



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

AUG 22 2002

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

MEMORANDUM

SUBJECT: State Implementation Plan (SIP) Call for Reducing Nitrogen Oxides (NO_x)--
Stationary Reciprocating Internal Combustion Engines

FROM: Lydia N. Wegman, Director *Lydia N. Wegman*
Air Quality Strategies and Standards Division

TO: Air Division Director
Regions I-V & VII

The purpose of this memorandum is to provide guidance to States that choose to adopt rules covering stationary reciprocating internal combustion engines (IC engines) as part of their response to the NO_x SIP call. Although the schedule for submittal of the SIPs addressing IC engines under the NO_x SIP call is the subject of on-going rulemaking, I am aware that several States are taking steps toward compliance with the requirements of the SIP call. This memorandum addresses questions on the IC engine source category that have been raised recently by several States as well as by the affected industry in various discussions and meetings. Specifically, EPA is providing guidance on the following issues related to IC engines: State flexibility, periodic monitoring, new source review, and early reductions. The EPA is also clarifying that the guidance in this memorandum reflects EPA's current views and supersede the views underlying the proposed requirements in the Federal implementation plan proposed October 21, 1998 regarding IC engines. This guidance is effective immediately.

State Flexibility

For purposes of complying with the NO_x SIP call, a State is free to choose whatever mix of controls will meet its budget and is free not to regulate IC engines at all. Where States choose to regulate large IC engines, EPA encourages the States to allow owners and operators of large IC engines the flexibility to achieve the NO_x tons/season reductions by selecting from among a variety of technologies or a combination of technologies applied to various sizes and types of IC engines. Flexibility would be helpful as companies take into account that individual engines or engine models may respond differently to control equipment. That is, while certain controls are known to have a specific average control effectiveness for an engine population, some individual engines that install the controls would be expected to be above and some below that average control level, simply because it is an average. Available technologies include combustion modifications, such as pre-combustion chambers or high energy ignition, and post-combustion controls, such as non-selective catalytic reduction.

During the SIP development process the States may establish a NO_x tons/season emissions decrease target for individual companies and then provide the companies with the opportunity to develop a plan that would achieve the needed emissions reductions. The companies may select from a variety of control measures to apply at their various emission units in the State or portion of the State affected under the NO_x SIP call. These control measures would be adopted as part of the SIP and must yield enforceable and demonstrable reductions equal to the NO_x tons/season reductions required by the State. What is important from EPA's perspective is that the State, through a SIP revision, demonstrate that all the control measures contained in the SIP are collectively adequate to provide for compliance with the State's NO_x budget during the 2007 ozone season.

Periodic Monitoring

The NO_x SIP call requires the State to provide for monitoring the status of compliance with any control measures adopted to meet the NO_x budget.¹ Title V air operating permit programs recognize SIP emissions limitations as applicable requirements that must be included in operating permits. Title V permit programs require SIP emissions limitations (and other applicable requirements) in permits to be accompanied by periodic monitoring sufficient to yield reliable data from the relevant time period that is representative of a source's compliance with the emissions limitation. In addition, the compliance assurance monitoring rule² may apply to these emissions limitations at certain emissions units at Title V major sources. Acceptable monitoring is not limited to those monitoring methods such as continuous or predictive emissions measurement systems that rely on automated data collection from instruments. Non-automated monitoring may provide a reasonable assurance of compliance for IC engines provided such periodic monitoring is sufficient to yield reliable data for the relevant time periods determined by the emission standard.

Using parametric data may be appropriate, as the source owners and operators in permitting authorities' jurisdiction might already be collecting data that could be used to indicate compliance as part of normal, ongoing operations. When using parametric data to satisfy the periodic monitoring requirement, Title V permits should specify an operating range for each parameter or combination of conditions which will provide a reasonable assurance that the source is in compliance with the underlying requirement. The proposed range should be supported by documentation indicating a site-specific developed relationship between parameter indicator ranges and compliance with the emission limit, although it is not required that the range be set such that an excursion from the range will prove noncompliance with the associated limit. Operational data collected during performance testing is a key element in establishing indicator

¹See 40 CFR section 51.121(i).

²See 40 CFR part 64.

ranges; however, other relevant information in establishing indicator ranges would be engineering assessments, historical data, and vendor data. The permit should also include some means of periodically verifying the continuing validity of the parameter ranges.

New Source Review (NSR)

Where sources choose to install combustion modification technology to reduce emissions of NO_x at natural gas-fired lean-burn IC engines, EPA believes this action should be considered by permitting authorities for exclusion from major NSR as a pollution control project (PCP). Combustion modification technology for these IC engines is similar to the "low-NO_x burner" technology already listed as a type of project that may be considered for exclusion from major NSR under EPA's PCP exclusion policy.³ Combustion modification technologies to reduce NO_x emissions at natural gas-fired lean-burn IC engines include, for example, pre-combustion chambers, low emission combustion, high pressure fuel injection, and high energy ignition. It should be noted that, as the air to fuel ratio increases to very lean conditions, carbon monoxide and hydrocarbon emissions may increase slightly as excess air cools combustion temperatures and inhibits complete combustion. Pursuant to EPA's policy, if the source is located in a nonattainment area, the State or the source must provide offsetting emissions reductions for any significant increase in a nonattainment pollutant from the PCP.

Unless information regarding a specific case indicates otherwise, installation of combustion modification technology for the purpose of reducing NO_x emissions at natural gas-fired lean-burn IC engines can be presumed, by its nature, to be environmentally beneficial. This presumption arises from EPA's experience that combustion modification technology is an effective pollution control technology when applied to new and modified natural gas-fired lean-burn IC engines. Therefore, under EPA's PCP exclusion policy, the combustion modification controls may be exempted from NSR provided that the safeguards and procedural steps contained in the exclusion policy memorandum are met.

Early Reductions by IC Engines

For large IC engines, development of the NO_x SIP call budget involved (1) obtaining a 1995 emissions inventory, (2) applying NO_x reasonably available control technology (RACT) controls to major sources in certain areas, including the Ozone Transport Region, (3) projecting emissions to 2007, (4) modifying that subinventory to represent an uncontrolled level of emissions, and (5) calculating a percentage reduction from the uncontrolled 2007 baseline to determine the NO_x tons reduction to include in the States' budget calculations. Because this methodology uses the uncontrolled value, any emission reduction from a large IC engine may be considered for credit toward meeting the NO_x SIP call requirements. Creditable reductions may

³Memorandum from John Seitz to EPA Regional Office Air Directors, "Pollution Control Projects and New Source Review (NSR) Applicability," July 1, 1994.

include emission controls in place during or prior to 1995 as well as after 1995 for the large engines. The applicable control requirements must be adopted as part of the SIP and must yield enforceable and demonstrable reductions.

For smaller IC engines, the first three steps above were completed as part of the NO_x SIP call budget calculation, but the subinventory was not modified to represent an uncontrolled level of emissions, and no percentage reduction was applied to the 2007 baseline in determining the States' budgets. Thus, the 2007 baseline for the smaller IC engines may include controls at IC engines, for example, that were subject to NO_x RACT. Such controls would not be creditable toward meeting the NO_x SIP call reductions because they are part of the 2007 baseline. Where the controls are not part of the 2007 baseline in the NO_x SIP call inventory⁴, States may use emission reductions achieved after 1995 at the smaller engines as part of their NO_x SIP call budget demonstration. The applicable control requirements must be adopted as part of the SIP and must yield enforceable and demonstrable reductions.

Federal Implementation Plan (FIP)

On October 21, 1998, EPA proposed FIP requirements for States that failed to meet the NO_x SIP call requirements published on October 27, 1998. In subsequent litigation, the issue of the level of control for IC engines was remanded to EPA. On February 22, 2002 EPA published a proposed rule regarding the NO_x SIP call and level of control for IC engines. The views in the February 22 proposal and in the guidance in this memorandum reflect EPA's current views regarding IC engines and supersede the views underlying the proposed requirements in the FIP with respect to IC engines. For example, although the FIP proposed selective catalytic reduction (SCR) for lean-burn engines, in the February 22 notice we propose there is currently an insufficient basis to identify SCR as a highly cost-effective control technology for lean-burn engines in variable load operations and we propose that low emission combustion technology is a highly cost-effective control technology for the lean-burn engines. As a result, EPA would need to repropose the FIP requirements for IC engines prior to issuing a final FIP concerning the IC engines. A FIP reproposal would need to be consistent with the final rule on the NO_x SIP call and control levels for IC engines.

⁴The 2007 baseline NO_x SIP Call emission inventory may be downloaded from the following site: ftp://ftp.epa.gov/EmisInventory/NOxSIPCall_Mar2_2000/

Please feel free to contact me or Doug Grano of my staff at (919) 541-3292 if you have any questions or wish to discuss any issues relating to this memorandum.

cc: Rob Brenner, OAR
Anna Wood, OPAR
Sarah Dunham, OAP
Kevin McLean, OGC
Richard Biondi, OECA
Tom Helms, OPSG

Original: 2302

Trostle, Sharon F. - DEP

From: Kevin Stewart [kstewart@alapa.org]
Sent: Friday, December 20, 2002 11:12 AM
To: regcomments@state.pa.us
Cc: Nathan Mains
Subject: Comments RE: 25 PA. CODE CHS. 121, 129 AND 145 per request at 32 PA. B. 5178



Ch 121 129 145 reg
comments 12...

Attachment Respectfully Submitted on the Subject:

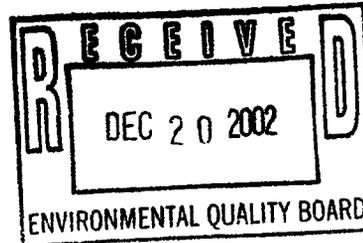
Small Sources of NOx, Cement Kilns and Large Internal Combustion Engines

32 PA. B. 5178
Environmental Quality Board
25 PA. CODE CHS. 121, 129 AND 145

Sincerely,

Kevin M. Stewart
Director of Environmental Health
American Lung Association of Pennsylvania
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Kevin M. Stewart
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December 20, 2002

Environmental Quality Board
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RECEIVED
2002 DEC 27 AM 10:12
DEPARTMENT OF ENVIRONMENTAL PROTECTION
AIR QUALITY CONTROL DIVISION

Comments on Proposed Rulemaking for 25 PA Code Chapters 121, 129, and 145
Small Sources of NO_x, Cement Kilns and Large Internal Combustion Engines
[32 Pa. B. 5178]

The mission of the American Lung Association of Pennsylvania (ALAPA) is the prevention of lung disease and the promotion of lung health. The adverse respiratory health effects of nitrogen oxide (NO_x), both in its own right as well as a precursor of ground level ozone and fine particulate matter, are significant and well-documented. Therefore, ALAPA espouses the adoption of policies that reduce or eliminate NO_x emissions to the greatest practicable degree. We are pleased to offer the following comments to the Environmental Quality Board (EQB).

Comments in Re: EQB's specific questions, asked upon the request of the Air Quality Technical Advisory Committee (AQTAC)

- 1) ALAPA's preference is that DEP not allow averaging of emissions among multiple boilers or among multiple emitting units of any kind. We believe that requirements that emissions from each source be controlled independently will create the greatest possible health benefits and will minimize injustices.

If however, despite this recommendation, the decision is made to allow averaging, then we strongly advise that this program not be unfettered: In an averaging scenario, in addition to meeting the emissions standard in the average, each separate source should be required to meet emission rates no worse than a certain maximum (*x*%) above the standard for the aggregate. Of course, ALAPA advocates that the value of "*x*" in this case be as small as possible. Absent this safeguard, the more units combined in a single averaging plan, the greater the likelihood that some particularly egregious emitters will be allowed to continue to operate in that manner, with concomitant localized adverse health effects inconsistent with principles of environmental justice.

- 2) ALAPA suggests that EQB evaluates with care any assessments it may receive concerning technical feasibility and implementation costs. History shows that sources frequently overstate anticipated technical difficulties and costs prior to implementation, yet when implementation is finally carried out, affected sources usually identify and use much more easily applied and much less expensive solutions.
- 3) The requirements sought for the five-county Philadelphia area under Chapter 129 are reasonable requirements to control NO_x air pollution. ALAPA believes that they should apply across the Commonwealth and for the entire year, not just the May 1 – September 30 ozone season.
 - a. Statewide application recognizes that NO_x is subject to transport processes acting over hundreds of miles. Indeed, such steps should be applied over a significant extent of the multi-state Ozone Transport Region (OTR), rather than piecemeal as if the effects of NO_x air pollution were just localized phenomena.
 - b. Year-round application recognizes that NO_x is a significant contributor to many air quality problems – fine particulates, acid deposition, and visibility impairment – other than seasonal ozone.
 - c. Finally, these requirements should be applied in a much broader scale simply because they are feasible and the benefits accruing to society outweigh the costs of implementing them.

Comments on the Proposed Regulation itself

- 1) Concerning language appearing in 129.201 (a)(1)(i) and (ii); 129.202 (a)(1)(i)(A) and (B) and (ii)(A) and (B); 129.203 (b)(1) and (2); and 145.113 (1) and (2): The proposed regulation allows the use of an “alternate emission rate approved by the Department that achieves a NO_x emission reduction of 60% from the actual 1990 NO_x emission rate.” Under this scenario, the potential that many sources will fail to meet the applicability criterion is high. The potential that similar sources with currently similar NO_x emission characteristics may be required to take quite different control measures is also high.

ALAPA supports the use of the most recent reliable data (certified by the United States Environmental Protection Agency) for the establishment of air pollution emissions benchmarks. In this case, such data are available for the years 1998-2000. In terms of advancements in air pollution control technology and in terms of physical plant aging, this is a significantly different regime than that in which data were collected twelve years ago.

The most appropriate basis from which to move forward is one that looks closely at what sources are emitting *now* and at what technologies are being employed *now* to control those emissions. Just as current egregious emitters should be required to clean up more than the average emitter, so also should those that have a history of taking proactive steps not be penalized for having done so. The most rational system that can best follow these two principles is one that is based on data that most closely reflects current realities.
- 2) Concerning language appearing in 129.201 (b); 129.202 (c); 129.203 (c); and 145.114 (b): ALAPA has addressed the issue of averaging on page 1 of these comments.

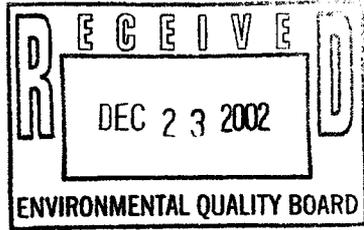
- 3) Concerning language appearing in 145.111 (a), (b), (c), and (d): The criterion that internal combustion engines (ICE) emitting "greater than or equal to 153 tons of NO_x" over the ozone season be used as a determinant of applicability is much too lenient considering the magnitude of the problem we are facing. Such use of what is equivalent to an allowable emission rate of *one ton per day per engine* would result in the unwarranted exemption of significant sources of NO_x. A review of these ICE NO_x sources, their relative contributions to the NO_x inventory, and the prospects for implementing cost-effective control technology would appear to be in order. Based on this analysis, a rational determination and justification of a lower emissions threshold under this paragraph could be advanced.

Additional Comments

- 1) All relevant "alternate procedures," in addition to being approved by the Department in writing, must be completely transparent to the public. All records must be accessible and NO_x reductions claimed must be measurable, verifiable, permanent and enforceable.
- 2) Units claimed as designated for emergency use, and hence exempt, must be verified to be such. Penalties must be assessed on sources that use emergency units for anything other than that purpose, and must be certain and of sufficient weight to be of deterrent effect.
- 3) The distinction between "stationary" and "mobile" units can be a false one, as when the so-called "mobile" units fulfill functions that stationary units could, and produce emissions on a scale approaching or comparable to that of truly stationary units.

To control air pollution, the key must be to focus on the air pollution first, its amount, frequency, and effect on the population. If the source is significant in this respect, effective controls should be applied independent of its designation as "stationary" or "mobile."

#



Original: 2302

PPL Corporation
Two North Ninth Street
Allentown, PA 18101-1179
December 19, 2002

Environmental Quality Board
P.O. Box 8477
Harrisburg, PA 17105-8477

Gentlemen:

Enclosed are comments by PPL Corporation on the proposed rulemaking to 25 PA. Code Chapters 121, 129, and 145, applicable to Small Sources of NOx, Cement Kilns and Large Internal Combustion Sources. The notice soliciting comments on this proposed rulemaking was published in the Pennsylvania Bulletin, Vol. 32, No. 42, October 19, 2002.

If you have any questions on these comments, my phone number is 610-774-5029.

Sincerely,

Thomas G. Keller
Senior Environmental Engineer

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PA DEPARTMENT OF ENVIRONMENTAL PROTECTION

2

PPL Corporation

Comments on Proposed Revisions to 25 PA Code Chapters 121, 129, 145

The proposed changes to Chapter 129 are intended to satisfy Pennsylvania's obligation to provide additional emission reductions to demonstrate compliance with the one hour ozone standard in the Philadelphia nonattainment area. This obligation was based on an analysis by EPA of what emission reductions beyond those already planned are needed for attainment in the Philadelphia area. For Pennsylvania, that analysis was limited to emission reductions in the five county Philadelphia nonattainment area. Extending emission reductions beyond those required for attainment would be inconsistent with the Pennsylvania Air Pollution Control Act, which prohibits the Commonwealth from imposing standards more stringent than federal requirements.

Apart from the prohibitions of the Pennsylvania Air Pollution Control Act, requiring NO_x emission reductions from small sources throughout the state would produce little if any benefit in the nonattainment areas because the emission reduction are small, and their effect diminishes as distance from the nonattainment area increases. Imposing such emission reductions would produce little, if any, measurable benefit.

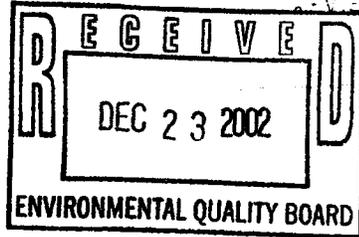
Also, NO_x emission reductions outside the May to September ozone season produce no benefit because by definition ozone standard exceedances do not occur outside the ozone season. Thus, mandating reductions outside the ozone season would also be inconsistent with the Pennsylvania Air Pollution Control Act by imposing standards more restrictive than federally required.

Changes to Chapter 129 should be made as flexible as possible to provide for minimizing the costs incurred to comply. Thus, the regulation should allow small boilers, small combustion turbines and small reciprocating engines to comply by averaging their emissions with other small sources within the nonattainment area. However, the regulations should not allow the sources to comply by purchasing and retiring contemporaneous emission allowances from sources within the five county area because there is nothing that would prevent the source selling the allowances from replacing its emission allowances by purchasing allowances from a source located outside the five county area. Such a sequence of events could lead to a net increase of emissions in the severe nonattainment area, which could increase ozone levels.

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LEHIGH
HEIDELBERGCEMENT Group



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December 19, 2002

Environmental Quality Board
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Harrisburg, Pennsylvania 17105-8477

Original: 2302

**Subject: Title 25, Part I, Subpart C, Article III, Chapter 145, Subchapter C
(Proposed October 18, 2002)**

To Whom It May Concern:

Please accept this submittal as comments from Lehigh Cement Company (Lehigh) regarding the subject proposed regulations. Lehigh operates two (2) cement manufacturing facilities in Pennsylvania: one in Blandon and the other in York. The purpose of the proposed regulations is to reduce emissions of nitrogen oxide (NO_x), a precursor to ozone, so as to reduce levels of ground-level ozone. These measures are part of a specific action plan of the Commonwealth and are stated as being necessary to achieve and maintain the National Ambient Air Quality Standard (NAAQS) for ozone, both within the Commonwealth and regionally.

Lehigh welcomes and appreciates the opportunity to provide comment on the proposed requirements. We offer comments on the following issues:

- 1.) Change and include definitions under §145.141
- 2.) Greater flexibility in implementation of alternative control options addressed under proposed §145.143(3) that is consistent with Federal EPA guidance provided in the NO_x Federal Implementation Plan (FIP)
- 3.) The industry-wide requirement for continuous emissions monitoring
- 4.) Implementation of the proposed requirements during the ozone season
- 5.) Exemptions should be included in the proposed rulemaking.

1.) Change and include definitions under §145.141

Change definitions of the following:

Low NO_x burner - A type of cement kiln burner (a device that functions as an injector of fuel and combustion air into the kiln to produce a flame that burns as close as possible to the center line of the kiln) that has a series of channels or orifices that (1) allow for the adjustment of the volume, velocity, pressure, and direction of the air carrying the fuel (known as primary air) and the combustion air (known as secondary air) into the kiln, and (2) impart high momentum and turbulence to the fuel stream to facilitate mixing of the fuel and secondary air.

Include definitions for the following:

Malfunction – any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operations are not malfunctions.

Shutdown – the cessation of operation (no feed to the kiln) of a portland cement kiln for any purpose.

Startup – the setting in operation (feed to the kiln) of a portland cement kiln for any purpose.

2.) The operating requirements for Cement Manufacturing should also consider emission limits deemed appropriate under the NO_x FIP

As currently proposed the operating requirements at §145.143 call for either the installation and operation of prescribed NO_x control technology, or the implementation of an alternate technology that achieves a 30% reduction from the actual 1990 baseline. These options are too limiting and to some extent are inconsistent with the EPA's 1998 NO_x SIP Call.

The EPA NO_x SIP call is based on an expectation that cement kilns will reduce NO_x emissions, on average, by 30% from a 1990 uncontrolled baseline. The NO_x budget allotted to the Commonwealth under the SIP Call is based on that approach. The DEP requirement at §145.143(3) expects alternate controls to achieve a 30% reduction from the actual baseline. We believe this to be inconsistent with the SIP Call, and that the requirement for alternate controls should be assessed from uncontrolled 1990 emission levels.

Furthermore, the requirement for alternate controls is too limiting. EPA has developed a FIP that may be used as guidance by state agencies in preparing responses to the 1998 SIP Call. In addressing alternate controls for cement kilns, the FIP describes implementation of process-specific emission factors that, if achieved, would result in an industry average 30% reduction of NO_x emissions. We agree with the Department that it is appropriate to allow a facility the option of demonstrating that the proposed control will meet the EPA's expectation of a 30% decrease in emissions. However, we also believe that the alternate control option should allow for implementation of the FIP emission factors. In incorporating these into the FIP, EPA is stating that achieving these limits with alternate controls would be sufficient for cement kilns in making

necessary progress towards attainment of the ozone NAAQS. It would be appropriate for the Department to allow a facility to show that it either achieves at least a 30% decrease of emission, or achieves the expected emission factor.

3.) Continuous emissions monitoring is not necessary for the entire industry.

The proposed Subchapter C rules impose an obligation on the owner/operator of a cement kiln to install and operate a NO_x continuous emission monitoring system ("CEMS") to demonstrate the continual effectiveness of the control measure selected under 25 Pa. Code 145.143. *See* 25 Pa. Code 145.144(b). Lehigh believes the NO_x CEMS requirement is unnecessarily and impermissibly included in Subchapter C.

First, Lehigh notes that the express reason for installing and operating the CEMS is to "demonstrate the continual effectiveness of the compliance option selected under 145.143." The compliance options listed in 145.143 include the installation and operation of: (1) low NO_x burners, (2) mid-kiln firing, or (3) an alternative control approved by DEP. None of these compliance options impose any numerical emission limits or NO_x budgets. Accordingly, installation and operation of a CEMS is meaningless in terms of producing any data that would demonstrate the continual effectiveness of the selected control measure. Lehigh notes that several other states that have adopted the control measure approach to regulating NO_x emissions from cement kilns (*e.g.*, low NO_x burners or mid-kiln firing) do not require CEMS. *See, e.g.*, Indiana (326 IAC 10-3-4(a)(requiring operation and maintenance in accordance with a preventative maintenance plan)); Illinois (35 Ill. Admin. Code 217.406(b)(4)(operate according to plan that includes parametric monitoring indicated in the manufacturer's specifications)); Michigan (Mich. Admin. R. 336.1801(8)(stack testing no more frequently than on an annual basis or CEMS)); West Virginia (WV CSR 45-1-100.6 (requiring annual stack testing)).

Second, the Federal Implementation Plan ("FIP") does not require CEMS but provides for annual stack testing. *See* proposed 40 C.F.R. 98.44(b) (63 Fed. Reg. 56,427 (October 21, 1998)). Accordingly, the EQB's proposal to require CEMS is not in accordance with the suggested approach advocated by the EPA as part of the federal rulemaking. Approval of the Pennsylvania rules as part of the state implementation plan should be considerably easier if Pennsylvania follows the proposed FIP.

Finally, the imposition of the CEMS requirement is impermissibly more stringent than required under federal law. Section 4004.2(b) of the Pennsylvania Air Pollution Control Act restricts the EQB's authority to promulgate rules such that Pennsylvania rules cannot be more stringent than required under the federal Clean Air Act. This restriction on the EQB's rulemaking authority does not apply if the EQB determines that the more stringent state rule is reasonably necessary in order for the Commonwealth to: (1) achieve or maintain compliance with a NAAQS; (2) satisfy Clean Air Act requirements as they specifically relate to the Commonwealth; (3) prevent an imposition of sanctions; or (4) comply with a final decree of a Federal court. Lehigh does not believe that the CEMS requirement fits within this limited exception to the Legislature's stated restriction that

Pennsylvania rules be no more stringent than federally required. Certainly, Lehigh has not been provided with any rationale as to why the CEMS requirement fits within this exception. Lehigh asks the EQB to seriously consider whether this exemption applies in light of the facts that EPA's own proposed rulemaking does not require CEMS nor do several other state rules that have been developed under the same federal mandate. Lehigh suggests that the EQB promulgate a final rulemaking that allows CEMS but does not require them.

4.) The requirements of proposed §145.143 should not apply outside the "Ozone Season".

The EQB has requested comment on three specific areas, one of which is whether the proposed requirements should apply for the entire year. Lehigh believes that it is inappropriate to impose the proposed requirements year-round, for at least two reasons.

First, as stated in the Background and Purpose of the proposed rule, the purpose of the rulemaking is to ultimately reduce ground-level ozone such that attainment of the ozone NAAQS can be achieved within the Commonwealth and in the regional "downwind" areas. The non-attainment issue at hand has been proven to only be a concern annually in the period May 1 through September 30. Implementation of the proposed regulations during that period may provide some contribution to achieving the stated purpose. Continuing to impose the requirements beyond that annual period would neither serve the stated purpose, nor serve to address any other known air quality non-attainment issue. Therefore, year-round imposition of the proposed requirements is unnecessary.

Second, as stated above, according to the Pennsylvania Air Pollution Control Act, the Department cannot promulgate rules that are more stringent than what may be required under the federal Clean Air Act. In the absence of any existing and proven air quality concern covered by the Clean Air Act, imposition of the proposed requirements year-round would be contrary to the Air Pollution Control Act.

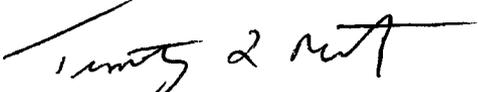
5.) Exemptions have not been included in the proposed rulemaking. The following exemptions should be incorporated into the proposed rulemaking.

1. There should be exemptions stating the requirements shall not apply to the following periods of operation:
 - a. Startup and shutdown periods and periods of malfunction;
 - b. Regularly scheduled maintenance activities.
2. There should be an expenditure limitation. Based on a case-by-case basis, sources should not be required to expend a certain dollar amount per ton of NO_x emissions reduced. For example, the expenditure limitation could be set in accordance with the EPA Alternative Control Techniques (ACT) document (EPA-453/R-94-004). When the incremental cost for reducing emissions at a given source exceeds the determined level, the source will be treated as having complied with this rule.

3. An additional exemption should be proposed for cement plants undergoing New Source Review (NSR). An existing affected unit at a portland cement plant is exempt from NO_x emissions reductions provided that:
 - a. A permit for a new kiln had been issued by the Department prior to May of the designated year, as specified in §117.524 of this title (Compliance Schedule for Cement Kilns), that would replace an existing kiln system; and
 - b. The new kiln system would be installed using best available control technology (BACT) for NO_x emissions; and
 - c. The new kiln system would become fully operation within three years of May of the designated year, as specified in §117.524 of this title (Compliance Schedule for Cement Kilns); and
 - d. Old affected kiln systems are shutdown after startup of the new kiln system.

Lehigh appreciates the opportunity to provide comment on the proposed regulations. If there are any questions, please direct them to me at the above address.

Sincerely,



Timothy L. Matz
Manager Environmental

cc: Roger Cotterill – Evansville Plant
Walter Conner – Evansville Plant
Clarence Meadows – York Plant
Tom Powers – York Plant

Original 2302

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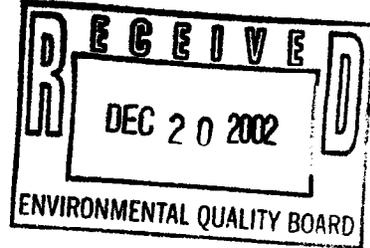
www.exeloncorp.com

Generation

2002 DEC 27 AM 11
REVIEW COMMISSION

December 18, 2002

Environmental Quality Board (EQB)
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Re: Proposed Rulemaking "Small Sources of NOx, Cement Kilns and Large Internal Combustion Engines [32 Pa.B. 5178]"

Exelon Background

Exelon Generation (ExGen) appreciates the opportunity to comment on the above referenced proposed rulemaking. By way of background, ExGen is a subsidiary of Exelon Corporation, which resulted from the year 2000 merger of Philadelphia-based PECO Energy Company and Commonwealth Edison of Chicago. ExGen operates in excess of 23,000 megawatts of capacity in the states of Pennsylvania, Illinois, Texas and Massachusetts.

Response to EQB Questions

"Compliance Flexibility"

The EQB has appropriately requested comment regarding compliance flexibility for sources affected by the proposed regulation. Based upon a review of potentially affected ExGen sources and their operating characteristics, we believe that cost effective options are limited to nonexistent for most of ExGen's small sources of nitrogen oxides (NOx). Therefore, we are very concerned that reasonable compliance flexibility is provided for in the final rule.

ExGen operates approximately 23 small combustion turbines (CTs) in southeastern Pennsylvania that fit the applicability definition in proposed Chapter 129.202. These small CT's have summer ratings that range between 13 and 17 megawatts. All have annual capacity factor permit limits of 5 percent and the units typically operate well under their capacity factor limits. The following table provides a list of ExGen's potentially affected CTs in southeastern Pennsylvania and their actual ozone season NOx emissions during each of the ozone seasons between 2000 and 2002.

As can be seen in the table, total NOx emissions from ExGen's 23 small CTs have ranged from a total of 45 tons to 82 tons per ozone season over the last three years. NOx emission rates at these simple cycle CTs are in the range of 0.63 lb/MMBtu to 0.66 lb/MMBtu versus the 0.291 lb/MMBtu emission rate proposed in Chapter 129.202 for oil-fired units. The proposed emission rate is roughly 55% below current emission rates. If the proposed rate had been applied over the last three years of operations, a ballpark estimate is that it would have reduced year 2000 NOx emissions by roughly 25 tons, and year 2002 NOx emissions by roughly 45 tons.

**ExGen's Small Combustion Turbine Emissions
Ozone Season (May 1 to September 30) NOx Tons**

	2000 (Tons)	2001 (Tons)	2002 (Tons)
Falls			
1	2.9	7.5	11.4
2	2.7	7.1	9.0
3	2.6	6.8	10.0
Moser			
1	2.7	6.2	13.9
2	2.6	4.6	14.9
3	2.4	4.7	1.9
Chester			
7	2.2	3.5	1.3
8	2.0	3.9	1.3
9	2.5	4.1	1.9
Eddystone			
10	0.1	1.9	1.0
20	2.2	1.9	1.0
30	2.6	3.2	1.0
40	2.6	1.4	0.8
Southwark			
3	1.9	0.8	0.7
4	2.0	1.9	1.0
5	1.9	1.9	0.9
6	2.1	1.5	2.3
Schuylkill			
10	2.3	2.9	1.3
11	2.6	3.7	2.0
Delaware			
9	0.8	3.2	1.6
10	0.7	0.2	0.9
11	0.6	0.3	0.5
12	0.6	0.3	0.9
Total (23 CTs)	45.6	73.5	81.5

ExGen's small CTs entered commercial operation in the late 1960s and early 1970s. Unit operating and maintenance costs are very high. As can be inferred from the data in the above table, it is ExGen's operating practice to operate these units for as few hours as possible, and to spread operating hours relatively evenly amongst all units, to minimize unit maintenance costs. On this basis, and given the very limited number of hours during which these units operate, we do not believe that cost-effective NOx controls are feasible at these units. We support the ability to average as outlined in the proposed regulation and believe that it may be useful for some affected units. However, the averaging provisions would not be helpful in the case of ExGen's small CTs as current operating practices (as previously discussed) dictate that operating hours are spread relatively evenly amongst all units and unit/portfolio capacity factors are already permit restricted to 5% or less. Even during 2002, with the hottest summer in recent years, only 5 of ExGen's 23 CT's have exceeded a 1% capacity factor year to date through December 2002. In addition, the 5 small CTs that have operated above a 1% capacity factor have operated in a range of 1% to 2.5% capacity factor.

We suggest that the EQB and Pennsylvania DEP consider the following compliance flexibility options for sources affected by Chapter 129.201-203 (boilers, CTs, IC engines).

1. **De minimus exemption.** Units willing to take a an enforceable permit limit (e.g. 5%) would be provided with an exemption from the program;
2. **Cost effectiveness exemption.** At their discretion, units could have the option to submit a demonstration to the Department that no cost effective control options exist (e.g. no options below \$3,000 per ton) and upon showing would be provided with an exemption from the program;
3. **NOx allowance purchase.** Regardless of the Department adopting de minimus or cost effectiveness exemption criteria, the Department should allow sources to demonstrate compliance via the purchase of NOx allowances via the Chapter 145 NOx program (including from sources in other states operating under the regional Section 126/NOx SIP Call programs). To put this in some perspective, 100% of Exelon's 2002 small CT emissions represent 0.02% of the PA Chapter 145 NOx program EGU budget (47,224 tons). Limiting the availability of NOx allowances for compliance under Chapter 129 to those allocated to sources in the five county area is inconsistent with the regional nature of NOx emissions, ground-level ozone formation and the emission budget and market based trading concepts embodied in the Chapter 145 and other regional state "NOx SIP Call/Section 126" rules.

"Geographic Applicability"

While annual standards may be required in the future to address the 8-hour ozone standard, ExGen does not believe that adoption of an annual standard for Chapter 129 sources is warranted at this point in time. Such a finding should be made as part of Pennsylvania's overall SIP planning process to address the 8-hour ozone standard in the future once area designations have been made.

However, as Pennsylvania is currently a deregulated state with regard to electric power generation, ExGen believes that the Chapter 129.203 requirements (pertaining to CTs) should be applied throughout Pennsylvania during the ozone season. This is important for both competitive and environmental reasons. On the competitive front, southeastern Pennsylvania represents only a small fraction of the Commonwealth's geography. In excess of 95% of the Commonwealth's NOx emissions from power generation is produced outside of southeastern Pennsylvania. Unless a level regulatory playing field is maintained, emissions from peakers in southeastern Pennsylvania may simply shift to upwind sources in adjacent counties with no net environmental benefit to southeastern Pennsylvania as NOx emissions will still transport into the nonattainment area.

Other ExGen Comments

“Emergency stationary internal combustion engines”

While we believe that emergency diesel generators (EDGs) serving nuclear power plants are intended to be exempt under the Chapter 121.1 Definitions section, we believe that an explicit exemption should be provided for in the definition of “emergency stationary internal combustion engine”. Possible language is as follows:

Emergency stationary internal combustion engine –

(i) A stationary internal combustion engine that operates as a mechanical or electrical power source only when the primary power source for a facility has been rendered inoperable by events beyond the control of the owner or operator.

(ii) A stationary internal combustion engine located at a nuclear power plant that operates pursuant to Nuclear Regulatory Commission (NRC) requirements.

(iii) A stationary reciprocating engine that provides power during instances of voltage reduction or curtailment from the electric grid is not an emergency stationary internal combustion engine.

This exemption is justified due to the unique operating circumstances and requirements of EDGs located at nuclear power plants. For example, the Nuclear Regulatory Commission (NRC) prohibits the use of nuclear EDGs to supply peaking power to the grid since this would represent a loss of required safety redundancy (see NRC Standard Review Plan (SRP) 8.1, Branch Technical Position ICSB - 8 (PSB) “Use of Diesel Generator Sets for Peaking”, in the context of an interpretation of General Design Criteria 17 of 10 CFR Part 50, Appendix A). Therefore, nuclear EDGs do not respond to peak distribution system demand for electric power.

NOx emissions will only result at a nuclear EDG due to periodic testing that must be scheduled well in advance in consideration of expected future nuclear plant status and NRC requirements. Under federal licensing requirements, nuclear EDGs must be tested on a monthly basis (generally for 1 to 2 hours) to ensure their availability.

Further, they are subject to an annual endurance test of up to twenty-four hours and may also be tested during periodic nuclear plant maintenance outages and after any major overhaul work as per NRC requirements. During a typical year, each EDG will operate between 75-100 hours.

ExGen's Limerick Generating Station, located in Montgomery County, utilizes eight emergency diesel generators rated at just under three megawatts each. During the 2000 ozone season (May-September), periodic testing of the eight Limerick EDGs resulted in emissions of 9.5 tons of NOx. Under Limerick's Title V permit, the Limerick EDGs are currently limited to a 5% annual capacity factor. Monthly federal license testing requirements have the effect of fairly evenly spreading out emissions over the 12 months of the year.

Any combustion control modifications or post-combustion control requirements have a high probability of conflicting with existing NRC performance and safety requirements. Further, at roughly one ton of NOx per EDG per ozone season, cost effective combustion or post-combustion modifications would be extremely cost-ineffective, particularly since any modifications must comply with NRC equipment testing requirements (see 10 CFR 50, Appendix B) which effectively can double or triple costs versus those at a non-nuclear applications.

As an aside, it should also be noted that over the course of an ozone season, a single nuclear generating unit typically provides over 1,000 megawatts of zero-emission, baseload generation to the grid which avoids thousands of tons of NOx versus a coal-fired plant. In this sense, a categorical exemption for nuclear EDGs is further warranted.

Nuclear plant EDGs have also historically been exempted from the EPA's emission regulations in recognition of the need for rapid EDG response at nuclear power plants. The following is quoted from the Federal Register notice for implementing 40 CFR Part 60:

Emergency standby engines also require special consideration. These engines operate less than 200 hours per year under all but very unusual circumstances. Consequently, they add relatively little to regional or national total NOx emissions. The largest category of emergency standby units is for nuclear power plants, where these engines provide power for the pumps used for cooling the reactors. These engines must attain a set speed in ten seconds and must assume full rated load in 30 seconds. In some cases, application of the demonstrated NOx control technique limits the responsiveness of these engines in emergency situations. Therefore, all emergency standby engines are exempted from standards of performance. [FR Vol. 44, No. 142, Page 43156, July 23, 1979].

Three of ExGen's fossil generating facilities are also equipped with small emergency diesel generators. These generators typically run only in emergencies and for testing once per month. During the last three years, 1999, 2000 and 2001, these units have

operated an average of 10.84 hours, 6.46 hours and 29.18 hours respectively. Given the role and operating history of these units, ExGen believes that it is appropriate to exempt these units from the proposed rule and that it is not cost effective to retrofit these units to reduce NOx emissions.

“Small Boilers”

ExGen operates three natural gas-fired auxiliary boilers at its Eddystone Generating Station with nameplate rated capacity of greater than 100 million Btu/hour but less than or equal to 250 million Btu/hour. No. 2 fuel oil is the back-up fuel for these boilers. NOx emission rates average 0.12 lb/mmBtu when firing natural gas and 0.28 lb/mmBtu when firing No. 2 fuel oil. During a typical ozone season, each of these boilers will emit between 10 and 15 tons of NOx and operate strictly on natural gas. A 17 % reduction in emissions when firing natural gas from 0.12 lb/mmBtu to 0.10 lb/mmBtu, as suggested in the proposed rule, would result in a 1.7 to 2.55 ton reduction in emissions from each of the three boilers during the ozone season or a total of 5.1 to 7.65 tons per season. ExGen does not believe that it is cost effective to retrofit these boilers to reduce NOx emissions from each boiler by 1.7 to 2.55 tons per season. Over the 153 days of the ozone season, this amounts to an average reduction of 0.02 tons per day or less from each of the three boilers. ExGen requests that these types of small source retrofits be subject to a cost effectiveness threshold of \$3,000 per ton of NOx removed.

Conclusion

We appreciate the opportunity to provide comments to the EQB on this proposed regulation. We would also like to thank Pennsylvania DEP for their role and continued support of NOx reduction programs that include states to the south and west that contribute significantly to the Commonwealth's nonattainment problems. These programs will help to reduce one-hour and eight-hour ozone nonattainment in Pennsylvania and throughout the Ozone Transport Region.

Please feel free to contact me at (610) 765-5885 if you would like any additional information regarding the points raised in these comments.

Sincerely,



Thomas A. Sylvester
Senior Engineer
Environment, Health and Safety

Original: 2302

Trostle, Sharon F. - DEP

From: Suchecki, Joe [jsuchecki@enginemanufacturers.org]
Sent: Thursday, December 19, 2002 5:43 PM
To: 'regcomments@state.pa.us'
Subject: COMMENTS ON PROPOSED RULEMAKING- SMALL NOX SOURCES, CEMENT KILNS, AND
LARGE INTERNAL COMBUSTION ENGINES

TO: Pennsylvania Air Quality Board

FROM: Engine Manufacturers Association

DATE: December 19, 2002

RE: COMMENTS ON PROPOSED RULEMAKING FOR SMALL NOX SOURCES,
CEMENT KILNS, AND LARGE INTERNAL COMBUSTION ENGINES

The Engine Manufacturers Association (EMA) submits the attached comments on the above mentioned rulemaking in response to the public comment notice published in the PA Bulletin, Doc No 02-1824. The EMA comments are in the attached document in Microsoft Word format.

Please contact me at the address below if you have any questions. <<PA Comments 1213.doc>>

Joe Suchecki
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All attachments are MS Office 2000/97 and are MIME encoded. If you have any software compatibility issues, please contact EMA at (312) 827-8700 immediately.



12/20/2002

**Commonwealth of Pennsylvania
Air Quality Board**

**Small Sources of NO_x, Cement Kilns)
And Large Internal Combustion Engines)**

25 PA CODE 121, 129 and 145

**COMMENTS OF THE
ENGINE MANUFACTURERS ASSOCIATION
REGARDING THE PROPOSED RULEMAKING
AFFECTING SMALL SOURCES OF NO_x, CEMENT KILNS,
AND LARGE INTERNAL COMBUSTION ENGINES**

December 19, 2002

**Joseph L. Suchecki
Engine Manufacturers Association
Two North LaSalle Street
Suite 2200
Chicago, Illinois 60602**

Introduction

The Engine Manufacturers Association (EMA) is the national trade association representing manufacturers of internal combustion engines, including those used in applications such as trucks and buses, construction and agricultural equipment, locomotives, marine vessels, lawn and garden equipment and stationary sources. More specifically, EMA members manufacture the gaseous-fueled spark ignited and compression ignition engines that are the subject of the proposed rulemaking and proposed NO_x reduction requirements.

EMA submits the following comments in response to the notice of proposed rulemaking published in the October 24, 2002, issue of The Pennsylvania Bulletin. The proposed rule establishes standards and monitoring requirements for large internal combustion engines to reduce NO_x emissions levels during the ozone season in select areas of Pennsylvania. Although the proposed rulemaking also addresses NO_x emissions from boilers, combustion turbines, and cement kilns, EMA's comments are limited to stationary internal combustion engines.

Internal combustion engines play a key role in meeting the energy needs of businesses and government, including emergency back-up power, powering remote or isolated equipment, and supplying consumers a local option to generate reliable and efficient electricity through Distributed Energy and Combined Heat and Power applications. Increasingly, gaseous-fueled engines are being utilized to provide highly efficient and clean sources of electricity to meet Pennsylvania's growing demand for reliable power. Considering that Pennsylvania's citizens and economy derive large benefits from the use of stationary engines, it is critical that the Pennsylvania Air Quality Board establish reasonable and achievable emissions controls on stationary internal combustion engines that allow their continued and expanded use in the State.

Significantly, manufacturers have improved engine efficiency and environmental performance over the last decade so that stationary engines emit considerably lower levels of criteria pollutants, including NO_x, compared to similar engines of just a few years ago. For example, engine-out emissions for gaseous-fueled spark ignited engines have been reduced from highs of 15 grams/bhp-hr to about 1.5-2.0 grams/bhp-hr today. Adding costly but effective aftertreatment devices can decrease NO_x emissions even further. Current research under the U. S. Department of Energy's Advanced Reciprocating Engine Systems (ARES) program seeks to improve the efficiency and emissions profile of gaseous-fueled engines even further. ARES has established "stretch goals" to achieve a 50 percent efficiency and NO_x emissions levels of 0.10 g/bhp-hr by 2010 for advanced gaseous-fueled engines.

The following comments address a number of specific issues relating to the proposed rule in addition to the three specific requests from the Air Quality Technical Advisory Committee.

Specific Comments

The overall structure and logic of the proposed emissions standards need to be reviewed and possibly changed to more cost-effectively achieve needed NOx reductions.

The proposed rule is structured to apply to certain stationary sources of NOx emissions in non-attainment areas surrounding Philadelphia (Section 129) and to very large stationary sources statewide to reduce interstate NOx transport (Section 145). Although there may be some statutory or programmatic reasons for structuring the rule and emissions standards as proposed, EMA believes that the structure of the proposed rule can be improved.

First, the proposed rule establishes separate and overlapping requirements for stationary engines with horsepower ratings above 2400 hp in the four county nonattainment area. Section 129 establishes specific emissions standards for engines greater than 1000 hp, and Section 145 establishes NOx reduction requirements for engines over 2400 hp. Therefore, there are two applicable regulatory requirements for engines greater than 2400 hp in nonattainment areas. As indicated in our following comments, this needs to be changed to prevent overlapping and conflicting regulatory requirements.

Second, EMA believes that Pennsylvania should consistently establish more stringent NOx emissions limits in nonattainment areas as compared to the rest of the State. Greater NOx emissions reductions are needed in nonattainment areas in order to reduce local ambient levels of NOx and, consequently, ozone formation. However, applying those same very stringent control levels to facilities outside of the nonattainment area will be less cost effective and will place an unnecessary regulatory and financial burden on the regulated community. The rule as proposed does not follow this logic since larger sources regulated statewide under Section 145 appear to have more stringent NOx reduction standards than sources in the State's specific non-attainment areas.

In light of these contradictory features of the proposed rulemaking, EMA recommends that Pennsylvania consider changing the structure of the rule as follows:

- Maintain the stringent NOx emissions standards on small sources (1000-2400 hp stationary engines) in nonattainment areas, as proposed in Section 129.
- Establish separate NOx emissions standards for larger sources (>2400hp) sited in the state's non-attainment areas under Section 145.
- Establish separate and less stringent NOx emissions standards for large sources (>2400hp) sited in the remaining attainment areas of the state.

Following the above recommendations will reduce NOx emissions where they are most needed, will establish clear and non-conflicting standards for the regulated community, and will not place unnecessary regulatory and cost burdens on facilities where NOx reductions are not as critical, thus assuring a cost effective NOx control strategy.

Title 25. Chapter 121 Definitions

The proposed definition of Emergency Stationary Internal Combustion Engine needs to be revised to reflect other regulatory and code requirements regarding emergency generators.

The proposed regulation defines Emergency Stationary Internal Combustion Engine as those engines that “operate as a mechanical or electrical source only when the primary power source for a facility has been rendered inoperable.” This definition is problematic in that virtually all emergency engines are required to be maintained and tested by federal, state, or municipal codes and standards to ensure that they will perform their required duties when needed. Generally, engines used for emergencies are started and exercised for a certain period each month, and the current definition in the proposed regulation would not allow this practice.

The definition needs to be changed to allow emergency engines to operate a certain number of hours per year for maintenance and testing. EMA recommends that the definition be revised to allow emergency engines to operate up to 100 hours per year for testing and maintenance.

Accordingly, we suggest that the definition be revised to read:

(i) A stationary internal combustion engine that operates as a mechanical or electrical power source only when the primary power source for a facility has been rendered inoperable by events beyond the control of the owner or operator, EXCEPT THAT SUCH ENGINES SHALL BE ALLOWED TO OPERATE UP TO 100 HOURS PER YEAR FOR ROUTINE TESTING AND MAINTENANCE.

The proposed definition of Stationary Internal Combustion Engine needs to be revised to reflect the federal preemption provisions related to portable engines.

The proposed definition of stationary internal combustion engine includes engines that “are designed or are capable of being moved from one location to another and remains at a single site at a building, structure, facility, or installation for more than 30 days.” This definition conflicts with the applicable definitions and federal preemption requirements under Section 209(e) of the Clean Air Act. Consequently, Pennsylvania’s definition of stationary engine needs to be revised to conform to federal requirements.

Section 209 of the Clean Air Act, 42 USC 7543, preempts states and their political subdivisions from adopting standards or any requirements relating to the control of mobile sources. Section 209(e) pertaining to nonroad engines and vehicles specifically provides that:

“No state or any political subdivision thereof shall adopt or attempt to enforce any standard or other requirement relating to the control of emissions from either of the following

new nonroad engines or nonroad vehicles subject to regulations under this Act – New engines used in construction equipment or vehicles or used in farm equipment or vehicles and which are smaller than 175 horsepower.”

Subsection (2) of Section 209(e) extends this preemption to all other new or non-new nonroad engines or vehicles. Significant in this regard is the fact that portable engines and equipment comprises a subset of the federally preempted nonroad engines and vehicles. Specifically, “Nonroad Engines” are defined in 40 CFR Part 90 as any internal combustion engine “ that is self propelled, is intended to be propelled while performing its function, or that, by itself or in or on a piece of equipment is portable or transportable, meaning designed to be and capable of being carried or moved from one location from another.” The regulation further states that an internal combustion engine is not a nonroad engine if “the engine remains or will remain at a location for more than 12 consecutive months or a shorter time at a seasonal source.”

Accordingly, internal combustion engines in portable equipment are considered a nonroad engine under federal law, and its emissions are regulated by US EPA emissions standards. Further, the Commonwealth of Pennsylvania is expressly preempted from establishing any emissions requirements or limits on such equipment under the unambiguous provisions of Section 209(e) of the Clean Air Act.

To remedy this situation, the definition of stationary internal combustion engine in Chapter 121.1 must be changed to reflect the federal definition of portable engine. In this case, Pennsylvania simply needs to change the “30 day” period in the proposed definition to “12 months”.

Title 25. Chapter 129. Standards for Sources Additional NO_x Requirements

EMA supports Pennsylvania’s decision to exempt emergency stationary and fire-fighting engines from the proposed emissions standards.

Pennsylvania has appropriately exempted emergency and fire fighting engines from the proposed emissions standards for stationary internal combustion engines. Such engines serve a critical role in safeguarding human life and property and must perform to demanding and exacting operating standards under adverse or emergency conditions. In addition, because these engines run only for emergency purposes, testing and required maintenance, their operational has minimal impact on ambient air quality.

EMA supports the proposed emissions standards for stationary internal combustion engines as proposed under Section 129.203

The proposed NO_x emission standards of 1.5 gm/bhp-hr for spark-ignited engines and 2.3 gm/bhp-hr for compression and dual-fueled engines can be achieved with advanced engines and sophisticated aftertreatment technologies, including SCR systems. New lean burn gaseous-fueled engines should be able to meet the NO_x standard without aftertreatment, whereas rich burn gaseous-fueled and compression ignition engines will require the addition of advanced

aftertreatment devices by 2005. Most existing engines should be able to be fitted with aftertreatment devices capable of achieving the established standards. Although technically feasible, the costs to apply aftertreatment devices to older and higher emitting engines may create an unfavorable cost structure for some operators depending on the local costs of power.

The applicability provisions of this section should be revised to clarify that the standards of Section 129.203 do not apply to engines greater than 2400 hp.

Section 129.203 (a) indicates that the emissions standards of this section apply to engines greater than 1000 hp in select counties in the Philadelphia area. Section 145.11 indicates that the regulatory requirements of that section apply to stationary engines greater than or equal to 2400 hp. Thus, both Section 129 and Section 145 emissions requirements apply to stationary engines greater than 2400 horsepower; this creates a conflicting and potentially incompatible set of regulatory standards for owners and operators of engines in this size category.

The proposed regulation needs to be revised as discussed above so that these conflicting regulatory requirements applicable to stationary engines are resolved, and that a clear and distinct set of emissions standards is established for the various engine sizes. EMA recommends that Section 129.203 be revised to indicate that the section is only applicable to engines greater than 1000 hp that are sited in non-attainment areas and not subject to Section 145 regulation, i.e., 1000-2400 hp for spark-ignited engines, 1000-3000 hp for compression ignition engines, and 1000-4400 for dual-fueled engines.

Title 25. Chapter 145. Interstate Pollution Transport Reduction

Establishing a mandatory percent reduction requirement for stationary engines greater than 2400 horsepower that is based on 1990 emissions fails to account for emissions controls already applied to these engines and is not technologically feasible in all cases.

The proposed language of Section 145.113 requires all large stationary engines to reduce emissions by 90% compared to 1990 emissions rates. This requirement does not account for emissions control measures that may already have been placed on engines in 1990 or earlier. For example, some rich burn spark-ignited engines may have already reduced NO_x emissions by 90% using 3-way catalysts. Other owners and operators may have replaced higher emitting rich burn engines with more energy efficient and lower emission lean burn engines.

If indeed such improvements were made in 1990 or earlier, these facilities have reduced NO_x emissions to a great extent, and it may be technologically – and certainly economically – infeasible to reduce NO_x emissions another 90%. Further, the proposed regulation places owners and operators of facilities who have made efforts to reduce NO_x emissions at a disadvantage and penalizes them for their early action.

EMA recommends that Pennsylvania revise the regulation by establishing stringent, but technically feasible, emissions standards for large engines regulated under Section 145 rather than require all engines to reduce emissions by 90- 91%. Setting specified emissions limits rather than mandatory reduction requirements has a number of advantages. First, it provides a

level playing field for all players and does not penalize operators who already installed NOx controls. Second, it requires facilities with larger emissions to reduce emissions to a greater extent than cleaner facilities. Third, the appropriate emissions standard can be based on the best available emissions control technology.

EMA recommends that Pennsylvania establish the following emissions limits under Section 145.113 for large stationary internal combustion engines that are based on the currently available control technologies.

- For rich burn spark-ignited engines, 0.15 gm/bhp-hr
- For lean burn spark-ignited engines, 0.9 gm/bhp-hr
- For compression ignition engines, 2.3 gm/bhp-hr.

Attainment of these stringent emissions levels will require aftertreatment on all engines. Such aftertreatment is expensive and varies depending on the size of the engine and type of aftertreatment required, often costing as much as the engines itself. Although the cost of such NOx reduction systems is expensive, depending on the local costs of power generation, operation of the engines may still be cost effective due to their underlying large size.

Significantly more flexible emissions standards – standards that may be met without aftertreatment technology – should be established for large engines operating in the state's attainment areas. Thus, in attainment areas the NOx standard should be 1.5 gm/bhp-hr for lean-burn spark-ignited engines (the standard in the OTC model rule) and 4.8 gm/bhp-hr for compression ignition engines (the prevailing federal nonroad engine standard).

The requirement to utilize CEMS to demonstrate compliance is not cost-effective and alternate compliance mechanisms should be allowed.

Section 145.114 requires owners and operators of large stationary engines subject to the requirements of Section 145.113 to use Continuous Emissions Monitoring Systems (CEMS) to demonstrate compliance. CEMS is very expensive and adds greatly to the cost of compliance with little or no environmental benefit. The costs associated with implementing CEMS in addition to the already large costs to add the NOx control aftertreatment systems to stationary engines is likely to make continued operation of many installation cost-ineffective.

Although there is a provision in the proposal to allow an alternative compliance mechanism, operators would apparently have to go through a specific demonstration and approval process to use of any system other than CEMS. Rather than require such an approval process, EMA recommends that alternate compliance mechanisms be identified in the regulation. Specifically, the use of Parametric Emissions Monitoring Systems (PEMS) should be permitted since they provide an acceptable method to demonstrate compliance and are less expensive to install and operate than CEMS for NOx emissions. This added flexibility would provide the regulated community a readily available and more cost-effective option to meet the requirements of the regulation.

AQTAC Request For Comments

1. Should owners and operators of stationary internal combustion engines be given flexibility in demonstrating compliance to the proposed emissions levels?

Section 129.201, 202, and 203 allow owners and operators flexibility by allowing emissions averaging among sources. The AQTAC requested comments on whether such flexibility should be allowed.

EMA believes that owners and operators should be given the maximum flexibility possible to meet NO_x reduction goals. NO_x reductions are costly, and owners and operators should have sufficient flexibility to allow innovative and cost effective means to achieve the desired reductions based on their individual situation. No one control strategy will optimize emissions reductions and costs for all operators.

As long as the overall targeted NO_x emissions standards are met, the regulations should allow owners and operators to determine the best and most cost efficient way to achieve those reductions.

2. Are the proposed standards technically feasible and what is the cost of compliance?

EMA believes that the proposed emissions limits for Section 129 are technically feasible. Information on compliance costs needs to come from the regulated community. As mentioned above, the proposed Section 145 requirements to reduce NO_x emissions 90-91% compared to 1990 emissions may not be technically or economically feasible for all currently installed stationary engines. EMA recommends that Pennsylvania alter the proposed requirements and move from a percent reduction standard to a specified numerical emission standard. The emissions levels proposed by EMA are currently technologically feasible.

The requirement under Section 145 requiring CEMS adds greatly to the cost of compliance and will negatively affect the cost of compliance for the regulated community. The proposed regulation needs to allow owners and operators flexibility to install alternate and less expensive monitoring systems.

3. Should the proposed standards be adopted statewide for the entire year

EMA believes that it is appropriate for Pennsylvania to establish different NO_x emissions standards in attainment and nonattainment areas. Additional and stricter controls are necessary in ozone nonattainment areas in order to bring ambient air quality levels into compliance with standards. Thus, it is appropriate to establish different requirements for the five county Philadelphia area.

EMA does not believe that the proposed standards are necessary or should be adopted in the rest of the State. Adopting the proposed stringent emissions standards in attainment areas where the health-based ambient air quality standard is already being met would just impose an

unnecessary burden on the regulated community. The adoption of the proposed standards in other parts of the State would unduly raise costs and hinder the deployment of new and cleaner stationary engines.

On the other hand, requiring owners and operators to meet the proposed standards year round in nonattainment areas would benefit air quality with little added costs. Since owners and operators will have to install the NOx control equipment anyway, it may make sense for non-seasonal owners and operators to keep it running throughout the year.

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REVIEW COMMISSION

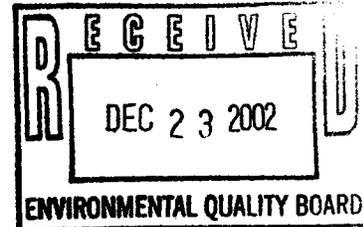


**AMERICAN
REF-FUEL**
COMPANY OF DELAWARE VALLEY

Original: 2302

December 18, 2002

Environmental Quality Board
Rachel Carson State Office Building
15th Floor
400 Market Street
Harrisburg, PA 17101-2301



Re: Proposed Rulemaking: Small Sources of NOx, Cement Kilns and Large Internal Combustion Engines: Chapters 121, 129 and 145
Comments of the American Ref-Fuel Company

Dear Members of the Environmental Quality Board:

On behalf of the American Ref-Fuel Company (Ref-Fuel), we offer the following comments regarding the above-referenced rulemaking. Ref-Fuel owns and operates the Delaware Valley Resource Recovery Facility (Delaware Valley Facility) in Chester, Pennsylvania. This municipal solid waste-to-energy (WTE) facility combusts about 3,000 tons per day of municipal solid waste from surrounding communities and converts it to about 80 MW of electricity. Ref-Fuel also owns and/or operates five other WTE facilities in the Northeastern U.S. The primary purpose of the Delaware Valley Facility and others like it is the safe and environmentally sound conversion of municipal solid waste to renewable energy. In addition to reducing landfill space requirements by 90%, the facility also provides other environmental benefits including the offsetting of fossil fuel use with an indigenous, renewable fuel, reduction of greenhouse gas emissions, and the recovery of metals from ash for recycling.

Our comments focus exclusively on the proposed new Section 129.201: Standards for Boilers. As discussed in more detail below, the proposed new NOx emission standards should not apply to municipal solid waste-to-energy (WTE) facilities. There are two main reasons for this position. WTE is already subject to recent federal NOx emission standards that were specifically derived for these types of facilities. Furthermore, the proposed standards would likely require the application of the most expensive NOx control equipment available, making the cost prohibitive for the communities that we serve.

Existing NOx Standards for WTE are Adequate

NOx emissions from WTE facilities are already fully regulated. The emission limits for the facilities in Pennsylvania are based upon stringent source-specific standards that are technically achievable at an economically realistic price. In December of 2000,

new Federal emission standards for WTE units went into effect pursuant to 40 CFR Part 60 Subparts Cb and Eb. These new regulations were promulgated pursuant to Section 129 of the 1990 Clean Air Act Amendments. They reflect the "Maximum Achievable Control Technology" (MACT) for municipal waste combustors, defined as the environmental performance of the best-performing 12% of large facilities nationwide. Pennsylvania submitted a State Plan to implement the new regulations, and EPA approved this plan on August 23, 1999. Pennsylvania's State Plan involved the incorporation of the new MACT standards into each WTE facility's federally enforceable state operating permit (FESOP). One of the several pollutants regulated under this new standard is NO_x.

In the USEPA's Final "NO_x SIP Call" of October, 1998, the USEPA noted that they considered the WTE MACT standards as appropriate levels of control for WTE. Specifically, the preamble states that "The USEPA does not assume, in this rulemaking, any additional control measures or lower emissions levels for municipal waste combustors because these combustors are already being controlled through MACT regulations." In addition, in the October 21, 1998 proposed Federal Implementation Plan (FIP) related to the SIP call, EPA reiterated that "...municipal waste combustors should not be required to reduce emissions beyond that already required by the maximum achievable control technology (MACT) rules for NO_x required under sections 111 and 129 of the CAA." No other state has implemented a NO_x standard comparable to the one proposed by the Department in this rule. Ref-Fuel can likewise find no Federal or regional regulation or guidance that addresses NO_x controls for WTE beyond those achievable by MACT.

The MACT standards were derived specifically for WTE facilities. They were promulgated after years of technical review of the capabilities of these unique types of facilities, and they represent the best level of control that can be reasonably attained. The proposed standards in Chapter 129 appear to be based upon the performance of fossil fuel-fired boilers. Emission standards for a particular type of boiler or fuel source should be based upon the achievable performance of that category, and one common standard is not appropriate for all fuels. The MACT rule and its underlying statutory requirement recognized this. Waste-to-energy boilers are not designed, constructed or operated in the same manner as fossil fuel units, because their fundamental purpose is different. Their primary purpose is the conversion of relatively heterogeneous, wet municipal solid waste into energy. They do not use a uniform and consistent fuel and as a result, there are technical and economic considerations that are unique to these types of units. Due to the nature of the fuel, the units are less thermally efficient than dedicated power production facilities, requiring larger amounts of excess air and less densely-packed heat recovery systems. These boilers also do not have access to NO_x reduction options available to other types of units such as low-NO_x burners, fuel switching during the ozone season, or load curtailment. It appears, however, that the Department assumed that one emission standard is appropriate for all boilers, regardless of purpose, fuel or design, and that the only classification that matters is one of size. Ref-Fuel does not agree with this

perspective. The recent MACT standard that has been derived specifically for the unique characteristics of WTE is appropriate and sufficient for WTE in Pennsylvania.

The Proposal Requires Control Technology that is Either Unproven or Prohibitively Expensive

Ref-Fuel's Delaware Valley Facility has six combustion units, each less than 250 MMBtu/hr in size. The units are O'Connor combustors, which are rotary units that operate at lower temperatures and less excess air than most other municipal waste combustion units. Their NOx emissions are therefore very low compared to most other WTE facilities, but the emissions are still higher than the proposed limit of 0.20 lb/MMBtu. In most cases, conventional mass-burn WTE boilers are equipped with selective noncatalytic reduction (SNCR) in order to control NOx and achieve MACT standards. This common technology, however, has never been applied to the unique design of O'Connor combustors and it is therefore considered unproven. We are not aware of any requirements for additional NOx control on units such as Ref-Fuel's because the emission levels have been recognized to already be low for municipal solid waste combustion. In order to achieve the proposed limit, Ref-Fuel believes that the facility would require the installation of selective catalytic reduction (SCR). No waste-to-energy facility in the U.S. is equipped with SCR, in part because its cost has been shown to be prohibitively expensive for such relatively small facilities.

WTE units are much smaller than fossil fuel units that typically use SCR when compared on an electrical production basis. However, due to the nature of the fuel, WTE units are much larger on the basis of gas flow per unit of energy produced. This means that WTE units must treat proportionately more flue gas. SCR on units such as ours may also require flue gas reheating, presumably with natural gas, which would be ironic given the renewable nature of our fuel. SCR is typically considered only for large dedicated power production facilities where economies of scale apply. Installing SCR on a small 80 MW plant with six individual units would be economically prohibitive when compared to the requirements for large fossil fuel-fired facilities.

Based upon our company's experience with WTE and recent analyses of SCR at similar facilities, Ref-Fuel estimates the capital cost of installing an SCR system at the Delaware Valley Facility to be at least \$30 million. At least two separate systems would be needed, each one serving three boilers. Annual operating costs, including reagent, gas and periodic catalyst replacement is estimated to be about \$1.5 million. On a unit basis, the total cost would be equivalent to about \$28,000 per ton of NOx removed during the ozone season. Even if the proposed standard were to apply year-round, the unit cost would be approximately \$12,000 per ton of NOx. This is far in excess of the estimate of \$1,500 to \$3,500 per ton estimated by the Department. This would constitute a major facility retrofit with a technology that has never been undertaken at a U.S. WTE facility. In accordance with Ref-Fuel's municipal contract as it pertains to changes in law, Delaware County would be directly responsible for 56% of all capital and operating costs.

12/18/2002

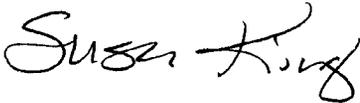
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In conclusion, Ref-Fuel requests that municipal waste-to-energy be excluded from the proposed revisions to Chapter 129. Emissions of NOx from this industry have already been regulated pursuant to a separate set of Federal and State rulemakings. The currently-applicable standard has been derived specifically for the unique design, operation and purpose of WTE units. Applying a standard that is based upon the operation and design of fossil fuel-fired boilers is inappropriate and it ignores the multiple purposes of WTE. WTE serves more than one purpose, and provides several environmental benefits. The benefits include conversion of a renewable fuel source into electricity while providing a 90% reduction in landfill space requirements, greenhouse gas reductions, and metals recycling.

The most expedient way of changing the proposed rule would be to substitute the word "boilers" in the proposed text with the word "units". The definition of "unit" in Chapter 145.2 specifically limits the applicability to fossil fuel-fired boilers.

Thank you for the opportunity to comment. Please feel free to contact me at 860-889-4900 x 135 or Susan King, Director of Government Affairs at 201-690-4806 with any questions or comments.

Sincerely,

A handwritten signature in cursive script that reads "Susan King".

Derek Grasso
Manager of Regulatory Affairs

Cc: J. Vastoria, P.E. Delaware County
The Honorable Matthew J. Ryan
The Honorable Ted Erikson
The Honorable Dominic Pileggi
N. Frye, Malady & Wooten Public Affairs

SUMMARY OF COMMENTS
PROPOSED RULEMAKING: 25 PA. CODE CHS. 121, 129 AND 145
Small Sources of NOx, Cement Kilns and Large Internal Combustion Engines

American Ref-Fuel Company
December 18, 2002

Commenter: American Ref-Fuel Company (Ref-Fuel) owns and operates the Delaware Valley Resource Recovery Facility in Chester, as well as five other municipal solid waste-to-energy (WTE) facilities in the Northeastern U.S. The Chester facility converts about 3,000 tons per day of regionally-generated municipal solid waste (MSW) into about 80 MW of renewable energy. WTE facilities provide several environmental benefits including the reduction of landfill space by 90%, displacement of fossil fuel use with an indigenous and renewable fuel, reduction of greenhouse gas emissions, and additional recovery of metals for recycling.

Summary of Comments: The proposed new section 129.201 proposes a single NOx emission standard for boilers of a given capacity. Waste-to-energy facilities should be exempt from the standard for the following reasons:

1. NOx emissions from WTE are already adequately regulated. Federal NOx standards for existing WTE facilities went into effect in December 2000 as part of "maximum achievable control technology" (MACT) regulations mandated under Section 129 of the Clean Air Act (40 CFR Part 60 Cb and Eb. Pennsylvania adopted the MACT standards under an EPA-approved state plan. The USEPA specifically excluded WTE from Federal NOx requirements, citing compliance with the WTE MACT as adequate and reasonable. No other state has required NOx emission reductions from WTE beyond those achievable by MACT. Furthermore, OTC has not considered additional NOx control for WTE in its analyses or guidance documents.
2. The proposed NOx standards are based on the capabilities of fossil fuel-fired boilers and are not applicable to WTE boilers, which are uniquely designed and operated to combust a heterogeneous, relatively wet fuel. NOx emission standards should be derived for specific fuel types and boiler designs, based upon the capabilities of each type of unit. This was the approach taken in the development of the WTE MACT standards.
3. The cost to ensure compliance would be prohibitive to the communities that Ref-Fuel serves. The proposed standard in Section 129.201 would require the application of selective catalytic reduction (SCR). This is the most expensive NOx control technology available. The estimated minimum capital cost of such a system at Ref-Fuel's facility is \$30 million, with an annual operating expense of about \$1.5 million. This is equivalent to a unit cost of about \$28,000 per ton of NOx removed for an ozone-season standard. Under Ref-Fuel's municipal contract, Delaware County would be responsible for 56% of this cost.

(Cashakian Henry)

Original: 2302

TESTIMONY OF INTEGRATED WASTE SERVICES ASSOCIATION
NOVEMBER 25, 2002

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Good afternoon. My name is Derek Grasso, and I am Manager of Regulatory Affairs for American Ref-Fuel Company. I spoke a moment ago to provide an overview of our company's comments concerning the Department's proposed rulemaking for additional ozone season nitrogen oxide control requirements for boilers at Section 129.201. I now wish to testify on behalf of the Integrated Waste Services Association, or IWSA, that represents 68 waste-to-energy facilities around the country, including the five facilities that convert Pennsylvania's trash into clean, renewable power. Ref-Fuel is a member of the IWSA.

In addition to Ref-Fuel, IWSA members also include Covanta Energy Company, Montenay Power Corporation, and Wheelabrator Technologies, as well as more than 25 municipalities that are served by waste-to-energy plants, and several dozen other organizations that work in the waste-to-energy field. IWSA members own and/or operate the five waste-to-energy facilities in Pennsylvania.

The U.S. Environmental Protection Agency recently released a comprehensive inventory of emissions from all waste-to-energy facilities in the country documenting a dramatic, and in the EPA's own words, "outstanding" reduction in air emissions from waste-to-energy facilities due to facilities' compliance with new Clean Air Act standards. The industry and their municipal partners spent more than one billion dollars to equip every large-unit facility with state-of-the-art pollution control equipment. Large unit facilities represent greater than 90% of the national capacity. Small unit facilities currently are completing a similar retrofit of existing plants that will be completed by 2005.

It is important to stress that the new Clean Air Act standards required EPA to analyze and make a determination of what constitutes the state-of-the-art in pollution control. Such an analysis resulted in promulgation of some of the toughest standards in the world for waste-to-energy facilities. Municipal governments made a significant, \$1 billion investment to meet these standards, but by all accounts the money was well spent. Equipping facilities with the most modern pollution control resulted in significant pollutant emission reductions, including a greater than 90% reduction in emissions for several parameters.

EPA, and facility operators realize that NOx emissions can be lowered only to a certain level in WTE units because of the inherent inefficiency of the their fuel and their design. These limitations, and the fact that our facilities are not significant sources of NOx, speak against imposition of additional controls on the pollutant for waste-to-energy facilities. Waste-to-energy is already required to meet NOx emission limits. Additional pollution control equipment has not been determined to be technically viable on the boilers used at waste-to-energy facilities, and the cost of experimenting to determine if emissions may be lowered would be extreme costly after a significant amount of money already has been spent to modernize pollution control.

The Department, in this proposed rulemaking, seems to have determined that one emissions standard is appropriate for all boilers. That assumption is false, and even the most summary investigation of the waste-to-energy industry would explain why.

As I mentioned in my earlier testimony, waste-to-energy boilers are not designed and are not operated in the same manner as fossil fuel units, because their fundamental purpose is different. Their primary purpose is the effective destruction of relatively heterogeneous, wet municipal solid waste. The boilers are less thermally efficient than dedicated power production facilities, requiring larger amounts of excess air and less densely-packed heat recovery systems. These boilers also do not have access to NOx reduction options available to other types of units such as low-NOx burners, fuel switching during the ozone season, or load curtailment.

The IWSA and its members would be pleased to work with the Department to determine the most effective method to control NOx emissions. The industry has proven its commitment to environmental improvements. We ask only that regulators investigate and impose fair rules that maximize the environmental benefit by properly balancing all aspects of waste-to-energy. Those benefits include reducing greenhouse gases that are released into our atmosphere, providing fuel diversity to energy consumers, lowering the environmental impacts associated with trash management, and providing the dual benefit of clean, safe trash disposal and renewable energy generation.

Thank you for your time today. IWSA will be submitting written comments by the close of the public comment period on December 26. I would be happy to take any questions now.