Summary of Comments – ARIPPA
Proposed Ozone Transport Regulation – 25 Pa. Code Chapter 145

1. The allocation scheme provided for in the Board's Proposed Ozone Transport Rule is based upon both an emission rate and the affected source's heat input. The proposed regulation would determine heat input for each affected source based upon a hierarchy of heat input data reported by the source. The proposed rule inappropriately establishes a conclusive preference for heat input data reported by each source within its annual emission reports. The emission reporting form is not designed to elicit accurate heat input data, but rather emission information. Individual sources have available sources of data that provide more accurate heat input information. The Proposed Ozone Transport Rule should allow for a case-by-case determination of appropriate sources of heat input data.

2. Like EPA's Model Rule, the Proposed Ozone Transport Rule provides for an initial allocation of NOx allowances to affected sources based upon heat input data recorded for the 1995 through 1997 ozone seasons. The Department's data for Pennsylvania's affected sources identifies inaccuracies in the heat input inventory maintained by EPA. Therefore, the Proposed Ozone Transport Rule should not merely incorporate inaccurate heat inventory information compiled by EPA, but rather base initial allowance allocations upon the Department's more accurate, source-specific information.

3. The monitoring scheme included within the Board's Proposed Ozone Transport Rule imposes additional monitoring requirements upon affected sources. Specifically, the Proposed Ozone Transport Rule would require sources that have recently incurred significant costs to comply with the Board's recent NOx Allowance Regulations to incur yet additional costs to comply with the Proposed Ozone Transport Rule. The Board's proposed regulation should be modified to ensure that the monitoring requirements under the Proposed Ozone Transport Rule are consistent with the requirements imposed under the existing NOx Allowance Regulations.

4. EPA's Model Rule would provide for an allocation of NOx Allowances to all regulated electric generating units based upon an emission rate of 0.15 lbs-NOx per million BTU ("MMBTU") of heat input. However, the Board's Proposed Ozone Transport Rule would reduce the allocation of NOx allowances for sources that are subject to a NOx permit rate less than 0.15 lbs/MMBtu. Thus, the Board's proposed rule departs from EPA's model rule by providing less favorable treatment to the cleanest sources in Pennsylvania subject to this proposed rulemaking. The Board should modify the Proposed Ozone Transport Rule to provide for a uniform and equitable allocation of NOx allowances to all sources based upon the 0.15 lb/MMBtu emission rate included within EPA's Model Rule.

5. EPA's NOx SIP Call Rule provides for the distribution of NOx allowances to certain states, including Pennsylvania, from a state-specific compliance supplement pool, to assist such states in complying with the emission limitations imposed under the NOx SIP Call Rule. The Board and the Department should ensure that the Commonwealth's ozone transport regulatory program protects Pennsylvania sources in the determination of those banked NOx allowances which count against the Commonwealth's compliance supplement pool. ARIPPA recommends that the Commonwealth advocate to EPA that only those banked allowances held at the conclusion of 2002 in the authorized accounts of Pennsylvania-based affected sources should be aggregated against this cap.

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Re: Proposed Interstate Ozone Transport Reduction Regulations
Written Comments of General Electric Company

Dear Board Members:

General Electric Company is submitting these comments on the Interstate Ozone Transport Reduction Regulations ("OTR Regulations") proposed by the Department of Environmental Protection ("the Department"). General Electric Company has a locomotive manufacturing facility in Erie, Pennsylvania which is significantly impacted by Pennsylvania's proposed OTR Regulations. General Electric's Erie facility ("GE Erie facility") employs approximately 5,500 and is the largest industrial employer in Erie County, Pennsylvania. The GE Erie facility has several sources which would be significantly affected by the OTR Regulations.

I. THE DEPARTMENT SHOULD INCLUDE EPA's EXEMPTION FOR UNITS WILLING TO ACCEPT A 25-TON OZONE SEASON NO_x EMISSION LIMIT

As the Department knows, the GE Erie facility has one fossil fuel-fired stationary boiler that has a maximum design heat input greater than 250 MMBtu/hr. As such, it would be subject to the proposed OTR Regulations. However, pursuant to RACT, the GE Erie facility is under an operating permit restriction issued by the Department which provides that the boiler cannot operate during the ozone season. Thus, the unit will have no NO_x emissions during the ozone season. Despite the fact that it will not have any NO_x emissions during the ozone season, under the proposed OTR Regulations, the unit still will be subject to these Regulations, including the costly monitoring requirements.

EPA's Model Rule for the SIP Call addresses the dilemma confronting the GE Erie facility. Under Section 96.4(b) of the Model Rule, boilers such as the one at the GE Erie facility are exempt from the Regulation. The Model Rule exempts units which accept a federally-enforceable permit condition that limits the unit's potential to emit NO_x to 25 tons or less during the ozone season. GE Erie recommends that Pennsylvania incorporate the EPA Model Rule exemption into its proposed OTR Regulations to address the problem that GE Erie, and possibly others, face. (See 40 C.F.R. § 96.4(b), 63 F.R. 57518-57519, attached hereto as Exhibit A).

Pennsylvania's failure to include this exemption will make its OTR Regulations more strict than required by the EPA SIP Call. Pennsylvania law has no justification for making its regulations more stringent on this issue. In its present form, the proposed OTR regulations violate Executive Order 1996-1 issued February 6, 1999, which prohibits Pennsylvania Regulations from exceeding federal standards in a manner not justified by a compelling and articulable Pennsylvania interest or required by state law. (See Executive Order 1996-1, attached hereto as Exhibit B).[1] There is no reason to apply the OTR Regulations to a unit that does not operate during the ozone season. Such regulation simply creates an unnecessary administrative burden on both the facility and the agency.

Furthermore, the GE Erie facility's willingness to not operate the unit during the ozone season may provide a significant benefit to Pennsylvania's effort to meet its NO_x budget. According to the allocations designated for this unit at the GE Erie facility under the proposed Section 126 Petitions Regulation, the heat input for the unit during the 1995 ozone season was 1,000,620 MMBtu/hr

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[1] On May 6, 1999, EPA finalized the budgets for the states under its SIP Call. As part of its final budgets, EPA made adjustments to the final budgets in response to comments made by numerous parties on the source inventories relied upon by EPA. Based on EPA's "Responses to the 2007 Baseline Sub-Inventory Information and Significant Comments for the Final NO_x SIP Call," it appears that EPA has reduced the ozone season NO_x emissions for GE's affected boiler to zero for the budget. (See Exhibit C). If, in fact, EPA has now recognized the RACT permit limitation on GE's affected boiler for purposes of the budget, then Pennsylvania must provide an exemption for GE's affected boiler because it clearly will be applying its regulations to the GE Erie facility in a fashion that is more strict than EPA without any justification.

(63 F.R. 56385, Table A.2, attached hereto as Exhibit D). Based upon this heat input and Pennsylvania's proposed allocation methodology, the unit could be entitled to 81 allowances in Years 2003, 2004 and 2005 if Pennsylvania does not adopt the exemption. Under the preamble discussion to EPA's SIP Call, if Pennsylvania adopts the exemption, the GE Erie facility could be entitled to 24 allowance allocations, with the remainder possibly distributable to the remaining OTR program participants or possibly retired by the Department. If Pennsylvania retires the allowances, Pennsylvania would be 57 tons of NO_x closer to meeting its budget based upon the information contained in the proposed Section 126 Petitions Regulation. (See e.g. 63 F.R. 57463, attached hereto as Exhibit E). If Pennsylvania does not adopt the exemption, GE Erie will be forced to install the unnecessary monitoring equipment and then sell its allowances to help pay for the equipment. Thus, the result will be more NO_x emissions in Pennsylvania.

The benefit is even more significant when one examines how the non-EGU NO_x budget proposed by EPA in its SIP Call treats the GE Erie facility unit. The March 23, 1998 Development of Modeling Inventory and Budgets for the Ozone Transport SIP Call lists the GE Erie facility unit at emitting 1.9307 tons of NO_x per day in 2007 with a 70% control efficiency. (Exhibit F) (But see Footnote 1, supra). Given that there are 153 days in the ozone season, this unit would account for 295.4 tons of NO_x in 2007. It appears that this 295.4 tons was included in Pennsylvania's non-EGU budget. Since the unit will not be operating, and will have only 24 allowances, Pennsylvania actually is 271.4 tons of NO_x emissions closer to meeting its budget. Thus, allowing the GE Erie facility to exempt this unit is a significant benefit to Pennsylvania as well as to the GE Erie facility.

II. THE DEPARTMENT SHOULD DETERMINE THE APPLICABILITY OF THE OTR REGULATIONS TO INTERNAL COMBUSTION ENGINES BASED UPON THE ACTUAL EMISSIONS OF THE UNITS, NOT HORSEPOWER RATINGS

Under its SIP Call, EPA established a budget for each affected state which assumed 90% NO_x emission reductions from certain Internal Combustion Engines ("ICE"). The ICE sources included in the budget were sources whose "1995 average daily ozone season emissions were greater than one ton." (63 F.R. 71224, attached hereto as Exhibit G). Thus, in order to satisfy EPA's SIP Call, states only need to control ICE sources which fit into that category.

Despite the standard that it used in the SIP Call, EPA used a different standard in its proposed Federal Implementation Plan ("FIP"), upon which Pennsylvania appears to be basing the ICE portion of its proposed OTR Regulations. Under the FIP, EPA used horsepower ratings to determine whether an ICE should reduce emissions by ninety percent. (63 F.R. 56425-56427, attached hereto as Exhibit H). EPA concluded that its horsepower ratings were equivalent to the unit's potential to emit one ton of NO_x a day. (63 F.R. 56416, Ex. H). Thus, EPA proposes to use a potential to emit one ton of NO_x per day standard in the FIP, but used 1995 actual emissions as the basis for the SIP Call. EPA's conclusion produces a significantly different set of results than that produced by its SIP Call analysis and is based upon stale and incomplete evidence.

There is a significant difference between regulating sources based upon their actual, 1995 NO_x emissions and regulating sources based upon their potential to emit. EPA's SIP Call budgeting was based solely upon actual 1995 (converted from 1990) emissions. (Development of Emissions Budget Inventories for Regional Transport NO_x SIP Call, May 1999 at p. 13, attached hereto as Exhibit I). EPA did not base its budget on any potential to emit emissions levels. Consequently, EPA's modeling was based upon actual emissions, not potential emissions. By now seeking to regulate units based upon potential emissions, EPA and the Department will capture a substantial number of sources not included in the modeling. Based upon the SIP Call modeling, NO_x reductions from these new additional sources are not necessary to enable the states to meet the goals of the EPA SIP Call. Thus, neither EPA nor the Department have any technical basis to regulate these new additional sources solely upon their having the potential to emit one ton of NO_x per day.

EPA has further compounded the regulation of unnecessary sources under the SIP Call by basing its horsepower cutoffs on erroneous data. Based upon its September 4, 1998 Technical Support Document for Stationary Internal Combustion Engines, EPA arrived at its horsepower cutoff determination by simply taking an average grams per horsepower per hour NO_x emission factor and dividing it into one ton. (Technical Support Document for Stationary Internal Combustion Engines, September 4, 1998, attached hereto as Exhibit J). For example, on diesel engines, EPA used 12.0 g/hp-hr as the average NO_x emission rate, converted it to .634 lbs/hp-day (by dividing by 454 g/lb and multiplying by 24) and then divided

the .634 into 2,000 pounds to arrive at 3,155 horsepower.[2] EPA's average grams per horsepower per hour NO_x emission factor is based upon data contained in EPA's July 1993 Alternative Control Techniques Document - NO_x Emissions From Stationary Regulatory Internal Combustion Engines ("ACT Document"). EPA simply gathered data on the emissions rates from a limited number of ICE engines and produced an average emission rate which it then used to determine the cutoff. There are significant problems with EPA's methodology.

First, and foremost, as described above, the potential to emit methodology results in a cutoff which is not consistent with the methodology used by EPA in determining budgets under the SIP Call because it includes sources which actually emitted less than one ton of NO_x per day in 1995. This problem is further compounded because EPA's methodology also unwittingly results in capturing units which have a potential to emit less than one ton of NO_x per day.[3] EPA's methodology ignores the fact that by using an average NO_x emission rate it captures ICEs with potentials to emit that are less than one ton of NO_x per day. This is supported by the data that EPA relied upon for the ACT Document. For example, with respect to Diesel ICEs, the lowest emission factor of the six (6) engines between 2,001-4,000 horsepower, for which EPA had data, was

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[2] For some unknown reason, EPA discussed a cutoff of 3,100 hp in the preamble to the FIP and its Technical Support Document, but then used 3,000 hp in the FIP Regulation. We also should point out that the 12.0 g/hp-hr emission factor used by EPA in the Technical Support Document was the factor for Diesel ICE with rated horsepower greater than 4,000. Thus, based on the factor it used, EPA should only be regulating Diesel ICEs greater than 4,000 hp. EPA's calculation only proves that a greater than 4,000 hp engine operated at 3,100 hp will emit one ton of NO_x per day. It does not establish what a 3,000 hp diesel ICE will emit. It is interesting to note that OTAG recommended that ICEs of greater than 4,000 hp and less than 8,000 hp only be required to meet RACT; and ICEs greater than or equal to 8,000 hp be required to achieve only a 70% reduction, not 90%. (See OTAG Recommendation, attached hereto as Ex. K).

[3] EPA's methodology also may result in some ICEs escaping regulation that would have been included in the budget calculations. For example, using the highest emission rate reported in the ACT Document for Diesel ICEs between 2,001-4,000 hp., 14 g/hp-hr, the one-ton potential to emit cutoff would be 2,700 hp. Thus, there may be some sources which operated at or near their potential to emit in 1995 which would have emitted greater than one ton of NO_x per day and therefore would have been included in the budget, but which now will escape regulation.

9.3 grams per horsepower per hour; this emission rate equates to a potential to emit of only .7 tons of NO_x per day using EPA's 3,000 hp cutoff for Diesel ICEs. (See ACT Document, p. 4-12, Table 4-1, attached hereto as Exhibit L). Likewise, the lowest emission factors from the data relied upon by EPA for Rich Burn, Lean Burn and Dual Fuel ICEs produces potentials to emit of .8 tons, .6 tons and .5 tons of NO_x respectively -- all of which are substantially below the potential to emit one ton of NO_x per day standard used by EPA in its FIP. Id. Thus, EPA's methodology of using the average emission rate results in even more ICEs being regulated by the OTR Regulations and will significantly increase the administrative burden on the Department.[4]

Second, the data relied upon by EPA is stale and incomplete. The data contained in the ACT Document is at least eight (8) years old. There is no indication in the ACT Document regarding the reliability of the data; and there is no analysis of the quality of the test data relied upon by EPA. There simply is a reference to EPA's receipt of letters and attachments from several engine manufacturers in 1991 and 1992. (See ACT Document, Ex. L). Further, the number of engines included in the analysis is woefully short of a representative sample. For instance, the Diesel ICE cutoff is based upon six (6) engines; the Dual Fuel ICE cutoff is based upon only four (4) engines. (Id.) These certainly cannot be representative of all of the engines, and should not be relied upon to establish regulatory applicability.

In summary, the potential to emit methodology adopted by EPA in the FIP, which Pennsylvania is not required to adopt, will include a substantial number of ICEs that are not required to be regulated by EPA's SIP Call. Consequently, Pennsylvania's Regulation will be more stringent than required by the federal regulations. Further, Pennsylvania's Regulation will result in more NO_x emission reductions than are necessary to meet the intent of EPA's SIP Call, which is to reduce interstate transport of ozone which significantly contributes to nonattainment or interferes with maintenance of the ozone NAAQS in downwind states. As such, Pennsylvania has no basis to regulate beyond that which is required by the SIP Call. Pennsylvania has no data other than the data EPA relied upon in issuing the SIP Call, and EPA only examined ICEs

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[4] Many of the engines captured by EPA's misplaced methodology are owned by the gas transportation industry. Most of these engines do not even operate during the ozone season, yet the use of horsepower cutoffs will force controls on these units. We anticipate that a significant number of these sources will be unwittingly captured by the Regulations.

which actually emitted one ton of NO_x per day in 1995. Any regulation which goes beyond that standard does not have any technical basis. Thus, Pennsylvania's Regulation, by adopting the potential to emit standard, goes beyond the scope of permissible actions authorized under 35 P.S. § 4005. Furthermore, such Regulation bears no rational basis to the purpose of the ACT, or the EPA SIP Call. Lastly, such a regulation violates Executive Order 1996-1 which prohibits Pennsylvania Regulations from exceeding federal standards in a manner not justified by a compelling and articulable Pennsylvania interest or required by state law.

GE Erie recommends that the Department adopt a standard that more accurately mirrors what EPA is requiring in the SIP Call. GE Erie recommends the following language to replace proposed § 145.101(a)-(c):

> An owner or operator of a Rich Burn, Lean Burn, Diesel or Dual Fuel stationary internal combustion engine which, any time on or after January 1, 1995, emits one ton of NO_x per day during the ozone season shall comply with the applicable requirements of this subchapter.

GE Erie believes this language ensures that the proper kinds of ICEs are regulated under the SIP Call.[5]

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[5] So far, it appears that several states are not even adopting ICE regulations. Based upon our review of the draft SIP Call proposals of New York, Massachusetts, Delaware, Wisconsin and Connecticut, these states do not propose to regulate large ICEs. Two states are preparing regulations of ICEs in a fashion similar to that proposed by GE Erie. Kentucky proposes to regulate "A stationary internal combustion engine whose NO_x emissions, on or after January 1, 1995, averages more than one (1) ton per day during a control period." (401 KAR § 51:120 Section 1(1), attached hereto as Exhibit M). In addition, Kentucky provides a command and control option. (Id. at Section 2). Missouri proposed to regulate in the following manner: "This rule applies to any large stationary internal combustion engine, greater than 1300 horsepower, that (1) Emitted greater than 1 ton per day on average during the period of May 1 through September 30 of 1995, 1996, or 1997 or (2) Any large stationary internal combustion engine that begins operation after September 30, 1999." (10 CSR 10-6.390(1), attached hereto as Exhibit N). One state, Tennessee, is proposing a command and control approach to ICEs. Tennessee proposed to use a 4 g/hp-hr standard and allow a facility as a whole to meet the standard. (Rule 1200-3-27-.05, attached hereto as Ex. O). Thus, a

III. THE DEPARTMENT SHOULD ADOPT THE EXEMPTIONS PROVIDED BY EPA IN ITS FIP AT SECTION 98.41

As part of its proposed FIP Regulation, EPA included certain exemptions which the Department has not included in its proposed OTR Regulations. EPA has exempted from the emission, compliance and reporting, monitoring and recordkeeping standards for ICEs, all startup and shutdown periods and periods of malfunction, not to exceed 36 consecutive hours, and periods within regular scheduled maintenance activities. EPA created these exemptions apparently in recognition of an ICE's inability to meet the standards, regardless of control equipment, during the time periods described in the Regulation; and apparently in recognition that the total NO_x emissions generated by such events over the year are insignificant. The Department does not explain why it chose not to include the exemptions in the proposed OTR Regulations, nor does there appear to be any justification for being more stringent than required under the EPA SIP Call. GE Erie recommends that the Department include the exemptions as provided in Section 98.6 of the EPA proposed FIP.

IV. THE DEPARTMENT SHOULD ADOPT EPA's 25 MW CUTOFF AND SELLS ELECTRICITY REQUIREMENT FOR ELECTRIC-GENERATING UNITS

In response to the Environmental Quality Board's ("the Board") requirement for comments on whether OTR Regulation Section 145.4(1)

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facility has the option of overcontrolling on some ICE units to make up for no controls on other ICE units. Michigan has abandoned the horsepower cutoff and in its place uses a cutoff of 250 MMBtu/hr. (Rule 801(3)(C), attached hereto as Exhibit P). Thus, only ICEs with a maximum rated heat input capacity greater than 250 MMBtu/hr are regulated in Michigan. This equates to a 37,500 horsepower ICE. Based on conversations with representatives from West Virginia, West Virginia likely will adopt a 1 ton per day standard because EPA's FIP Standards result in an additional sixty (60) units being regulated that were not included in the SIP Call budget. So far, only Indiana is proposing to adopt EPA's proposed FIP Applicability Standards for ICEs. (326 IAC 10-2-1(5), attached hereto as Exhibit Q). Based upon this review of Pennsylvania's neighboring states, Pennsylvania's Regulation, to the extent it goes beyond the required EPA SIP Call, also violates Executive Order 1996-1 because it hampers Pennsylvania's ability to compete effectively with other states.

should include electric-generating units of 15 MW or greater, GE Erie recommends that the Department adopt the applicability language used by EPA in the recent final 126 Petition Rulemaking dated May 3, 1999.

The 15 MW cutoff proposed by the Department is troublesome for several reasons. First, contrary to the Board implication, the 15 MW cutoff in the OTR Regulations is broader than the 15 MW cutoff contained in the NO_x Allowance Regulations. Second, EPA concluded that it did not need to regulate units serving generators smaller than 25 MW because such units did not significantly contribute to ozone nonattainment or interfere with the maintenance of ozone nonattainment of downwind states. Thus, the Department has no technical basis to regulate beyond that which EPA has required. Without additional analysis performed by the Department, which we believe has not been done, the Department's attempt to regulate units that serve generators less than 25 MW violates the Pennsylvania Air Pollution Control Act and Executive Order 1996-1.

The Department also has excluded a critical component of EPA's applicability requirements. As part of its budget, EPA included only those units that serve 25 MW generators or greater and which produce electricity for sale under a firm contract to the electric grid. The Department's Regulation fails to include the requirement that the unit produce electricity for sale under a firm contract to the electric grid. As a result, the Department's proposed OTR Regulation will include sources as EGUs which were not included as EGUs in the budget. The Department has no technical basis to justify treating as EGUs, sources which EPA treated as non-EGUs under the budget. As with the 15 MW cutoff, the Department's attempt to negotiate sources in this fashion violates the Pennsylvania Air Pollution Control Act and Executive Order 1996-1.

V. CONCLUSION

In conclusion, GE Erie reiterates the need to include the 25-ton exemption in order to ensure that it will not have to needlessly install costly monitors on a unit that will not have any NO_x emissions during the ozone season. In addition, GE Erie believes that it is critical for the Department to use the same standard EPA used in its SIP Call to regulate ICEs. Regulating ICEs beyond the actual one ton of NO_x emissions by using an ICE's potential to emit one ton of NO_x is not necessary to meet Pennsylvania's budget. It also will produce significant administrative costs.

GE Erie appreciates the opportunity to present these written comments to the proposed OTR Regulations. If the Department has any questions or wishes to discuss these comments further, please contact me at 814-870-7607.

Very truly yours,

MacDONALD, ILLIG, JONES & BRITTON LLP

By _____
Mark J. Shaw

MJS/tmb/490858
cc: General Electric Company

GENERAL ELECTRIC COMPANY
SUMMARY OF WRITTEN COMMENTS
OTR REGULATIONS

1. The Department should include EPA's exemption for units willing to accept a 25-ton ozone season NO_x emission limit.

   a. The GE Erie facility has one unit with a rated design capacity in excess of 250 MMBtu/hr to which the proposed OTR Regulations apply.

   b. The GE Erie facility affected unit is under a RACT permit restriction which prevents GE Erie from operating the unit during the ozone season; thus, during the ozone season, the affected unit will have zero emissions.

   c. Despite having no NO_x emissions during the ozone season, GE Erie would be required to install very costly monitoring equipment on its affected unit under the proposed OTR Regulations.

   d. The GE Erie facility needs Pennsylvania to adopt EPA's exemption to enable it to avoid significant unnecessary monitoring costs.

2. The Department should determine the applicability of the OTR Regulations to Internal Combustion Engines (ICEs) based upon the actual emissions of the units, not horsepower ratings.

   a. EPA included in its budget calculations for ICEs only those ICEs whose actual 1995 NO_x emissions exceeded one ton per day.

   b. Pennsylvania's use of horsepower cutoffs which are equivalent to a unit's potential to emit of one ton per day of NO_x results in a significant number of ICEs regulated by Pennsylvania which were not included in EPA's SIP Call budget.

   c. Pennsylvania's horsepower cutoffs ignore the recommendations of OTAG that only ICEs with horsepower ratings of 8,000 or greater be subject to regulation.

   d. Numerous other states, including New York, Massachusetts, Delaware, Wisconsin, Connecticut, Kentucky, Missouri, Tennessee, Michigan and West Virginia have either not regulated ICEs or have adopted standards that more closely resemble the actual one-ton-per-day standard used by EPA to determine the SIP Call Budget for ICEs.

3. The Department should adopt the exemptions for ICEs provided by EPA in its FIP at Section 98.41.

4. The Department should adopt EPA's 25 MW cutoff and sells electricity requirement for electric-generating units.

EXHIBITS TO

GENERAL ELECTRIC COMPANY'S

COMMENTS TO PROPOSED OTR REGULATIONS

Reference method means any direct test method of sampling and analyzing for an air pollutant as specified in appendix A of part 60 of this chapter.

Serial number means, when referring to NO_X allowances, the unique identification number assigned to each NO_X allowance by the Administrator, under § 96.53(c).

Source means any governmental, institutional, commercial, or industrial structure, installation, plant, building, or facility that emits or has the potential to emit any regulated air pollutant under the CAA. For purposes of section 502(c) of the CAA, a "source," including a "source" with multiple units, shall be considered a single "facility."

State means one of the 48 contiguous States and the District of Columbia specified in § 51.121 of this chapter, or any non-federal authority in or including such States or the District of Columbia (including local agencies, and Statewide agencies) or any eligible Indian tribe in an area of such State or the District of Columbia, that adopts a NO_X Budget Trading Program pursuant to § 51.121 of this chapter. To the extent a State incorporates by reference the provisions of this part, the term "State" shall mean the incorporating State. The term "State" shall have its conventional meaning where such meaning is clear from the context.

State trading program budget means the total number of NO_X tons apportioned to all NO_X Budget units in a given State, in accordance with the NO_X Budget Trading Program, for use in a given control period.

Submit or serve means to send or transmit a document, information, or correspondence to the person specified in accordance with the applicable regulation:

(1) In person;

(2) By United States Postal Service; or

(3) By other means of dispatch or transmission and delivery. Compliance with any "submission," "service," or "mailing" deadline shall be determined by the date of dispatch, transmission, or mailing and not the date of receipt.

Title V operating permit means a permit issued under title V of the CAA and part 70 or part 71 of this chapter.

Title V operating permit regulations means the regulations that the Administrator has approved or issued as meeting the requirements of title V of the CAA and part 70 or 71 of this chapter.

Ton or tonnage means any "short ton" (i.e., 2,000 pounds). For the purpose of determining compliance with the NO_X Budget emissions limitation, total tons for a control period shall be calculated as the sum of all recorded hourly emissions (or the tonnage equivalent of the recorded hourly emissions rates) in accordance with subpart H of this part, with any remaining fraction of a ton equal to or greater than 0.50 ton deemed to equal one ton and any fraction of a ton less than 0.50 ton deemed to equal zero tons.

Unit means a fossil fuel-fired stationary boiler, combustion turbine, or combined cycle system.

Unit load means the total (i.e., gross) output of a unit in any control period (or other specified time period) produced by combusting a given heat input of fuel, expressed in terms of:

(1) The total electrical generation (MWe) produced by the unit, including generation for use within the plant; or

(2) In the case of a unit that uses heat input for purposes other than electrical generation, the total steam pressure (psia) produced by the unit, including steam for use by the unit.

Unit operating day means a calendar day in which a unit combusts any fuel.

Unit operating hour or *hour of unit operation* means any hour (or fraction of an hour) during which a unit combusts any fuel.

Utilization means the heat input (expressed in mmBtu/time) for a unit. The unit's total heat input for the control period in each year will be determined in accordance with part 75 of this chapter if the NO_X Budget unit was otherwise subject to the requirements of part 75 of this chapter for the year, or will be based on the best available data reported to the Administrator for the unit if the unit was not otherwise subject to the requirements of part 75 of this chapter for the year.

§ 96.3 Measurements, abbreviations, and acronyms.

Measurements, abbreviations, and acronyms used in this part are defined as follows:

Btu—British thermal unit.
hr—hour.
Kwh—kilowatt hour.
lb—pounds.
mmBtu—million Btu.
MWe—megawatt electrical.
ton—2000 pounds.
CO_2—carbon dioxide.
NO_X—nitrogen oxides.
O_2—oxygen.

§ 96.4 Applicability.

(a) The following units in a State shall be NO_X Budget units, and any source that includes one or more such units shall be a NO_X Budget source, subject to the requirements of this part:

(1) Any unit that, any time on or after January 1, 1995, serves a generator with a nameplate capacity greater than 25 MWe and sells any amount of electricity; or

(2) Any unit that is not a unit under paragraph (a) of this section and that has a maximum design heat input greater than 250 mmBtu/hr.

(b) Notwithstanding paragraph (a) of this section, a unit under paragraph (a) of this section shall be subject only to the requirements of this paragraph (b) if the unit has a federally enforceable permit that meets the requirements of paragraph (b)(1) of this section and restricts the unit to burning only natural gas or fuel oil during a control period in 2003 or later and each control period thereafter and restricts the unit's operating hours during each such control period to the number of hours (determined in accordance with paragraph (b)(1)(ii) and (iii) of this section) that limits the unit's potential NO_X mass emissions for the control period to 25 tons or less. Notwithstanding paragraph (a) of this section, starting with the effective date of such federally enforceable permit, the unit shall not be a NO_X Budget unit.

(1) For each control period under paragraph (b) of this section, the federally enforceable permit must:

(i) Restrict the unit to burning only natural gas or fuel oil.

(ii) Restrict the unit's operating hours to the number calculated by dividing 25 tons of potential NO_X mass emissions by the unit's maximum potential hourly NO_X mass emissions.

(iii) Require that the unit's potential NO_X mass emissions shall be calculated as follows:

(A) Select the default NO_X emission rate in Table 2 of § 75.19 of this chapter that would otherwise be applicable assuming that the unit burns only the type of fuel (i.e., only natural gas or only fuel oil) that has the highest default NO_X emission factor of any type of fuel that the unit is allowed to burn under the fuel use restriction in paragraph (b)(1)(i) of this section; and

(B) Multiply the default NO_X emission rate under paragraph (b)(1)(iii)(A) of this section by the unit's maximum rated hourly heat input. The owner or operator of the unit may petition the permitting authority to use a lower value for the unit's maximum rated hourly heat input than the value as defined under § 96.2. The permitting authority may approve such lower value if the owner or operator demonstrates that the maximum hourly heat input specified by the manufacturer or the highest observed hourly heat input, or both, are not representative, and that such lower value is representative, of the unit's current capabilities because

Exhibit A

modifications have been made to the unit, limiting its capacity permanently.

(iv) Require that the owner or operator of the unit shall retain at the source that includes the unit, for 5 years, records demonstrating that the operating hours restriction, the fuel use restriction, and the other requirements of the permit related to these restrictions were met.

(v) Require that the owner or operator of the unit shall report the unit's hours of operation (treating any partial hour of operation as a whole hour of operation) during each control period to the permitting authority by November 1 of each year for which the unit is subject to the federally enforceable permit.

(2) The permitting authority that issues the federally enforceable permit with the fuel use restriction under paragraph (b)(1)(i) and the operating hours restriction under paragraphs (b)(1)(ii) and (iii) of this section will notify the Administrator in writing of each unit under paragraph (a) of this section whose federally enforceable permit issued by the permitting authority includes such restrictions. The permitting authority will also notify the Administrator in writing of each unit under paragraph (a) of this section whose federally enforceable permit issued by the permitting authority is revised to remove any such restriction, whose federally enforceable permit issued by the permitting authority includes any such restriction that is no longer applicable, or which does not comply with any such restriction.

(3) If, for any control period under paragraph (b) of this section, the fuel use restriction under paragraph (b)(1)(i) of this section or the operating hours restriction under paragraphs (b)(1)(ii) and (iii) of this section is removed from the unit's federally enforceable permit or otherwise becomes no longer applicable or if, for any such control period, the unit does not comply with the fuel use restriction under paragraph (b)(1)(i) of this section or the operating hours restriction under paragraphs (b)(1)(ii) and (iii) of this section, the unit shall be a NO_X Budget unit, subject to the requirements of this part. Such unit shall be treated as commencing operation and, for a unit under paragraph (a)(1) of this section, commencing commercial operation on September 30 of the control period for which the fuel use restriction or the operating hours restriction is no longer applicable or during which the unit does not comply with the fuel use restriction or the operating hours restriction.

§ 96.5 Retired unit exemption.

(a) This section applies to any NO_X Budget unit, other than a NO_X Budget opt-in source, that is permanently retired.

(b)(1) Any NO_X Budget unit, other than a NO_X Budget opt-in source, that is permanently retired shall be exempt from the NO_X Budget Trading Program, except for the provisions of this section, §§ 96.2, 96.3, 96.4, 96.7 and subparts E, F, and G of this part.

(2) The exemption under paragraph (b)(1) of this section shall become effective the day on which the unit is permanently retired. Within 30 days of permanent retirement, the NO_X authorized account representative (authorized in accordance with subpart B of this part) shall submit a statement to the permitting authority otherwise responsible for administering any NO_X Budget permit for the unit. A copy of the statement shall be submitted to the Administrator. The statement shall state (in a format prescribed by the permitting authority) that the unit is permanently retired and will comply with the requirements of paragraph (c) of this section.

(3) After receipt of the notice under paragraph (b)(2) of this section, the permitting authority will amend any permit covering the source at which the unit is located to add the provisions and requirements of the exemption under paragraphs (b)(1) and (c) of this section.

(c) *Special provisions.* (1) A unit exempt under this section shall not emit any nitrogen oxides, starting on the date that the exemption takes effect. The owners and operators of the unit will be allocated allowances in accordance with subpart E of this part.

(2)(i) A unit exempt under this section and located at a source that is required, or but for this exemption would be required, to have a title V operating permit shall not resume operation unless the NO_X authorized account representative of the source submits a complete NO_X Budget permit application under § 96.22 for the unit not less than 18 months (or such lesser time provided under the permitting authority's title V operating permits regulations for final action on a permit application) prior to the later of May 1, 2003 or the date on which the unit is to first resume operation.

(ii) A unit exempt under this section and located at a source that is required, or but for this exemption would be required, to have a non-title V permit shall not resume operation unless the NO_X authorized account representative of the source submits a complete NO_X Budget permit application under § 96.22 for the unit not less than 18 months (or such lesser time provided under the permitting authority's non-title V permits regulations for final action on a permit application) prior to the later of May 1, 2003 or the date on which the unit is to first resume operation.

(3) The owners and operators and, to the extent applicable, the NO_X authorized account representative of a unit exempt under this section shall comply with the requirements of the NO_X Budget Trading Program concerning all periods for which the exemption is not in effect, even if such requirements arise, or must be complied with, after the exemption takes effect.

(4) A unit that is exempt under this section is not eligible to be a NO_X Budget opt-in source under subpart I of this part.

(5) For a period of 5 years from the date the records are created, the owners and operators of a unit exempt under this section shall retain at the source that includes the unit, records demonstrating that the unit is permanently retired. The 5-year period for keeping records may be extended for cause, at any time prior to the end of the period, in writing by the permitting authority or the Administrator. The owners and operators bear the burden of proof that the unit is permanently retired.

(6) *Loss of exemption.* (i) On the earlier of the following dates, a unit exempt under paragraph (b) of this section shall lose its exemption:

(A) The date on which the NO_X authorized account representative submits a NO_X Budget permit application under paragraph (c)(2) of this section; or

(B) The date on which the NO_X authorized account representative is required under paragraph (c)(2) of this section to submit a NO_X Budget permit application.

(ii) For the purpose of applying monitoring requirements under subpart H of this part, a unit that loses its exemption under this section shall be treated as a unit that commences operation or commercial operation on the first date on which the unit resumes operation.

§ 96.6 Standard requirements.

(a) *Permit Requirements.* (1) The NO_X authorized account representative of each NO_X Budget source required to have a federally enforceable permit and each NO_X Budget unit required to have a federally enforceable permit at the source shall:

(i) Submit to the permitting authority a complete NO_X Budget permit application under § 96.22 in accordance

Commonwealth of Pennsylvania
GOVERNOR'S OFFICE

EXECUTIVE ORDER

Subject:		Number:
Regulatory Review and Promulgation		**1996–1**
Date:	Distribution:	By Direction Of:
February 6, 1996	**B**	Thomas J. Ridge, Governor

WHEREAS, the volume and scope of regulations promulgated by Commonwealth agencies has grown at an alarming rate in recent years; and

WHEREAS, a regulation should be promulgated only after a determination that it is necessary to address a compelling public interest; and

WHEREAS, political subdivisions and the private sector have often been asked to comply with regulations that were drafted and promulgated without meaningful input from these members of the regulated community; and

WHEREAS, burdensome regulations have placed undue restrictions on the regulated community and have hampered Pennsylvania's ability to compete effectively with other states; and

WHEREAS, despite the increasing volume and burden of regulations, they remain an appropriate and necessary means of protecting the public health and safety.

NOW, THEREFORE, I, Thomas J. Ridge, Governor of the Commonwealth of Pennsylvania, by virtue of the authority vested in me by the Constitution of the Commonwealth of Pennsylvania, the Regulatory Review Act, and other laws, do hereby establish the following procedures regarding the review and promulgation of regulations:

1. General Requirements. In the drafting and promulgating of new regulations and the application and review of existing regulations, all agencies shall adhere to the following principles:

a. Regulations shall address a compelling public interest.

b. Costs of regulations shall not outweigh their benefits.

c. Regulations shall be written in clear, concise and, when possible, nontechnical language.

Exhibit B

d. Regulations shall address definable public health, safety, or environmental risks.

e. Where federal regulations exist, Pennsylvania's regulations shall not exceed federal standards unless justified by a compelling and articulable Pennsylvania interest or required by state law.

f. Compliance shall be the goal of all regulations.

g. Where viable nonregulatory alternatives exist, they shall be preferred over regulations.

h. Regulations shall be drafted and promulgated with early and meaningful input from the regulated community.

i. Regulations shall not hamper Pennsylvania's ability to compete effectively with other states.

j. All agency heads shall be held directly accountable for regulations promulgated by their respective agencies.

2. Evaluation of Existing Regulations.

a. Existing regulations shall be reviewed by agencies for consistency with the aforementioned principles. Any regulations that are inconsistent with these principles shall be considered for amendment or repeal.

b. Agency heads shall have the flexibility to construct a program that reviews their existing regulations to assure consistency with these principles. A plan and schedule for review of existing regulations is to be submitted to the Governor's Policy Office within six months of the effective date of this order. All review programs shall commence within one year of the effective date of this order.

c. Regulations proposed for repeal should be submitted to the General Counsel, Secretary of the Budget, and Governor's Policy Director along with a Repeal Analysis Form. The analysis shall state:

- The name of the agency.
- The name of a contact person at that agency.
- A short title of the regulation.
- An explanation of the regulation.
- A justification for the proposed repeal.
- A proposed schedule for repeal – noting any public comment periods.
- Any costs and/or savings associated with the repeal.

d. If a statute prohibits the repeal of a regulation that the agency deems to be inconsistent with the aforementioned principles, the agency head shall submit to the General Counsel, Governor's Policy Director, and Secretary for Legislative Affairs the specific citation for the statute that prohibits the repeal and the citation for any regulation that is determined to be inconsistent with the aforementioned principles, the nature of and reason for the inconsistency, and a recommendation for legislative action, if appropriate.

3. Pre-Drafting and Drafting Guidelines.

a. Before drafting a regulation, agencies, where practical, shall undertake extensive public outreach to those who are likely to be affected by the regulation. Creating advisory committees, using regulatory negotiation, and developing other creative procedures are encouraged as means to solicit the public's input during the regulatory development process.

b. Those to be affected by the regulation should continue to be consulted during the drafting process. When appropriate, members of the regulated community should be involved with the formulation of language, the development of standards, and any other areas in which the regulated community has an interest and/or can provide insight. During the regulation development and drafting process, agencies should advise and consult with the Governor's Policy Office, Office of General Counsel, and the Budget Office whenever the agency determines that any such involvement would hasten the review process.

c. Each agency shall develop its own policies regarding public involvement tailored best to meet the needs of the agency and the regulated community.

d. Within six months of the effective day of this order, agencies shall submit to the Governor's Policy Office their internal guidelines for pre-drafting and drafting public outreach.

4. Review by Governor's Office.

a. Prior to submitting a proposed rulemaking, the agency head shall evaluate each regulation and attest to the fact that the regulation addresses a compelling public need that can be best remedied by the promulgation of the regulation.

b. The agency head shall submit to the General Counsel, Secretary of the Budget, and Governor's Policy Director a written Regulatory Analysis. The analysis shall state:

- The name of the agency.
- The name of a contact person at that agency.
- A short title for the regulation and a citation from the Pennsylvania Code.
- Whether the regulation is a proposed, final-form or final-omitted rulemaking.
- A brief, clear and, if possible, nontechnical explanation of the regulation.
- The statutory authority or mandate for the regulation.
- The compelling public need that justifies the regulation.
- The public health, safety, or environmental risks associated with nonregulation.
- Individuals or groups that are likely to benefit from the regulation.

- Individuals, groups, or entities that will be required to comply with the regulation.
- The outreach conducted by the agency with the regulated community prior to submission of the regulation.
- An estimate of the costs and/or savings associated with compliance and implementation.
- A cost/benefit analysis of the regulation.
- Nonregulatory alternatives considered and the reasons for their dismissal.
- Alternative regulatory schemes considered and the reasons for their dismissal.
- A statement of the compelling Pennsylvania interest if the regulation exceeds federal standards.
- Any requirements that would place Pennsylvania at a competitive disadvantage compared to other states.
- An intra-agency review schedule for the regulation.

c. Each regulation submitted for review shall contain a brief preamble, written in clear and concise language, which shall describe in nontechnical terms the compelling public need the regulation is designed to address, what the regulation requires in legal and practical terms, and who the regulation is likely to affect.

d. The regulatory analysis, along with the preamble and draft regulation, will be reviewed by the Office of General Counsel for form, language, and legal authority. The Governor's Policy Office will review the request to determine that public interest is compelling, that no viable alternative to the regulation exists, and that the costs of the regulation reasonably relate to the benefits. The Office of General Counsel will also consider whether the proposed regulation exceeds federal standards. If the regulation does exceed federal standards, the Policy Office will then evaluate whether the regulation is justified by a compelling and unique Pennsylvania interest. The Budget Office will evaluate the cost analysis prepared by the agency and prepare a fiscal note for the regulation.

e. No agency shall proceed with a proposed, final-form or final-omitted regulation until the General Counsel, Secretary of the Budget, and Policy Director have informed the agency that the regulation is consistent with the regulatory principles and overall policies of the Administration. Review by these three offices will be conducted in a fair and timely manner.

5. Nonregulatory Documents.

a. Nonregulatory public documents such as internal guidelines, policy statements, guidance manuals, decisions, rules and other written materials that provide directives, guidance, or other relevant compliance related information to the public shall be cataloged by every agency.

b. The cataloged titles of these documents, along with an agency contact and phone number, shall be published in the Pennsylvania Bulletin on August 3, 1996. Each year thereafter every agency shall publish and update its list in the Pennsylvania Bulletin on the first Saturday in August.

6. Petitions. To further the goal of greater public participation in the regulatory process; individuals, groups, and businesses are encouraged to use the regulatory petition process outlined in *1 PA Code Section 35.18.* Agencies that have not already done so shall develop internal procedures to receive and review petitions in a fair and timely manner.

7. Continual Review of Regulations. All regulations shall be reviewed in accordance with the review schedule published annually by each agency. As part of its review, the agency shall determine whether the regulation continues to effectively fulfill the goals for which it was intended and remains consistent with the previously-mentioned principles.

8. Regulatory Agendas. Semiannually, on February 1 and July 1, each agency head shall submit to the General Counsel, the Secretary of the Budget, and the Governor's Policy Office Director, for publishing in the *Pennsylvania Bulletin,* an agenda of regulations under development or consideration. The agenda shall describe the regulations being considered, the proposed date for promulgation, the need and legal basis for the action being taken, and the status of regulations previously listed on the agenda. Each item on the agenda shall also include a contact person within the agency from whom additional information may be obtained.

9. Exemptions. The procedure prescribed by this Order shall not apply to:

a. Emergency regulations as defined in the Regulatory Review Act.

b. Any regulation for which consideration or reconsideration under the terms of this order would conflict with deadlines imposed by statute, consent decree or by judicial order, provided that any such regulation shall be reported to the Director of the Governor's Policy Office together with a brief explanation of the conflict. The agency shall publish in the *Pennsylvania Bulletin* a statement of the reasons why it is impracticable for the agency to follow the procedures of this order with respect to such a rule. The agency, in consultation with the Governor's Policy Office, shall adhere to the requirements of this order to the extent permitted by statutory or judicial deadlines.

10. Applicability.

a. This order shall apply to all agencies under the jurisdiction of the Governor's Office.

b. This order is intended only to improve the internal management of executive agencies and is not intended to create any right or benefit, substantive or procedural, enforceable at law by a party against the Commonwealth, its agencies, its officers or any person.

11. Effective Date. This order is effective immediately

12. Rescission. Executive Order 1982-2 is rescinded.

Responses to the 2007 Baseline Sub-Inventory Information and Significant Comments for the Final NOx SIP Call (63 FR 57356, October 27, 1998)

Docket Number A-96-56
X-C-01

U.S. Environmental Protection Agency
May 1999

Exhibit C

B029 process unit heater with design capacity of 234 mmBtu/hr

P002 is a FCC Regenerator Unit which does not have the potential to emit greater than 1 ton/day NOx MAP Canton has no other heaters with a design duty over 250 mmBtu/hr and the most recent 1997 emissions inventory for the facility indicates no other NOx emission sources that approach the 1 ton/day cutoff number.

EPA Final Decision:
Modify inventory as requested.

Item Number: **VIII-B-57**
Origin: United States Enrichment Corporation (USEC); Robert Blythe
Category: Non-EGU
States Affected: OH

Requested Modification:

Facility ID 0666000000, Source IDs B001, B002, and B003, SCC 10200204

Requests that these points be removed from the inventory, as they are each rated at a heat input of 158 mmBtu/hr.

EPA Final Decision:
Modify boiler capacity of each boiler to 158 MMBtu/hr.

Item Number: **VIII-B-58**
Origin: Jackson & Kelly PLLC (for Consolidation Coal Co.); Kathy Beckett
Category: Non-EGU
States Affected: IL, PA, VA, WV

Requested Modification:
Requests modification of inventory for multiple sources.

EPA Final Decision:
Modify base inventory as requested.

Item Number: **VIII-B-61**
Origin: General Electric Corporation; Robert Schenker
Category: EGU & Non-EGU
States Affected: AL, IN, IL, KY, MA, NY, OH, PA

Requested Modification:
Requests modification of inventory for multiple sources and removal of sources from tables allocating emissions.

EPA Final Decision:
Non-EGU: Modify non-EGU capacity inventory as requested with following exceptions.
Remove sources from inventory where shown to not be in operation in 1995.
No modifications made to 2007 heat input values as this topic not open during this comment period.

AL: Cannot match data to comment. Point ID's and SCCs do not match EPA data.
State comment addresses the large unit.
IN: Cannot match EPA data to comment. No such FIPS county.
KY: Comment addressed by Jefferson Co., KY data submitted.
MA: Large units deleted from non-egu inventory.
NY: Comment addressed by NY state comment.
OH: B01 deleted from non-egu inventory.
PA: Pointids begin at 031. Matched EPA point # 032 to boiler 2 in supplied comment using other parameters.
Emissions for boiler 2 changed to 0 to indicate seasonal shutdown.
Modified other boiler capacities as requested.

Item Number: **VIII-B-62**
Origin: Illinois Environmental Protection Agency; Bharat Mathur
Category: EGU, Non-EGU, Area, Nonroad, Mobile
States Affected: IL

TABLE A.2.—ALLOCATIONS TO NON-EGUS BY MMBTU—Continued

State	Plant	Point ID	Unit 1995, Summer HI	Unit allocations by HI
OH	ARMCO STEEL COMPANY L.P.	P009	1,035,705	118
OH	ARMCO STEEL COMPANY L.P.	B010	511,020	58
OH	ARMCO STEEL COMPANY L.P.	B009	511,020	58
OH	ARMCO STEEL COMPANY L.P.	B008	818,504	93
OH	ARMCO STEEL COMPANY L.P.	B007	818,504	93
OH	BP CHEMICALS, INC.	B003	3,729,736	423
OH	BP CHEMICALS, INC.	B002	532,325	60
OH	BP CHEMICALS, INC.	B001	599,876	68
OH	BP OIL COMPANY—LIMA REFINERY	P010	1,224,000	139
OH	GENERAL ELECTRIC CO	B004	166,309	19
OH	PROCTER & GAMBLE CO	B021	932,754	106
CH	WHEELING PITTSBURGH STEEL STEUBENVILLE S	B004	125,864	14
OH	ARMCO STEEL COMPANY L.P.	P012	1,035,705	118
OH	PROCTER & GAMBLE CO	B022	5,348,925	607
OH	HENKEL CORP.—EMERY GROUP	B027	3,846,420	436
OH	HENKEL CORP.—EMERY GROUP	B015	681,360	77
OH	HENKEL CORP.—EMERY GROUP	B014	317,220	36
OH	ANHEUSER-BUSCH COLUMBUS BREWERY	X001	302,149	34
OH	FAIRFIELD RECYCLED PAPER, INC.	B003	192,697	22
OH	GENERAL ELECTRIC CO	B002	1,240,156	141
OH	LTV STEEL COMPANY, INC.	B905	87,181	10
OH	LTV STEEL COMPANY, INC.	B009	707,842	80
OH	LTV STEEL COMPANY, INC.	B005	473,434	54
OH	LTV STEEL COMPANY, INC.	B007	527,014	60
OH	LTV STEEL COMPANY, INC.	B004	632,208	72
OH	LTV STEEL COMPANY, INC.	B010	192,838	22
OH	LTV STEEL COMPANY, INC.	B001	575,218	65
OH	LTV STEEL COMPANY, INC.	B002	931,161	106
OH	LTV STEEL COMPANY, INC.	B003	437,625	50
OH	LTV STEEL COMPANY, INC.	B004	1,008,422	114
OH	LTV STEEL COMPANY, INC.	B005	259,811	29
OH	LTV STEEL COMPANY, INC.	B006	202,653	23
PA	INTERNATIONAL PAPER CO.	040	662,852	68
PA	ALLIED CHEMICAL CORP	052	844,191	87
PA	TEXAS EASTERN GAS PIPELINE CO	032	753,026	77
PA	GENERAL ELECTRIC CO.	035	627,589	65
PA	MERCK SHARP & DOHME	039	532,174	55
PA	BETHLEHEM STEEL CORP.	041	639,151	66
PA	BETHLEHEM STEEL CORP.	042	835,995	86
PA	BETHLEHEM STEEL CORP.	067	1,333,002	137
PA	BETHLEHEM STEEL CORP.	147	3,110,558	320
PA	GENERAL ELECTRIC CO.	032	1,000,620	103
PA	SUN REFINING AND MARKETING 1 O	006	450,087	46
PA	SUN REFINING AND MARKETING 1 O	007	740,245	76
PA	SUN REFINING AND MARKETING 1 O	038	549,423	57
PA	SUN REFINING AND MARKETING 1 O	039	549,423	57
PA	PROCTER & GAMBLE PAPER PRODUCTS CO.	932	5,618,055	578
PA	ALLIED CHEMICAL CORP	051	175,625	18
PA	JEFFERSON SMURFIT (FRMLY CONTAINER CORP)	001	724,340	75
PA	MONESSEN INC.	031	252,039	26
PA	PROCTER & GAMBLE PAPER PRODUCTS CO.	035	2,522,800	259
PA	INTERNATIONAL PAPER CO.	037	1,029,159	106
PA	ALLIED CHEMICAL CORP	050	100,620	10
PA	LTV STEEL COMPANY—PITTSBURGH WORKS	17	114,361	12
PA	GLATFELTER, P. H. CO.	031	1,030,727	106
PA	LTV STEEL COMPANY—PITTSBURGH WORKS	15	114,361	12
PA	LTV STEEL COMPANY—PITTSBURGH WORKS	19	157,590	16
PA	LTV STEEL COMPANY—PITTSBURGH WORKS	21	95,486	10
PA	SHENANGO IRON & COKE WORKS	06	168,766	17
PA	SHENANGO IRON & COKE WORKS	09	137,878	14
PA	BMG ASPHALT CO.	101	30,943	3
PA	ZINC CORPORATION OF AMERICA	034	1,498,461	154
PA	ZINC CORPORATION OF AMERICA	035	1,759,488	181
PA	UNITED STATES STEEL CORP., THE	043	999,098	103
PA	BP OIL, INC.	033	1,234,200	127
PA	PENNTECH PAPERS, INC.	041	1,063,116	109
PA	UNITED STATES STEEL CORP., THE	045	1,172,194	121
PA	PENNTECH PAPERS, INC.	040	978,703	101
PA	SUN REFINING & MARKETING CO.	090	2,212,658	228
PA	SCOTT PAPER CO.	035	2,173,948	224
PA	SCOTT PAPER CO.	034	858,330	88
PA	INTERNATIONAL PAPER COMPANY	034	1,099,800	113
PA	INTERNATIONAL PAPER COMPANY	033	1,100,520	113
PA	BETHLEHEM STEEL CORP.	132	981,509	101
PA	UNITED STATES STEEL CORP., THE	046	982,367	101
TN	EASTMAN, TENN. CO	002	540,192	64
TN	EASTMAN, TENN. CO	001	540,192	64
TN	KRAFT FOOD INGREDIENTS CORP	003	621,815	74
TN	HUMKO-DIV WITCO CHEM	010	453,804	54
TN	HUMKO-DIV WITCO CHEM	009	468,815	55

Exhibit D

federal register

Tuesday
October 27, 1998

Part II

Environmental Protection Agency

40 CFR Parts 51, 72, 75, and 96
Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone; Rule

Exhibit E

alternative compliance options for units with low NO_x mass emissions, explained below. Combustion turbines smaller than 100 MWe are also likely candidates to qualify for the alternative compliance option explained below.

The Acid Rain Program exempts cyclone boilers with a maximum continuous steam flow at 100 percent load of greater than 1060 thousand lb/hr from NO_x control requirements under part 76. These units were exempted because one of the primary criteria in title IV of the CAA for setting emissions limitations under part 76 was comparability of cost with low NO_x emission controls on boilers categorized as group 1 boilers under Title IV (large tangentially fired and dry bottom, wall fired). There is no such criterion in the CAA applicable to this rulemaking. Also, since the emission reductions required by this rulemaking are more substantial than the emission reductions required under part 76 [70], the cost per ton of reducing NO_x emission reductions is correspondingly higher. Therefore, applicability cutoffs that were relevant in the part 76 rulemaking are not relevant in this rulemaking.

In response to the comment that small electrical generators less than 25 MWe should be exempt from the NO_x Budget Trading Program, they were proposed to be exempt and will be exempt under the final model rule. They do still have the option of opting into the program if they choose to do so.

In the SNPR (63 FR 25926), EPA took comment on allowing units with a low federally enforceable NO_x emission limit (e.g. 25 tons per ozone season), that because of their size would be included in the trading program, to be exempt from the requirements of the trading program. In general commenters supported this concept. One commenter who supported the concept also added that it would be important to ensure that there were adequate requirements to assure that the individual sources who took advantage of this option demonstrated compliance with their unit-specific caps. The commenters who disagreed with this option expressed concern that a State's budget could be exceeded if emissions from these units were not accounted for.

Based on the comments received EPA continues to believe that it is appropriate to offer States the option of providing units that are above the applicability threshold but that have a very low potential to emit an alternative compliance option. This option would allow units that meet the requirements described below to be exempt from the requirements to hold allowances, and to comply with quarterly reporting requirements. In order to address the concern that sources must demonstrate compliance with their individual cap, EPA has added specific requirements that sources must meet in order to use this alternative compliance option.

Units that use this option would be required to:

(1) have a federally enforceable permit restricting ozone season emissions to less than 25 tons;

(2) keep on site records demonstrating that the conditions of the permit were met, including restrictions on operating time;

(3) report hours of operation during the ozone season to the permitting authority on an annual basis.

A unit choosing to use this compliance option would be required to determine the appropriate restrictions on its operating time by dividing 25 tons by the unit's maximum potential hourly NO_x mass emissions. The unit's maximum potential hourly NO_x mass emissions would be determined by multiplying the highest default emission rate for any fuel that the unit burned (using the default emission rates, in part 75.19 of this chapter) by the maximum rated hourly heat input of the unit (as defined in part 72 of this chapter).

States would be allowed, but not required, to incorporate this alternative compliance option into their SIPs. The EPA does agree that if a State does incorporate this option into the SIP, it would have to account for the emissions under its budget. Thus a State that chose to use this option would have to either:

(1) Subtract the total amount of potential emissions permitted to be emitted using this approach from the trading portion of the budget before the remaining portion of the trading budget is allocated to the trading participants; or (2) Offset the difference between total amount of potential emissions permitted to be emitted using this approach and the 2007 base year inventory emissions for these same sources with additional reductions outside of the trading portion of the budget.

If States choose not to incorporate this alternative compliance option into their SIPs, or if they choose to incorporate it exactly as it is set forth in the model rule, it will not affect the streamlined approval of the trading rule portion of the SIP. A State may choose to require an alternative means of ensuring that the potential to emit for units utilizing the alternative means of compliance is limited to less than 25 tons, however if a State deviates from the model rule in this way, the SIP will no longer receive streamlined approval.

2. Mobile/Area Sources

The proposed rule did not include mobile or area sources in the trading program, but solicited comment on expanding applicability to include these sources, or to include credits generated by these sources, in the trading program. Mobile and area sources were not included in the proposed trading rule due to EPA's concerns related to ensuring that reductions were real, developing and implementing procedures for monitoring emissions, and identifying responsible parties for the implementation of the program and associated emissions reductions.

The EPA received comment from State and local government, industry and coalitions of industry, and environmental groups regarding the inclusion of mobile and area sources in the program. Comments focused on the following main areas: inclusion or exclusion of mobile and area sources, subcategories of mobile sources for inclusion, and the use of pilot programs to foster innovation.

Some commenters urged EPA to include mobile and area sources with as few restrictions as possible in the trading program, primarily on an opt-in or voluntary basis. These commenters argued that excluding mobile sources would reduce the potential scope and benefits of the trading by placing a large portion of States' NO_x inventory outside the scope of the trading program. They noted that the existence of RECLAIM protocols for mobile and area source credit generation demonstrated that EPA's quantification, verification, and administration concerns were misplaced.

The majority of commenters, however, indicated that mobile sources should not be included at this time and that the model rule should not be delayed to address concerns related to inclusion of these sources. Some commenters argued against ever including mobile and area sources in the program. One State argued that inclusion of mobile and area sources would destroy the integrity of the program since mobile and area source reductions are not necessarily real, verifiable and quantifiable, failing to display a level of certainty comparable to those sources included in the trading program. A few commenters indicated that mobile sources were inherently unsuited to a capped system, since the difficulties of measuring emissions from these sources precludes their inclusion in a budget.

[70] The lowest emission rate required under part 76 is 0.40 lbs/mmBtu.

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CHAPTER IV

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APPENDIX D
LIST OF LARGE AND MEDIUM NON-EGU SOURCES

SIP Size	State	County	Plant ID	Point	SCC	Plant	1990 NO, Emissions (Tons/Day)	1995 NO, Emissions (Tons/Day)	2007 NO, Uncontrolled (Tons/Day)	2007 NO, w/Reduction (Tons/Day)	2007 Control Eff (%)	Fuel
L	40	049	0507	40	306002	WYNNEWOOD REFINING COMPANY	1.0000	0.9514	1.2463	1.2463	0.00	NONCOM
L	40	071	0502	45	306002	CONOCO INC	1.0000	0.9514	1.2463	1.2463	0.00	NONCOM
L	40	071	0502	46	306002	CONOCO INC	1.0000	0.9514	1.2463	1.2463	0.00	NONCOM
L	40	143	0008	04	306002	SINCLAIR	1.0000	0.9514	1.2463	1.2463	0.00	NONCOM
L	40	097	0709	17	305006	LONE STAR INDUSTRIES	1.0000	0.9914	1.1599	1.1599	0.00	NONCOM
L	40	097	0709	18	305006	LONE STAR INDUSTRIES	1.0000	0.9914	1.1599	1.1599	0.00	NONCOM
L	40	097	0709	19	305006	LONE STAR INDUSTRIES	1.0000	0.9914	1.1599	1.1599	0.00	NONCOM
L	40	123	0701	12	305006	HOLNAM INC. (IDEAL CEMENT)	3.0000	2.9742	3.4798	3.4798	0.00	NONCOM
L	40	131	0703	10	305006	BLUE CIRCLE CEMENT	2.0000	1.9828	2.3199	2.3199	0.00	NONCOM
L	40	143	0556	01	501001	OGDEN MARTIN SYSTEMS OF TULSA,	2.0000	2.3568	2.0033	2.0033	0.00	NONCOM
L	40	089	0700	02	102004	WEYERHAEUSER COMPANY	4.0000	4.5780	5.8598	5.8598	0.00	OIL
L	40	143	0008	01	102005	SINCLAIR	2.0000	1.9028	2.9303	2.9303	0.00	OIL
L	40	109	0010	01	102005	OKLAHOMA GAS & ELECTRIC	1.0000	1.1784	1.4612	1.4612	0.00	OIL
L	40	089	0700	06	102009	WEYERHAEUSER COMPANY	2.0000	2.2890	2.0143	2.0143	0.00	OTHER
L	40	109	0071	30	204001	TINKER AIR FORCE BASE	0.0000	0.0000	0.0000	0.0000	0.00	OTHER
L	40	109	0071	84	204001	TINKER AIR FORCE BASE	0.0000	0.0000	0.0000	0.0000	0.00	OTHER
M	40	131	0703	09	390002	BLUE CIRCLE CEMENT	2.0000	1.9828	2.9147	2.9147	0.00	COAL
M	40	089	0700	01	390006	WEYERHAEUSER COMPANY	2.0000	2.2890	2.9299	2.9299	0.00	GAS
M	40	143	0035	01	390006	FORD MOTOR CORPORATION/TULSA	4.0000	3.9656	5.8294	5.8294	0.00	GAS
M	40	143	0035	02	390006	FORD MOTOR CORPORATION/TULSA	3.0000	2.9742	4.3721	4.3721	0.00	GAS
M	40	123	0701	11	390006	HOLNAM INC. (IDEAL CEMENT)	3.0000	2.9742	4.3721	4.3721	0.00	GAS
M	40	047	0218	01	310004	TRIDENT NGL, INC	5.0000	5.0650	3.7988	3.7988	0.00	NONCOM
M	40	111	0703	01	305014	ANCHOR GLASS CONTAINER CORP	2.0000	1.9828	2.3199	2.3199	0.00	NONCOM
L	42	013	0010	036	102002	APPLETON PAPERS INC.	1.0165	1.0111	1.1111	0.3333	70.00	COAL
L	42	035	0008	033	102002	INTERNATIONAL PAPER COMPANY	2.4983	2.4851	2.7309	0.8193	70.00	COAL
L	42	035	0008	034	102002	INTERNATIONAL PAPER COMPANY	2.4966	2.4834	2.7290	0.8187	70.00	COAL
L	42	047	0005	040	102002	PENNTECH PAPERS, INC.	1.7249	1.7158	1.8855	0.5657	70.00	COAL
L	42	047	0005	041	102002	PENNTECH PAPERS, INC.	1.3272	1.3175	1.9972	0.5992	70.00	COAL
L	42	049	0004	035	102002	INTERNATIONAL PAPER CO.	1.6797	1.6708	1.8360	0.5508	70.00	COAL
L	42	049	0004	036	102002	INTERNATIONAL PAPER CO.	1.6684	1.6596	1.8238	0.5471	70.00	COAL
L	42	049	0004	037	102002	INTERNATIONAL PAPER CO.	0.8357	0.8313	0.9135	0.2741	70.00	COAL
L	42	133	0016	033	102002	GLATFELTER, P. H. CO.	0.9520	0.9470	1.0406	0.3122	70.00	COAL
L	42	133	0016	034	102002	GLATFELTER, P. H. CO.	2.5436	2.5301	2.7804	0.8341	70.00	COAL
L	42	133	0016	035	102002	GLATFELTER, P. H. CO.	1.7162	1.7071	1.8759	0.5628	70.00	COAL
L	42	133	0016	036	102002	GLATFELTER, P. H. CO.	1.4960	1.4881	1.9204	0.5761	70.00	COAL
L	42	029	0015	932	102002	SONOCO PRODUCTS CO., DWNGTWN	1.0425	1.0370	1.1396	0.3419	70.00	COAL
L	42	101	1566	001	102002	CONTAINER CORP OF AMER	1.2090	0.6013	1.3108	0.3932	70.00	COAL
L	42	101	1566	002	102002	CONTAINER CORP OF AMER	1.2090	0.6013	1.3108	0.3932	70.00	COAL
L	42	091	0058	034	102002	OCCIDENTAL CHEMICAL CORP	1.0229	1.1369	1.1118	0.3335	70.00	COAL
L	42	083	0003	931	102002	PETROWAX PA INC	1.0567	1.0755	1.1494	0.3448	70.00	COAL
L	42	007	0032	034	102002	ZINC CORPORATION OF AMERICA	3.3809	3.1966	3.6739	1.1022	70.00	COAL
L	42	007	0032	035	102002	ZINC CORPORATION OF AMERICA	3.7531	3.5486	4.0785	1.2236	70.00	COAL
L	42	049	0009	031	102002	GENERAL ELECTRIC CO.	1.0798	1.2927	1.1730	0.3519	70.00	COAL
L	42	049	0009	032	102002	GENERAL ELECTRIC CO.	5.9909	7.1723	6.4355	1.9307	70.00	COAL
L	42	049	0009	033	102002	GENERAL ELECTRIC CO.	2.2046	2.6393	2.3948	0.7184	70.00	COAL
L	42	049	0009	035	102002	GENERAL ELECTRIC CO.	1.3280	1.5899	1.4426	0.4328	70.00	COAL
L	42	007	0042	032	102002	AES BEAVER VALLEY PARTNERS, INC.	4.8307	5.1896	5.2843	1.5853	70.00	COAL
L	42	007	0042	033	102002	AES BEAVER VALLEY PARTNERS, INC.	5.2798	5.6721	5.7756	1.7327	70.00	COAL
L	42	007	0042	034	102002	AES BEAVER VALLEY PARTNERS, INC	4.8242	5.1826	5.2771	1.5831	70.00	COAL
L	42	007	0042	035	102002	AES BEAVER VALLEY PARTNERS, INC.	2.6839	2.8833	2.9359	0.8808	70.00	COAL
L	42	003	0009	04	102007	USX CORPORATION - EDGAR THOMSON	0.2150	0.1075	0.2279	0.0684	70.00	GAS
L	42	003	0011	50	102007	USX CORPORATION - CLAIRTON WORKS	0.3800	0.1900	0.4023	0.1208	70.00	GAS
L	42	003	0011	53	102007	USX CORPORATION - CLAIRTON WORKS	1.3810	0.9405	1.9939	0.5982	70.00	GAS
L	42	003	0011	56	102007	USX CORPORATION - CLAIRTON WORKS	0.1870	0.0935	0.1982	0.0595	70.00	GAS
L	42	003	0022	15	102007	LTV STEEL COMPANY - PITTSBURGH	0.1930	0.0965	0.2046	0.0614	70.00	GAS
L	42	003	0022	17	102007	LTV STEEL COMPANY - PITTSBURGH	0.1930	0.0965	0.2046	0.0614	70.00	GAS
L	42	003	0022	19	102007	LTV STEEL COMPANY - PITTSBURGH	0.1930	0.0965	0.2046	0.0614	70.00	GAS
L	42	003	0022	21	102007	LTV STEEL COMPANY - PITTSBURGH	0.1600	0.0800	0.1696	0.0509	70.00	GAS
L	42	003	0050	06	102007	SHENANGO IRON & COKE WORKS	0.2840	0.1420	0.3010	0.0903	70.00	GAS

Commander, no person or vessel may enter or remain in the regulated area.

Regulatory Evaluation

This rule is not a significant regulatory action under section 3(f) of Executive Order 12866 and does not require an assessment of potential costs and benefits under section 6(a)(3) of that order. It has been exempted from review by the Office of Management and Budget under that order. It is not significant under the regulatory policies and procedures of the Department of Transportation (DOT) (44 FR 11040; February 26, 1979). The Coast Guard expects the economic impact of this rule to be so minimal that a full Regulatory Evaluation under paragraph 10e of the regulatory policies and procedures of DOT is unnecessary. Since the regulations will only be in effect for one hour, the impacts on routine navigation are expected to be minimal.

Small Entities

Under the Regulatory Flexibility Act (5 U.S.C. 601–612), the Coast Guard must consider whether this rule will have a significant economic impact on a substantial number of small entities. "Small entities" include independently owned and operated small businesses that are not dominant in their field and that otherwise qualify as "small business concerns" under section 3 of the Small Business Act (15 U.S.C. 632). Because it expects the impact of this rule to be minimal, the Coast Guard certifies under 5 U.S.C. 605(b) that this temporary final rule will not have a significant economic impact on a substantial number of small entities.

Collection of Information

These regulations contain no collection of information requirements under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3520).

Federalism

The Coast Guard has analyzed this rule under the principles and criteria contained in Executive Order 12612 and has determined that this rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

Environment

The Coast Guard considered the environmental impact of this rule and concluded that, under figure 2–1, paragraph (34)(h) of COMDTINST M16475.1C, this rule is categorically excluded from further environmental documentation. Special local regulations issued in conjunction with a regatta or marine parade are excluded under that authority.

List of Subjects in 33 CFR Part 100

Marine Safety, Navigation (water), Reporting and recordkeeping requirements, Waterways.

Temporary Regulations

In consideration of the foregoing, Part 100 of Title 33, Code of Federal Regulations is amended as follows:

PART 100—[AMENDED]

1. The authority citation for Part 100 continues to read as follows:

Authority: 33 U.S.C. 1233; 49 CFR 1.46 and 33 CFR 100.35.

2. A temporary section 100.35–T05–106 is added to read as follows:

§ 100.35–T05–106 Cape Fear River, Wilmington, North Carolina.

(a) *Definitions:*

(1) *Regulated Area.* The waters of the Cape Fear River from shoreline to shoreline, bounded on the north by a line drawn along latitude 34°14.4' North and bounded on the south by a line drawn along latitude 34°14.0' North. All coordinates reference Datum NAD 1983.

(2) *Coast Guard Patrol Commander.* The Coast Guard Patrol Commander is a commissioned, warrant, or petty officer of the Coast Guard who has been designated by the Commander, Coast Guard Group Fort Macon.

(b) *Special Local Regulations:*

(1) Except for persons or vessels authorized by the Coast Guard Patrol Commander, no person or vessel may enter or remain in the regulated area.

(2) The operator of any vessel in this area shall:

(i) Stop the vessel immediately when directed to do so by any official patrol, including any commissioned, warrant, or petty officer on board a vessel displaying a Coast Guard ensign.

(ii) Proceed as directed by any official patrol, including any commissioned, warrant, or petty officer on board a vessel displaying a Coast Guard ensign.

(c) *Effective Dates.* This temporary final rule is effective from 11:30 p.m. on December 31, 1998 to 12:30 a.m. on January 1, 1999.

Dated: December 8, 1998.

Roger T. Rufe, Jr.,

Vice Admiral, U.S. Coast Guard Commander, Fifth Coast Guard District.

[FR Doc. 98–34133 Filed 12–23–98; 8:45 am]

BILLING CODE 4910–15–M

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 51 and 96

[FRL–6198–1]

Correction and Clarification to the Finding of Significant Contribution and Rulemaking for Purposes of Reducing Regional Transport of Ozone

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule; correction and clarification.

SUMMARY: The EPA is correcting and clarifying certain aspects to the requirements for 22 States and the District of Columbia to submit State implementation plan (SIP) revisions to prohibit specified amounts of emissions of oxides of nitrogen (NO_x) (also referred to as the NO_x SIP call). Most importantly, EPA is reopening the period for emissions inventory revisions to 2007 baseline sub-inventory information used to establish each State's budget in the NO_x SIP Call to February 22, 1999. This includes source-specific emission inventory data and vehicle miles traveled (VMT) and nonroad mobile growth rates, VMT distribution by vehicle class, average speed by roadway type, inspection and maintenance program parameters, and other input parameters used in the calculation of highway vehicle emissions. The comment period for 2007 baseline sub-inventory revisions will be reopened for two related notices of proposed rulemaking concerning Clean Air Act section 126 petitions (the section 126 proposal) and Federal implementation plans for the NO_x SIP call (the FIP proposal) in a future action.

DATES: This rule is effective December 28, 1998.

ADDRESSES: Dockets containing information relating to this rulemaking (docket Nos. A–96–56, A–97–43, and A–98–12) are available for public inspection at the Air and Radiation Docket and Information Center (6102), U.S. Environmental Protection Agency, 401 M Street SW, room M–1500, Washington, DC 20460, telephone (202) 260–7548, between 8:00 a.m. and 4:00 p.m., Monday through Friday, excluding legal holidays. A reasonable fee may be charged for copying. E-mail is A–AND–R–DOCKET–GROUP@EPA.GOV.

FOR FURTHER INFORMATION CONTACT: General questions concerning today's action should be addressed to Kimber S. Scavo, Office of Air Quality Planning and Standards, Air Quality Strategies and Standards Division, MD–15.

identify "large" and "small" non-EGU boilers and turbines (for more detailed information refer to the "Development of Modeling Inventory and Budgets for Regional SIP Call" document, September 24, 1998, in docket A–96–56):

1. Where boiler heat input capacity data were available for a unit, those data were used. Units with such data that are less than or equal to 250 mmBtu are "small" and units greater than 250 mmBtu/hr are "large."

2. Where boiler heat input capacity data were not available for a unit, those data were estimated, as described in the NPR and SNPR. Units estimated to be greater than 250 mmBtu/hr are "large."

3. Where boiler heat input capacity data were not available for a unit and where the boiler capacity was estimated to be less than 250 mmBtu/hr, 1995 point-level emissions were checked for each unit. If the 1995 average daily ozone season emissions were greater than one ton, the unit was categorized as a "large" source; otherwise, the unit was categorized as a "small" source.

A stationary internal combustion engine and a cement plant were determined to be "large" if its 1995 average daily ozone season emissions were greater than one ton. The heat input capacity does not affect its classification as large or small.

Clarification to 40 CFR 51.121(f)(2)(ii)

This notice clarifies that 40 CFR 51.121(f)(2)(ii) requires that if a State controls large EGUs and large non-EGU boilers, turbines and combined cycle units for purposes of complying with the NO_x SIP call, those control measures must assure that collectively all such sources, including new or modified units, will not exceed the total NO_x emissions projected for such sources and that those control measures must be in place no later than May 1, 2003. The amendment made to 40 CFR 51.121(f)(2)(ii) in this correction notice also clarifies that if SIP rules allow the large EGUs and large non-EGU boilers, turbines, and combined cycle units to use credits from the State compliance supplement pool, those units may use credit from the State compliance supplement pool during the 2003 or 2004 control seasons.

Section 51.121(f)(2)(ii) in the October 27 final SIP call requires that if a State elects to impose control measures on fossil fuel-fired NO_x sources serving electric generators with a nameplate capacity greater than 25 MWe or boilers, combustion turbines or combined cycle units with a maximum design heat input greater than 250 mmBtu/hr, those measures must assure that collectively all such sources, including new or modified units, will not exceed in the 2007 ozone season the total NO_x emissions projected for such sources. Section 51.121(b)(1)(i) requires that SIP revisions must contain control measures adequate to prohibit NO_x emissions in excess of the budget for that jurisdiction and 40 CFR 51.121(b)(1)(ii) requires that those control measures be implemented by May 1, 2003. Therefore, 40 CFR 51.121(f)(2)(ii) is amended to contain an explicit reference to 40 CFR 51.121(b)(1)(i) and (ii). This amendment clarifies that the control measures adopted for large EGUs and large non-EGU boilers, turbines, and combined cycle units sources, including new or modified units, must be in place by May 1, 2003."

Additionally, by referencing 40 CFR 51.121(b)(1)(i) (40 CFR 51.121(b)(1)(i) references 40 CFR 51.121(e) which provides for distribution of the compliance supplement pool) in 40 CFR 51.121(f)(2)(ii), this notice clarifies that if SIP rules allow large EGUs and large non-EGU boilers, turbines and combined cycle units to use credits from the State compliance supplement pool, those sources, including new or modified units, may demonstrate compliance in the 2003 and 2004 control seasons using credit from the compliance supplement pool.

Correction to 40 CFR 96.42

This notice corrects the formula for distributing unused allowances in the new source set-aside back to existing sources. The October 27 final SIP call mistakenly included an extra parenthesis in the text of 40 CFR 96.42. The text of 40 CFR 96.42 is corrected to remove the extra parenthesis so that the formula reads: Unit's share of NO_x allowances remaining in allocation set-aside = Total NO_x allowances remaining in allocation set-aside × (Unit's NO_x allowance allocation ÷ State trading program budget excluding allocation set-aside).

Correction to Page 57,404

On page 57,404, third column, the carryover sentence, beginning, "The Air Quality Modeling TSD * * *" is inaccurate and is replaced with the following: "The 'National Air Quality and Emissions Trends Report, 1996,' included in the docket as VI–C–18, contains information as to the reductions in ozone values that have resulted from these controls."

Administrative Requirements

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This rule is not a "major rule" as defined by 5 U.S.C. 804(2).

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this action is not a "significant regulatory action" and is therefore not subject to review by the Office of Management and Budget. In addition, this action does not impose any enforceable duty, contain any unfunded mandate, or impose any significant or unique impact on small governments as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4). This action also does not require prior consultation with State, local, and tribal government officials as specified by Executive Order 12875 (58 FR 58093, October 28, 1993) or Executive Order 13084 (63 FR 27655 (May 10, 1998), or involve special consideration of environmental justice related issues as required by Executive Order 12898 (59 FR 7629, February 16, 1994). Because this action is not subject to notice-and-comment requirements under the Administrative Procedure Act or any other statute, it is not subject to the regulatory flexibility provisions of the Regulatory Flexibility Act (5 U.S.C. 601 et seq.). This action also is not subject to Executive Order 13045 (Protection of Children from Environmental Health Risks and Safety Risks) (62 FR 19885, April 23, 1997) because EPA interprets E.O. 13045 as applying only to those regulatory actions that are based on health or safety risks, such that the analysis required under section 5–501 of the Order has the potential to influence the regulation. This action is not subject to E.O. 13045 because it does not establish an environmental standard intended to mitigate health or safety risks. In addition, the National Technology Transfer and Advancement Act of 1997 (NTTAA) does not apply because today's action does not require the public to perform activities conducive to the use of voluntary consensus standards under that Act. The EPA's compliance with these statutes and Executive Orders for the underlying rule, the final NO_x SIP call, is discussed in 63 FR 57477–81 (October 27, 1998).

federal register

Wednesday
October 21, 1998

Part III

Environmental Protection Agency

40 CFR Parts 52 and 98
Federal Implementation Plans To Reduce the Regional Transport of Ozone; Proposed Rule

Exhibit H

requirements of this rule are applicable requirements under § 70.2 and must be reflected in the title V operating permit of sources subject to the FIP that are required to have such a permit. The EPA believes that the large stationary internal combustion engines and cement kilns subject to the FIP are required to have a title V permit. Further, all State and local air permitting authorities currently have EPA-approved title V operating permits programs. Consequently, these State and local agencies would be the permitting authorities for the sources subject to the FIP.

C. Stationary Internal Combustion Engines

1. Rule Requirements

As described in the NO_X SIP call, EPA's budget calculation includes a 90 percent decrease from uncontrolled levels for the large sources in this category. The FIP rules proposed today are designed to achieve that 90 percent emissions decrease, averaged over a rolling 30-day period, using control technologies that are estimated to be less than $2,000 per ton of NO_X removed on average. The requirements are contained in the regulatory section of this notice. To ensure that the rules apply only to large sources, the regulation includes a size cutoff of between 2,400 and 4,400 brake horsepower, depending on the fuel.

2. Background

The control level selected for spark ignited rich-burn engines is a limit of 110 parts per million by volume (ppmv) NO_X at 15 percent oxygen (O_2) for engines that are 2400 brake horsepower (hp) or larger. This represents non-selective catalytic reduction (NSCR) control. The NSCR provides the greatest NO_X reduction of all technologies considered in the Alternative Control Techniques (ACT) document for "NO_X emissions from Stationary Reciprocating Internal Combustion Engines" (EPA–453/R–93–032) and is capable of providing a 90 to 98 percent reduction in NO_X emissions. The range of controlled NO_X is reported to be 0.3 to 1.6 grams per brake horsepower-hour (g/hp-hr), or 20 to 110 ppmv (at 15 percent O_2) in the ACT document. The lower end of the range represents 98 percent control and the upper end represents 90 percent control. According to the ACT document, one NSCR supplier guarantees 98 percent reduction. However, an alternative limitation of 90 percent reduction was selected because 98 percent reduction is based on a single supplier's guarantee. Engines that are 2400 hp or larger have the potential to emit 1 ton of NO_X per day.

The control level selected for spark ignited lean-burn engines is a limit of 125 ppmv NO_X at 15 percent O_2 for engines that are 2400 hp or larger. This represents selective catalytic reduction (SCR) control. The SCR provides the greatest NO_X reduction of all technologies considered in the ACT document for lean-burn engines and is capable of providing a 90 percent reduction in NO_X emissions. Engines that are 2400 hp or larger have the potential to emit 1 ton or more of NO_X per day.

The control level selected for diesel engines is a limit of 175 ppmv NO_X at 15 percent O_2 for engines that are 3100 hp or larger. This represents SCR control. The SCR provides the greatest NO_X reduction of all technologies considered in the ACT document for diesel engines and is capable of providing a 90 percent reduction in NO_X emissions. Engines that are 3100 hp or larger have the potential to emit 1 ton or more of NO_X per day.

The control level selected for dual fuel engines is a limit of 125 ppmv NO_X at 15 percent O_2 for engines that are 4400 hp or larger. This represents SCR control which provides the greatest NO_X reduction of all technologies considered in the ACT document for dual fuel engines. The SCR is capable of providing a 90 percent reduction in NO_X emissions from dual fuel engines. Dual fuel engines that are 4400 hp or larger have the potential to emit 1 ton of NO_X per day.

To ensure compliance with these post-combustion controls, EPA is proposing requiring affected sources to install continuous emissions monitoring systems (CEMS). The CEMS must meet the requirements of 40 CFR part 60. The EPA is proposing the part 60 requirements rather than the part 75 requirements because the rule does not regulate mass emissions, but instead regulates on a volumetric (parts per million) basis.

The EPA invites comment on alternative approaches to monitoring emissions, including CEMS meeting the requirements of 40 CFR part 75. The EPA specifically requests comments on the use of predictive emissions monitoring systems (PEMS). The EPA will give greater consideration to comments that provide data demonstrating the accuracy of alternative methods such as PEMS, particularly if the data provide a comparison of the alternative method to simultaneous data gathered using either a CEM or using EPA reference method testing. More consideration will also be given to data that provide complete information about the range of unit operating parameters that the method was tested over. If commenters do not have these data available, EPA requests comments explaining why the alternative methods would be valid over the range of operating conditions that the unit could be expected to be operating.

D. Cement Manufacturing

1. Rule Requirements

As described in the NO_X SIP call, EPA's budget calculation includes a 30 percent decrease from uncontrolled levels for the large sources in this category. The FIP rules proposed today are designed to achieve that 30 percent emissions decrease using control technologies that are estimated to be less than $2,000 per ton of NO_X removed. The requirements are to install and operate low-NO_X burners, mid-kiln firing, or alternative control techniques, subject to EPA approval, that achieve at least the same emissions decreases as low-NO_X burners or mid-kiln firing. These requirements are contained in the regulatory section of this notice. To ensure that the rules apply only to large sources, the rule applies only to kilns with process rates of at least the following:

Long dry kilns—12 tons per hour (TPH)
Long wet kilns—10 TPH
Preheater kilns—16 TPH
Precalciner and preheater/precalciner kilns—22 TPH

For the purpose of determining alternative control techniques that EPA would consider, it should be noted that EPA expects the following emissions limits can be met by low-NO_X burners or mid-kiln firing:

(i) For any long wet kiln, 6.0 lbs/ton of clinker produced when averaged over any 30 consecutive days.

(ii) For any long dry kiln, 5.1 lbs/ton of clinker produced when averaged over any 30 consecutive days.

(iii) For any preheater kiln, 3.8 lbs/ton of clinker produced when averaged over any 30 consecutive days.

(iv) For any preheater/precalciner or precalciner kiln, 2.8 lbs/ton of clinker produced when averaged over any 30 consecutive days.

2. Background

There are 4 types of cement kilns: long wet, long dry, preheater, and precalciner, as described in the ACT document for "NO_X emissions from Cement Manufacturing" (EPA–453/R–94-004). For purposes of developing this rule, EPA is using the average of the standard EPA emission factor (see

Subpart NN—Pennsylvania

18. Subpart NN is amended to add § 52.2031 to read as follows:

§ 52.2031 Interstate pollutant transport provisions; requirements for decreases in emissions of nitrogen oxides.

FIP Regulations. The owner or operator of each NO_X source located within the State of Pennsylvania and for which requirements are set forth in parts 97 or 98 of this chapter must comply with such applicable requirements.

Subpart OO—Rhode Island

19. Subpart OO is amended to add § 52.2082 to read as follows:

§ 52.2082 Interstate pollutant transport provisions; requirements for decreases in emissions of nitrogen oxides.

FIP Regulations. The owner or operator of each NO_X source located within the State of Rhode Island and for which requirements are set forth in parts 97 or 98 of this chapter must comply with such applicable requirements.

Subpart PP—South Carolina

20. Subpart PP is amended to add § 52.2135 to read as follows:

§ 52.2135 Interstate pollutant transport provisions; requirements for decreases in emissions of nitrogen oxides.

FIP Regulations. The owner or operator of each NO_X source located within the State of South Carolina and for which requirements are set forth in parts 97 or 98 of this chapter must comply with such applicable requirements.

Subpart RR—Tennessee

21. Subpart RR is amended to add § 52.2232 to read as follows:

§ 52.2232 Interstate pollutant transport provisions; requirements for decreases in emissions of nitrogen oxides.

FIP Regulations. The owner or operator of each NO_X source located within the State of Tennessee and for which requirements are set forth in parts 97 or 98 of this chapter must comply with such applicable requirements.

Subpart VV—Virginia

22. Subpart VV is amended to add § 52.2429 to read as follows:

§ 52.2429 Interstate pollutant transport provisions; requirements for decreases in emissions of nitrogen oxides.

FIP Regulations. The owner or operator of each NO_X source located within the State of Virginia and for which requirements are set forth in parts 97 or 98 of this chapter must comply with such applicable requirements.

Subpart XX—West Virginia

23. Subpart XX is amended to add § 52.2529 to read as follows:

§ 52.2529 Interstate pollutant transport provisions; requirements for decreases in emissions of nitrogen oxides.

FIP Regulations. The owner or operator of each NO_X source located within the State of West Virginia and for which requirements are set forth in parts 97 or 98 of this chapter must comply with such applicable requirements.

Subpart YY—Wisconsin

24. Subpart YY is amended to add § 52.2576 to read as follows:

§ 52.2576 Interstate pollutant transport provisions; requirements for decreases in emissions of nitrogen oxides.

FIP Regulations. The owner or operator of each NO_X source located within the State of Wisconsin and for which requirements are set forth in parts 97 or 98 of this chapter must comply with such applicable requirements.

25. Part 98 is added to read as follows:

PART 98—NITROGEN OXIDES (NO_X) BUDGET PROGRAM REQUIREMENTS FOR STATIONARY SOURCES NOT IN THE TRADING PROGRAM

Subpart A—Emissions of NO_X From Stationary Reciprocating Internal Combustion Engines

Sec.
98.1 Applicability.
98.2 Definitions.
98.3 Standard requirements.
98.4 Compliance determination.
98.5 Reporting, monitoring and recordkeeping.
98.6 Exemptions.

Subpart B—Emissions of NO_X From Cement Manufacturing.

98.41 Applicability.
98.42 Definitions.
98.43 Standard requirements.
98.44 Reporting, monitoring and recordkeeping.
98.45 Exemptions.

Authority: 42 U.S.C. 7401–7671q.

Subpart A—Emissions of NO_X From Stationary Reciprocating Internal Combustion Engines

§ 98.1 Applicability.

(a) Any owner or operator of a rich burn stationary internal combustion engine rated at equal to or greater than 2,400 brake horsepower shall comply with the applicable requirements of this section and §§ 98.2 through 97.6.

(b) Any owner or operator of a lean burn stationary internal combustion engine rated at equal to or greater than 2,400 brake horsepower shall comply with the applicable requirements of this section and §§ 98.2 through 98.6.

(c) Any owner or operator of a diesel stationary internal combustion engine rated at equal to or greater than 3,000 brake horsepower shall comply with the applicable requirements of this section and § 98.2 through 98.6.

(d) Any owner or operator of a dual fuel stationary internal combustion engine rated at equal to or greater than 4,400 brake horsepower shall comply with the applicable requirements of this section and § 98.2 through 98.6.

§ 98.2 Definitions.

For the purposes of this subpart, the following definitions shall apply.

(a) *Diesel engine* means a compression ignited two- or four-stroke engine in which liquid fuel injected into the combustion chamber ignites when the air charge has been compressed to a temperature sufficiently high for auto-ignition.

(b) *Dual fuel engine* means a compression ignited stationary internal combustion engine that is burning liquid fuel and gaseous fuel simultaneously.

(c) *Emergency standby engine* means an internal combustion engine used only when normal power line or natural gas service fails, or for the emergency pumping of water for either fire protection or flood relief. An emergency standby engine may not be operated to supplement a primary power source when the load capacity or rating of the primary power source has been either reached or exceeded.

(d) *Engine rating* means the output of an engine as determined by the engine manufacturer and listed on the nameplate of the unit, regardless of any derating.

(e) *Higher heating value (HHV)* means the total heat liberated per mass of fuel burned (Btu per pound), when fuel and dry air at standard conditions undergo complete combustion and all resultant products are brought to their standard States at standard conditions. If certification of the HHV is not provided by the third party fuel supplier, it shall be determined by one of the following test methods: ASTM D2015–85 for solid fuels; ASTM D240–87 or ASTM D2382–88 for liquid hydrocarbon fuels; or ASTM D1826–88 or ASTM D1945–81 in conjunction with ASTM D3588–89 for

gaseous fuels. These methods are all incorporated by reference as specified at 40 CFR 52.3002.

(f) *Lean-burn engine* means any two- or four-stroke spark-ignited engine that is not a rich-burn engine.

(g) *Maintenance operation* means the use of an emergency standby engine and fuel system during testing, repair and routine maintenance to verify its readiness for emergency standby use.

(h) *Malfunction* means any sudden and unavoidable failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner. Failures that are caused entirely or in part by poor maintenance, careless operation, or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions.

(i) *Output* means the shaft work output from an engine plus the energy reclaimed by any useful heat recovery system.

(j) *Peak load* means the maximum instantaneous operating load.

(k) *Permitted capacity factor* means the annual permitted fuel use divided by the manufacturers specified maximum fuel consumption times 8,760 hours per year.

(l) *Rich-burn engine* means a two- or four-stroke spark-ignited engine where the manufacturers original recommended operating air/fuel ratio divided by the stoichiometric air/fuel ratio is less than or equal to 1.1.

(m) *Shutdown* means the period of time a unit is cooled from its normal operating temperature to cold or ambient temperature.

(n) *Startup* means the period of time a unit is heated from cold or ambient temperature to its normal operating temperature as specified by the manufacturer.

(o) *Stationary internal combustion engine* means any internal combustion engine of the reciprocating type that is either attached to a foundation at a facility or is designed to be capable of being carried or moved from one location to another and remains at a single site at a building, structure, facility, or installation for more than 12 consecutive months. Any engine (or engines) that replaces an engine at a site that is intended to perform the same or similar function as the engine replaced is included in calculating the consecutive time period. Nonroad engines and engines used solely for competition are not stationary internal combustion engines.

(p) *Stoichiometric air/fuel ratio* means the air/fuel ratio where all fuel and all oxygen in the air/fuel mixture will be consumed.

(q) *Unit* means any diesel, lean-burn, or rich-burn stationary internal combustion engine as defined in paragraph (o) of this section.

§ 98.3 Standard requirements.

After May 1, 2003, an owner or operator of a unit subject to the standards of this subpart shall not operate the unit May 1 through September 30 of 2003, and any subsequent year unless the owner or operator complies with the requirements of paragraph (a) of this section during May 1 through September 30 of each year.

(a) No owner or operator of a stationary internal combustion engine shall cause to be discharged into the atmosphere any gases that contain NO_x in excess of the following applicable limit, expressed as NO_2 corrected to 15 percent parts per million by volume (ppmv) stack gas O_2 on a dry basis, averaged over a rolling 30-day period:

(1) Rich-burn, ≥ 2400 bhp: 110 ppmv
(2) Lean-burn, ≥ 2400 bhp: 125 ppmv
(3) Diesel, ≥ 3000 bhp: 175 ppmv
(4) Dual fuel, ≥ 4400 bhp: 125 ppmv

(b) Each emission limit expressed in paragraphs (a)(1) through (4) of this section may be multiplied by X, where X equals the engine efficiency (E) divided by a reference efficiency of 30 percent. Engine efficiency (E) shall be determined using one of the methods specified in paragraph (b)(1) or (2) of this section, whichever provides a higher value. However, engine efficiency (E) shall not be less than 30 percent. An engine with an efficiency lower than 30 percent shall be assigned an efficiency of 30 percent.

(1)

$$E = \frac{(\text{Engine output}) * (100)}{\text{Energy input}}$$

where energy input is determined by a fuel measuring device accurate to ±5 percent and is based on the higher heating value (HHV) of the fuel. Percent efficiency (E) shall be averaged over 15 consecutive minutes and measured at peak load for the applicable engine.

(2)

$$E = \frac{(\text{Mfrs Rated Efficiency [Continuous] at LHV}) * (\text{LHV})}{(\text{HHV})}$$

Where
LHV = the lower heating value of the fuel; and
HHV = the higher heating value of the fuel

§ 98.4 Compliance determination.

Any owner or operator of a unit subject to the requirements of § 98.3 shall determine compliance using a continuous emissions monitoring system (CEMS) which meets the applicable requirements of Appendices B and F of 40 CFR part 60, excluding data obtained during periods specified in § 98.6.

§ 98.5 Reporting, monitoring, and recordkeeping.

(a) *Reporting requirements.* Any owner or operator subject to the requirements of § 98.3 shall comply with the following requirements:

(1) By May 1, 2003, submit to the Administrator the identification number and type of each unit subject to the section, the name and address of the plant where the unit is located, and the name and telephone number of the person responsible for demonstrating compliance with the section.

(2) Submit a report documenting for that unit the total NO_x emissions from May 1 through September 30 of each year to the Administrator by October 31 of each year, beginning in 2003.

(3) Each owner or operator of a unit subject to this rule and operating a CEMS shall submit an excess emissions and monitoring systems performance report, in accordance with the requirements of 40 CFR 60.7(c) and 60.13.

(b) *Monitoring requirements.* (1) Any owner or operator subject to the requirements of § 98.3 shall not operate such equipment unless it is equipped with one of the following:

(i) A CEMS which meets the applicable requirements of 40 CFR part 60, subpart A, and appendix B, and complies with the quality assurance procedures specified in 40 CFR part 60, appendix F. The CEMS shall be used to demonstrate compliance with the applicable emission limit.

(ii) An alternate calculational and recordkeeping procedure based upon actual emissions testing and correlations with operating parameters. The installation, implementation and use of such an alternate calculational and recordkeeping procedure must be approved by EPA in writing prior to implementation.

(2) The CEMS or approved alternate recordkeeping procedure shall be operated and maintained in accordance with an on-site CEMS operating plan approved by EPA.

(c) *Recordkeeping requirements.*

(1) Any owner or operator of a unit subject to this subpart shall maintain all records necessary to demonstrate compliance with the section for a period of 2 calendar years at the plant at which the subject unit is located. The records shall be made available to the

Administrator upon request. The owner or operator shall maintain records of the following information for each day the unit is operated:

(i) Identification and location of each engine subject to the requirements of this section.

(ii) Calendar date of record.

(iii) The number of hours the unit is operated during each day including startups, shutdowns, malfunctions, and the type and duration of maintenance and repairs.

(iv) Date and results of each emissions inspection.

(v) A summary of any emissions corrective maintenance taken.

(vi) The results of all compliance tests.

(vii) If a unit is equipped with a CEMS:

(A) Identification of time periods during which NO_X standards are exceeded, the reason for the exceedance, and action taken to correct the exceedance and to prevent similar future exceedances.

(B) Identification of the time periods for which operating conditions and pollutant data were not obtained including reasons for not obtaining sufficient data and a description of corrective actions taken.

(2) [Reserved]

§ 98.6 Exemptions.

(a) The requirements of §§ 98.3, 98.4, and 98.5 shall not apply to the following periods of operation:

(1) Start-up and shut-down periods and periods of malfunction, not to exceed 36 consecutive hours;

(2) Regularly scheduled maintenance activities.

Subpart B—Emissions of NO_X From Cement Manufacturing

§ 98.41 Applicability.

The requirements of this subpart apply only to kilns with process rates of at least the following: long dry kilns—12 tons per hour (TPH); long wet kilns—10 TPH; preheater kilns—16 TPH; precalciner and preheater/precalciner kilns—22 TPH.

§ 98.42 Definitions.

(a) *Clinker* means the product of a Portland cement kiln from which finished cement is manufactured by milling and grinding.

(b) *Long dry kiln* means a kiln 14 feet or larger in diameter, 400 feet or greater in length, which employs no preheating of the feed. The inlet feed to the kiln is dry.

(c) *Long wet kiln* means a kiln 14 feet or larger in diameter, 400 feet or greater in length, which employs no preheating of the feed. The inlet feed to the kiln is a slurry.

(d) *Low-NO_X* burners means combustion equipment designed to reduce flame turbulence, delay fuel/air mixing, and establish fuel-rich zones for initial combustion.

(e) *Malfunction* means 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 operation are not malfunctions.

(f) *Mid-kiln firing* means the secondary firing in kilns by injecting solid fuel at an intermediate point in the kiln using a specially designed feed injection mechanism for the purpose of decreasing NO_X emissions through:

(1) Burning part of the fuel at a lower temperature; and

(2) Reducing conditions at the solid waste injection point that may destroy some of the NO_X formed upstream in the kiln burning zone.

(g) *Portland cement* means a hydraulic cement produced by pulverizing clinker consisting essentially of hydraulic calcium silicates, usually containing one or more of the forms of calcium sulfate as an interground addition.

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

(i) *Precalciner kiln* means a kiln where the feed to the kiln system is preheated in cyclone chambers and utilize a second burner to calcine material in a separate vessel attached to the preheater prior to the final fusion in a kiln which forms clinker.

(j) *Preheater kiln* means a kiln where the feed to the kiln system is preheated in cyclone chambers prior to the final fusion in a kiln which forms clinker.

(k) *Shutdown* means the cessation of operation of a Portland cement kiln for any purpose.

(l) *Startup* means the setting in operation of a Portland cement kiln for any purpose.

§ 98.43 Standard requirements.

After May 1, 2003, an owner or operator of any Portland cement kiln subject to this rule shall not operate the kiln during May 1 through September 30 unless the kiln has installed and operates during May 1 to September 30 with low-NO_X burners, mid-kiln firing, or alternative control techniques, subject to EPA approval, that achieve at least the same emissions decreases as low-NO_X burners or mid-kiln firing.

§ 98.44 Reporting, monitoring and recordkeeping.

(a) *Reporting requirements.* Any owner or operator subject to the requirements of § 98.43 shall comply with the following requirements:

(1) By May 1, 2003, submit to the Administrator the identification number and type of each unit subject to the section, the name and address of the plant where the unit is located, and the name and telephone number of the person responsible for demonstrating compliance with the section.

(2) Submit a report documenting for that unit the total NO_X emissions from May 1 through September 30 of each year to the Administrator by October 31 of each year, beginning in 2003.

(b) *Monitoring requirements.* Any owner or operator of a unit subject to this subpart shall complete an initial performance test and subsequent annual testing consistent with the requirements of 40 CFR part 60, appendix A, Method 7, 7A ,7C, 7D, or 7E.

(c) *Recordkeeping Requirements.* Any owner or operator of a unit subject to this subpart shall produce and maintain records which shall include, but are not limited to:

(1) The emissions, in pounds of NO_X per ton of clinker produced from each affected Portland cement kiln.

(2) The date, time and duration of any startup, shutdown or malfunction in the operation of any of the cement kilns or the emissions monitoring equipment.

(3) The results of any performance testing.

(4) Daily cement kiln production records.

(5) All records required to be produced or maintained shall be retained on site for a minimum of 2 years and be made available to the EPA or State or local agency upon request.

§ 98.45 Exemptions.

The requirements of §§ 98.43 and 98.44 shall not apply to the following periods of operation:

(a) Start-up and shut-down periods and periods of malfunction, not to exceed 36 consecutive hours;

(b) Regularly scheduled maintenance activities.

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BILLING CODE 6560-01-P

DEVELOPMENT OF EMISSION BUDGET INVENTORIES FOR REGIONAL TRANSPORT NO_x SIP CALL

U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards
May 1999

Exhibit I

The following rules were then used to determine if a unit's boiler capacity was considered greater than, equal to, or less than 250 MMBtu/hr. For each unit:

a. If boiler capacity data were provided for the unit, size determination was made based on those data.

b. If both the mean and median boiler capacity in the file were greater than 300 MMBtu/hr, it was assumed that the unit's boiler capacity was greater than 250 MMBtu/hr.

c. If either the mean or median boiler capacity was between 200 and 300 MMBtu/hr, then the daily NO_x emissions were used to determine the boiler size. If the daily NO_x emissions were greater than the average daily NO_x emissions in the default boiler capacity file, it was assumed that the boiler capacity was greater than 250 MMBtu/hr. If the daily NO_x emissions were less than the average daily NO_x emissions in the default boiler capacity file, it was assumed that the boiler capacity was less than 250 MMBtu/hr.

d. If both the mean and median boiler capacity in the file were less than 200 MMBtu/hr, it was assumed that the boiler capacity was less than 250 MMBtu/hr.

e. If the boiler could not be matched to the default boiler capacity file, it was assumed that the boiler capacity was less than 250 MMBtu/hr.

Units for which the boiler capacity was estimated to be greater than 250 MMBtu/hr were categorized as large sources.

2. Cement Manufacturing Plants and Internal Combustion Engines

For cement manufacturing plants and internal combustion engines, boiler capacity was not used to determine source size. Instead 1995 typical ozone season daily emissions were used as a determinant. If the 1995 point-level emissions were more than 1 ton/day, the unit was categorized as a large source. Otherwise the unit was categorized as a small source.

3. Calculation of Reductions

Emissions reductions for the budgets were calculated only for large sources in the specific source categories listed in Table III-3. Sources not meeting the large source requirements from these affected categories were considered small and not subject to additional budget control. Emissions from sources smaller than the heat input capacity cutoff level, and that emit less than 1 ton of NO_x per typical ozone season day are included in the budget inventory at their 2007 base case level. Additionally, those sources without adequate information to determine potentially applicable control techniques are included in the budget at 2007 base case levels.

TECHNICAL SUPPORT DOCUMENT
FOR
STATIONARY INTERNAL COMBUSTION ENGINES
(September 4, 1998)

The EPA reviewed requirements for stationary reciprocating internal combustion engines, including information developed for the California FIP rule (m), 59 FR 23265. The EPA examined requirements that reflect the most stringent level of control that can be achieved at a cost of $2,000/ton of NO_x, for units emitting 1 ton/day or more. Technical information in the Alternative Control Techniques (ACT) document for NO_x Emissions From Stationary Internal Combustion Engines was used to determine appropriate control levels based on this criteria.[1] Determination of the control levels is discussed below for each engine type.

Spark Ignited Rich-Burn Engines

The control level for spark ignited rich-burn engines that meets the $2,000/ton criteria above, is a limit of 110 ppmv NO_x at 15% O_2 for engines that are 2400 brake horsepower (hp) or larger. This represents non-selective catalytic reduction (NSCR) control. NSCR provides the greatest NO_x reduction of all technologies considered in the ACT document and is capable of providing a 90 to 98 percent reduction in NO_x emissions.[1] This emission limitation represents the upper end of the range of "Expected controlled NO_x emission levels" (NSCR) from Table 2-2 of the ACT document. The range of controlled NO_x is reported to be 0.3 to 1.6 g/hp-hr, or 20 to 110 ppmv (at 15% O_2) in the ACT. The lower end of the range represents 98 percent control and the upper end represents 90 percent control. According to the ACT, one NSCR supplier guarantees 98 percent reduction. However, an alternative limitation of 90 percent reduction is recommended because 98 percent reduction is based on a single supplier's guarantee. There was no source test data provided to support this claim.

The 2400 hp threshold corresponds to a 1 ton/day emission level, based on the 15.8 g/hp-hr average NO_x emission factor reported in the ACT. Engines that are 2400 hp or larger have the potential to emit 1 ton of NO_x per day.

As illustrated in Figure 2-3 of the ACT (p. 2-29), the cost effectiveness of NSCR increases exponentially as the engine size drops below 1500 hp. The cost effectiveness is nearly constant at about $300/ton (1993 $) for large engines and starts to increase as the engine size drops below 3000 hp. There is an inflection point around 1000 hp and the

cost effectiveness increase sharply as the engine size drops below 500 hp. The cost effectiveness is about $400/ton for a 2400 hp engine operated 8,000 hours per year. Therefore, NSCR meets the criteria of less than $2,000/ton of NO_x reduction.

Spark Ignited Lean-Burn Engines

The control level for spark ignited lean burn engines that meets the $2,000/ton criteria above, is a limit of 125 ppmv NO_x at 15% O_2. This represents selective catalytic reduction (SCR) control. SCR provides the greatest NO_x reduction of all technologies considered in the ACT document for lean-burn engines and is capable of providing a 90 percent reduction in NO_x emissions. This emission limitation corresponds to the "Expected controlled NO_x emission levels" (SCR) from Table 2-5 of the ACT document.

The 2200 hp threshold corresponds to a 1 ton/day emission level, based on the 16.8 g/hp-hr average NO_x emission factor reported in the ACT. Engines that are 2400 hp or larger have the potential to emit 1 ton of NO_x per day.

As illustrated in Figure 2-6 of the ACT (p. 2-35), the cost effectiveness of SCR for lean burn engines increases exponentially as the engine size drops below 2000 hp. The cost effectiveness is nearly constant at about $600/ton for large engines and starts to increase as the engine size drops below 3000 hp. There is an inflection point around 1000 hp and the cost effectiveness increase sharply as the engine size drops below 800 hp. The cost effectiveness is about $800/ton for a 2200 hp engine operated 8,000 hours per year. Therefore, SCR meets the criteria of less than $2,000/ton of NO_x reduction.

Diesel Engines

The control level for diesel engines engines that meets the $2,000/ton criteria above, is a limit of 175 ppmv NO_x at 15% O_2. This represents selective catalytic reduction (SCR) control. SCR provides the greatest NO_x reduction of all technologies considered in the ACT document for diesel engines and is capable of providing a 90 percent reduction in NO_x emissions. This emission limitation corresponds to the upper end of the range (1.2 to 2.4 g/hp-hr or 90 - 175 ppmv) for "Expected controlled NO_x emission levels" (SCR) from Table 2-8 of the ACT document.

The 3100 hp threshold corresponds to a 1 ton/day emission level, based on the 12.0 g/hp-hr average NO_x emission factor reported in the ACT. Therefore, engines that are 3100 hp or larger have the potential

to emit 1 ton of NO_x per day.

As illustrated in Figure 2-9 of the ACT (p. 2-41), the cost effectiveness of SCR for diesel engines increases exponentially as the engine size drops below 3000 hp. The cost effectiveness is nearly constant at about $800/ton for large engines and starts to increase as the engine size drops below 3000 hp. The cost effectiveness is about $1,000/ton for a 3100 hp diesel engine operated 8,000 hours per year. Therefore, SCR meets the criteria of less than $2,000/ton of NO_x reduction.

Dual Fuel Engines

The control level for dual fuel engines engines that meets the $2,000/ton criteria above, is a limit of 125 ppmv NO_x at 15% O_2. This represents selective catalytic reduction (SCR) control which provides the greatest NO_x reduction of all technologies considered in the ACT document for dual fuel engines. SCR is capable of providing a 90 percent reduction in NO_x emissions from dual fuel engines. This emission limitation corresponds to the upper end of the range (0.8 to 1.7 g/hp-hr or 60 to 125 ppmv) for "Expected controlled NO_x emission levels" (SCR) from Table 2-8 of the ACT document.

The 4400 hp threshold corresponds to a 1 ton/day emission level, based on the 8.5 g/hp-hr average NO_x emission factor reported in the ACT. Therefore, dual fuel engines that are 4400 hp or larger have the potential to emit 1 ton of NO_x per day.

As illustrated in Figure 2-12 of the ACT (p. 2-45), the cost effectiveness of SCR for dual fuel engines increases exponentially as the engine size drops below 4000 hp. The cost effectiveness is nearly constant at about $1,000/ton for large engines and starts to increase as the engine size drops below 4000 hp. There is an inflection point around 2000 hp and the cost effectiveness increase sharply as the engine size drops below 1000 hp. The cost effectiveness is about $1,200/ton for a 4400 hp dual fuel engine operated 8,000 hrs/year. Therefore, SCR meets the criteria of less than $2,000/ton of NO_x reduction.

REFERENCES

1. Robert B. Snyder, Midwest Research Institute. Prepared for the U. S. Environmental Protection Agency. Alternative Control Technology Document - NO_x Emissions from Stationary Reciprocating Internal Combustion Engines. EPA Publication No. EPA-453/R-93-032. July 1993.

ECOS

Ozone Transport Assessment Group

Recommendation: Non-Utility Point Source Controls

Definitions

For purposes of this recommendation, individual medium non-utility point sources are defined as follows:

A boiler > 100 MMBtu/hr and < 250 MMBtu/hr
A reciprocating i.c. engine > 4000 hp and < 8000 hp
A turbine > 10,000 hp and < 20,000 hp
Any other source > 1 ton/average summer day and < 2 tons/average summer day

For purposes of this recommendation, individual large non-utility point sources are defined as follows:

A boiler ≥250 MMBtu/hr
A reciprocating i.c. engine ≥8000 hp
A turbine ≥20,000 hp
Any other source ≥2 tons/average summer day

Control Levels

The OTAG Policy Group recommends that the stringency of controls for large non-utility point sources should be established in a manner equitably with utility controls. The OTAG Policy Group recommends that RACT should be considered for individual medium non-utility point sources where appropriate.

If additional modeling and air quality analyses are performed as specified in OTAG's recommendation for "Additional Modeling and Air Quality Analysis." then development of final state non-utility point source strategies should consider said modeling and analyses.

Control Targets for Budget* Calculation Purposes

The OTAG Policy Group anticipates USEPA will calculate a statewide NOx tonnage budget for each state. In calculating the statewide NOx tonnage budgets, the OTAG Policy Group recommends a calculation based on the following non-utility point source control targets:

Reference Utility Control Level (Coal-fired Power Plants)	Control Targets for the Large Non-utility Point Source Sector	Control Targets for the Medium Non-utility Point Source Sector
55% (0.35 lb/MMBtu)	55%	Uncontrolled
65% (0.25 lb/MMBtu)	60%	Uncontrolled
75% (0.20 lb/MMBtu)	65%	RACT
85% (0.15 lb/MMBtu)	70%	RACT

The control targets, expressed as an emission reduction percentage, should be based on uncontrolled emission rates. The budget component for non-utility point sources is not intended to be an allocation for the non-utility point source sector or for individual units.

Flexibility and Relationship to Other Requirements

The OTAG Policy Group acknowledges that states have flexibility in implementing the non-utility point source strategy. These recommendations shall not supersede any other more restrictive state or federal requirement.

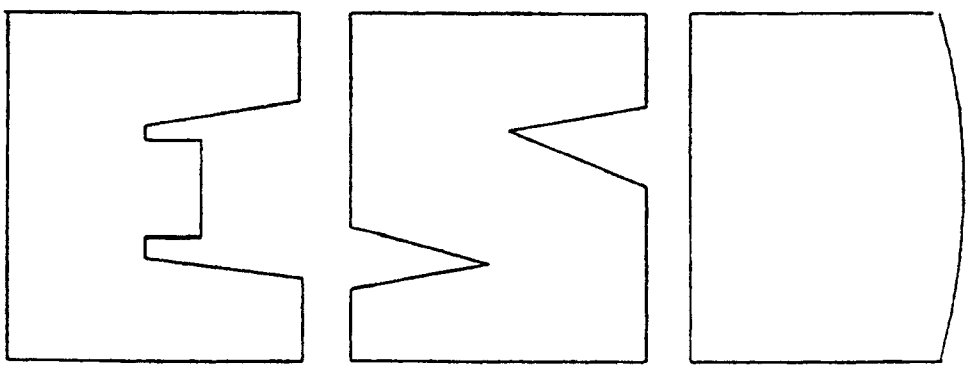
*Budget as used in this recommendation does not imply that a cap will be implemented.

United States Environmental Protection Agency | Office of Air Quality Planning and Standards Research Triangle Park NC 27711 | EPA-453/R-93-032 July 1993

Air

EPA

Alternative Control Techniques Document -- NOx Emissions from Stationary Reciprocating Internal Combustion Engines



A/F's and relatively low combustion temperatures. Fuel effects on CO emissions, as shown in Figure 4-2, are minimal.[15]

4.2.3 Ambient Conditions.

The effects of atmospheric conditions on NO_x emissions have been evaluated by several sources, predominately by or for automotive engine manufacturers. These test results indicate changes in NO_x of up to 25 percent caused by ambient temperature changes and up to 40 percent caused by ambient pressure changes.[16] Most of these effects are caused by changes in the A/F as the density of the combustion air changes. Humidity has an additional effect on lowering NO_x in that high-moisture conditions reduce the peak temperatures within the engine cylinders, decreasing NO_x emissions by up to 25 percent.[17]

The design A/F varies for different IC engines, so engines respond differently to changes in atmospheric conditions. Thus it is quite difficult to quantify atmospheric effects on engine emissions. However, the following general effects have been observed for engines operating close to stoichiometric conditions:[17]

1. Increases in humidity decrease NO_x emissions;
2. Increases in intake manifold air temperature may increase HC and CO emissions; and
3. Decreases in atmospheric pressure increase HC and CO emissions.

4.3 UNCONTROLLED EMISSION LEVELS

Stationary IC engine sizes vary widely, so comparisons of emissions among a group of engines require that emissions be presented on a brake-specific, mass-per-unit-power-output basis. In this document emissions are expressed in units of grams per horsepower-hour (g/hp-hr). For conversion to parts per million

by volume (ppmv) at 15 percent O_2, the following approximate conversion factors are used in this document:[18]

NO_x emissions:

rich-burn engines: 1 g/hp-hr = 67 ppmv

lean-burn engines: 1 g/hp-hr = 73 ppmv

CO emissions:

rich-burn engines: 1 g/hp-hr = 110 ppmv

lean-burn engines: 1 g/hp-hr = 120 ppmv

HC emissions:

rich-burn engines: 1 g/hp-hr = 194 ppmv

lean-burn engines: 1 g/hp-hr = 212 ppmv

Uncontrolled emission levels were provided by several engine manufacturers. These emissions levels were tabulated and averaged for engines with similar power ratings. The range of NO_x emissions and the average for engine size categories from 0 to 4,000+ hp are shown in Table 4-1. Most manufacturers provided emission data only for current production engines, but some included older engine lines as well. For rich-burn engines, the average NO_x emission level ranges from 13.1 to 16.4 g/hp-hr (3.54 to 4.87 pounds/million Btu's [lb/MMBtu]). For lean-burn engines, the average ranges from 7.9 to 18.6 g/hp-hr (1.99 to 5.46 lb/MMBtu). The 7.9 g/hp-hr shown for the smallest lean-burn engine category is considerably lower than for the other lean-burn engines. This figure reflects unusually low NO_x emissions reported for one manufacturer's line of engines. Excluding this engine line yields emission levels similar to those shown for other lean-burn engine categories (i.e., 17.0 to 17.5 g/hp-hr). For diesel engines, NO_x emissions range from 11.2 to 13.0 g/hp-hr (3.66 to 4.26 lb/MMBtu). Dual-fuel engines have the lowest NO_x emission rates, ranging from 4.9 to 10.7 g/hp-hr (1.75 to 3.26 MMBtu).

TABLE 4-1. AVERAGE NO_x EMISSIONS FOR IC ENGINES[18-25]

Size category, hp	Number of engines in data base	Average heat rate, Btu/hp-hr[a]	Uncontrolled NO_x emissions			
			Highest	Lowest	Average	
			g/hp-hr	g/hp-hr	g/hp-hr[a]	lb/MMBtu[b]
Rich-Burn SI Engines[c]						
0-200	8	8,140	15.8	9.1	13.1	3.54
201-400	13	7,820	23.5	9.1	16.4	4.62
401-1000	31	7,540	22.4	10.4	16.3	4.76
1001-2000	19	7,460	25.0	13.0	16.3	4.81
2001-4000	10	6,780	18.0	13.0	15.0	4.87
4001 +	2	6,680	14.0	14.0	14.0	4.62
Lean-Burn SI Engines[c]						
0-400	7	8,760	17.5	3.0	7.9	1.99
401-1000	17	7,660	27.0	15.5	18.6	5.35
1001-2000	43	7,490	27.0	14.0	17.8	5.23
2001-4000	30	7,020	27.0	10.0	17.2	5.40
4001 +	25	6,660	17.5	10.0	16.5	5.46
Diesel CI Engines[d]						
0-200	12	6,740	17.1	10.0	11.2	3.66
201-400	8	6,600	19.0	7.6	11.8	3.94
401-1000	22	6,790	19.0	9.0	13.0	4.22
1001-2000	14	6,740	19.0	8.5	11.4	3.73
2001-4000	6	6,710	14.0	9.3	11.4	3.74
4000 +	6	6,300	12.0	12.0	12.0	4.20
Dual Fuel CI Engines[e]						
700-1200	5	6,920	13.0	9.3	10.0	3.18
1201-2000	3	7,220	13.0	6.2	10.7	3.26
2001-4000	5	6,810	13.0	5.0	8.4	2.72
4000 +	4	6,150	5.0	4.5	4.9	1.75

[a]Calculated from figures corresponding to International Standards Organization (ISO) conditions, as provided by engine manufacturers.
[b]lb/MMBtu = (g/hp-hr)*(lb/454 g)*(1/heat rate)*10^6.
[c]Natural gas fuel.
[d]No. 2 diesel oil fuel.
[e]Natural gas and No. 2 diesel oil fuel.

4.4 REFERENCES FOR CHAPTER 4

1. Control Techniques for Nitrogen Oxides Emissions From Stationary Sources - Revised Second Edition. U. S. Environmental Protection Agency, Research Triangle Park, NC. Publication No. EPA-450/3-83-002. January 1983. p. 2-1.

2. Stationary Internal Combustion Engines. Standards Support and Environmental Impact Statement, Volume I: Proposed Standards of Performance. U. S. Environmental Protection Agency, Research Triangle Park, NC. Publication No. EPA-450/2-78-125a. July 1979. p. 4-3.

3. Radian Corporation. Internal Combustion Engine NO_x Control. Prepared for the Gas Research Institute (Chicago, IL) and the Electric Power Research Institute (Palo Alto, CA). Publication No. GS-7054. December 1990. 55 pp.

4. Wilkes, C. Control of NO_x Emissions From Industrial Gas Turbine Combustion Systems. General Motors Corporation. Indianapolis, IN. For presentation at the 82nd annual meeting and exhibition, Anaheim, CA. June 25 to 30, 1989. p. 5.

5. Reference 2, p. 4-4.

6. Reference 2, p. 3-5.

7. Schorr, M. NO_x Control for Gas turbines: Regulations and Technology. General Electric Company. Schenectady, NY. For presentation at the Council of Industrial Boiler Owners NO_x Control IV Conference. February 11-12, 1991. pp. 3-5.

8. Reference 2, pp. 4-5 through 4-9.

9. Reference 2, pp. 3-33, 3-34.

10. Environmental Assessment of Combustion Modification Controls for Stationary Internal Combustion Engines. U. S. Environmental Protection Agency, Industrial Environmental Research Laboratory, Research Triangle Park, NC. Publication No. EPA-600/7-81-127. July 1981. pp. 4-11 and 4-12.

11. Letter from Dowdall, D.C., Caterpillar Inc., to Neuffer, W. J., EPA/ISB. December 17, 1992. Review of draft reciprocating engine ACT document.

12. Reference 2, p. 4-89.

13. Reference 2, pp. 3-27 through 3-29.

14. Helmich, M. J., and M. A. Schleigh. C-B Reciprocating Cleanburn™ Update. Cooper-Bessemer Reciprocating Products Division of Cooper Industries. Presented at the Sixth Annual Reciprocating Machinery Conference. Salt Lake City. September 23-26, 1991. 23 pp.

15. Sorge, G. W. Update on Emissions. Waukesha Engine Division--Dresser Industries, Waukesha, WI. August 1991. 17 pp.

16. Reference 2, pp. 4-11 through 4-30.

17. Reference 10, pp. 4-4, 4-5.

18. Letter and attachments from Stachowicz, R. W., Waukesha Engine Division of Dresser Industries, Inc., to Snyder, R. B., Midwest Research Institute. September 16, 1991. Internal combustion engines.

19. Letter and attachment from Miklos, R. A., Cooper-Bessemer Reciprocating Products Division, to Jordan, B. C., EPA/ESD. January 21, 1992. Internal Combustion engines.

20. Letter and attachment from Dowdall, D. C., Caterpillar Inc., to Jordan, B. C., EPA/ESD. March 25, 1992. Internal combustion engines.

21. Letter and attachment from Iocco, D. E., Dresser-Rand, to Snyder, R. B., Midwest Research Institute. October 1, 1991. Internal combustion engines.

22. Letter and attachment from McCormick, W. M., Cooper Industries--Ajax Superior Division, to Snyder, R. B., Midwest Research Institute. September 16, 1991. Internal combustion engines.

23. Letter and attachment from Axness, J., Deere Power Systems Group, to Snyder, R. B., Midwest Research Institute. August 30, 1991. Internal combustion engines.

24. Letter and attachment from Fisher, J., Detroit Diesel Corporation, to Jordan, B. C., EPA/ESD . June 10, 1992. Internal combustion engines.

25. Letter and attachment from Kasel, E., Fairbanks Morse Engine Division of Coltee Industries, to Snyder, R. B., Midwest Research Institute. September 4, 1991. Internal combustion engines.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET

Department for Environmental Protection

Division for Air Quality

(New Administrative Regulation)

401 KAR 51:120 Regional NOx controls.

RELATES TO: KRS 224.10-100, 224.20-100, 224.20-110, 224.20-120, 42 U.S.C. 7410, 63 Fed. Reg. 57356 (October 27, 1998)

STATUTORY AUTHORITY: KRS 224.10-100, 224.20-100, 224.20-110, 224.20-120, 42 U.S.C. 7410, 63 Fed. Reg. 57356 (October 27, 1998)

NECESSITY, FUNCTION, AND CONFORMITY: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to prescribe administrative regulations for the prevention, abatement, and control of air pollution. This administrative regulation provides for the regional control of nitrogen oxides (NOx) emissions from stationary internal combustion engines and portland cement manufacturing plants, pursuant to the federal mandate published in NOx SIP Call at 63 Fed. Reg. 57356 (October 27, 1998). This administrative regulation is not more stringent nor otherwise different than the provisions allowed under the NOx SIP Call.

Section 1. Applicability. This administrative regulation shall apply to:

(1) A stationary internal combustion engine whose NOx emissions, on or after January 1, 1995, averages more than one (1) ton per day during a control period; and

(2) A portland cement manufacturing plant with process rates, on or after

January 1, 1995, equal to or greater than

(a) Twelve (12) tons of clinker per hour for a long dry kiln;

(b) Ten (10) tons of clinker per hour for a long wet kiln;

(c) Sixteen (16) tons of clinker per hour for a preheater kiln; or

(d) Twenty-two (22) tons of clinker per hour for a precalciner or preheater/precalciner kiln.

Section 2. Standard for Engines. On and after May 1, 2003, the owner or operator of an engine specified in Section 1(1) of this administrative regulation shall, during a control period:

(1) Operate the engine using:

(a) LEC technology for a lean burn engine;

(b) NSCR technology for a rich burn engine;

(c) SCR technology for a dual fuel or diesel engine; or

(d) Another control device achieving a reduction in NOx emissions during the control period of at least ninety (90) percent of its uncontrolled emissions, if the engine is equipped with a CEMS for NOx; or

(2) Use REC technology to operate more than one engine, if:

(a) Each engine has uncontrolled NOx emissions of at least 0.5 tons per day

during the control period; and

(b) The sum of the NOx emission reductions during the control period is equal to or greater than the reduction that would be achieved if the engine specified in Section 1(1) of this administrative regulation reduced its uncontrolled NOx emissions by 90%; or

(3) Use other control devices to operate more than one engine so that the sum of the NOx emission reductions during the control period is equal to or greater than the reduction that would be achieved by reducing the NOx emissions from the engine specified in Section 1(1) of this administrative regulation by at least 90% of its uncontrolled emissions, if each controlled engine:

(a) Is equipped with CEMS for NOx;

(b) Has uncontrolled NOx emissions of at least 0.5 tons per day during the control period; and

(c) Achieves a reduction of at least forty (40) percent of its uncontrolled emissions.

Section 3. Reporting, Monitoring, and Recordkeeping for Engines.

(1) Reporting requirements. An owner or operator of an engine specified in Section 1(1) of this administrative regulation shall submit the following reports to the cabinet at the locations specified in Section 6 of this administrative regulation:

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Title 10 - DEPARTMENT OF NATURAL RESOURCES

Division 10 - Air Conservation Commission

Chapter 6 - Air Quality Standards, Definitions, Sampling and Reference Methods and Air Pollution Control Regulations for the Entire State of Missouri

10 CSR 10-6.390 Control of NOx Emissions from Large Internal Combustion Engines. If the commission adopts this rule action, it will be submitted to the U.S. Environmental Protection Agency to be included in the Missouri State Implementation Plan.

Purpose: The purpose of this regulation is to reduce emissions of NOx to ensure compliance with the federal NOx control plan. This rulemaking will establish emission levels for large Stationary Internal Combustion Engines.

(1) Applicability
- (A) This rule applies to any large stationary internal combustion engine, greater than 1300 horsepower, that:
  1. Emitted greater that 1 ton per day on average during the period from May 1 through September 30 of 1995, 1996, or 1997. or
  2. Any large stationary internal combustion engine that begins operation after September 30, 1997.
- (B) Exemptions
  1. Any source meeting the applicability requirements of section (1)(A) of this rule which has an approved NOx budget opt-in permit under 10 CSR 10-6.350(2)(H), is exempt from this rule.
  2. Any stationary internal combustion engine that meets the definition of emergency standby engine in subsection (2)(D) of this rule.
  3. The requirements of sections (3) and (4) of this rule shall not apply to the following operating conditions:
     - A. Start-up and shut-down periods and periods of malfunctions, not to exceed 36 consecutive hours;
     - B. Regularly scheduled maintenance activities.
     - C.

(2) Definitions
- (A) Definitions of key words or phrases used in this rule may be found in 10 CSR 10-6.020 or 10 CSR 10-6.350.
- (B) CI – Compression Ignited
- (C) Diesel engine – compression-ignited two- or four- stroke engine in which liquid fuel is injected into the combustion chamber ignites when the air charge has been compressed to a temperature sufficiently high for auto-ignition.

TENNESSEE ALLOCATIONS

NOx SIP CALL

On October 27, 1998, EPA published as a final rule "Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone (The NOx SIP Call). In response to this NOx SIP Call the Division of Air Pollution Control adopted the rule as follows: "1200-3-27-.06 NOx Budget Trading Program for State Implementation Plans (40 CFR 96)". The timing requirements for these NOx allowance allocations are specified in Paragraph (4) of Rule 1200-3-27-.06. The NOx allowance allocations for each control period are specified in the attached table. A NOx allocation is included for each fossil fuel fired boiler unit with a heat input capacity equal to or greater than 250 mmBtu per hour. The allocation of NOx allowances for new source growth of NOx Budget units is provided in subparagraph (5) (d) of Rule 1200-3-27-.06. The allocation set-aside for units under 40 CFR 96.4 (a)(2) is 236 tons of NOx.

compliance certification consistent with methods specified by the Technical Secretary and the EPA.

(7) Beginning May 1, 2003, the owner or operator of a kiln subject to this rule shall maintain records for May 1 through September 30 of each year that include the data as follow:

(a) The date, time, and duration of any startup, shutdown, or malfunction in the operation of the cement kiln or its emissions monitoring equipment or of any scheduled maintenance activity that affects NOx emissions or emissions monitoring;

(b) The results of any compliance testing; and

(c) Other data required by permit to be maintained.

(8) The records listed in Paragraph (7) of this rule shall be retained on-site for a minimum of 2 years following the calendar year for which they are made and shall be made available to the Technical Secretary for his review upon request.

(9) The requirements of this rule shall not apply to periods of scheduled maintenance activities that affect NOx emissions.

Authority: T.C.A. ((68-201-105 and 4-5-201 et. seq.

1200-3-27-.05 STANDARDS FOR STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES

(1) The requirements of this rule apply to the following:

(a) Any person who owns or operates a stationary reciprocating internal combustion engine (engine) that had average daily nitrogen oxide (NOx) emissions of one ton or more during the five-month period May 1 through September 30, 1995, or,

(b) Alternatively, to engines as follow:

1. Rich and lean-burn engines rated at or greater than 5,500 brake horsepower;

2. Diesel engines rated at or greater than 3,000 brake horsepower; and

3. Dual fuel engines rated at or greater than 4,400 brake horsepower;

(2) For the purpose of this rule, definitions apply as follow:

(a) "Control period" means the five-month period May 1 through September 30.

(b) "Diesel engine" means a compression ignited two- or four-stroke

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engine in which liquid fuel injected into the combustion chamber ignites when the air charge has been compressed to a temperature sufficiently high for auto-ignition.

(c) "Dual fuel engine" means a compression ignited engine that is burning liquid fuel and gaseous fuel simultaneously.

(d) "Engine rating, rated load, or rated at" means the output of an engine as determined by the engine manufacturer and listed on the nameplate of the engine, regardless of any derating.

(e) "Lean-burn engine" means any two-or four-stroke spark-ignited engine that is not a rich-burn engine.

(f) "Output" means the shaft work output from an engine plus the energy reclaimed by any useful heat recovery system.

(g) "Rich-burn engine" means a spark-ignited engine for which the oxygen content in the exhaust stream before any dilution is 1% or less measured on a dry basis.

(h) "Stationary reciprocating internal combustion engine (engine)" means any internal combustion engine of the reciprocating type that is either attached to a foundation at a facility or is designed to be capable of being carried or moved from one location to another and remains at a single site at a building, structure, facility, or installation for more than 12 consecutive months. Any engine or engines that replace an engine at a site that are intended to perform the same or similar function as the engine replaced are included in calculating the consecutive time period. Nonroad engines and engines used solely for competition are not stationary internal combustion engines.

(3) Beginning in 2003 and in all following years, emission compliance shall be as follows:

(a) A person subject to this rule through the applicability provisions of Subparagraph (1)(a) shall operate engines in the state under his ownership or control so that a reduction in NOx emissions, expressed as nitrogen dioxide (NO2), is achieved equivalent to the reduction that would have been achieved during 1995 by ninety percent (90%) emission control on the engines described in Subparagraph (1)(a) that are under his ownership or control, or,

(b) Alternatively, after May 1, 2003, the owner or operator of an engine subject to this rule through the applicability provisions of Subparagraph (1)(b) at a facility shall not operate that engine May 1 through September 30 of that year or any following year unless the calendar monthly average NOx emission, expressed as NO2, from the group of all engines subject through Subparagraph (1)(b) to this rule at the facility is no more than 4 grams per horsepower hour at rated load and speed.

(4) A person subject to this rule through Subparagraph (1)(a) or the owner or operator of an engine subject to this rule through Subparagraph (1)(b), as

applicable, shall demonstrate compliance with the requirements of Paragraph (3) using methods of compliance demonstration approved by the Technical Secretary and the EPA.

(5) A person subject to the requirements of Subparagraph (3)(a) or the owner or operator of an engine subject to the requirements of Subparagraph (3)(b), as applicable, shall comply with the following:

(a) No later than January 1, 2002, submit to the Technical Secretary a plan for achieving initial compliance with the requirements of Paragraphs (3) and (4) of this rule.

(b) No later than May 1, 2003, monitor operations and emissions and perform recordkeeping and reporting for each control period or calendar month during the control period, as applicable, as specified by the Technical Secretary and the EPA.

(c) By March 31, 2004, and by March 31 of each following year submit to the Technical Secretary a report documenting compliance with the requirement of Paragraph (3) of this rule for the control period of the previous year.

(6) Monitoring, recordkeeping, and reporting requirements shall be included as conditions on operating permits issues for facilities containing engines affected by this rule.

Authority: T.C.A. ((68-201-105 and 4-5-201 et. seq.

1200-3-27-.06 NOX BUDGET TRADING PROGRAM FOR STATE IMPLEMENTATION PLANS (40 CFR 96).

(1) For what follows "Administrator" means the Technical Secretary of the Tennessee Air Pollution Control Board in those cases for which authority to implement and enforce provisions of the rule have been delegated to Tennessee. Otherwise, "Administrator" means the Administrator of the United States Environmental Protection Agency. "State" means the State of Tennessee.

(2) Amend Subpart A, § 96.2 Definitions: the term "NOx Budget emissions limitation" shall have the meaning as follows:

NOx Budget emissions limitation means, for a NOx Budget unit, the tonnage equivalent of the NOx allowances available for compliance deduction for the unit and for a control period under § 96.54 (a) and (b), adjusted to account for excess emissions for a prior control period under § 96.54 (d) or to account for withdrawal from the NOx Budget Program, or for a change in regulatory status, for a NOx Budget opt-in source under § 96.86 or § 96.87.

(3) Amend Subpart E - NOx Allowance Allocations, § 96.40 State trading program budget to read as follows:

The State trading program budget allocated by the permitting authority under § 96.42 for a control period will equal the total number of tons of NOx emissions apportioned to the

DEPARTMENT OF ENVIRONMENTAL QUALITY

AIR QUALITY DIVISION

AIR POLLUTION CONTROL

Filed with the Secretary of State on
These rules take effect 15 days after filing with the Secretary of State

(By authority conferred on the director of the department of environmental quality by sections 5503 and 5512 of Act No. 451 of the Public Acts of 1994, as amended, and Executive Reorganization Order No. 1995-16, being §§324.5503, 324.5512, and 324.99903 of the Michigan Compiled Laws)

R 336.1801 is added to the Michigan Administrative Code to read as follows:

PART 8. EMISSION LIMITATIONS AND PROHIBITIONS--OXIDES OF NITROGEN

R 336.1801 EMISSION OF OXIDES OF NITROGEN FROM STATIONARY SOURCES.

RULE 801.

(1) ANY OWNER OR OPERATOR OF A FOSSIL-FUEL FIRED ELECTRICITY GENERATING UTILITY UNIT WITH A POTENTIAL TO EMIT OXIDES OF NITROGEN OF MORE THAN 25 TONS PER OZONE SEASON AND SERVING A GENERATOR WITH A NAMEPLATE CAPACITY OF 25 MEGAWATT OR GREATER SHALL COMPLY WITH THE EMISSION LIMITS, DURING THE OZONE SEASON, AS SPECIFIED IN THE FOLLOWING SUBDIVISIONS:

(a) BY APRIL 1, 2002, MEET THE LEAST STRINGENT OF A UTILITY SYSTEM-WIDE AVERAGE OXIDES OF NITROGEN EMISSION RATE OF 0.35 POUNDS PER MILLION BRITISH THERMAL UNITS HEAT INPUT, OR AN EMISSION RATE BASED ON 55 PERCENT REDUCTION OF OXIDES OF NITROGEN FROM 1990 LEVELS.

(b) BY APRIL 1, 2004, MEET THE LEAST STRINGENT OF A UTILITY SYSTEM-WIDE AVERAGE OXIDES OF NITROGEN EMISSION RATE OF 0.25 POUNDS PER MILLION BRITISH THERMAL UNITS HEAT INPUT, OR AN EMISSION RATE BASED ON 65 PERCENT REDUCTION OF OXIDES OF NITROGEN FROM 1990 LEVELS.

(c) THE DATES LISTED IN SUBDIVISIONS (a) AND (b) OF THIS SUBRULE MAY BE EXTENDED BY UP TO 1 YEAR IF AN OWNER OR OPERATOR MAKES AN ACCEPTABLE DEMONSTRATION TO THE DEPARTMENT THAT THE ADDITIONAL TIME IS NECESSARY TO AVOID DISRUPTION OF THE ENERGY SUPPLY IN THE STATE.

(2) COMPLIANCE WITH THE EMISSION LIMITS IN SUBRULE (1) OF THIS RULE SHALL BE DETERMINED BY EITHER OF THE FOLLOWING, AS APPROPRIATE:

(a) TO DEMONSTRATE COMPLIANCE WITH A UTILITY SYSTEM-WIDE AVERAGE EMISSION RATE, THE SUM OF THE MASS EMISSIONS FROM ALL UNITS OWNED OR OPERATED BY THE UTILITY SUBJECT TO SUBRULE (1) OF THIS RULE, THAT OCCURRED DURING THE OZONE SEASON, DIVIDED BY THE SUM OF THE HEAT INPUT FROM ALL UNITS OWNED OR OPERATED BY THE UTILITY SUBJECT TO SUBRULE (1) OF THIS RULE, THAT OCCURRED DURING THE OZONE SEASON, SHALL BE LESS THAN OR EQUAL TO THE LIMITS IN SUBRULE (1).

(b) TO DEMONSTRATE COMPLIANCE WITH THE PERCENT REDUCTION REQUIREMENTS OF SUBRULE (1) OF THIS RULE, THE OWNER OR OPERATOR SHALL PROVIDE CALCULATIONS SHOWING THAT THE UTILITY SYSTEM

AVERAGE EMISSION RATE DURING EACH COMPLIANCE OZONE SEASON HAS BEEN REDUCED BELOW THE 1990 OZONE SEASON AVERAGE EMISSION RATE BY THE APPLICABLE PERCENT REDUCTION LISTED IN SUBRULE (1) OF THIS RULE. THE 1990 OZONE SEASON AVERAGE EMISSION RATE IS THE SUM OF THE MASS EMISSIONS FROM ALL UNITS OWNED OR OPERATED BY THE UTILITY SUBJECT TO SUBRULE (1) OF THIS RULE THAT OCCURRED DURING THE 1990 OZONE SEASON, DIVIDED BY THE SUM OF THE HEAT INPUT FROM ALL UNITS OWNED OR OPERATED BY THE UTILITY SUBJECT TO SUBRULE (1) OF THIS RULE THAT OCCURRED DURING THE 1990 OZONE SEASON.

(3) BY APRIL 1, 2003, THE OWNER OR OPERATOR OF A FOSSIL-FUEL FIRED EMISSION UNIT WITH A POTENTIAL TO EMIT OF MORE THAN 25 TONS OF OXIDES OF NITROGEN PER OZONE SEASON, EXCEPT EMISSION UNITS SUBJECT TO SUBRULE (1) OF THIS RULE, THAT HAS A MAXIMUM RATED HEAT INPUT CAPACITY GREATER THAN 250 MILLION BRITISH THERMAL UNITS PER HOUR SHALL COMPLY WITH THE FOLLOWING APPLICABLE PROVISIONS, AVERGED OVER THE OZONE SEASON:

(a) ANY OWNER OR OPERATOR OF A FOSSIL FUEL-FIRED BOILER OR PROCESS HEATER SHALL MEET THE EMISSION LIMITS CONTAINED IN TABLE 81 OF THIS RULE.

(b) ANY OWNER OR OPERATOR OF A GAS-FIRED BOILER OR PROCESS HEATER THAT FIRES GASEOUS FUEL WHICH CONTAINS MORE THAN 50 PERCENT HYDROGEN BY VOLUME SHALL COMPLY WITH A OXIDES OF NITROGEN EMISSION LIMIT OF 0.25 POUNDS PER MILLION BTU HEAT INPUT.

(c) ANY OWNER OR OPERATOR OF A STATIONARY INTERNAL COMBUSTION ENGINE THAT IS SUBJECT TO THE PROVISIONS OF THIS RULE, WHERE THE MAXIMUM RATED HEAT INPUT CAPACITY IS THE HEAT INPUT AT 80 DEGREES FAHRENHEIT AT SEA LEVEL AND TAKES INTO ACCOUNT INLET AND EXHAUST LOSSES, SHALL COMPLY WITH THE FOLLOWING OXIDES OF NITROGEN EMISSION LIMITS, AS APPLICABLE:

(i) FOR NATURAL GAS-FIRED STATIONARY INTERNAL COMBUSTION ENGINES - 14 GRAMS OF OXIDES OF NITROGEN PER BRAKE HORSEPOWER-HOUR, AT RATED OUTPUT.

(ii) FOR DIESEL-FIRED STATIONARY INTERNAL COMBUSTION ENGINES - 10 GRAMS OF OXIDES OF NITROGEN PER BRAKE HORSEPOWER-HOUR, AT RATED OUTPUT.

(d) AN OWNER OR OPERATOR OF A CEMENT KILN THAT IS SUBJECT TO THE PROVISIONS OF THIS RULE SHALL REDUCE KILN OXIDES OF NITROGEN EMISSIONS BY ANY OF THE FOLLOWING METHODS:

(I) LOW OXIDES OF NITROGEN BURNERS.

(ii) MID-KILN FIRING.

(iii) A 30 PERCENT RATE-BASED REDUCTION OF OXIDES OF NITROGEN FROM 1995 LEVELS. COMPLIANCE WITH THIS PARAGRAPH SHALL BE BASED ON CALCULATIONS SHOWING THAT THE EMISSION RATE, ON A POUNDS OF OXIDES OF NITROGEN PER TON OF CLINKER PRODUCED BASIS, DURING EACH COMPLIANCE OZONE SEASON, HAS BEEN REDUCED BELOW THE 1995 OZONE SEASON EMISSION RATE BY 30 PERCENT.

DRAFT RULE

SECTION 1. 326 IAC 10-2 IS ADDED TO READ AS FOLLOWS:

Rule 10-2. Regional Nitrogen Oxide Reduction Program

326 IAC 10-2-1 Applicability
Authority: IC 13-14-8; IC 13-17-3-4; IC 13-17-3-11
Affected: IC 13-15; IC 13-17

Sec. 1. (a) This rule applies to the following:
(1) An electricity generating unit (EGU) shall comply with all of the following:
(A) The emission limits under section 3(a) of this rule.
(B) The monitoring and testing requirements under sections 4(b) and 4(c)of this rule.
(C) The record keeping and reporting requirements under section 5(b) of this rule.
(2) A large affected boiler shall comply with all of the following:
(A) The emission limits under section 3(b) of this rule.
(B) The monitoring and testing requirements under sections 4(b) and 4(c) of this rule.
(C) The record keeping and reporting requirements under section 5(b) of this rule.
(3) A small affected boiler shall comply with all of the following:
(A) The emission limits under section 3(c) of this rule.
(B) The monitoring and testing requirements under sections 4(d) of this rule.
(C) The record keeping and reporting requirements under section 5(c) of this rule.
(4) The following small internal combustion engines:
(A) Any rich burn or lean burn stationary internal combustion engine rated greater than or equal to one thousand three hundred (1300) brake horsepower and less than two thousand four hundred (2400) brake horsepower.
(B) Any diesel stationary internal combustion engine rated greater than or equal to one thousand three hundred (1300) brake horsepower and less than three thousand (3000) brake horsepower.
(C) Any dual fuel stationary internal combustion engine rated greater than or equal to one thousand three hundred (1300) brake horsepower and less than four thousand four hundred (4400) brake horsepower.
shall comply with the requirements under sections 3(d), 4(d), and 5(c) of this rule.
(5) The following large internal combustion engines:
(A) Any rich burn or lean burn stationary internal combustion engine rated greater than two thousand four hundred (2400) brake horsepower.
(B) Any diesel stationary internal combustion engine rated greater than three thousand (3000) brake horsepower.
(C) Any dual fuel stationary internal combustion engine rated greater than four thousand four hundred (4400) brake horsepower.
shall comply with the requirements under sections 3(e), 4(d), and 5(c) of this rule.
(6) Any portland cement kiln with process rates equal to or greater than:
(A) long dry kilns of twelve (12) tons per hour (TPH);
(B) long wet kilns of ten (10) TPH;
(C) preheater kilns of sixteen (16) TPH; or

Original: 2009
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cc: Smith
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Sandusky
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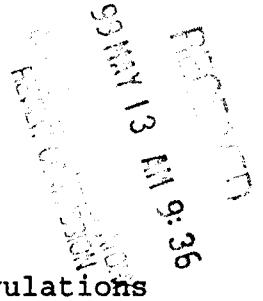
May 7, 1999



VIA FEDERAL EXPRESS

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

Re: Proposed Interstate Ozone Transport Reduction Regulations
Written Comments of General Electric Company

Dear Board Members:

General Electric Company is submitting these comments on the Interstate Ozone Transport Reduction Regulations ("OTR Regulations") proposed by the Department of Environmental Protection ("the Department"). General Electric Company has a locomotive manufacturing facility in Erie, Pennsylvania which is significantly impacted by Pennsylvania's proposed OTR Regulations. General Electric's Erie facility ("GE Erie facility") employs approximately 5,500 and is the largest industrial employer in Erie County, Pennsylvania. The GE Erie facility has several sources which would be significantly affected by the OTR Regulations.

I. THE DEPARTMENT SHOULD INCLUDE EPA's EXEMPTION FOR UNITS WILLING TO ACCEPT A 25-TON OZONE SEASON NO_x EMISSION LIMIT

As the Department knows, the GE Erie facility has one fossil fuel-fired stationary boiler that has a maximum design heat input greater than 250 MMBtu/hr. As such, it would be subject to the proposed OTR Regulations. However, pursuant to RACT, the GE Erie facility is under an operating permit restriction issued by the Department which provides that the boiler cannot operate during the ozone season. Thus, the unit will have no NO_x emissions during the ozone season. Despite the fact that it will not have any NO_x emissions during the ozone season, under the proposed OTR Regulations, the unit still will be subject to these Regulations, including the costly monitoring requirements.

EPA's Model Rule for the SIP Call addresses the dilemma confronting the GE Erie facility. Under Section 96.4(b) of the Model Rule, boilers such as the one at the GE Erie facility are exempt from the Regulation. The Model Rule exempts units which accept a federally-enforceable permit condition that limits the unit's potential to emit NO_x to 25 tons or less during the ozone season. GE Erie recommends that Pennsylvania incorporate the EPA Model Rule exemption into its proposed OTR Regulations to address the problem that GE Erie, and possibly others, face. (See 40 C.F.R. § 96.4(b), 63 F.R. 57518-57519, attached hereto as Exhibit A).

Pennsylvania's failure to include this exemption will make its OTR Regulations more strict than required by the EPA SIP Call. Pennsylvania law has no justification for making its regulations more stringent on this issue. In its present form, the proposed OTR regulations violate Executive Order 1996-1 issued February 6, 1999, which prohibits Pennsylvania Regulations from exceeding federal standards in a manner not justified by a compelling and articulable Pennsylvania interest or required by state law. (See Executive Order 1996-1, attached hereto as Exhibit B).[1] There is no reason to apply the OTR Regulations to a unit that does not operate during the ozone season. Such regulation simply creates an unnecessary administrative burden on both the facility and the agency.

Furthermore, the GE Erie facility's willingness to not operate the unit during the ozone season may provide a significant benefit to Pennsylvania's effort to meet its NO_x budget. According to the allocations designated for this unit at the GE Erie facility under the proposed Section 126 Petitions Regulation, the heat input for the unit during the 1995 ozone season was 1,000,620 MMBtu/hr

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[1] On May 6, 1999, EPA finalized the budgets for the states under its SIP Call. As part of its final budgets, EPA made adjustments to the final budgets in response to comments made by numerous parties on the source inventories relied upon by EPA. Based on EPA's "Responses to the 2007 Baseline Sub-Inventory Information and Significant Comments for the Final NO_x SIP Call," it appears that EPA has reduced the ozone season NO_x emissions for GE's affected boiler to zero for the budget. (See Exhibit C). If, in fact, EPA has now recognized the RACT permit limitation on GE's affected boiler for purposes of the budget, then Pennsylvania must provide an exemption for GE's affected boiler because it clearly will be applying its regulations to the GE Erie facility in a fashion that is more strict than EPA without any justification.

(63 F.R. 56385, Table A.2, attached hereto as Exhibit D). Based upon this heat input and Pennsylvania's proposed allocation methodology, the unit could be entitled to 81 allowances in Years 2003, 2004 and 2005 if Pennsylvania does not adopt the exemption. Under the preamble discussion to EPA's SIP Call, if Pennsylvania adopts the exemption, the GE Erie facility could be entitled to 24 allowance allocations, with the remainder possibly distributable to the remaining OTR program participants or possibly retired by the Department. If Pennsylvania retires the allowances, Pennsylvania would be 57 tons of NO_x closer to meeting its budget based upon the information contained in the proposed Section 126 Petitions Regulation. (See e.g. 63 F.R. 57463, attached hereto as Exhibit E). If Pennsylvania does not adopt the exemption, GE Erie will be forced to install the unnecessary monitoring equipment and then sell its allowances to help pay for the equipment. Thus, the result will be more NO_x emissions in Pennsylvania.

The benefit is even more significant when one examines how the non-EGU NO_x budget proposed by EPA in its SIP Call treats the GE Erie facility unit. The March 23, 1998 Development of Modeling Inventory and Budgets for the Ozone Transport SIP Call lists the GE Erie facility unit at emitting 1.9307 tons of NO_x per day in 2007 with a 70% control efficiency. (Exhibit F) (But see Footnote 1, supra). Given that there are 153 days in the ozone season, this unit would account for 295.4 tons of NO_x in 2007. It appears that this 295.4 tons was included in Pennsylvania's non-EGU budget. Since the unit will not be operating, and will have only 24 allowances, Pennsylvania actually is 271.4 tons of NO_x emissions closer to meeting its budget. Thus, allowing the GE Erie facility to exempt this unit is a significant benefit to Pennsylvania as well as to the GE Erie facility.

II. THE DEPARTMENT SHOULD DETERMINE THE APPLICABILITY OF THE OTR REGULATIONS TO INTERNAL COMBUSTION ENGINES BASED UPON THE ACTUAL EMISSIONS OF THE UNITS, NOT HORSEPOWER RATINGS

Under its SIP Call, EPA established a budget for each affected state which assumed 90% NO_x emission reductions from certain Internal Combustion Engines ("ICE"). The ICE sources included in the budget were sources whose "1995 average daily ozone season emissions were greater than one ton." (63 F.R. 71224, attached hereto as Exhibit G). Thus, in order to satisfy EPA's SIP Call, states only need to control ICE sources which fit into that category.

Despite the standard that it used in the SIP Call, EPA used a different standard in its proposed Federal Implementation Plan ("FIP"), upon which Pennsylvania appears to be basing the ICE portion of its proposed OTR Regulations. Under the FIP, EPA used horsepower ratings to determine whether an ICE should reduce emissions by ninety percent. (63 F.R. 56425-56427, attached hereto as Exhibit H). EPA concluded that its horsepower ratings were equivalent to the unit's potential to emit one ton of NO_x a day. (63 F.R. 56416, Ex. H). Thus, EPA proposes to use a potential to emit one ton of NO_x per day standard in the FIP, but used 1995 actual emissions as the basis for the SIP Call. EPA's conclusion produces a significantly different set of results than that produced by its SIP Call analysis and is based upon stale and incomplete evidence.

There is a significant difference between regulating sources based upon their actual, 1995 NO_x emissions and regulating sources based upon their potential to emit. EPA's SIP Call budgeting was based solely upon actual 1995 (converted from 1990) emissions. (Development of Emissions Budget Inventories for Regional Transport NO_x SIP Call, May 1999 at p. 13, attached hereto as Exhibit I). EPA did not base its budget on any potential to emit emissions levels. Consequently, EPA's modeling was based upon actual emissions, not potential emissions. By now seeking to regulate units based upon potential emissions, EPA and the Department will capture a substantial number of sources not included in the modeling. Based upon the SIP Call modeling, NO_x reductions from these new additional sources are not necessary to enable the states to meet the goals of the EPA SIP Call. Thus, neither EPA nor the Department have any technical basis to regulate these new additional sources solely upon their having the potential to emit one ton of NO_x per day.

EPA has further compounded the regulation of unnecessary sources under the SIP Call by basing its horsepower cutoffs on erroneous data. Based upon its September 4, 1998 Technical Support Document for Stationary Internal Combustion Engines, EPA arrived at its horsepower cutoff determination by simply taking an average grams per horsepower per hour NO_x emission factor and dividing it into one ton. (Technical Support Document for Stationary Internal Combustion Engines, September 4, 1998, attached hereto as Exhibit J). For example, on diesel engines, EPA used 12.0 g/hp-hr as the average NO_x emission rate, converted it to .634 lbs/hp-day (by dividing by 454 g/lb and multiplying by 24) and then divided

the .634 into 2,000 pounds to arrive at 3,155 horsepower.[2] EPA's average grams per horsepower per hour NO_x emission factor is based upon data contained in EPA's July 1993 Alternative Control Techniques Document - NO_x Emissions From Stationary Regulatory Internal Combustion Engines ("ACT Document"). EPA simply gathered data on the emissions rates from a limited number of ICE engines and produced an average emission rate which it then used to determine the cutoff. There are significant problems with EPA's methodology.

First, and foremost, as described above, the potential to emit methodology results in a cutoff which is not consistent with the methodology used by EPA in determining budgets under the SIP Call because it includes sources which actually emitted less than one ton of NO_x per day in 1995. This problem is further compounded because EPA's methodology also unwittingly results in capturing units which have a potential to emit less than one ton of NO_x per day.[3] EPA's methodology ignores the fact that by using an average NO_x emission rate it captures ICEs with potentials to emit that are less than one ton of NO_x per day. This is supported by the data that EPA relied upon for the ACT Document. For example, with respect to Diesel ICEs, the lowest emission factor of the six (6) engines between 2,001-4,000 horsepower, for which EPA had data, was

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[2] For some unknown reason, EPA discussed a cutoff of 3,100 hp in the preamble to the FIP and its Technical Support Document, but then used 3,000 hp in the FIP Regulation. We also should point out that the 12.0 g/hp-hr emission factor used by EPA in the Technical Support Document was the factor for Diesel ICE with rated horsepower greater than 4,000. Thus, based on the factor it used, EPA should only be regulating Diesel ICEs greater than 4,000 hp. EPA's calculation only proves that a greater than 4,000 hp engine operated at 3,100 hp will emit one ton of NO_x per day. It does not establish what a 3,000 hp diesel ICE will emit. It is interesting to note that OTAG recommended that ICEs of greater than 4,000 hp and less than 8,000 hp only be required to meet RACT; and ICEs greater than or equal to 8,000 hp be required to achieve only a 70% reduction, not 90%. (See OTAG Recommendation, attached hereto as Ex. K).

[3] EPA's methodology also may result in some ICEs escaping regulation that would have been included in the budget calculations. For example, using the highest emission rate reported in the ACT Document for Diesel ICEs between 2,001-4,000 hp., 14 g/hp-hr, the one-ton potential to emit cutoff would be 2,700 hp. Thus, there may be some sources which operated at or near their potential to emit in 1995 which would have emitted greater than one ton of NO_x per day and therefore would have been included in the budget, but which now will escape regulation.

9.3 grams per horsepower per hour; this emission rate equates to a potential to emit of only .7 tons of NO_x per day using EPA's 3,000 hp cutoff for Diesel ICEs. (See ACT Document, p. 4-12, Table 4-1, attached hereto as Exhibit L). Likewise, the lowest emission factors from the data relied upon by EPA for Rich Burn, Lean Burn and Dual Fuel ICEs produces potentials to emit of .8 tons, .6 tons and .5 tons of NO_x respectively -- all of which are substantially below the potential to emit one ton of NO_x per day standard used by EPA in its FIP. Id. Thus, EPA's methodology of using the average emission rate results in even more ICEs being regulated by the OTR Regulations and will significantly increase the administrative burden on the Department.[4]

Second, the data relied upon by EPA is stale and incomplete. The data contained in the ACT Document is at least eight (8) years old. There is no indication in the ACT Document regarding the reliability of the data; and there is no analysis of the quality of the test data relied upon by EPA. There simply is a reference to EPA's receipt of letters and attachments from several engine manufacturers in 1991 and 1992. (See ACT Document, Ex. L). Further, the number of engines included in the analysis is woefully short of a representative sample. For instance, the Diesel ICE cutoff is based upon six (6) engines; the Dual Fuel ICE cutoff is based upon only four (4) engines. (Id.) These certainly cannot be representative of all of the engines, and should not be relied upon to establish regulatory applicability.

In summary, the potential to emit methodology adopted by EPA in the FIP, which Pennsylvania is not required to adopt, will include a substantial number of ICEs that are not required to be regulated by EPA's SIP Call. Consequently, Pennsylvania's Regulation will be more stringent than required by the federal regulations. Further, Pennsylvania's Regulation will result in more NO_x emission reductions than are necessary to meet the intent of EPA's SIP Call, which is to reduce interstate transport of ozone which significantly contributes to nonattainment or interferes with maintenance of the ozone NAAQS in downwind states. As such, Pennsylvania has no basis to regulate beyond that which is required by the SIP Call. Pennsylvania has no data other than the data EPA relied upon in issuing the SIP Call, and EPA only examined ICEs

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[4] Many of the engines captured by EPA's misplaced methodology are owned by the gas transportation industry. Most of these engines do not even operate during the ozone season, yet the use of horsepower cutoffs will force controls on these units. We anticipate that a significant number of these sources will be unwittingly captured by the Regulations.

which actually emitted one ton of NO_x per day in 1995. Any regulation which goes beyond that standard does not have any technical basis. Thus, Pennsylvania's Regulation, by adopting the potential to emit standard, goes beyond the scope of permissible actions authorized under 35 P.S. § 4005. Furthermore, such Regulation bears no rational basis to the purpose of the ACT, or the EPA SIP Call. Lastly, such a regulation violates Executive Order 1996-1 which prohibits Pennsylvania Regulations from exceeding federal standards in a manner not justified by a compelling and articulable Pennsylvania interest or required by state law.

GE Erie recommends that the Department adopt a standard that more accurately mirrors what EPA is requiring in the SIP Call. GE Erie recommends the following language to replace proposed § 145.101(a)-(c):

> An owner or operator of a Rich Burn, Lean Burn, Diesel or Dual Fuel stationary internal combustion engine which, any time on or after January 1, 1995, emits one ton of NO_x per day during the ozone season shall comply with the applicable requirements of this subchapter.

GE Erie believes this language ensures that the proper kinds of ICEs are regulated under the SIP Call.[5]

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[5] So far, it appears that several states are not even adopting ICE regulations. Based upon our review of the draft SIP Call proposals of New York, Massachusetts, Delaware, Wisconsin and Connecticut, these states do not propose to regulate large ICEs. Two states are preparing regulations of ICEs in a fashion similar to that proposed by GE Erie. Kentucky proposes to regulate "A stationary internal combustion engine whose NO_x emissions, on or after January 1, 1995, averages more than one (1) ton per day during a control period." (401 KAR § 51:120 Section 1(1), attached hereto as Exhibit M). In addition, Kentucky provides a command and control option. (Id. at Section 2). Missouri proposed to regulate in the following manner: "This rule applies to any large stationary internal combustion engine, greater than 1300 horsepower, that (1) Emitted greater than 1 ton per day on average during the period of May 1 through September 30 of 1995, 1996, or 1997 or (2) Any large stationary internal combustion engine that begins operation after September 30, 1999." (10 CSR 10-6.390(1), attached hereto as Exhibit N). One state, Tennessee, is proposing a command and control approach to ICEs. Tennessee proposed to use a 4 g/hp-hr standard and allow a facility as a whole to meet the standard. (Rule 1200-3-27-.05, attached hereto as Ex. O). Thus, a

III. THE DEPARTMENT SHOULD ADOPT THE EXEMPTIONS PROVIDED BY EPA IN ITS FIP AT SECTION 98.41

As part of its proposed FIP Regulation, EPA included certain exemptions which the Department has not included in its proposed OTR Regulations. EPA has exempted from the emission, compliance and reporting, monitoring and recordkeeping standards for ICEs, all startup and shutdown periods and periods of malfunction, not to exceed 36 consecutive hours, and periods within regular scheduled maintenance activities. EPA created these exemptions apparently in recognition of an ICE's inability to meet the standards, regardless of control equipment, during the time periods described in the Regulation; and apparently in recognition that the total NO_x emissions generated by such events over the year are insignificant. The Department does not explain why it chose not to include the exemptions in the proposed OTR Regulations, nor does there appear to be any justification for being more stringent than required under the EPA SIP Call. GE Erie recommends that the Department include the exemptions as provided in Section 98.6 of the EPA proposed FIP.

IV. THE DEPARTMENT SHOULD ADOPT EPA's 25 MW CUTOFF AND SELLS ELECTRICITY REQUIREMENT FOR ELECTRIC-GENERATING UNITS

In response to the Environmental Quality Board's ("the Board") requirement for comments on whether OTR Regulation Section 145.4(1)

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facility has the option of overcontrolling on some ICE units to make up for no controls on other ICE units. Michigan has abandoned the horsepower cutoff and in its place uses a cutoff of 250 MMBtu/hr. (Rule 801(3)(C), attached hereto as Exhibit P). Thus, only ICEs with a maximum rated heat input capacity greater than 250 MMBtu/hr are regulated in Michigan. This equates to a 37,500 horsepower ICE. Based on conversations with representatives from West Virginia, West Virginia likely will adopt a 1 ton per day standard because EPA's FIP Standards result in an additional sixty (60) units being regulated that were not included in the SIP Call budget. So far, only Indiana is proposing to adopt EPA's proposed FIP Applicability Standards for ICEs. (326 IAC 10-2-1(5), attached hereto as Exhibit Q). Based upon this review of Pennsylvania's neighboring states, Pennsylvania's Regulation, to the extent it goes beyond the required EPA SIP Call, also violates Executive Order 1996-1 because it hampers Pennsylvania's ability to compete effectively with other states.

should include electric-generating units of 15 MW or greater, GE Erie recommends that the Department adopt the applicability language used by EPA in the recent final 126 Petition Rulemaking dated May 3, 1999.

The 15 MW cutoff proposed by the Department is troublesome for several reasons. First, contrary to the Board implication, the 15 MW cutoff in the OTR Regulations is broader than the 15 MW cutoff contained in the NO_x Allowance Regulations. Second, EPA concluded that it did not need to regulate units serving generators smaller than 25 MW because such units did not significantly contribute to ozone nonattainment or interfere with the maintenance of ozone nonattainment of downwind states. Thus, the Department has no technical basis to regulate beyond that which EPA has required. Without additional analysis performed by the Department, which we believe has not been done, the Department's attempt to regulate units that serve generators less than 25 MW violates the Pennsylvania Air Pollution Control Act and Executive Order 1996-1.

The Department also has excluded a critical component of EPA's applicability requirements. As part of its budget, EPA included only those units that serve 25 MW generators or greater and which produce electricity for sale under a firm contract to the electric grid. The Department's Regulation fails to include the requirement that the unit produce electricity for sale under a firm contract to the electric grid. As a result, the Department's proposed OTR Regulation will include sources as EGUs which were not included as EGUs in the budget. The Department has no technical basis to justify treating as EGUs, sources which EPA treated as non-EGUs under the budget. As with the 15 MW cutoff, the Department's attempt to negotiate sources in this fashion violates the Pennsylvania Air Pollution Control Act and Executive Order 1996-1.

V. CONCLUSION

In conclusion, GE Erie reiterates the need to include the 25-ton exemption in order to ensure that it will not have to needlessly install costly monitors on a unit that will not have any NO_x emissions during the ozone season. In addition, GE Erie believes that it is critical for the Department to use the same standard EPA used in its SIP Call to regulate ICEs. Regulating ICEs beyond the actual one ton of NO_x emissions by using an ICE's potential to emit one ton of NO_x is not necessary to meet Pennsylvania's budget. It also will produce significant administrative costs.

GE Erie appreciates the opportunity to present these written comments to the proposed OTR Regulations. If the Department has any questions or wishes to discuss these comments further, please contact me at 814-870-7607.

Very truly yours,

MacDONALD, ILLIG, JONES & BRITTON LLP

By _____
Mark J. Shaw

MJS/tmb/490858
cc: General Electric Company

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April 16, 1999

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Mr. James M. Smith
Regulatory Analyst
Independent Regulatory Review Commission
Harristown 2, 14th Floor
333 Market Street
Harrisburg, PA 17101

Re: Proposed Interstate Ozone Transport
Reduction Regulations

Dear Mr. Smith:

Enclosed for your consideration is Testimony which was presented to the Environmental Quality Board on April 6, 1999 in Pittsburgh, Pennsylvania on behalf of my client, International Paper Company. International Paper Company is greatly concerned that the proposed Regulations violate Executive Order 1996-1 by exceeding federal standards in a manner not justified by any compelling and articulable Pennsylvania interest and by hampering Pennsylvania's ability to compete effectively with other states.

Please take these comments into consideration in preparing IRRC's comments to this Regulation.

If you have any questions, please do not hesitate to contact me at 814-870-7607.

Very truly yours,

MacDONALD, ILLIG, JONES & BRITTON LLP

By _____
Mark J. Shaw

MJS/tmb/488108
Enclosure
cc w/o enc.: International Paper Company

Interstate Ozone Transport Reduction Hearing
April 6, 1999

Testimony of International Paper Company
Presented by
Mark J. Shaw, Esq.
MacDonald, Illig, Jones & Britton LLP
100 State Street, Suite 700
Erie, PA 16507-1498

I am presenting this testimony on behalf of International Paper Company. International Paper has a pulp and paper mill in Erie, Pennsylvania which is significantly impacted by Pennsylvania's proposed Interstate Ozone Transport Reduction Regulations ("OTR Regulation"). International Paper's Erie facility is comprised of pulp, paper making and converting operations and employs approximately 900 people. It is one of the largest industrial employers in Erie County, Pennsylvania. The Erie Mill has several sources which would be significantly affected by the OTR Regulation.

The main purpose of this testimony is to respond to the Environmental Quality Board's ("the Board") request for comments on whether the OTR Regulation should include electric-generating units of 15 MW or greater despite the fact that EPA is requiring only that electric-generating units of 25 MW capacity or greater be included.

As an initial matter, in its request for comments, the Board appears to imply that the 15 MW "cutoff" in the OTR Regulation is the same "cutoff established by the NO_x Allowance Requirements;"

however, this implication is not supported by the language used in the OTR Regulation. The NO_x Allowance Regulation applies to "all fossil fuel-fired electric-generating sources rated at 15 megawatts or greater." In contrast, the OTR Regulation applies to "A unit that, ..., serves a generator with a nameplate capacity greater than or equal to 15 MW." (Emphasis added). The use of the term "serves" in the OTR Regulation significantly expands the scope of the OTR Regulation beyond the scope of the NO_x Allowance Regulations. For instance, the NO_x Allowance Regulations apply only to fossil fuel-fired units which generate 15 MW of electricity; however, the proposed OTR Regulation would apply to any fossil fuel-fired unit connected to a 15 MW generator, regardless of how much power that individual unit actually can generate. This expanded definition has significant impacts on the Erie Mill, and goes well beyond what is required by EPA's SIP call.

Under its SIP call, EPA is requiring 22 states and the District of Columbia to regulate units that serve 25 MW generators and that sell electricity. EPA, in developing its Model Rule, determined that 25 MW was an appropriate size cutoff. It based this determination on a number of factors. First, EPA determined that emissions from sources below 25 MW are not significant as compared to sources above 25 MW. Second, EPA determined that the 25 MW level was consistent size-wise with a 250 MMBtu/hr unit, which is a type of source also covered by the SIP call. Third, EPA wanted

to maintain consistency between the NO_x Budget Trading Program and the Title IV monitoring requirements which already use a 25 MW cutoff level. This consistency reduces the economic impact of EPA's SIP call because units covered by the Title IV monitoring requirements already are equipped with the costly monitoring equipment which is required under the SIP call. Fourth, the financial impact on a per ton reduction basis is significant on sources below 25 MW as compared to larger sources. For example, unlike the larger sources, most smaller sources do not have the required Continuous Emissions Monitors ("CEMS"), which can cost several hundred thousand dollars per unit. In the Erie Mill's case, under the language proposed by the Department, it would need to install CEMS on three additional units solely because they serve one generator which exceeds 15 MW. Lastly, EPA determined that including units of less than 25 MW creates significant administrative burdens on the owner/operator of the unit as well as the regulatory agency.

In summary, EPA has determined that only highly cost-effective NO_x reductions are necessary at this time (i.e., those at $2,000/ton or less) and that controlling sources below 25 MW will not be highly cost-effective. More importantly, EPA has specifically determined that once the reductions envisioned in the model rule are achieved, NO_x emissions will not significantly contribute to ozone nonattainment, or interfere with ozone maintenance by a downwind

state. Thus, controlling beyond what is prescribed by EPA will provide minimal benefit to meeting or attaining the National Ambient Air Quality Standards for Ozone. Despite EPA's determinations, the Department proposes to expand the scope of the OTR Regulation to include units that serve 15 MW generators.

EPA also has concluded that its SIP call should apply only to 25 MW electrical generators which sell electricity. The key here is EPA's definition of what constitutes a source that sells electricity. EPA defines sources selling electricity as those sources "listed as sources that sell power under contract to the electric grid using the electric generation forecasts of the North American Electric Reliability Council." 63 F.R. 71223. Sources that are on this list have entered into specific contracts with utilities to sell power when the utilities require it. In the vernacular of the electric generation market, this is known as a sale of capacity. The utilities rely upon this capacity availability to satisfy regulatory requirements imposed upon them regarding the amount of electric generation they must have available to meet demands. During the ozone season when demand is often greatest, utilities use these capacity sources to meet peak demands. Thus, the need to regulate NO_x emissions from such sources is clearly evident.

In contrast, there also are sales of electricity known as the sale of energy. Energy sales are not, and cannot be, relied upon by utilities to satisfy their capacity requirements, nor can a utility require such sales. Typically, sales of energy occur when an industrial user happens to generate more electricity than it can consume at a given time. In Pennsylvania, sales of energy are regulated by PUC-approved tariffs, not negotiated contracts. Sales of energy are not the kind of electricity sales intended to be covered by EPA's SIP call. It is these types of "sales" that the Erie Mill incurs. Ironically, the Erie Mill typically experiences these sales outside of the ozone season when its steam demands are highest.

EPA's "sells electricity" requirement is a critical component to its SIP call. It ensures that sources rated less than 250 MMBtu/hr which serve electric generators, but which are not utility based are not regulated under this part of the SIP call. For the same reasons discussed above, the benefit of controlling such sources is outweighed by the significant costs associated with such control. Again despite EPA's determination, the Department has not included this "sells electricity" requirement in its Regulation and has accordingly expanded the scope of the OTR Regulation to include all 15 MW units which generate electricity, rather than just those which sell electricity for capacity.

The Department decision to expand the scope of the OTR Regulations beyond EPA requirements violates Executive Order 1996-1 issued February 6, 1996 by Governor Thomas J. Ridge which prohibits Pennsylvania regulations from exceeding federal standards in a manner not justified by a compelling and articulable Pennsylvania interest or required by state law, and which also prohibits regulations which hamper Pennsylvania's ability to compete effectively with other states.

The scope of sources regulated by the proposed OTR Regulations exceed the scope of sources regulated under EPA's SIP call in two ways. First, the Pennsylvania OTR Regulation applies to any unit that serves a 15 MW generator whereas EPA's SIP call only applies to 25 MW generators. Second, Pennsylvania's OTR Regulation applies to all 15 MW electric generators, rather than just 15 MW electric generators that sell electricity for capacity.

The Department has offered no compelling or articulable Pennsylvania interest or state law which justifies exceeding the standards in the EPA SIP call. Although the Ozone Transport Commission concluded in 1996 that controlling 15 MW generating units would cost-effectively reduce ozone, EPA, after substantial additional modeling and analysis, has concluded that controlling 25 MW generating units is the most cost-effective way to reduce ozone, and that imposing the cost of control on smaller units

simply is not supported by the evidence at this time. We can discern no compelling or articulable Pennsylvania interest or state law which contradicts EPA's more educated decision. In fact, EPA has determined that by solely controlling the sources it has identified, states will be able to meet National Ambient Air Quality Standards for Ozone. Thus, there is no legal or technical basis to control beyond those sources.

International Paper also is greatly concerned that Pennsylvania's proposed Regulation will place Pennsylvania at a significant disadvantage in competing effectively with other states in attracting new business and, more importantly, in retaining existing businesses in Pennsylvania. Pennsylvania is in the unenviable position of having several neighboring states which are subject to the EPA SIP call, but which were not subject to the NO_x Allowance Regulation. Many of these neighboring states, including Ohio and West Virginia, have challenged EPA's SIP call as unnecessary. It can be safely presumed that these states will not implement Regulations more strict than EPA has promulgated. In fact, Michigan has proposed its SIP call Regulations which appear even more lenient than EPA's 25 MW applicability standard. Thus, Pennsylvania clearly will be at a competitive disadvantage to Michigan and most likely will be at a competitive disadvantage to every other non-OTC state which must implement the SIP call,

including states such as Ohio, West Virginia, Wisconsin and Virginia.

It also is likely that Pennsylvania will be at a competitive disadvantage to even other OTC states. For instance, in July of 1998, New Jersey adopted NO_x control regulations in anticipation of EPA's SIP call. New Jersey's Regulations apply only to 15 MW generating units, not to units that serve 15 MW generators. Thus, Pennsylvania is proposing regulations that would be more strict than New Jersey. It is difficult to imagine that other OTC states would follow Pennsylvania's lead and require stricter regulations than their sister western and southern states. Thus, Pennsylvania risks having the most stringent NO_x regulations in the nation under its current proposal. This clearly will put Pennsylvania at a competitive disadvantage, which also puts the Erie Mill at a competitive disadvantage. The proposed Regulation will discourage businesses from coming to Pennsylvania and encourage businesses already located in Pennsylvania to leave.

As mentioned above, the proposed OTR Regulation would have a significant impact on the Erie Mill. Presently, the Erie Mill has only one boiler subject to the NO_x Allowance Regulation due to its heat rate exceeding 250 MM Btu/hr; however, under the proposed Regulations, three (3) additional boilers, all with a heat rate of less than 250 MMBtu/hr and none of which individually can generate

15 MW, will be covered by the OTR Regulation due to the fact that each will "serve a 15 MW generator" through a common steam header. The cost per ozone season ton reduction for these three separate units is staggering, and far exceeds the $2,000 per ozone season ton reduction used by EPA in determining whether a control would be highly cost-effective. Depending upon how the Erie Mill may decide to achieve compliance, the Erie Mill estimates that its cost of control per ton of NO_x reduced in the ozone season (based on actual usage as opposed to maximum usage), will be approximately $8,500 to $21,700 per ton. Even if you assume NO_x reductions based on maximum output, the cost ranges from $6,300 to $12,600 per ton. These costs severely impede the Erie Mill's ability to operate competitively.

The Erie Mill does not anticipate that the availability of allowances will help its predicament. As the Department may recall, during the Hearing for the NO_x Allowance Program, the Erie Mill predicted that the cost of NO_x Allowances would be between $5,000 - $10,000 per ton despite the claim that it would only cost utilities $500 per ton to control. Presently, NO_x Allowances are trading at $6,600/ton. Given that the monitoring system costs alone exceed $2,000 per ozone season ton reduction, the total cost of relying on allowances is nearly $9,000 per ton. Clearly, these are the exact kinds of costs, together with the lack of benefits, which led to EPA's decision to exclude units such as those at the

Erie Mill from inclusion in the program. Given EPA's expressed uncertainty of the exact impact of ozone transport and the most effective ways to assure downwind attainment, the imposition of such costs cannot be justified.

International Paper appreciates the dilemma that Pennsylvania, and the other OTC states, are in because EPA's SIP call established 25 MW as the cutoff, whereas the OTC model rule adopted a 15 MW cutoff. However, given the significant additional modeling and analysis performed by EPA to support its SIP call, Pennsylvania must be aware that such modeling and analysis undercuts the OTC's decision to use a 15 MW cutoff. Accordingly, International Paper recommends that the Department adopt the applicability language recommended by EPA in its SIP call, and regulate only units that serve 25 MW generators or larger.

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May 7, 1999

Environmental Quality Board
15th Floor
Rachel Carson State Office Building
P.O. Box 8477
400 Market Street
Harrisburg, PA 17105-8477

Re: Interstate Ozone Transportation Reduction, Comments from Lehigh Portland Cement Company

Dear Environmental Quality Board,

On behalf of the Lehigh Portland Cement Company (Lehigh), we would like to thank the Environmental Quality Board for the opportunity to comment on the proposed rulemaking outlined in the draft 25 Pennsylvania Code, Chapter 145. Interstate Pollution Transport Reduction. Our goal is to work with the Pennsylvania Department of Environmental Protection (PADEP) to develop regulations that are consistent with the U. S. Environmental Protection Agency's (USEPA) Federal Implementation Plan (FIP) for NOx reductions, to provide for the opportunity to opt-in to a NOx budget trading program, and to provide for sensible options for NOx reductions from cement manufacturing facilities while maintaining a competitive business position for our white portland cement manufacturing facility.

Specifically, Lehigh would like to recommend the following:

- The proposed emission based limits for portland cement kilns should be the limit of what a kiln could emit with installed control technologies. The proposed rule should allow for NOx reduction technologies and controls. The proposed emission based limits for portland cement kilns should only be used for comparative purposes when approving alternative control techniques.
- The Pennsylvania NOx State Implementation Plan (SIP) Call regulations should not be more stringent than the Federal rule.
- The terms Low-NOx Burner and Mid-Kiln System Firing should be clearly defined.
- Flexibility and economic consideration should be taken into account for installation of alternative NOx-reduction technologies or controls.
- Compliance implementation and documentation for installed NOx reduction technologies or controls should be clear.

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- Compliance demonstration should be based upon an average rate expressed as pounds of NOx per ton of clinker produced during the entire control season for those facilities wishing to comply with a PADEP approved emission rate based limit, or choosing to comply with an alternative NOx reduction strategy.
- Exceptions during startup, shutdown, malfunction, or scheduled maintenance activities should be allowed.
- Portland cement manufacturing facilities should be able to "opt-in" to the NOx budget trading program.
- NOx emission reduction credits should be transferable to and from other states.

- **Recommendation: The proposed emission based limits for portland cement kilns should not set a limit of what a kiln could emit with installed control technologies. The proposed rule should allow for NOx reduction technologies and controls. The proposed emission based limits for portland cement kilns should only be used for comparative purposes when approving alternative control techniques.**

The PADEP rulemaking of March 6, 1999, Interstate Pollution Transport Reduction, outlined in 25 Pennsylvania Code Chapter 145. proposes that after May 1, 2003, any portland cement kiln subject to this proposed rule may not emit NOx during the May 1–September 30 control period that exceeds the emission rates codified at § 145.143. Meeting the proposed emission rates is the only option available to portland cement plants operating in Pennsylvania during the ozone season. In the proposed rulemaking, cement plants are required to meet NO_x emission limits which are based on the averages of emission data used to develop USEPA emission factors. Lehigh believes requiring Pennsylvania cement plants to meet these limits will significantly disadvantage 30% to 50% of the cement plants in the Commonwealth. In fact, some of the plants may not be able to meet these limits and would have to shut down their operations during the ozone months.

As proposed, the FIP would require that cement plants install and operate effective NOx-control equipment. This technology-application requirement can be satisfied by installing one of the following: (1) Low-NO_x burners (LNB), (2) Mid-kiln system firing, or, (3) Alternative NOx reduction technologies or controls that achieve at least the same emission decreases as the first two options. The alternative technologies or controls are subject to the USEPA approval. In addition, "[T]the FIP does not propose an emissions rate requirement nor does it propose an emissions cap for cement kilns.[1]"

The emission rates listed in the FIP were provided as guidance to affected sources to help them determine which alternative technologies could meet an average emission rate expected from the installation of mid-kiln system firing or LNBs, and which alternative technologies may be considered for approval by the USEPA. The USEPA calculated the emission rates listed in the FIP by averaging two different NO_x emission

[1] April 22, 1999 letter from Doug Grano (USEPA) to Tom Carter (American Portland Cement Alliance).

factors for cement manufacturing: AP-42 factors and those found in the Alternative Control Techniques (ACT) document for cement manufacturing (EPA-453/R-94-004). The factors in these documents represent the average of a wide range of observed emission rates, expressed as pounds of NO_x per ton of clinker produced. The final average of the two emission factors is meant to represent average NO_x emissions from the various kiln types. The USEPA further assumes LNBs and mid-kiln system firing will achieve 30 percent reductions on average. Thus, the USEPA reduces the final average of the two emission factors by 30 percent to produce the comparative target emission rates that need to be achieved by any individual facility opting for alternative controls.

Since emission factors represent a wide range of actual emission rates, it is expected that about half of the plants sampled have emissions greater, and half below, those levels. In this context, such an average rate may be an appropriate comparison for those plants wishing to take the third option. However, the PADEP should understand that the USEPA's intent is that the use of these emission rates should be limited to this comparative purpose. It would be inappropriate, and in many cases infeasible, to suggest that such emission rates be the only compliance option available to affected portland cement manufacturing facilities. To apply an average number—particularly one that already incorporates 30 percent reductions—as an emission ceiling is to fail to understand the mathematical principle of averages. Indeed, the AP-42 document is clear in the position that emission factors are merely averages of readily available data that can be used to make projections as to long-term averages. The report goes on to warn against the use of the factors as an emission limit or standard, since, the very nature of averages would result in roughly half of the sources emitting more than the average rate:

> "Because emission factors essentially represent an average of a range of emission rates, approximately half of the subject sources will have emission rates greater than the emission factor and the other half will have emission rates less than the factor. As such, a permit limit using an AP-42 emission factor would result in half of the sources being in noncompliance." (United States Environmental Protection Agency, "Section 11.6 Portland Cement Manufacturing," *Compilation of Air Pollutant Emission Factors (AP-42)*, Fifth Edition, 1995)

If the emission rates, as proposed in Chapter 145, were applied, then average emissions from affected cement plants would be lower and the cement industry would be held to much more significant reductions than intended or necessary. Moreover, meeting these rates would be impossible at many plants. These facilities might, therefore, be unable to meet the rule requirements.

Cement plant NO_x emissions are highly variable from kiln to kiln, even within the same process type, and can range from 2.0 pounds of NO_x per ton of clinker to 20.0 pounds or greater of NO_x per ton of clinker. The following example indicates how averages can work. If the three sources listed in the table below were all long dry kilns, and were

used to determine the controlled emission factor for long dry kilns, one can easily see that requiring all kilns to meet the same emission limit as determined by an emission factor is not equable – one kiln must reduce 55%, one kiln must reduce 30%, and the low emitting kiln could petition the state to take a 3.0 pound per ton of clinker emission limit and attempt to sell the 1.9 pound per ton emission credits.

Source	Emission Rate – pounds of NO_x per ton of clinker	Emission limit - based on 30% reduction from the emission factor	Percent Reduction Required
Source 1	11	4.9	55%
Source 2	7	4.9	30%
Source 3	3	4.9	0%
Emission Factor	7		

As explained in other areas of the comments, not only should the rule provide rate based limits for compliance, but should also allow for the use of a technology based standard for cement plants, and provide those plants who cannot install low NOx burners or mid-kiln system firing the option to determine an uncontrolled baseline and propose an alternative control technique to reduce NOx emissions by 30%. If the PADEP wants to publish emission rate-based guidelines for sources to compare the emissions of alternate technologies to the average emissions expected from the installation of low NOx burners or mid-kiln firing, the Department should use the following methodology to determine the emission guidelines.

It would be appropriate to maintain a rate based benchmark in the final rule. However, at a minimum, the rates contained in the right hand column of the following table should be used These figures are derived from the standard EPA emission factor (see Volume I: ``Stationary Point and Area Sources," Chapter 11, ``Portland Cement Manufacturing Compilation of Air Pollutant Emission Factors," AP-42, Fifth Edition, EPA) and the ACT document's uncontrolled emission factors. In each case, Lehigh recommends that the greater of the two factors be used as the baseline, and then reduced by 30 percent, as demonstrated below. The values are expressed in pounds of NO_x per ton of clinker produced.

Kiln Type	**AP-42 Factor** Pound per ton clinker	**ACT Factor** Pound per ton clinker	**Greater of Two** Pound per ton clinker	**§ 145.143 Factor** Pound per ton clinker
Wet	7.4	9.7	9.7	6.8

Long Dry	6.0	8.6	8.6	6.0
Preheater	4.8	5.9	5.9	4.1
Prehtr./Precal.	4.2	3.8	4.2	2.9

This table clearly demonstrates PADEP's more stringent proposal by establishing an emission rate based limit approach. As stated above, this places all Pennsylvania cement manufacturing plants at a huge economic and competitive disadvantage, while at the same time some plants in the Commonwealth may not be able to meet their respective limits. Lehigh urges the PADEP to revise the emission rate based approach to the values proposed in the above table and to use these emission rates as a comparative value for sources to use to determine the feasibility of alternative technology. In addition to the emission rate based approach for control and reduction of NOx emissions from cement kilns, Lehigh urges the State to consider alternative control technologies as a basis for satisfying the requirement for NOx reductions from cement manufacturing facilities. These additional options are listed below.

(1) The installation of a Low-NOx Burner

(2) The installation of mid-kiln system fuel firing equipment; or

(3) The use of an alternate control that will achieve similar NOx reductions as compared to the two options above.

Lehigh urges the PADEP to include these options as a means of satisfying the requirement for NOx reductions from Pennsylvania portland cement manufactures. The proposed FIP for cement manufacturing provides flexibility by incorporation of these options to comply with its requirements.

- **Recommendation: The Pennsylvania NOx State Implementation Plan (SIP) Call regulations should not be more stringent than the Federal rule.**

Lehigh believes that the PADEP should modify its NO_x SIP Call regulations so that the regulations are not more stringent than the FIP. We believe the PADEP standards should more closely mirror the options and flexibility provided in the proposed Federal standards. Such an approach would be in keeping with PA §4004.2. Allowing for the options outlined in the proposed Federal rule, the Pennsylvania cement industry would be able to implement NOx control strategies deemed acceptable to the USEPA, while remaining competitive with the domestic and offshore cement manufacturers.

- **Recommendation: The terms Low-NOx Burner and Mid-Kiln System Firing should be clearly defined.**

A Low-NOx burner (LNB) is a type of cement kiln burner that produces a flame that improves the mixing of fuel and air, and thus results in lower maximum flame temperature and a lower generation rate for thermal NOx. In addition, a LNB controls the shape of the flame to produce an oxygen deficiency in the initial combustion zone.

This inhibits the generation of NOx because of the reducing conditions present and also reduces fuel NOx. The flame shape promotes internal combustion inside of the flame under reducing conditions while the atmosphere in the area of the kiln where the chemical reaction occurs remains oxidizing so product quality can be maintained. To accomplish this, a LNB for a cement kiln will have a series of channels or orifices that 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. This LNB configuration is significantly different from a typical cement kiln burner which introduces the fuel through a pipe commingled with the combustion air. In order to distinguish between a typical cement kiln burner and a LNB, Lehigh proposes the following definition of a LNB to be included into Chapter 145. Subpart C:

> Definition: ***"Low-NOx Cement Kiln Burner: A type of cement kiln burner, or burner modification, that uses a series of channels or orifices which minimize NOx formation by introducing fuel and its associated primary air into a kiln by: (1) causing an internal and external re-circulation of combustion air so that the initial combustion of the fuel occurs in a fuel-rich (i.e. oxygen deficient) environment; (2) completes combustion in a fuel-lean (i.e. oxygen rich) environment at the middle and end of the flame, and (3) provides a uniform heat distribution in the flame to reduce sharp temperature peaks in the flame."***

Mid-Kiln System Firing is one of the several methods that apply the secondary combustion NOx reduction technology. Secondary combustion is also used in other kiln systems such as in (1) a preheater kiln where some of the fuel is injected into the preheater riser ducts, and (2) a precalciner kiln where a portion of the fuel is burned in a specialized vessel with the raw materials before those materials enter the kiln. For the purposes of defining mid-kiln injection and setting an implementation plan and compliance schedule for installing such a system to satisfy NOx reduction requirements, Lehigh proposes the following language inserted into Chapter 145. Subchapter C.:

> Definition: ***"Mid-Kiln System Firing" means the secondary firing in portland cement kilns by injecting fuel at an intermediate point in the kiln system using a specially designed feed injection mechanism for the purpose of decreasing NOx emissions through both of the following:***
>
> ***(A) Burning part of the fuel at a lower temperature***
>
> ***(B) Reducing conditions at the fuel injection point that may destroy some of the NOx formed upstream in the kiln burning zone."***

As currently proposed, the FIP does not impose any emission limit on a source that chooses to implement either of the two prescribed technologies. The USEPA indicates that implementation of these technologies is expected to result in the emission reductions desired of cement kilns. The proposed FIP provisions of several compliance options obviously provides a much greater flexibility of implementation for affected

sources. We believe it would be appropriate for the PADEP to incorporate these options into Part §145.143 of the proposed State rule.

- **Recommendation: Flexibility and economic consideration should be taken into account for installation of alternative NOx-reduction technologies or controls.**

In a scenario where a cement manufacturing plant cannot install and/or operate LNBs or mid-kiln system firing, the rule should allow for the use of other alternative NOx reduction technologies or controls. Lehigh recommends these technologies be approved by the PADEP and the USEPA on a case by case basis and must achieve a 30% NOx emission rate reduction during the control season. The use of the alternative control technology should provide for an economic consideration which would also be reviewed on a case by case basis and must either achieve the emission rate based guidance level or reduce NOx emissions from the 1995 baseline (as determined in the reported figures to the Pennsylvania Air Information Management System Database) by at least 30% during the control season. Under no circumstances should a cement manufacturing plant be forced to install an alternative control technology which exceeds a cost-effectiveness of more than $5,000 per ton of NOx reduced. Lehigh recommends this cost effectiveness consideration based on USEPA's NOx SIP Call Regulatory Impact Analysis (RIA). In the RIA, under Chapter 7: Results of Cost Emission Reductions, and Economic Impact Analyses for Non-electricity Generating Units, Page 5; the USEPA uses a figure of $5,000 as the maximum cost per ton of NOx reduced.

- **Recommendation: Compliance implementation and documentation for installed NOx reduction technologies or controls should be clear.**

The monitoring and/or implementation requirements of installing a LNB, mid-kiln firing system, or an alternative control technology should be determined on a case by case basis with the Department. Lehigh suggests the following implementation and documentation of NOx controls for LNB and Mid-kiln system firing. The implementation would include the installation and documentation that the control technology is installed and being operated. Document the technology being operated during the ozone season. The technology would undergo an initial performance test according to the requirements of 40CFR part 60, appendix A, Method 7, 7A, 7C, 7D, or 7E. The owner or operator of a subject unit should produce and maintain records during the period of May 1 through September 30, which would include, but are not limited to: (1) the control season NOx emissions produced from each affected portland cement kiln; (2) the date, time, and duration of any startup, shutdown, or malfunction in the operation of the subject cement kiln or the emissions monitoring equipment; and, (3) the results of an annually required performance test during the control season.

- **Compliance demonstration should be based upon an average rate expressed as pounds of NOx per ton of clinker produced during the entire control season for those facilities wishing to comply with a PADEP approved emission rate**

based limit, or choosing to comply with the third option of an alternative NOx reduction strategy.

For facilities complying with the PADEP approved emission rate based limit, or an alternative NOx reduction strategy outlined in option (3) above, compliance demonstration should be based on an average rate expressed in pounds of NOx per ton of clinker produced during the entire control season. Such facilities should document their clinker production and hours of operation during the control season. Periods of malfunction, startup, shutdown, or scheduled maintenance of certified monitoring equipment would be excluded from the emission calculations. The facility should demonstrate that the control season emissions, when divided by the clinker production and hours of operation, do not exceed the permitted emission rate limit.

- **Recommendation: Exceptions during startup, shutdown, malfunction, or scheduled maintenance activities should be allowed.**

For all of the above NOx reduction activities the rule must allow for an exception from the emission based limit or use of an alternative control technology during periods of start-up, shut-down, malfunction, or regularly scheduled maintenance activities. An allowance for exemption under these circumstances should be provided in the final rule and outlined under Part §145.143

- **Recommendation: Portland cement manufacturing facilities should be able to "opt-in" to the NOx budget trading program.**

In addition to the above comments, Lehigh seeks clarification of the ability for a subject cement manufacturing plant to opt-in to the NOx budget trading program. It is the PA NOx Workgroup's understanding that the Opt-in provisions extend to all industries regulated under Chapter145; however, the wording of the regulation has left some confusion. The definition of "Opt-in" refers to a "...unit...". The definition of a "unit" in Subchapter A does not describe a cement kiln system; therefore, it would appear that there is no provision for the cement industry to take advantage of the Opt-in provision as the rule is currently written.

Lehigh requests the wording of the rule make it clear that all industry regulated under Chapter 145 be allowed to take advantage of the Opt-in provision. We suggest the PADEP insert language from §145.4 in Subchapter C that defines a subject unit; and that such subject units are eligible for the Opt-in provisions should the affected so desire. The Opt-in unit would be subject to the same requirements outlined in the Opt-in Process under parts §145.80 through §145.85.

- **Recommendation: NOx emission reduction credits should be transferable to and from other states.**

Lehigh advocates the use of NOx credits generated in other affected states be allowed to be banked in the Commonwealth's supplemental compliance pool. We feel the

program should be as broad as possible and therefore favor the interstate use of emission reduction credits across the entire 22 state region.

There are two attachments to this document for the use and consideration of the Environmental Quality Board: (1) Attachment A - Recommended Regulatory Language for 25 PA Code Chapter 145. Subchapter C - Emissions of NOx from Cement Manufacturing; and, (2) April 22, 1999 letter from Doug Grano (USEPA) to Tom Carter (American Portland Cement Association regarding interpretation of the language in the proposed FIP.

Once again, Lehigh would like to thank the Environmental Quality Board for the opportunity to comment on the proposed rulemaking outlined under Part 145. In particular we would like to thank Wick Havens and Dean Van Orden for their time and consideration of the Pennsylvania cement industry as stakeholders in this rulemaking process. We look forward to working jointly with the PADEP to take the necessary measures to improve ambient air quality standards, while still maintaining a competitive business climate for the cement manufacturing industry in Pennsylvania.

Sincerely,

Thomas Powers
Lehigh Portland Cement Company

Attachment A

Recommended Regulatory Language
25 PA Code Chapter 145,
Subchapter C - Emission of NOx from Cement Manufacturing

§ 145.141. Applicability.

The requirements of this subchapter apply only to kilns with process rates of at least the following: long dry kilns - 12 tons per hour (TPH); long wet kilns - 10 TPH; preheater kilns - 16 TPH; precalciner and preheater/precalciner kilns - 22 TPH .

§ 145.142. Definitions.

The terms used in this subchapter shall have the following meanings unless the context clearly indicates otherwise:

Clinker—The product of a Portland cement kiln from which finished cement is manufactured by milling and grinding.

Department—The Department of Environmental Protection.

Long dry kiln—A kiln 14 feet or larger in diameter, 400 feet or greater in length, which employs no preheating of the feed. The inlet feed to the kiln is dry.

Long wet kiln—A kiln 14 feet or larger in diameter, 400 feet or greater in length, which employs no preheating of the feed. The inlet feed to the kiln is a slurry.

Cement kiln burner: a device that functions as an injector of fuel and combustion air into kiln to produce a flame that burns as close as possible to the center line of the kiln.

"Low-NOx Cement Kiln Burner: A type of cement kiln burner, or burner modification, that uses a series of channels or orifices which minimize NOx formation by introducing fuel and its associated primary air into a kiln by: (1) causing an internal and external re-circulation of combustion air so that the initial combustion of the fuel occurs in a fuel-rich (i.e. oxygen deficient) environment; (2) completes combustion in a fuel-lean (i.e. oxygen rich) environment at the middle and end of the flame, and (3) provides a uniform heat distribution in the flame to reduce sharp temperature peaks in the flame."

"Mid-Kiln System Firing" means the secondary firing in portland cement kilns by injecting fuel at an intermediate point in the kiln system using a specially designed feed injection mechanism for the purpose of decreasing NOx emissions through both of the following:

(A) Burning part of the fuel at a lower temperature

(B) Reducing conditions at the fuel injection point that may destroy some of the NOx formed upstream in the kiln burning zone."

Portland cement—A hydraulic cement produced by pulverizing clinker consisting essentially of hydraulic calcium silicates, usually containing one or more of the forms of calcium sulfate as an interground addition.

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

Precalciner kiln—A kiln where the feed to the kiln system is preheated in cyclone chambers and utilize a second burner to calcine material in a separate vessel attached to the preheater prior to the final fusion in a kiln which forms clinker.

Preheater kiln—A kiln where the feed to the kiln system is preheated in cyclone chambers prior to the final fusion in a kiln which forms clinker.

§ 145.143. Standard requirements.

After May 1, 2003, an owner or operator of any Portland cement kiln subject to this rule shall not operate the kiln during May 1 through September 30 unless the owner or operator complies with one (1) of the following:
(1) The owner or operator has installed and operates the kiln with one (1) of the following:
(A) Low-NOx burners.
(B) Mid-kiln firing.

(2) A limit on the amount of NOx emitted when averaged during the control period from May 1 to September 30 as follows:
(A) For long wet kilns, 6.8 pounds of NOx per ton of clinker produced.
(B) For long dry kilns, 6.0 pounds of NOx per ton of clinker produced.
(C) For preheater kilns, 4.1 pounds of NOx per ton of clinker produced.
(D) For precalciner kilns, 2.9 pounds of NOx per ton of clinker produced.

(3) If the owner/operator cannot achieve the requirements specified in (1) or (2) above, installation and use of alternative control techniques, subject to department and U.S. EPA approval, that achieves the maximum, cost-effective, attainable NOx emissions reduction. For this option, the owner or operator shall not be required to:
(A) install controls which exceed not to exceed a cost-effectiveness of $5,000 per ton of NOx reduced which is to be determined as outlined in 25 PA CODE §129.92 - RACT proposal requirements, or;
(B) reduce emissions from baseline by greater than 30% or to a level less than that prescribed in paragraph (2) above.

§ 145.144. Reporting, monitoring and recordkeeping.

(a) Reporting requirements. Any owner or operator subject to the requirements of § 145.143 shall comply with the following requirements:

(1) By May 1, 2003, submit to the Department the identification number and type of each unit subject to the section, the name and address of the plant where the unit is located, and the name and telephone number of the person responsible for demonstrating compliance with the section.

(2) Submit a report documenting for that unit the total NOx emissions from May 1 through September 30 of each year to the Department by October 31 of each year, beginning in 2003.

(b) Monitoring Requirements. A unit subject to this rule that is required under Chapter 139 or permit condition to record NOx emissions data using a continuous emission monitor shall use that data to demonstrate compliance with this subchapter. A unit that does not have a continuous emissions monitor shall use an alternate calculational and recordkeeping procedure based upon actual emissions testing and correlations with operating parameters. The installation, implementation and use of such an alternate calculational and recordkeeping procedure must be approved by the Department in writing prior to implementation.

(c) Recordkeeping Requirements. Any owner or operator of a unit subject to this rule shall produce and maintain records which shall include, but are not limited to:

(1) For owners/operators complying with 145.143 (2) or (3):
(A) The emissions, in pounds of NOx per ton of clinker produced averaged over the period from May 1, through September 30, and;

(2) The date, time and duration of any startup, shutdown or malfunction in the operation of any of the cement kilns or the emissions monitoring equipment.

(3) The results of any performance testing.

(4) Daily cement kiln production records.

(5) All records required to be produced or maintained shall be retained on site for a minimum of 5 years and be made available to the Department upon request.

Attachment B

Letter from Doug Grano (USEPA to Tom Carter, APCA)