the Board expeditiously adopts these rules for the State of Illinois.

Respectfully submitted,
ILLINOIS ENVIRONMENTAL
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