

# Regulatory Analysis Form

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REVIEW COMMISSION

(1) Agency

Department of  
Environmental Protection

(2) I.D. Number (Governor's Office Use)

7-378

IRRC Number: 2302

(3) Short Title

Small Sources of NO<sub>x</sub>, Cement Kilns, Large IC Engines

(4) PA Code Cite

25 PA Code Chapter 121, 129, and  
145

(5) Agency Contacts & Telephone Numbers

Primary Contact: Sharon Trostle, 783-8727

Secondary Contact: John Hines, 783-8727

(6) Type of Rulemaking (Check One)

☒ Proposed Rulemaking

☐ Final Order Adopting Regulation

☐ Final Order, Proposed Rulemaking Omitt

(7) Is a 120-Day Emergency Certification  
Attached?

Yes: By the Attorney General

Yes: By the Governor

(8) Briefly explain the regulation in clear and non-technical language.

The proposed regulation is intended to protect the public health by reducing precursor emissions that react to form atmospheric ozone. The proposed regulation establishes ozone season (May 1 through September 30) emission limits for nitrogen oxides (NO<sub>x</sub>). The proposed Chapters 121 and 129 regulations apply to certain boilers, turbines and stationary internal combustion engines located in the Counties of Bucks, Chester, Delaware, Montgomery and Philadelphia. The proposed Chapter 121 and 129 regulations do not affect large sources that are regulated under Chapter 145.

The proposed Chapter 145, Subchapters B and C would apply to sources statewide. Subchapter B applies to large stationary internal combustion engines that emit more than 1 ton NO<sub>x</sub> per day. The regulation would reduce NO<sub>x</sub> emissions and subsequent ozone transport into nonattainment areas in Pennsylvania and downwind states. The proposed Subchapter C would establish ozone season NO<sub>x</sub> control requirements for cement kilns.

(9) State the statutory authority for the regulation and any relevant state or federal court decisions.

This action is being taken under the authority of Section 5 of the Air Pollution Control Act (35 P.S. § 4005.)

## Regulatory Analysis Form

(10) Is the regulation mandated by any federal or state law or court order, or federal regulation? If yes, cite the specific law, case or regulation, and any deadlines for action.

The proposed Chapter 121 and 129 regulations are not required by any federal or state law or court order, or federal regulation. These rules are based on model rules for NO<sub>x</sub> emission reductions developed by the Ozone Transport Commission (OTC), of which the Commonwealth is a member. These rules are being proposed to achieve additional NO<sub>x</sub> emission reductions to achieve and maintain attainment of the health-based 1-hour National Ambient Air Quality Standard (NAAQS) for ozone for the Philadelphia nonattainment area.

The proposed Chapter 145 regulations are needed to complete the Commonwealth's obligation to reduce those amounts of NO<sub>x</sub> emissions that significantly contribute to ozone attainment problems in downwind states under the Environmental Protection Agency's (EPA) NO<sub>x</sub> State Implementation Plan (SIP) Call. The proposed rules are modeled on the proposed control requirements published by the EPA at 63 FR 56394 (cement kilns) and 67 FR 8396 (stationary internal combustion engines). The proposed regulations represent the Commonwealth's fair share in reducing transported air pollution.

(11) Explain the compelling public interest that justifies the regulation. What is the problem it addresses?

Large areas of the Commonwealth continue to exceed the health-based standard for ozone. Additional reductions of NO<sub>x</sub> are necessary to continue to move toward attainment in those areas where the ozone levels exceed the NAAQS. This regulation will help move the Commonwealth toward attainment and maintenance of the health-based standard for ozone, which is in the best interest of the public.

(12) State the public health, safety, environmental or general welfare risks associated with non-regulation.

There is a risk that without the proposed revisions to Chapters 121 and 129, the Commonwealth will not achieve and maintain the NAAQS in the Southeast Pennsylvania area and that this would result in a serious and cumulative adverse impact on health, general welfare, and the environment. Failure to adopt the proposed Chapter 145 rules would similarly impact health, welfare and the environment, would result in continued transport of ozone and ozone precursors, would prevent the attainment of the ozone standard, could result in the imposition of sanctions and would demonstrate a lack of leadership.

### Regulatory Analysis Form

(13) Describe who will benefit from the regulation. (Quantify the benefits as completely as possible and approximate the number of people who will benefit.)

This proposed regulation will provide progress towards attainment of the health-based one-hour ozone standard in the northeast by reducing the transported pollutants. The regulation will help to achieve and maintain the one-hour ozone standard in the Philadelphia region. There are an estimated 3,800,000 people living in the 5-county Philadelphia region. The emission reductions achieved by the proposed Chapter 145 regulations will affect all areas of Pennsylvania, which has a (2000) population of 12,287,150. EPA had estimated the benefits of compliance with the NO<sub>x</sub> SIP Call rule (40 CFR 51.121). EPA projected benefits in ozone reduction (mortality, hospital admissions, acute respiratory symptoms, worker productivity, crops and forests) as well as resultant particulate and acidity reduction benefits (mortality, hospital admissions, chronic bronchitis, acute bronchitis, acute respiratory symptoms, work loss, soiling, visibility, and nitrogen deposition) at \$4,170,000,000 per year in a region affected by the SIP Call. Pro-rating this benefit to Pennsylvania based on population results in an estimated benefit of \$336,500,000 per year for the entire NO<sub>x</sub> SIP Call. Prorating this benefit to the emission reductions achieved by the proposed regulation results in an estimated benefit of \$16,000,000 per year.

(14) Describe who will be adversely affected by the regulation. (Quantify the adverse effect as completely as possible and approximate the number of people who will be adversely affected.)

Adverse effects are not anticipated to occur as a result of this rule. The emission control costs from implementation of the rule are quantified and discussed later in this analysis. These costs are not projected to cause adverse effects since no industrial and electric source will suffer an adverse loss of business because the costs are not high in proportion to revenues and add minimally to operating expenses. In addition, the rules are to be applied uniformly on all similar facilities.

(15) List the persons, groups or entities that will be required to comply with the regulation. (Approximate the number of people who will be required to comply.)

The proposed Chapter 129 regulation would impact owners and operators of certain boilers, turbines and stationary internal combustion engines in the 5-county Philadelphia region. These sources are located at industrial, utility and commercial sites. The Chapter 145 Subchapter B proposed rules would impact the owners and operators of an estimated 14 large stationary internal combustion engines owned by 4 companies and institutions. The Chapter 145 Subchapter C proposed rules would impact the owners and operators of 21 cement kilns located in Pennsylvania.

## Regulatory Analysis Form

(16) Describe the communications with and input from the public in the development and drafting of the regulation. List the persons and/or groups who were involved, if applicable.

The proposed Chapter 121 and 129 regulations are based on model rules developed by the Ozone Transport Commission (OTC). Pennsylvania is a member of the OTC and actively participated in the development of the model rules. The model rules were developed with the input of the affected industry, environmentalists, and Environmental Protection Agency. The proposed Chapter 145 regulations are based on EPA model rules published on February 22, 2002 (67 FR 8396) and October 21, 1998 (63 FR 56394). The proposed regulations were discussed with the Air Quality Technical Advisory Committee on May 2, 2002.

(17) Provide a specific estimate of the costs and/or savings to the regulated community associated with compliance, including any legal, accounting or consulting procedures which may be required.

The boilers, turbines and stationary internal combustion engines subject to the proposed Chapter 129 regulation are expected to reduce NO<sub>x</sub> emissions by approximately 3 tons per day in the Philadelphia area. The emission reduction can be achieved through installation of control equipment, combustion unit modification, or fuel switching. Cost to reduce emissions for these sources has been estimated to be \$1,500 to \$3,500 per ton of NO<sub>x</sub> reduced for boilers; \$3,000 per ton of NO<sub>x</sub> for turbines; and \$1,700 to \$4,400 per ton of NO<sub>x</sub> for stationary internal combustion engines. Cost estimates for the boilers, turbines, and stationary internal combustion engines in the Philadelphia area are within the recommended control cost range made by the Southeast Pennsylvania Ozone Stakeholder Working Group in a report published on January 16, 1997.

Large stationary internal combustion engines regulated by proposed Chapter 145 are expected to install control equipment to meet the emission reduction requirements. These controls are estimated to cost \$1,500 to \$2,000 per ton of NO<sub>x</sub> reduced. Cement kilns are expected to achieve some emission reductions through improved fuel efficiency resulting in a potential cost savings. However, 8 kilns will need to install continuous emission monitors at a cost of approximately \$60,000 to \$100,000 each.

(18) Provide a specific estimate of the costs and/or savings to local governments associated with compliance, including any legal, accounting or consulting procedures which may be required.

The implementation of the proposed rule is not expected to increase the costs to the County agencies since the agencies currently inspect and permit the facilities covered by the proposed rule.

(19) Provide a specific estimate of the costs and/or savings to state government associated with the implementation of the regulation, including any legal, accounting or consulting procedures which may be required.

There should be a small workload increase to state government for implementation of the proposed regulations. The increased workload will involve a one-time review of monitoring systems. The additional workload can be handled by the current staffing. After this effort, the implementation of the rules will involve regular facility inspections consistent with current practice. No new staffing needs are anticipated.

## Regulatory Analysis Form

(20) In the table below, provide an estimate of the fiscal savings and cost associated with implementation and compliance for the regulated community, local government, and state government for the current year and five subsequent years.

	Current FY Year	FY +1 Year	FY +2 Year	FY +3 Year	FY +4 Year	FY +5 Year
<b>SAVINGS:</b>	\$	\$	\$	\$	\$	\$
Regulated Community	0.00	0.00	0.00	0.00	0.00	0.00
Local Government	0.00	0.00	0.00	0.00	0.00	0.00
State Government	0.00	0.00	0.00	0.00	0.00	0.00
General Public	0.00	0.00	0.00	16 M	16 M	16 M
Total Savings	0.00	0.00	0.00	16 M	16 M	16 M
<b>COSTS:</b>	\$	\$	\$	\$	\$	\$
Regulated Community	0.00	0.00	0.00	6.98 M to 10 M	6.98 M to 10 M	6.98 M to 10 M
Local Government	0.00	0.00	0.00	0.00	0.00	0.00
State Government	0.00	0.00	0.00	0.00	0.00	0.00
Total Costs	0.00	0.00	0.00	6.98 M to 10 M	6.98 M to 10 M	6.98 M to 10 M
<b>REVENUE LOSSES:</b>						
Regulated Community	0.00	0.00	0.00	0.00	0.00	0.00
Local Government	0.00	0.00	0.00	0.00	0.00	0.00
State Government	0.00	0.00	0.00	0.00	0.00	0.00
Total Revenue Losses	0.00	0.00	0.00	0.00	0.00	0.00

(20a) Explain how the cost estimates listed above were derived.

Cost estimates were derived from actual reported emission levels, reduction targets, and EPA and equipment vendor control cost estimates.

(20b) Provide the past three year expenditure history for programs affected by the regulation.

Program expenditures will not be affected by the proposed regulation. Fiscal Year expenditures for the Bureau of Air Quality are approximately \$28,000,000 per year.

Program	FY-3	FY-2	FY-1	Current FY
Air Quality	28,000,000	28,000,000	26,000,000	24,000,000

## Regulatory Analysis Form

(21) Using the cost-benefit information provided above, explain how the benefits of the regulation outweigh the adverse effects and costs.

Total estimated benefits are approximately \$16,000,000 per year. Costs are estimated to be \$10,000,000 per year. The benefits outweigh the costs.

(22) Describe the nonregulatory alternatives considered and the costs associated with those alternatives. Provide the reasons for their dismissal.

Non-regulatory options are not available.

This proposed rulemaking is part of the Commonwealth's efforts to achieve emission reductions necessary to attain and maintain the health-based ozone air quality standard. In order for the emissions reductions to be included in the state implementation plan (SIP), they must be enforceable. Regulatory requirements are necessary to assure this enforceability.

(23) Describe alternative regulatory schemes considered and the costs associated with those schemes. Provide the reasons for their dismissal.

There are two alternatives to the proposed regulation in Chapters 121 and 129. First, the emission reduction goal could be achieved by requiring sources regulated under Chapter 145, Subchapter A to further reduce emissions. This was rejected as too costly and could negatively impact the market-based allowance system. The second alternative is to require the affected sources to submit new control applications as specified under Section 129.91 using a control threshold of \$3,000 per ton of NO<sub>x</sub>. This option was not selected because of the significant cost to industry in developing new applications and to government for the review of the applications.

## Regulatory Analysis Form

(24) Are there any provisions that are more stringent than federal standards? If yes, identify the specific provisions and the compelling Pennsylvania interest that demands stronger regulation.

There are no federal standards for the proposed Chapter 121 and 129 revisions. These revisions are based on model rules for NO<sub>x</sub> emission reduction developed by the OTC and are being proposed to achieve additional NO<sub>x</sub> emission reductions to achieve and maintain attainment of the health-based 1-hour ozone NAAQS in the Philadelphia nonattainment area.

The proposed Chapter 145 regulations are based on proposed control requirements published by EPA on February 22, 2002 (67 FR 8396) and October 21, 1998 (63 FR 56394). The proposed revisions are more stringent than the proposed federal regulations in very few ways. The revisions are necessary to complete the Commonwealth's obligation under the EPA NO<sub>x</sub> SIP Call to reduce those amounts of NO<sub>x</sub> emissions that significantly contribute to ozone attainment problems in downwind States. Additionally, the revisions represent the Commonwealth's fair share in reducing transported air pollution. The EPA proposed an emission reduction range for the large stationary internal combustion engines of 82 to 91 percent. EPA is taking comment on the range of control and will select the control requirement when the rule is finalized this Fall 2002. The Department proposed the 91 percent control requirement with the intent to match the anticipated final EPA requirement. While this aspect of the Department's proposal may appear to be more stringent on its face, it is not necessarily more stringent because the Department's proposal allows flexibility not offered in the EPA proposal by allowing sources to average their emissions.

The proposed Portland cement kiln rule requires continuous emission monitoring (CEM). The proposed EPA rule does not specify the monitoring method. CEM monitoring is needed because of the variability of NO<sub>x</sub> emissions even under steady-state production.

The scope of the proposed cement kiln rules may appear facially more stringent than EPA's proposal, but is not. The proposed EPA definition of a Portland cement kiln includes the size of the kiln. The Department did not include the size in the proposed definition resulting in all Portland cement kilns in Pennsylvania being included in the program. EPA's analysis of their proposal assumed that all of the Pennsylvania Portland cement kilns would be included. Thus, the Department's proposal is consistent with EPA's intent.

(25) How does the regulation compare with those of other states? Will the regulation put Pennsylvania at a competitive disadvantage with other states?

The states in the Philadelphia nonattainment area (Maryland, Delaware, New Jersey) are adopting similar rules to the proposed Chapter 121 and 129 regulations. The proposed Chapter 145, Subchapter B rules for large stationary internal combustion engines are based on the model rule proposed by the Environmental Protection Agency. The proposed Chapter 145, Subchapter C rules for cement kilns are similar to rules adopted by other states with cement kilns (for example, West Virginia, Maryland, and Illinois). Since most states are anticipated to adopt similar cement and large IC engine rules, Pennsylvania sources should not be placed at a competitive disadvantage.

## Regulatory Analysis Form

(26) Will the regulation affect existing or proposed regulations of the promulgating agency or other state agencies? If yes, explain and provide specific citations.

The proposed regulation will not affect any existing or proposed regulations.

(27) Will any public hearings or informational meetings be scheduled? Please provide the dates, times, and locations, if available.

It is recommended that three public hearings be held with a 60-day comment period.

(28) Will the regulation change existing reporting, record keeping, or other paperwork requirements? Describe the changes and attach copies of forms or reports which will be required as a result of implementation, if available.

The proposed regulation will require 8 of the cement kilns to install continuous emission monitors and report the data in accordance with existing monitoring regulations in Chapter 139. The remaining sources will continue to report and maintain records in accordance with their permits.

(29) Please list any special provisions which have been developed to meet the particular needs of affected groups or persons including, but not limited to, minorities, elderly, small businesses, and farmers.

No special provisions have been developed.

(30) What is the anticipated effective date of the regulation; the date by which compliance with the regulation will be required; and the date by which any required permits, licenses or other approvals must be obtained?

The proposed rule becomes effective upon publication in the Pennsylvania Bulletin. Sources must demonstrate compliance with the provisions of the regulations by May 1, 2005.

No special permits or licenses are required.

(31) Provide the schedule for continual review of the regulation.

The regulations, if adopted, will be reviewed in accordance with the Sunset Review schedule published by the Department to determine whether the regulations effectively fulfill the goals for which they were intended.



**FACE SHEET  
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WITH THE LEGISLATIVE REFERENCE BUREAU**  
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REVIEW COMMISSION

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Copy below is hereby approved as to  
form and legality. Attorney General

*Cristina S. Caputo*  
(DEPUTY ATTORNEY GENERAL)

SEP 19 2002

DATE OF APPROVAL

Check if applicable  
copy not approved. Objections  
attached.

Copy below is hereby certified to be a true and correct copy  
of a document issued, prescribed or promulgated by:

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
ENVIRONMENTAL QUALITY BOARD

(AGENCY)

DOCUMENT/FISCAL NOTE NO. 7-378

DATE OF ADOPTION:

BY: *David E. Hess*

TITLE: DAVID E. HESS, CHAIRMAN  
(EXECUTIVE OFFICER, CHAIRMAN OR SECRETARY)

Copy below is hereby approved as to  
form and legality. Executive or Independent  
Agencies.

BY:

*K. Smith*

DATE OF APPROVAL

(Deputy General Counsel)  
(Chief Counsel, Independent Agency)  
(Strike inapplicable title)

☐ Check if applicable. No Attorney General  
approval or objection within 30  
days after submission.

NOTICE OF  
PROPOSED RULEMAKING  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
ENVIRONMENTAL QUALITY BOARD

SMALL SOURCES OF NO<sub>x</sub>, CEMENT KILNS, LARGE IC ENGINES

25 PA CODE CHAPTER 121, 129, AND 145



**Notice of Proposed Rulemaking**  
**Department of Environmental Protection**  
**Environmental Quality Board**  
**(25 Pa. Code, Chapters 121, 129 and 145)**  
**Small NO<sub>x</sub>, Cement Kilns and Stationary Internal Combustion Engines**

**Preamble**

The Environmental Quality Board (Board) proposes to amend 25 Pa. Code, Chapters 121, 129 and 145 (relating to general provisions; standards for sources; and interstate pollution transport reduction). The amendments establish additional ozone season nitrogen oxide (NO<sub>x</sub>) control requirements for certain boilers, turbines and stationary internal combustion units that are small sources of NO<sub>x</sub> in the Counties of Bucks, Chester, Delaware, Montgomery and Philadelphia. The amendments also establish ozone season NO<sub>x</sub> emission limits for large stationary internal combustion engines and Portland cement kilns across the Commonwealth.

This proposal was adopted by the Board at its meeting of September 17, 2002.

**A. Effective Date**

These amendments will go into effect upon publication in the *Pennsylvania Bulletin* as a final rulemaking.

**B. Contact Persons**

For further information contact Dean E. Van Orden, Chief, Stationary Sources Section, Division of Air Resource Management, Bureau of Air Quality, P.O. Box 8468, Rachel Carson State Office Building, Harrisburg, PA 17105-8468, (717) 787-9495, or Kristen M. Campfield, Assistant Counsel, Bureau of Regulatory Counsel, P.O. Box 8464, Rachel Carson State Office Building, Harrisburg, PA 17105-8464, (717) 787-7060. Information regarding submitting comments on this proposal appears in Section I of this preamble. Persons with a disability may use the AT&T Relay Service by calling 1-800-654-5984 (TDD users) or 1-800-654-5988 (voice users). This proposal is available electronically through the DEP Web site (<http://www.dep.state.pa.us>), choose "participate."

**C. Statutory Authority**

This proposed rulemaking is being made under the authority of Section 5 of the Air Pollution Control Act (35 P.S. §4005), which grants the Board the authority to adopt regulations for the prevention, control, reduction and abatement of air pollution.

**D. Background and Purpose**

When ground-level ozone is present in concentrations in excess of the federal health-based standard, public health is adversely affected. The federal Environmental Protection Agency (EPA) has concluded that there is an association between ambient ozone concentrations

and increased hospital admissions for respiratory ailments, such as asthma. Further, although children, the elderly and those with respiratory problems are most at risk, even healthy individuals may experience increased respiratory ailments and other symptoms when they are exposed to ambient ozone while engaged in activity that involves physical exertion. Though such symptoms are often temporary, repeated exposure could result in permanent lung damage. The implementation of additional measures to address ozone air quality nonattainment in Pennsylvania is necessary to protect the public health.

The purpose of this proposed rulemaking is to reduce emissions of NO<sub>x</sub>, so as to reduce levels of ground-level ozone. Ground-level ozone is not directly emitted by pollution sources, but is created as a result of the chemical reaction of NO<sub>x</sub> and volatile organic compounds (VOC), in the presence of light and heat. The reduction of NO<sub>x</sub> will also protect the public health from high levels of fine particulates, of which nitrogen oxides are a precursor component. Fine particulates, as well as ozone, are health hazards. The reduction of NO<sub>x</sub> also reduces visibility impairment and acid deposition. This proposed rulemaking is part of the Commonwealth's specific action plan and is necessary to achieve and maintain the ozone National Ambient Air Quality Standard in this Commonwealth and is part of a regional effort among the states in the Ozone Transport Region (OTR) to reduce transported ozone.

The proposed amendments to Chapters 121 and 129 establish ozone season (May 1 through September 30) emission limits for NO<sub>x</sub> from certain boilers, turbines and stationary internal combustion engines located at industrial, utility and commercial sites in the Counties of Bucks, Chester, Delaware, Montgomery and Philadelphia. These counties are in a severe nonattainment area for ozone. Surrounding states in the same nonattainment area (Maryland, Delaware, New Jersey) are taking similar actions. The Board's proposed regulations require the emission limits to be implemented by May 1, 2005. The proposed amendments to Chapters 121 and 129 do not affect large sources that are regulated under Chapter 145. The proposed amendments are based on model rules developed by the Ozone Transport Commission (OTC), which was created to address ozone problems in the OTR. The Commonwealth is a member of the OTC. The proposed amendments are also consistent with the recommendations of the Southeast Pennsylvania Ozone Stakeholders Working Group.

In 1998, EPA published its requirement that 22 eastern states and the District of Columbia submit revised State Implementation Plans (SIP) (the "NO<sub>x</sub> SIP Call") prohibiting those amounts of NO<sub>x</sub> emissions that significantly contribute to ozone attainment problems in downwind states. In 2000, the Commonwealth promulgated the Chapter 145, Subchapter A, NO<sub>x</sub> "cap and trade" program for fossil fuel-fired combustion units and electric generating units, to satisfy the first phase of the NO<sub>x</sub> SIP Call. Subchapter A was published in the *Pennsylvania Bulletin* as a final rule on September 30, 2000 at 30 Pa. B. 4899 and was approved by EPA as a SIP revision on August 21, 2001 (66 FR 43795). Subchapters B and C of Chapter 145, in the current proposal, are needed to satisfy the Commonwealth's remaining obligation under the SIP Call.

Proposed Subchapters B and C of Chapter 145 establish ozone season emission limits for NO<sub>x</sub> from large stationary internal combustion engines that emitted more than 153 tons of NO<sub>x</sub> per ozone season in 1995 or any ozone season thereafter and from Portland cement kilns.

Revisions pertaining to large stationary internal combustion engines and cement kilns were originally part of the 2000 proposal, but final action was deferred on them. The current proposal reflects further revisions made in response to comments received on the previous proposal and is based on EPA proposed emission limits and control technologies published February 22, 2002 (67 FR 8396) and October 21, 1998 (63 FR 56394). The cement kiln provisions in the current proposal are similar to rules adopted by other states including West Virginia, Maryland and Illinois. Most states are expected to adopt similar provisions for cement kilns and large stationary internal combustion engines.

Subchapter B will impact owners and operators of an estimated 14 large stationary internal combustion engines owned by 4 companies and institutions. Subchapter C will impact the owners and operators of 21 cement kilns and will require 8 of them to install continuous emission monitors (CEM) and report the data in accordance with existing monitoring regulations. Two cement kilns have shutdown or have announced a shutdown date. The remaining cement kilns currently operate CEMs.

The Board's proposed amendments also represent the Commonwealth's continuing commitment to do its fair share in reducing ozone transport both within this Commonwealth and throughout the Northeast.

The Department worked with the Air Quality Technical Advisory Committee (AQTAC) in the development of this proposed rulemaking. The Department presented an earlier draft of the Chapter 129 amendments to AQTAC at its January 17, 2002 meeting. In response to AQTAC's comments at the January meeting, the Department revised the proposal, which it presented to AQTAC at its May 2, 2002 meeting. At that meeting, AQTAC concurred with the Department's recommendation that the Board publish these proposed amendments. However, AQTAC specifically requested that the Board seek public comment on three issues concerning scope and flexibility. Those three issues are identified more fully in Section I, below.

#### **E. Summary of Regulatory Requirements**

The amendments to Chapter 121 (relating to definitions) consist of definitions of four terms that will be used in the substantive provisions of the regulation. The terms are: "emergency stationary internal combustion engine," "fire-fighting stationary internal combustion engine," "ppmvd," and "stationary internal combustion engine."

Amendments to Chapter 129 apply during the ozone season (May 1 to September 30) to small sources of NO<sub>x</sub> located in Bucks, Chester, Delaware, Montgomery or Philadelphia County (the five-county Philadelphia area). The amendments establish NO<sub>x</sub> emission limits for boilers, stationary combustion turbines and stationary internal combustion engines in new Sections 129.201, 129.202 and 129.203 (relating to standards for boilers; standards for stationary combustion turbines; and standards for stationary internal combustion engines). These sections allow averaging of emissions to demonstrate compliance in certain circumstances. Some boilers and turbines may demonstrate compliance through the "opt-in" provisions of Sections 145.80 through 145.88 (relating to opt-in process). Emergency gas turbines and fire-fighting turbines,

fire-fighting stationary internal combustion engines and emergency stationary internal combustion engines are exempt.

Subchapter B, of Chapter 145, establishes emission rates for four categories of large stationary internal combustion engines listed in Section 145.111 (relating to applicability). Section 145.112 (relating to definitions) defines terms that are used in Subchapter B: “CEMS-Continuous Emission Monitoring System,” “diesel stationary internal combustion engine,” “dual-fuel stationary internal combustion engine,” “engine rating,” “lean-burn stationary internal combustion engine,” “rich-burn stationary internal combustion engine,” “stoichiometric air/fuel ratio” and “unit.” Section 145.113 (relating to standard requirements) establishes the emission rates.

This subchapter also establishes compliance reporting, monitoring and recordkeeping requirements in Sections 145.114 and 145.115 (relating to compliance determination and reporting, monitoring and recordkeeping). Section 145.114 allows averaging of emissions to demonstrate compliance in certain circumstances.

Subchapter C applies to Portland cement kilns, in Section 145.141 (relating to applicability). Section 145.142 (relating to definitions) defines the following terms for the purposes of this subchapter: “CEMS-Continuous Emission Monitoring System,” “clinker,” “low NO<sub>x</sub> burner,” “mid-kiln firing,” “Portland cement” and “Portland cement kiln.” Section 145.143 (relating to standard requirements) establishes acceptable control technologies and emission limitations. Section 145.144 establishes reporting, monitoring and recordkeeping requirements for these units.

This proposal, if adopted as a final rulemaking, will be submitted to the EPA as an amendment to the State Implementation Plan.

#### **F. Benefits, Costs and Compliance**

Executive Order 1996-1 requires a cost/benefit analysis of the proposed regulation.

##### **Benefits**

Overall, the citizens of this Commonwealth will benefit from these recommended changes because the changes will result in improved air quality by reducing ozone and fine particulate precursor emissions and encourage new technologies and practices, which will reduce emissions. The proposed regulations will also reduce visibility impairment and acid deposition. Financial savings resulting from the proposed regulation in terms of effects on mortality, hospital admissions, acute bronchitis, acute respiratory systems, worker productivity, crops and forests could exceed \$16,000,000 per year, based on EPA estimates.

##### **Compliance Costs**

The boilers, turbines and stationary internal combustion engines subject to the proposed Chapter 129 regulation are expected to reduce NO<sub>x</sub> emissions by approximately 3 tons per day in

the Philadelphia area. The emission reduction can be achieved through installation of control equipment, combustion unit modification, or fuel switching. Cost to reduce emissions for these sources has been estimated to be \$1,500 to \$3,500 per ton for boilers, \$3,000 per ton of NO<sub>x</sub> for turbines and \$1,700 to \$4,400 per ton for stationary internal combustion engines. Under Chapter 145, large stationary internal combustion engines are expected to install control equipment to meet the emission reduction requirements. These controls are estimated to cost \$1,500 to \$2,000 per ton of NO<sub>x</sub> reduced. Cement kilns are expected to achieve some emission reductions through improved fuel efficiency resulting in a potential cost savings. Eight kilns will need to install continuous emission monitors at a cost of approximately \$60,000 to \$100,000 each.

### **Compliance Assistance Plan**

The Department plans to educate and assist the regulated community and the public with understanding these new regulatory requirements through various means, including field inspector contacts, mailings and the Small Business Compliance Assistance Program.

### **Paperwork Requirements**

Aside from electronic CEMS reports that will be required of the cement kiln owners or operators, the regulatory revisions will not increase the paperwork that is already generated during the normal course of business operations.

### **G. Sunset Review**

This regulation will be reviewed in accordance with the sunset review schedule published by the Department to determine whether the regulation effectively fulfills the goals for which it was intended.

### **H. Regulatory Review**

Under Section 5(a) of the Regulatory Review Act (71 P.S. §745.5(a)), the Department submitted a copy of the proposed rulemaking on October 8, 2002 to the Independent Regulatory Review Commission (IRRC), and the Chairpersons of the Senate and House Environmental Resources and Energy Committees. In addition to submitting the proposed amendments, the Department has provided IRRC and the Committees with a copy of a detailed regulatory analysis form prepared by the Department. A copy of this material is available to the public upon request.

If IRRC has objections to any portion of the proposed amendments, it will notify the Department within 10 days following the close of the Committees' review period. The notification shall specify the regulatory review criteria which have not been met by that portion. The Regulatory Review Act specifies detailed procedures for review by the Department, the Governor, and the General Assembly before final publication of the regulation.

## **I. Public Comments**

**Written Comments** – Interested persons are invited to submit comments, suggestions, or objections regarding the proposed regulation to the Environmental Quality Board, P.O. Box 8477, Harrisburg, PA 17105-8477 (express mail: Rachel Carson State Office Building, 15<sup>th</sup> Floor, 400 Market Street, Harrisburg, PA 17101-2301). Comments submitted by facsimile will not be accepted. Comments, suggestions or objections must be received by the Board by December 26, 2002. Interested persons may also submit a summary of their comments to the Board. The summary may not exceed one page in length and must also be received by December 26, 2002. The one-page summary will be provided to each member of the Board in the agenda packet distributed prior to the meeting at which the final regulation will be considered.

At the request of the Department's Air Quality Technical Advisory Committee, the Board is specifically requesting comments in three areas:

1. Section 129.201 allows an owner or operator of two or more affected boilers to demonstrate compliance with the emission levels required in that section by averaging emissions from the boilers, with written Department approval. Sections 129.202 and 129.203 allow the same for an owner or operator of two or more stationary combustion turbines or stationary internal combustion engines. The Board is requesting comment on whether these sections should remain the same, allow more flexibility or allow less flexibility. Examples of flexibility include allowing owners and operators to average their NO<sub>x</sub> emissions among other sources within the 5-county Philadelphia ozone nonattainment area or allowing sources to purchase and retire NO<sub>x</sub> allowances issued under Chapter 145, Subchapter A of contemporaneous vintage from the 5-county area.
2. Affected sources are requested to submit detailed information concerning the technical feasibility of the proposed control requirements and potential cost to comply for the affected units in Pennsylvania.
3. The proposed revisions to Chapter 129 apply only within the 5-county Philadelphia area. The entire proposed rulemaking applies only during each year's ozone season (May 1 through September 30). The Board is requesting comment on whether the proposal should apply statewide and for the entire year.

**Electronic Comments** – Comments may be submitted electronically to the Board at [regcomments@state.pa.us](mailto:regcomments@state.pa.us) and must also be received by the Board by December 26, 2002. A subject heading of the proposal and a return name and address must be included in each transmission. If an acknowledgement of electronic comments is not received by the sender within two working days, the comments should be retransmitted to ensure receipt.

## **J. Public Hearings**



The Environmental Quality Board will hold 3 public hearings for the purpose of accepting comments on this proposal. The hearings will be held at 1:00 p.m. on the following dates:

November 18, 2002                      Department of Environmental Protection  
Southcentral Regional Office  
Susquehanna River Conference Room A  
909 Elmerton Avenue  
Harrisburg, PA

November 20, 2002                      Department of Environmental Protection  
Southwest Regional Office  
Waterfront A Conference Room  
500 Waterfront Drive  
Harrisburg, PA

November 25, 2002                      Department of Environmental Protection  
Southeast Regional Park  
Main Conference Room, Lee Park  
555 North Lane  
Conshohocken, PA

Persons wishing to present testimony at a hearing are requested to contact Heather Dwilet at the Environmental Quality Board, P.O. Box 8477, Harrisburg, PA 17105-8477, (717) 787-4526, at least one week in advance of the hearing to reserve a time to present testimony. Oral testimony is limited to ten minutes for each witness. Witnesses are requested to submit three written copies of their oral testimony to the hearing chairperson at the hearing. Organizations are limited to designating one witness to present testimony on their behalf at each hearing.

Persons in need of accommodations as provided for in the Americans With Disabilities Act of 1990 should contact Heather Dwilet directly at (717) 787-4526 or through the Pennsylvania AT&T Relay Service at 1-800-654-5984 (TDD) to discuss how the Department may accommodate their needs.

BY:

David E. Hess

Chairperson

Environmental Quality Board



Annex A

TITLE 25. ENVIRONMENTAL PROTECTION

PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION

Subpart C. PROTECTION OF NATURAL RESOURCES

ARTICLE III. AIR RESOURCES

CHAPTER 121. GENERAL PROVISIONS

§ 121.1. Definitions.

The definitions in section 3 of the act (35 P. S. § 4003) apply to this article. In addition, the following words and terms, when used in this article, have the following meanings, unless the context clearly indicates otherwise:

\* \* \* \* \*

**Emergency stationary internal combustion engine** – A stationary internal combustion engine that operates as a mechanical or electrical power source only when the primary power source for a facility has been rendered inoperable by events beyond the control of the owner or operator. A stationary reciprocating engine that provides power during instances of voltage reduction or curtailment from the electrical grid is not an emergency stationary internal combustion engine.

\* \* \* \* \*

**Fire-fighting stationary internal combustion engine** – A stationary internal combustion engine that is used solely to pump water for extinguishing fires.

\* \* \* \* \*

**ppmvd** – Parts per million dry volume.

\* \* \* \* \*

**Stationary internal combustion engine** – An 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 30 days. An engine 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.

\* \* \* \* \*

## CHAPTER 129. STANDARDS FOR SOURCES

\* \* \* \* \*

*(Editor's note: The following sections are new and are printed in normal type for ease of reading.)*

### ADDITIONAL NO<sub>x</sub> REQUIREMENTS

#### § 129.201. Standards for boilers.

(a) No later than May 1, 2005, the owner or operator of a boiler that meets the definition of a boiler in Section 145.2 (relating to definitions) located in Bucks, Chester, Delaware, Montgomery or Philadelphia Counties shall ensure that the boiler meets the lower of any NO<sub>x</sub> emission limitation established in a permit issued under Chapter 127 (relating to permits) or the following NO<sub>x</sub> emission limits:

(1) Boilers with a nameplate rated capacity of greater than 100 million Btu/hour but less than or equal to 250 million Btu/hour shall meet the following NO<sub>x</sub> emission standards from May 1 through September 30 of each year:

(i) Natural gas-fired boilers or boilers firing a non-commercial gaseous fuel shall not emit NO<sub>x</sub> in excess of 0.10 pounds NO<sub>x</sub> per million Btu or an alternate emission rate approved by the Department that achieves a NO<sub>x</sub> emission reduction of 60% from the actual 1990 NO<sub>x</sub> emission rate as determined in Section 129.91(b) (relating to control of major sources of NO<sub>x</sub> and VOCs). The NO<sub>x</sub> emissions from the boiler after implementation of the alternate standard may not exceed any NO<sub>x</sub> emission limit contained in a permit issued under Chapter 127.

(ii) Boilers firing solid or liquid fuel may not emit NO<sub>x</sub> in excess of 0.20 pounds of NO<sub>x</sub> per million Btu or an alternate emission rate approved by the Department that achieves a NO<sub>x</sub> emission reduction of 60% from the actual 1990 NO<sub>x</sub> emission rate as determined in Section 129.91(b). The NO<sub>x</sub> emissions from the boiler after implementation of the alternate standard may not exceed any NO<sub>x</sub> emission limit contained in a permit issued under Chapter 127.

(2) Boilers with a nameplate rated capacity of greater than 250 million Btu/hour that are not subject to the requirements of Sections 145.1 through 145.76 (related to NO<sub>x</sub> budget trading program) shall meet the lower of any NO<sub>x</sub> emission limitation established in a permit issued under Chapter 127 or 0.17 pounds NO<sub>x</sub> per million Btu heat input from May 1 through September 30 of each year. A boiler may demonstrate compliance with this paragraph through the provisions of Sections 145.80 through 145.88 (relating to opt-in process).

(b) The owner or operator of two or more boilers identified in subsection (a) may propose in writing to the Department to demonstrate compliance with this section by averaging emissions from the affected sources. In no case may averaging eliminate or modify an otherwise applicable regulatory or permit-based emission limitation. The owner or operator shall propose monitoring and averaging provisions sufficient to demonstrate compliance on a daily basis. The Department will approve such averaging proposal in writing.

**§ 129.202. Standards for stationary combustion turbines.**

(a) No later than May 1, 2005, the owner or operator of a stationary combustion turbine located in Bucks, Chester, Delaware, Montgomery or Philadelphia Counties shall ensure that the stationary combustion turbine meets the lower of any NO<sub>x</sub> emission limitation established in a permit issued under Chapter 127 (relating to permits) or the following NO<sub>x</sub> emission limits:

(1) Stationary combustion turbines with a nameplate rated capacity of greater than 100 million Btu/hour but less than or equal to 250 million Btu/hour shall meet the following NO<sub>x</sub> emission standards from May 1 through September 30 of each year:

(i) Combined cycle or regenerative cycle stationary combustion turbines shall emit no more than:

(A) 42 ppmvd of NO<sub>x</sub>, corrected to 15% O<sub>2</sub>, when firing natural gas or a non-commercial gaseous fuel or an alternate emission rate approved by the Department that achieves a NO<sub>x</sub> emission reduction of 60% from the actual 1990 NO<sub>x</sub> emission rate as determined in Section 129.91(b) (relating to control of major sources of NO<sub>x</sub> and VOCs). The NO<sub>x</sub> emissions from the turbine after implementation of the alternate standard may not exceed any NO<sub>x</sub> emission limit contained in a permit issued under Chapter 127.

(B) 65 ppmvd of NO<sub>x</sub>, corrected to 15% O<sub>2</sub>, when firing oil or an alternate emission rate approved by the Department that achieves a NO<sub>x</sub> emission reduction of 60% from the actual 1990 NO<sub>x</sub> emission rate as determined in Section 129.91(b). The NO<sub>x</sub> emissions from the turbine after implementation of the alternate standard may not exceed any NO<sub>x</sub> emission limit contained in a permit issued under Chapter 127.

(ii) Simple cycle stationary combustion turbines shall emit no more than:

(A) 55 ppmvd of NO<sub>x</sub>, corrected to 15% O<sub>2</sub>, when firing natural gas or a non-commercial gaseous fuel or an alternate emission rate approved by the Department that achieves a NO<sub>x</sub> emission reduction of 60% from the actual 1990 NO<sub>x</sub> emission rate as determined in Section 129.91(b). The NO<sub>x</sub> emissions from the turbine after implementation of the alternate standard may not exceed any NO<sub>x</sub> emission limit contained in a permit issued under Chapter 127.

(B) 75 ppmvd of NO<sub>x</sub>, corrected to 15% O<sub>2</sub>, when firing oil or an alternate emission rate approved by the Department that achieves a NO<sub>x</sub> emission reduction of 60% from the actual 1990 NO<sub>x</sub> emission rate as determined in Section 129.91(b). The NO<sub>x</sub> emissions from the turbine after implementation of the alternate standard may not exceed any NO<sub>x</sub> emission limit contained in a permit issued under Chapter 127.

(2) Stationary combustion turbines with a nameplate rated capacity of greater than 250 million Btu/hour that are not subject to the requirements of Sections 145.1 through 145.76 (relating to NO<sub>x</sub> Budget Trading Program) shall meet the lower of any NO<sub>x</sub> emission limit established in a permit issued under Chapter 127 or 0.17 lb NO<sub>x</sub> per million Btu heat input from May 1 through September 30 of each year. A stationary combustion turbine may demonstrate compliance with this paragraph through the provisions of Sections 145.80 through 145.88 (relating to opt-in process).

(b) Emergency gas turbines and fire-fighting turbines, as those terms are defined in 40 CFR § 60.331 (relating to definitions), are exempt from this section.

(c) The owner or operator of two or more stationary combustion turbines identified in subsection (a) may propose in writing to the Department to demonstrate compliance with this section by averaging emissions from the affected sources. In no case may averaging eliminate or modify any otherwise applicable regulatory or permit-based emission limitation. The owner or operator shall propose monitoring and averaging provisions sufficient to demonstrate compliance on a daily basis. The Department will approve such averaging proposal in writing.

#### **§ 129.203. Standards for stationary internal combustion engines.**

(a) This section applies to stationary internal combustion engines rated at greater than 1000 horsepower and located in Bucks, Chester, Delaware, Montgomery, or Philadelphia Counties, except for the following:

(1) Fire-fighting stationary internal combustion engines and emergency stationary internal combustion engines.

(2) Stationary internal combustion engines regulated under Chapter 145, Subchapter B (relating to emissions of NO<sub>x</sub> from stationary internal combustion engines).

(b) No later than May 1, 2005, the owner or operator shall ensure that, during the period May 1 through September 30 of each year, the affected stationary internal combustion engines identified in subsection (a) meet the lower of any NO<sub>x</sub> emission limitation established in a permit issued under Chapter 127 (relating to permits) or the following NO<sub>x</sub> emission limits:

(1) For a spark-ignited engine, 1.5 grams of NO<sub>x</sub> per brake horsepower-hour or an alternate emission rate approved by the Department that achieves a NO<sub>x</sub> emission reduction of 80% from the actual 1990 NO<sub>x</sub> emission rate as determined in Section

129.91(b) (relating to control of major sources of NO<sub>x</sub> and VOCs). The NO<sub>x</sub> emissions from the stationary internal combustion engine after implementation of the alternate standard may not exceed any NO<sub>x</sub> emission limit contained in a permit issued under Chapter 127.

(2) For a compression ignition stationary internal combustion engine firing diesel fuel or a combination of diesel fuel and natural gas, 2.3 grams of NO<sub>x</sub> per brake horsepower-hour or an alternate emission rate approved by the Department that achieves a NO<sub>x</sub> emission reduction of 80% from the actual 1990 NO<sub>x</sub> emission rate as determined in §129.91(b). The NO<sub>x</sub> emissions from the stationary internal combustion engine after implementation of the alternate standard may not exceed any NO<sub>x</sub> emission limit contained in a permit issued under Chapter 127.

(c) The owner or operator of two or more stationary internal combustion engines identified in subsection (a) may propose in writing to the Department to demonstrate compliance with this section by averaging emissions from the affected sources. In no case may averaging eliminate or modify any otherwise applicable regulatory or permit-based emission limitation. The owner or operator shall propose monitoring and averaging provisions sufficient to demonstrate compliance on a daily basis. The Department will approve such averaging proposal in writing.

## **CHAPTER 145. INTERSTATE OZONE TRANSPORT REDUCTION**

### **Subchapter B. EMISSIONS OF NO<sub>x</sub> FROM STATIONARY INTERNAL COMBUSTION ENGINES**

#### **§ 145.111. Applicability.**

(a) An owner or operator of a rich-burn stationary internal combustion engine with an engine rating equal to or greater than 2,400 brake horsepower that emitted greater than or equal to 153 tons of NO<sub>x</sub> from May 1 through September 30 in 1995 or from May 1 through September 30 of any year thereafter shall comply with the applicable requirements of this subchapter.

(b) An owner or operator of a lean-burn stationary internal combustion engine with an engine rating equal to or greater than 2,400 brake horsepower that emitted greater than or equal to 153 tons of NO<sub>x</sub> from May 1 through September 30 in 1995 or from May 1 through September 30 of any year thereafter shall comply with the applicable requirements of this subchapter.

(c) An owner or operator of a diesel stationary internal combustion engine with an engine rating equal to or greater than 3,000 brake horsepower that emitted greater than or equal to 153 tons of NO<sub>x</sub> from May 1 through September 30 in 1995 or from May 1 through September 30 of any year thereafter shall comply with the applicable requirements of this subchapter.

(d) An owner or operator of a dual-fuel stationary internal combustion engine with an engine rating equal to or greater than 4,400 brake horsepower that emitted greater than or equal to 153 tons of NO<sub>x</sub> from May 1 through September 30 in 1995 or from May 1 through September 30 of

any year thereafter shall comply with the applicable requirements of this subchapter.

#### **§ 145.112. Definitions.**

The following words and terms, when used in this subchapter, have the following meanings, unless the context clearly indicates otherwise:

*CEMS–Continuous Emission Monitoring System* – The equipment required under this subchapter and Chapter 139 (relating to sampling and testing) to sample, analyze, measure and provide, by readings taken at least every 15 minutes of the measured parameters, a permanent record of NO<sub>x</sub> emissions.

*Diesel stationary internal combustion engine*—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.

*Dual-fuel stationary internal combustion engine*—A compression-ignited stationary internal combustion engine that is burning liquid fuel and gaseous fuel simultaneously.

*Engine rating*—The output of an engine as determined by the engine manufacturer and listed on the nameplate of the unit, regardless of any derating.

*Lean-burn stationary internal combustion engine*—Any two- or four-stroke spark-ignited engine that is not a rich-burn stationary internal combustion engine.

*Rich-burn stationary internal combustion engine*—A two- or four-stroke spark-ignited engine where the manufacturer's original recommended operating air/fuel ratio divided by the stoichiometric air/fuel ratio is less than or equal to 1.1.

*Stoichiometric air/fuel ratio* – The air/fuel ratio where all fuel and all oxygen in the air/fuel mixture will be consumed.

*Unit*—An engine subject to the requirements of this subchapter.

#### **§ 145.113. Standard requirements.**

Beginning May 1, 2005, an owner or operator of a unit described in Section 145.111 (relating to applicability) may not operate the unit from May 1 through September 30 of any year unless the owner or operator complies with the following requirements:

- (1) An owner or operator of a unit identified in § 145.111(a), (c), or (d) shall demonstrate that emissions from the unit have been reduced by 90% from the 1990 emission rate as determined in § 129.91(b) (relating to control of major sources of NO<sub>x</sub> and VOCs).
- (2) An owner or operator of a unit identified in § 145.111(b) shall demonstrate that emissions from the unit have been reduced by 91% from the 1990 emission rate as



determined in § 129.91(b).

**§ 145.114. Compliance determination.**

(a) An owner or operator of a unit subject to the requirements of this subchapter shall determine compliance using a CEMS that meets the applicable requirements of Chapter 139 (relating to sampling and testing) unless an alternate monitoring technique is approved by the Department under § 145.115(b)(1)(ii) (relating to reporting, monitoring and recordkeeping).

(b) An owner or operator of two or more units subject to the requirements of this subchapter may demonstrate compliance with this subchapter through an averaging demonstration approved in writing by the Department. In no case may averaging eliminate or modify an otherwise applicable regulatory or permit-based emission limitation. The units demonstrating compliance through an averaging provision must be monitored using a CEMS.

**§ 145.115. Reporting, monitoring and recordkeeping.**

(a) *Reporting requirements.* An owner or operator of a unit subject to the requirements of this subchapter shall:

(1) By May 1, 2004, submit to the Department the identification number and type of each unit, 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.

(2) Submit a report documenting for that unit the total NO<sub>x</sub> emissions from May 1 through September 30 of each year to the Department by October 31 of each year, beginning in 2005.

(b) *Monitoring requirements.*

(1) An owner or operator of a unit subject to the requirements of this subchapter shall not operate the unit unless it is equipped with one of the following:

(i) A CEMS that meets the applicable requirements of Chapter 139 (relating to source testing).

(ii) An alternate calculation and recordkeeping procedure based upon actual annual emissions testing and correlations with operating parameters. The installation, implementation and use of the alternate calculation and recordkeeping procedure shall be approved by the Department in writing prior to implementation.

(2) The CEMS or approved alternate calculation and recordkeeping procedure shall be operated and maintained in accordance with an onsite CEMS operating plan approved by the Department.

(c) *Recordkeeping requirements.* An owner or operator of a unit subject to the requirements of this subchapter shall maintain records necessary to demonstrate compliance for 5 consecutive calendar years at the facility at which the unit is located. The records shall be made available to the Department upon request.

### **Subchapter C. EMISSIONS OF NO<sub>x</sub> FROM CEMENT MANUFACTURING**

#### **§ 145.141. Applicability.**

The requirements of this subchapter apply to Portland cement kilns located in Pennsylvania.

#### **§ 145.142. Definitions.**

The following words and terms, when used in this subchapter, have the following meanings, unless the context clearly indicates otherwise:

*CEMS—Continuous Emission Monitoring System* – The equipment required under this subchapter and Chapter 139 (relating to sampling and testing) to sample, analyze, measure and provide, by readings taken at least every 15 minutes of the measured parameters, a permanent record of NO<sub>x</sub> emissions.

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

*Low NO<sub>x</sub> burner* – Combustion equipment designed to reduce flame turbulence, delay fuel/air mixing, and establish fuel-rich zones for initial combustion.

*Mid-kiln firing* – 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<sub>x</sub> emissions through burning part of the fuel at a lower temperature and creating reducing conditions at the solid waste injection point that may destroy some of the NO<sub>x</sub> 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.

#### **§ 145.143. Standard requirements.**

Beginning May 1, 2005, an owner or operator of a Portland cement kiln subject to this subchapter may not operate the kiln during May 1 through September 30 unless one of the following has been installed and operates during May 1 to September 30:

- (1) Low NO<sub>x</sub> burner.
- (2) Mid-kiln firing.
- (3) An alternative control approved in writing by the Department that achieves at least a 30% reduction of NO<sub>x</sub> from the actual 1990 emission rate as determined in § 129.91(b) (relating to control of major sources of NO<sub>x</sub> and VOCs). The NO<sub>x</sub> emissions from the Portland cement kiln after installation and operation of the alternate control may not exceed any NO<sub>x</sub> emission limit contained in a permit issued under Chapter 127.

**§ 145.144. Reporting, monitoring and recordkeeping.**

(a) *Reporting requirements.* An owner or operator subject to the requirements of § 145.143 (relating to standard requirements) shall:

- (1) By May 1, 2005, submit to the Department the identification number and type of each unit subject to this 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 this subchapter.
- (2) Submit a report documenting for that unit the total NO<sub>x</sub> emissions from May 1 through September 30 of each year to the Department by October 31 of each year, beginning in 2005.
- (3) Submit a report, by May 1, 2005, documenting the control equipment or NO<sub>x</sub> reduction technique installed to demonstrate compliance with § 145.143.

(b) *Monitoring requirements.* A Portland cement kiln subject to this rule shall install and operate a CEMS to demonstrate the continual effectiveness of the compliance option selected under § 145.143. The CEMS shall be installed, operated and certified in accordance with the requirements of Chapter 139 (relating to sampling and testing) by May 1, 2005.

(c) *Recordkeeping requirements.* The owner or operator of the Portland cement kiln shall maintain all records and reports required by this subchapter for a minimum of 5 years. The records and reports shall be made available to the Department upon request.



**ENVIRONMENTAL QUALITY BOARD  
NOTICE OF PUBLIC HEARINGS**

**PROPOSED AMENDMENTS TO PENNSYLVANIA'S  
AIR QUALITY REGULATIONS AND THE STATE IMPLEMENTATION PLAN –  
SMALL SOURCES OF NO<sub>x</sub>, LARGE STATIONARY INTERNAL  
COMBUSTION ENGINES AND CEMENT KILNS**

The Environmental Quality Board (EQB) will hold three public hearings to accept comments on a proposed two-part rule that would establish additional ozone season control requirements in Chapters 129 and new ozone season requirements in Chapter 145 of Title 25 of the Pennsylvania Code. The proposed rulemaking would reduce emissions of nitrogen oxides (NO<sub>x</sub>) from small sources of NO<sub>x</sub> in Bucks, Chester, Delaware, Montgomery and Philadelphia Counties and from large stationary internal combustion engines and cement kilns across Pennsylvania.

The proposed rulemaking for small NO<sub>x</sub> sources in Chapter 129 are based on model rules developed by the Ozone Transport Commission to achieve and maintain the health-based 1-hour ozone standard. The proposed amendments are consistent with recommendations of the Southeast Pennsylvania Ozone Stakeholders Working Group and propose a compliance date of May 1, 2005.

The proposed rulemaking for the large stationary internal combustion engines and cement kilns in Chapter 145 are based upon proposals and models developed by the Environmental Protection Agency (EPA) to reduce ozone transport throughout the eastern United States under the NO<sub>x</sub> State Implementation Plan Call (NO<sub>x</sub> SIP Call). The proposed rulemaking represents Pennsylvania's fair share in reducing transported air pollution and also proposes a compliance date of May 1, 2005.

The regulations, if approved, will be submitted to the EPA as a revision to the State Implementation Plan (SIP). The SIP, which is a requirement of the Clean Air Act, is a plan that provides for the implementation, maintenance and enforcement of the National Ambient Air Quality Standards (NAAQS) in Pennsylvania.

The hearings will be held at 1:00 p.m. as follows:

November 18, 2002	Department of Environmental Protection Southcentral Regional Office Susquehanna River Conference Room A 909 Elmerton Avenue Harrisburg, PA
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November 20, 2002	Department of Environmental Protection Southwest Regional Office Waterfront A Conference Room 500 Waterfront Drive Pittsburgh, PA
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November 25, 2002

Department of Environmental Protection  
Southeast Regional Park  
Main Conference Room, Lee Park  
555 North Lane  
Conshohocken, PA

### Public Comments

Persons wishing to present testimony at any of the hearings are requested to contact Heather Dwilet at the Environmental Quality Board, P.O. Box 8477, Harrisburg, PA 17105-8477, (717) 787-4526, at least one week in advance of the hearing to reserve a time to present testimony. Oral testimony is limited to ten minutes for each witness. Witnesses are requested to submit three written copies of their statement at the hearing. Each organization is limited to designating one witness to present testimony on its behalf.

Persons with a disability who wish to attend a hearing and require an auxiliary aid, service or other accommodation in order to participate should contact Heather Dwilet at (717) 787-4526, or through the Pennsylvania AT&T Relay Service at 1-800-654-5984 (TDD), to discuss how their needs may be accommodated.

In lieu of or in addition to presenting oral testimony at a hearing, interested persons may submit written comments, suggestions, or objections regarding the proposed regulations to the Environmental Quality Board, P.O. Box 8477, Harrisburg, PA 17105-8477 (express mail: Rachel Carson State Office Building, 15<sup>th</sup> Floor, 400 Market Street, Harrisburg, PA 17101-2301). Comments on the proposal must be received by December 26, 2002. Comments submitted by facsimile will not be accepted. Electronic comments may be submitted to [RegComments@state.pa.us](mailto:RegComments@state.pa.us). In addition to written or electronic comments, interested persons may submit a summary of their comments to the EQB. The summary cannot exceed one page in length and must also be received by December 26, 2002. One-page summaries will be provided to each member of the EQB in the agenda packet distributed prior to the meeting at which the final regulations will be considered.

### Availability of the Proposal

Copies of the proposal are available from Connie Cross, Division of Air Resource Management, Bureau of Air Quality, P.O. Box 8468, Harrisburg, PA 17105-8468, at (717) 787-9495 (email: [cocross@state.pa.us](mailto:cocross@state.pa.us)). The proposal is also available on the DEP website at <http://www.dep.state.pa.us> (select *Participate!* Tab, then *Proposals Open for Comment*).

DAVID E. HESS  
Chairman



Pennsylvania Department of Environmental Protection

**Rachel Carson State Office Building**

**P.O. Box 2063**

**Harrisburg, PA 17105-2063**

**October 8, 2002**

**The Secretary**

Phone: 717-787-2814

E-Mail: [DavidHess@state.pa.us](mailto:DavidHess@state.pa.us)

Mr. Robert E. Nyce, Executive Director  
Independent Regulatory Review Commission  
14<sup>th</sup> Floor, Harrisstown #2  
333 Market Street  
Harrisburg, PA 17120

RE: Proposed Rulemaking: Small Sources of NO<sub>x</sub>, Cement Kilns, Large IC Engines (#7-378)

Dear Bob:

Enclosed is a copy of a proposed regulation for review and comment by the Commission pursuant to Section 5(a) of the Regulatory Review Act. This proposal is scheduled for publication as a proposed rulemaking in the *Pennsylvania Bulletin* on October 19, 2002 with a 68-day public comment period. Three public hearings have been scheduled as indicated on the enclosed public notice. This proposal was approved by the Environmental Quality Board (EQB) on September 17, 2002.

This proposal is a two-part rule that would reduce emissions of nitrogen oxides (NO<sub>x</sub>) from small sources of NO<sub>x</sub> in the five-county Philadelphia area and from large stationary internal combustion (I/C) engines and cement kilns across Pennsylvania, with the goal of reducing ground-level ozone. The small NO<sub>x</sub> rule in Chapter 129, which establishes additional ozone season control requirements in Bucks, Chester, Delaware, Montgomery and Philadelphia counties, is needed to address an EPA-identified "shortfall" in the emissions inventory for the Philadelphia nonattainment area. The amendments are based on an Ozone Transport Commission model rule to achieve and maintain the health-based 1-hour ozone standard and are consistent with recommendations of the Southeast Pennsylvania Ozone Stakeholders Working Group. There are no federal standards pertaining to these Chapter 129 amendments.

The amendments pertaining to large stationary I/C engines and cement kilns in Chapter 145 would establish new ozone season emission limits to meet the Commonwealth's remaining obligation to reduce ozone transport throughout the eastern United States under the NO<sub>x</sub> State Implementation Plan Call (NO<sub>x</sub> SIP Call). These revisions are based on a proposed federal rule and represent Pennsylvania's fair share in reducing transported air pollution.



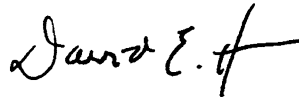


The Air Quality Technical Advisory Committee (AQTAC) reviewed and endorsed the proposal on May 2, 2002. AQTAC did, however, express concerns relating to scope and flexibility in three areas and asked that the preamble specifically solicit comment on these issues. The areas of concern include whether Chapter 129 provisions for averaging emissions should remain the same or allow more or less flexibility; whether the proposed control requirements are technically feasible and what the potential cost would be for affected units to comply; and whether the Chapter 129 provisions should apply statewide and for the entire year, not just the May 1 through September 30 ozone season. A request for this information is contained in the Public Comments section of the preamble.

The Department will provide the Commission with any assistance required to facilitate a thorough review of this proposal. Section 5(g) of the Act provides that the Commission may, within ten days after the expiration of the Committee review period, notify the agency of any objections to the proposed regulation. However, because the legislature will not be in session when the public comment period closes, the proposed rulemaking will be resubmitted to both the Committees and the Commission when the Committees are designated in early 2003. The Department will consider any comments or suggestions received by the Commission, together with Committee and other public comments prior to final adoption.

For additional information, please contact Sharon Trostle, Regulatory Coordinator, at 787-4526.

Sincerely,

A handwritten signature in black ink, appearing to read "David E. Hess", with a stylized flourish at the end.

David E. Hess  
Secretary

Enclosures



**TRANSMITTAL SHEET FOR REGULATIONS SUBJECT TO THE  
REGULATORY REVIEW ACT**

I.D. NUMBER: 7-378

SUBJECT: Small Sources of NO<sub>x</sub>, Cement Kilns, Large IC Engines

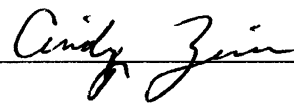
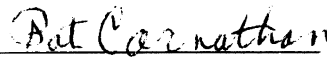
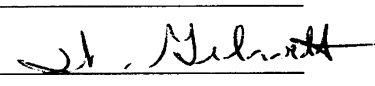

AGENCY: DEPARTMENT OF ENVIRONMENTAL PROTECTION

**TYPE OF REGULATION**

- X Proposed Regulation
- Final Regulation
- Final Regulation with Notice of Proposed Rulemaking Omitted
- 120-day Emergency Certification of the Attorney General
- 120-day Emergency Certification of the Governor
- Delivery of Tolled Regulation
- a. With Revisions                      b. Without Revisions

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**FILING OF REGULATION**

DATE	SIGNATURE	DESIGNATION
10-8		HOUSE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY
10/8		SENATE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY
10/8		INDEPENDENT REGULATORY REVIEW COMMISSION
		ATTORNEY GENERAL
10/08		LEGISLATIVE REFERENCE BUREAU

September 19, 2002

