

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)
)
FAST-TRACK RULES UNDER) **R07-18**
NITROGEN OXIDE (NOx) SIP CALL:) **(Rulemaking - Air)**
AMENDMENTS TO 35 ILL.)
ADM. CODE SECTION 201.146,)
AND PARTS 211 AND 217)

NOTICE

TO:

Dorothy Gunn, Clerk
Illinois Pollution Control Board
State of Illinois Center
100 West Randolph, Suite 11-500
Chicago, Illinois 60601

SEE ATTACHED SERVICE LIST

PLEASE TAKE NOTICE that I have today filed with the Office of the Pollution Control Board the attached MOTION TO WITHDRAW TESTIMONY, MOTION TO AMEND TESTIMONY, AND AMENDED TESTIMONY OF ROBERT KALEEL AND YOGINDER MAHAJAN of the Illinois Environmental Protection Agency a copy of which is herewith served upon you.

ILLINOIS ENVIRONMENTAL PROTECTION
AGENCY

By: /s/ Rachel L. Doctors
Rachel L. Doctors
Assistant Counsel
Division of Legal Counsel

DATED: May 18, 2007

P.O. Box 19276
Springfield, Illinois 62794-9276
217/782-5544

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)
)
FAST-TRACK RULES UNDER) **R07-18**
NITROGEN OXIDE (NO_x) SIP CALL:) **(Rulemaking - Air)**
AMENDMENTS TO 35 ILL.)
ADM. CODE SECTION 201.146,)
AND PARTS 211 AND 217)

MOTION TO WITHDRAW TESTIMONY

NOW COMES the Proponent, the Illinois Environmental Protection Agency (Illinois EPA), by its attorneys, and pursuant to 35 Ill. Adm. Code 101.500 and 102.402, hereby requests that the Illinois Pollution Control Board (Board) grant the Illinois EPA leave to withdraw the testimony of Michael Koerber and Scott Leopold. In support of this Motion, the Illinois EPA states as follows:

1. On April 20, 2007, following the filing by the Illinois EPA of its proposal entitled, "Stationary Reciprocating Internal Combustion Engines and Turbines: Amendments to 35 Ill. Adm. Code Section 201.146, and Parts 211 and 217," the Hearing Officer entered an order scheduling hearings and dates for pre-filing testimony. The first hearing is scheduled for May 21, 2007, with service by the Illinois EPA of prefiled testimony required by May 11, 2007.

2. Since the filing of the Illinois EPA's testimony on May 11th, the Board ruled on the Opponents' Objections to the use of fast-track rulemaking procedures for the Illinois EPA's above proposal and entered an order bifurcating the rulemaking into two dockets. The order included the acknowledgement that the hearing scheduled for Monday, May 21, 2007, would concern only engines affected by the NO_x SIP Call Phase II requirements. This significantly narrowed the scope of the hearing scheduled for May 21st on R07-18.

3. The testimony of Michael Koerber and Scott Leopold is outside of the narrow scope of R07-18, and consequently will more appropriately be addressed under the new docket R07-19, as portions of the testimony concerned issues besides the control of large engines as required by the NO_x SIP Call Phase II. The Illinois EPA is requesting that the testimony of Michael Koerber and Scott Leopold be withdrawn.

4. Although the timing of this request is quite short, only one business day before the scheduled hearing, withdrawal of this testimony was not justified until issuance of the Board's Order to bifurcate the original proposed rulemaking. Further, it is commensurate with the narrow scope of the rulemaking and will facilitate a hearing more focused on the relevant issues. It will also conserve scarce resources, as the Illinois EPA will no longer be required to produce a witness not located in Springfield or a witness not normally scheduled to work on the hearing date.

WHEREFORE, for the reasons stated above, the Illinois EPA hereby respectfully requests that the Board grant the Illinois EPA's Motion to Withdraw Testimony.

ILLINOIS ENVIRONMENTAL PROTECTION
AGENCY

By: /s/ Rachel L. Doctors
Rachel L. Doctors
Assistant Counsel
Division of Legal Counsel

DATED: May 18, 2007

P.O. Box 19276
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217/782-5544
217/782-9143(TDD)

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)
)
FAST-TRACK RULES UNDER) **R07-18**
NITROGEN OXIDE (NO_x) SIP CALL:) **(Rulemaking - Air)**
AMENDMENTS TO 35 ILL.)
ADM. CODE SECTION 201.146,)
AND PARTS 211 AND 217)

MOTION TO AMEND TESTIMONY

NOW COMES the Proponent, the Illinois Environmental Protection Agency (Illinois EPA), by its attorneys, and pursuant to 35 Ill. Adm. Code 101.500 and 102.402, hereby requests that the Illinois Pollution Control Board grant the Illinois EPA leave to amend the testimony of Robert Kaleel and Yoginder Mahajan. In support of this Motion, the Illinois EPA states as follows:

1. On April 20, 2007, following the filing by the Illinois EPA of its proposal entitled, "Stationary Reciprocating Internal Combustion Engines and Turbines: Amendments to 35 Ill. Adm. Code Section 201.146, and Parts 211 and 217," the Hearing Officer entered an order scheduling hearings and dates for prefiling testimony. The first hearing is scheduled for May 21, 2007, with service by the Illinois EPA of prefiled testimony required by May 11, 2007.

2. Since the filing of the Illinois EPA's testimony on May 11th, the Board ruled on the Opponents' Objections to the use of fast-track rulemaking procedures for the Illinois EPA's above proposal and entered an order bifurcating the rulemaking into two dockets. The order included the acknowledgement that the hearing scheduled for Monday, May 21, 2007, would concern only engines affected by the NO_x SIP Call Phase II requirements. This significantly narrowed the scope of the hearing scheduled for May 21st on R07-18.

3. The testimony of Robert Kaleel and Yoginder Mahajan contained information that is now outside of the narrow scope of R07-18, and consequently will more appropriately be addressed under the new docket R07-19, as portions of the testimony concerned issues besides the control of large engines as required by the NO_x SIP Call Phase II. The Illinois EPA is requesting that it may be allowed to file amended testimony for Robert Kaleel and Yoginder Mahajan addressing the more limited scope of Monday's hearing..

4. Although the timing of this request is quite short, only one business day before the scheduled hearing, revision of this testimony is was not justified until issuance of the Board's order to bifurcate the original proposed rulemaking. Further, it is commensurate with the narrow scope of the rulemaking and will facilitate a hearing more focused on the issues contained in R07-18.

WHEREFORE, for the reasons stated above, the Illinois EPA hereby respectfully requests that the Board grant the Illinois EPA's Motion to File Amended Testimony.

ILLINOIS ENVIRONMENTAL PROTECTION
AGENCY

By: /s/ Rachel L. Doctors
Rachel L. Doctors
Assistant Counsel
Division of Legal Counsel

DATED: May 18, 2007

P.O. Box 19276
Springfield, Illinois 62794-9276
217/782-5544
217/782-9143(TDD)

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)
)
STATIONARY RECIPROCATING) **R07-18**
INTERNAL COMBUSTION) **(Rulemaking - Air)**
ENGINES AND TURBINES:)
AMENDMENTS TO 35 ILL.)
ADM. CODE SECTION 201.146,)
AND PARTS 211 AND 217)

TESTIMONY OF ROBERT KALEEL

My name is Robert Kaleel. I am the Manager of the Air Quality Planning Section, Division of Air Pollution Control, Bureau of Air at the Illinois Environmental Protection Agency (“Illinois EPA”), Springfield, Illinois. I have a Bachelor of Science degree in meteorology from Northern Illinois University. I have worked at the Illinois EPA for more than twenty-six years, and have been in my present position since 2004. Prior to that, I was the Manager of the Air Quality Modeling Unit in the Air Quality Planning Section, a position that I held for more than fifteen years. I have also worked as a private consultant as a specialist in air quality modeling. As Manager of the Air Quality Planning Section, my responsibilities include oversight of staff that provides technical support for regulatory initiatives needed to address air quality issues in Illinois, including the regulatory proposal before the Board at this hearing. The Air Quality Planning Section also provides technical support to the Bureau of Air’s permitting and enforcement functions, and is responsible for maintaining the Bureau’s emission inventory system, including Annual Emission Reports. I have been closely involved with the development

of Illinois' State Implementation Plans to address the PM_{2.5} and ozone nonattainment areas in Illinois.

The purpose of my testimony is to explain the purpose of this proposal, and to describe the components of the proposed rule. Included in this proposal are amendments to 35 Ill. Adm. Code Part 217. Adoption of the proposed rules will reduce emissions of nitrogen oxides ("NO_x") from certain stationary reciprocating internal combustion engines. 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.

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"). It has long been recognized that volatile organic compounds ("VOC") and NO_x are the primary precursors responsible for the formation of ground level ozone. Illinois has two areas (greater Chicago and Metro East/St. Louis), consisting of 12 counties or partial counties, that were designated as nonattainment areas for the 8-hour ozone standard. The designations were effective on June 15, 2004. The two areas in Illinois are classified as moderate nonattainment areas. 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 six years from the effective date of the nonattainment designations.

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, termed PM_{2.5}. USEPA has determined that, in addition to direct particulate matter, that NO_x, SO₂, VOCs, and ammonia are precursors to the formation of PM_{2.5}. States are required

to address NO_x, sulfur dioxide (“SO₂”), and direct emissions of PM_{2.5} in their attainment plans. 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. 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. States may be granted up to a 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.

Control of NO_x SIP Call engines, as well as other sources of NO_x, is an important and necessary part of Illinois’ attainment strategy for ozone and PM_{2.5}. The geographic region subject to “Subpart Q: Stationary Reciprocating Internal Combustion Engines and Turbines” is the entire State of Illinois. Emissions of NO_x from stationary internal combustion engines are not currently regulated in the State of Illinois. There are 28 existing engines that were identified by the NO_x SIP Call that will be subject to this rule. The estimated reduction of NO_x emissions from the 28 engines identified by the NO_x SIP Call is 5,422 tons per ozone season. The NO_x SIP Call does not require any emission reductions on an annual basis.

U.S. EPA has determined that affected engines can meet the requirements of the NO_x SIP Call through a combination of control techniques such that compliance is both technically feasible and economically reasonable. The Illinois EPA agrees with U.S. EPA’s finding that the control requirements of this proposal are technically feasible and economically reasonable.

The proposal being considered today is the result of an extensive stakeholder process. Throughout the development of the rule, the Illinois EPA has sought and received comments from interested parties. The 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. The Illinois EPA's proposal was amended several times in response to comments provided by stakeholders.

The Illinois EPA proposal includes separate concentration limits for rich-burn and lean-burn engines. The proposal also allows owners and operators the option to comply with an emissions averaging plan in lieu of meeting the specified concentration limit for each affected unit. Units located in Illinois that commenced operation before January 1, 2002, and are owned by the same company or parent company, can in most cases be included in an averaging plan. An averaging plan must insure that 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. The proposal contains specific formulas for making the calculations needed to demonstrate compliance. This option will allow owners to control units that are most cost effective to control, and reduce or avoid control costs for units that are more expensive to control.

According to the NO_x SIP Call, affected engines listed in Appendix G must comply by May 1, 2007. Since that date has already passed, the Illinois EPA is recommending that the compliance date in Section 217.392 be amended to January 1, 2008.

The Illinois EPA's proposal provides a flexible approach for meeting the requirements for testing and monitoring. In general, affected units must conduct a compliance test by the applicable compliance date. Affected units that operate intermittently do not need to be tested until after they have operated at least 876 hours in a year. Units that operate less than 876 hours

per calendar year can be tested at the owner's or operator's choosing any time within the first five years after the applicable compliance date.

Units listed in Appendix G and other units included in an emissions averaging plan must subsequently be tested once every five years. In years in which a compliance test is not performed, the proposal requires that an inexpensive portable NO_x monitor be used annually to verify continued compliance. For units that operate less than 876 hours per calendar year monitoring is required only once every five years.

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)	
)	
PROPOSED STATIONARY)	R07-18
RECIPROCATING INTERNAL)	(Rulemaking – Air)
COMBUSTION ENGINES AND)	
TURBINES: AMENDMENTS TO 35 ILL.)	
ADM. CODE SECTION 201.146,)	
AND PARTS 211 AND 217)	

TESTIMONY OF YOGINDER MAHAJAN

Good Morning. My name is Yoginder Mahajan. I am employed as an Environmental Protection Engineer in the Air Quality Planning Section in the Bureau of Air of the Illinois Environmental Protection Agency (Illinois EPA). I have been employed in this capacity since March 1992. Prior to my employment with the Illinois EPA I worked for various metal fabrication industries for nine (9) years. My educational background includes a Bachelor of Engineering Degree in Mechanical Engineering from Bhopal University at Bhopal, India.

As part of my regular duties in the Air Quality Planning Section, I have been involved with preparing emission estimates for various source categories used in the development of the 1990 ozone season weekday emissions inventories; evaluating control technologies applicable to volatile organic material (VOM) emissions sources utilized in the preparation of the Rate-of-Progress plans for the Chicago and St. Louis ozone nonattainment areas; and assisting in the development of regulations for the control of VOM emissions from source categories included in the Rate-of-Progress plans. Regarding the proposal before you today, I have been involved in the development of the regulations to control nitrogen oxides (NOx) from stationary reciprocating internal combustion engines (RICE). I provided the list of affected sources for the

proposal and technical feasibility of NO_x controls for the Technical Support Document (TSD) for the proposal.

Internal combustion engines are used throughout the United States to drive compressors, pumps, electric generators and other equipment. In Illinois, a prominent use of large engines is to drive natural gas pipeline compressors. Emissions of NO_x are the result of combustion of fuel at high temperatures and pressures in the RICE, which cause the nitrogen and oxygen in the air that sustains the combustion to unite and form the various oxides of nitrogen that constitute NO_x.

Today's proposal is to control NO_x emissions from sources that are impacted by the NO_x SIP Call Phase II. NO_x SIP Call requires NO_x emission controls on internal combustion engines that emitted one ton or more of NO_x in 1995 summer day. The required levels of NO_x emissions controls are 82 percent NO_x emissions reduction from natural gas-fired engines, and 90 percent NO_x emission reduction from all other (diesel and dual fuel) internal combustion engines.

As part of evaluation of controlling NO_x emissions from RICE, the Illinois EPA identified several sources of guidance. The United States Environmental Protection Agency (U.S. EPA) published an Alternative Control Techniques (ACT) document - NO_x Emissions from Stationary Reciprocating Internal Combustion engines. Also, U.S. EPA published Regulatory Impact Analysis for the NO_x SIP Call, and Stationary Reciprocating Internal Combustion Engines Technical Support documents for the NO_x SIP Call. Controlling Nitrogen Oxides Under the Clean Air Act: A Menu of Option document was published by State and Territorial Air Pollution Program Administrators/Association of Local Air Pollution Control Official. These documents contain detailed information on description of sources of NO_x emissions, various techniques of controlling NO_x and the costs of various controls. The Illinois

EPA relied upon the information contained in these documents for the costs and economic impacts for this proposal.

For RICE both combustion controls and post-combustion catalytic reduction have been developed. For reciprocating engines, air/fuel ratio adjustments, low emission combustion, and prestratified charge all function by modifying the combustion zone air/fuel ratio, thus influencing oxygen availability and peak flame temperature. Ignition timing retard lowers the peak flame temperature by delaying the onset of combustion. Selective catalytic reduction and non-selective catalytic reduction are the two post-combustion control strategies that destroy NO_x once it has been formed for reciprocating internal combustion engines. After reviewing the U.S. EPA's guidance documents, the Illinois EPA determined that there are cost effective NO_x control techniques available to reduce NO_x emissions from RICE.

The Illinois EPA identified 28 RICE impacted by the NO_x SIP Call Phase II that each emitted one ton or more of NO_x in 1995 summer day. The proposed regulations will reduce NO_x emissions by 5,422 tons per ozone season from 28 RICE in 2007 ozone control season and satisfy the U.S. EPA's NO_x SIP Call Phase II requirements for RICE. Attachment B to the TSD contains list of the sources and the associated NO_x emissions reductions from each of the impacted RICE.

The Illinois EPA relied upon the economic impact analysis of the NO_x SIP call performed by U.S. EPA. In regulatory impact analysis for the NO_x SIP Call, U.S. EPA determined that average cost of controlling NO_x emissions in an ozone season from RICE at 90 percent reduction, in the NO_x SIP Call region (including Illinois), would be \$1,215 (1990 dollars) per ton of NO_x reduces. TSD at 40 and 41. However, U.S. EPA issued updated results of cost and sensitivity analysis in the technical support document for the NO_x SIP Call. TSD Ref. 12 at 34. The Illinois EPA reviewed this information and determined that cost of controlling natural gas-fired

RICE impacted by the NOx SIP call in ozone season would be \$552 (1990 dollars) per ton of NOx reduced. The cost of controlling RICE annually will be even lower than controlling RICE in the ozone season only.

SERVICE LIST
R 07-18

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