

CONTROL OF NO<sub>x</sub> EMISSIONS  
FROM CEMENT KILNS  
*25 Pa. Code* Chapters 121, 129 and 145  
*38 Pa.B.* 1838 (April 19, 2008)  
Environmental Quality Board Regulation #7-419  
(Independent Regulatory Review Commission #2682)

Comment/Response Document

## Control of NOx Emissions from Cement Kilns

On April 19, 2008, the Environmental Quality Board (Board, EQB) published a notice of public hearing and comment period on a proposed rulemaking concerning revisions to 25 *Pa. Code* Chapters 121, 129 and 145 (relating to general provisions; standards for sources; and interstate pollution transport reduction) to control the emissions of nitrogen oxides (NOx) from cement kilns during the ozone season (38 *Pa. B.* 1838). The public comment period closed on June 23, 2008.

Three public hearings were held on the proposed rulemaking as follows:

May 19, 2008  
10:00 a.m.            Department of Environmental Protection  
Rachel Carson State Office Building  
Room 105  
400 Market Street  
Harrisburg, PA 17105

May 21, 2008  
10:00 a.m.            Department of Environmental Protection  
Northeast Regional Office  
Susquehanna Room A, Second Floor  
2 Public Square  
Wilkes-Barre, PA 18711

May 23, 2008  
10:00 a.m.            Department of Environmental Protection  
Southwest Regional Office  
Waterfront A & B Conference Room  
400 Waterfront Drive  
Pittsburgh, PA 15222

This document summarizes the testimony received during the public hearings and the written comments received from the public during the public comment period. Each public comment is listed with the identifying commentator number for each commentator that made the comment. A list of the commentators, including name and affiliation (if any) can be found at the beginning of this document. The Board invited each commentator to prepare a one-page summary of the commentator's comments. One one-page summary was submitted to the Board for this rulemaking. The proposed rulemaking revisions to Chapter 129 have been deleted and incorporated in the final-form rulemaking into Chapter 145, Subchapter C (relating to emissions of NOx from cement manufacturing), to amend the existing cement kilns requirements that were effective December 11, 2004 (34 *Pa.B.* 6509) (§§ 145.141 – 145.144 (relating to emissions of NOx from cement manufacturing)) and amended effective April 12, 2008 (38 *Pa.B.* 1705) (§ 145.143 (relating to standard requirements)). The decision to incorporate the final-form amendments for cement kilns in Chapter 145, Subchapter C, was editorial because the existing provisions in Subchapter C regulate emissions of NOx from cement kilns. If adopted by the Board, the final regulation will be submitted to the U.S. Environmental Protection Agency (EPA) as a revision to the State Implementation Plan (SIP).

**Table of Commentators to the Environmental Quality Board**  
**Control of NOx Emissions from Cement Kilns Rulemaking # 7-419**  
**(IRRC # 2682)**

<b>ID</b>	<b>Name/Address</b>	<b>One Page Summary Submitted for Distribution to EQB</b>	<b>Provided Testimony</b>	<b>Requested Copy of Final Rulemaking after EQB Action</b>
1.	Christoph Streicher Plant Manager Lehigh Cement Company Evansville Plant			
2.	Gary A. Molchan Vice President Environmental Affairs Essroc			
3.	Michael H. Winek Babst, Calland, Clements & Zomnir, P.C. (submitted comments on behalf of: Armstrong Cement & Supply Corp.)	√		
4.	Amarjit Singh Gill, P.E Director, Environmental Affairs CEMEX			
5.	Senator Mary Jo White Chairperson Senate Environmental Resources and Energy Committee			
6.	Senator Raphael J. Musto Democratic Chairman Senate Environmental Resources and Energy Committee			
7.	Independent Regulatory Review Commission			

## **General Support**

1. **Comment:** The commentators support the proposed regulation to lower ozone in the Commonwealth and support efforts in reducing NO<sub>x</sub> and ozone related pollutants to reduce ground-level ozone. (1, 2)

**Response:** The Department of Environmental Protection (Department) appreciates the commentators' support of this rulemaking. The proposed rulemaking is consistent with regulatory initiatives recommended by the Ozone Transport Commission (OTC) to address transport of ozone precursor emissions, including NO<sub>x</sub>, throughout the Ozone Transport Region (OTR). The measures recommended by the OTC are reasonably necessary to attain and maintain the health-based 8-hour ozone National Ambient Air Quality Standard (NAAQS) in this Commonwealth. Furthermore, on March 12, 2008, the EPA issued a more protective 8-hour ozone standard that could require additional emission reductions. Additionally, on September 16, 2009, the EPA filed a notice with the United States Court of Appeals for the District of Columbia Circuit explaining that the agency will reconsider the 2008 8-hour ozone NAAQS and announced its intent to propose a revised 8-hour ozone standard in December 2009; the final revised 8-hour ozone NAAQS is expected in March 2010. If the EPA acts to significantly tighten the 8-hour ozone standard, more areas of this Commonwealth could be in violation.

2. **Comment:** The commentator supports the facility-wide emissions averaging compliance option among kilns under common control of the same owner in this Commonwealth. (2)

**Response:** The Department appreciates the commentator's support to allow facility-wide emissions averaging as a compliance option. The Department is allowing this option to provide cement kiln owners and operators with greater flexibility to demonstrate compliance with the allowable NO<sub>x</sub> emission limits.

3. **Comment:** The commentator supports the use of Clean Air Interstate Rule (CAIR) NO<sub>x</sub> Ozone Season allowances as an economical compliance alternative. (2)

**Response:** The Department appreciates the commentator's support of allowing the use of CAIR NO<sub>x</sub> Ozone Season allowances as part of the proposed rule's compliance options available to cement kiln owners and operators. The rulemaking amendments that were proposed in the *Pennsylvania Bulletin* on April 19, 2008 (38 Pa.B. 1838), under §§ 129.401 – 129.405 (relating to emissions of NO<sub>x</sub> from cement manufacturing), have been deleted at final and in the final-form rulemaking the requirements are incorporated under Chapter 145, Subchapter C, as amendments to the cement kilns requirements that were effective December 11, 2004 (34 Pa.B. 6509) under §§ 145.141 – 145.144 (relating to emissions of NO<sub>x</sub> from cement manufacturing) and amended effective April 12, 2008 (38 Pa.B. 1705) under § 145.143 (relating to standard requirements). The use of CAIR NO<sub>x</sub> Ozone Season allowances as a compliance strategy is preserved in the final-form rulemaking under existing § 145.143(d), which provides that the owners or operators of Portland cement kilns shall surrender CAIR NO<sub>x</sub> Ozone Season and CAIR NO<sub>x</sub> annual allowances if the actual NO<sub>x</sub> emissions from the kilns exceed the allowable NO<sub>x</sub> emissions calculated for the kilns.

## **Proposed NO<sub>x</sub> Emission Limits**

4. **Comment:** The proposed emission limits are derived from a 60% emissions reduction (from uncontrolled levels) based on SNCR (selective non-catalytic reduction) control technology that should not be applied to wet kilns. The two reports cited as support for the OTC Resolution and recommended NO<sub>x</sub> emission limit of 3.88 lb/ton clinker for wet kilns both indicate that SNCR is not available for wet kilns. Most published reports state that SNCR technology is not available for wet process kilns due to the difficulty of injecting the reagent in the proper place. The commentator recommends that the NO<sub>x</sub> limit for wet kilns should be based on a 50% reduction from uncontrolled levels (4.85 lb NO<sub>x</sub>/ton clinker) because a 50% reduction from uncontrolled levels of NO<sub>x</sub> is consistent with the EPA cement New Source Performance Standard (NSPS) rule that was proposed in the Federal Register on June 16, 2008 (73 FR 34072). (3)

**Response:** The Department disagrees with the commentator. The Department is proposing emission limits based on the OTC recommended limits. The Department is not requiring a specific reduction efficiency from the installation of an SNCR should an affected cement owner or operator decide to install an SNCR in order to comply with the emission limits proposed. Further, a review based on available emissions data indicate that in order to meet the proposed emission limits for a wet kiln, the wet kilns at the commentator's facility would require less than a 20% reduction from uncontrolled emission levels.

5. **Comment:** The Department is urged to add a compliance option which allows a cement company to establish a site-specific emission limit in tons of NO<sub>x</sub> during the ozone season. The site-specific emission limit should be based on the applicable emission factor for the kiln and the clinker production of the kiln based on the design rating or the highest historical actual production during the previous 10 years. (4)

**Response:** The Department disagrees with the commentator. The proposed rulemaking establishes emission **rates** per ton of clinker produced, based on kiln type, that are not to be exceeded during the ozone season. A site-specific emission limit based on a kiln's applicable emission factor and its clinker production, either using the kiln's design rating or historical actual production data from the previous 10 years, is in effect a **cap**-based emission limit rather than a rate-based emission limit. The Department's proposed emission limits are rate-based, not cap-based, and are emission limits recommended by the OTC.

6. **Comment:** The Department should state if it considered a compliance method of establishing a site-specific emission limit in tons of NO<sub>x</sub> during the ozone season. (7)

**Response:** Yes, the Department considered site-specific emission limits as a compliance option. Please see the response to comment # 5.

7. **Comment:** The Department should provide the basis for limiting new cement kilns subject to the proposed regulation to a lower emission limit (1.52 lb NO<sub>x</sub>/ton clinker) than existing kilns, as specified under proposed § 129.404(d) (relating to compliance determination). (4,7)

**Response:** Prior to developing the proposed rulemaking, the Department reviewed a number of technical documents and independently concluded that new cement kilns should have a lower emission limit than existing kilns. Under the EPA's proposed NSPS rule for Portland cement kilns (73 FR 34072, June 16, 2008), the EPA found that according to the industry, all new kilns will be preheater/precalciner kilns. The agency confirmed this by reviewing a detailed listing of Portland cement kilns which indicates that since 2000 all kilns constructed or modernized are of the preheater/precalciner design. Moreover, when the OTC recommended to the states the NOx emission limits for cement kilns in Resolution 06-02 of the Ozone Transport Commission Concerning Coordination and Implementation of Regional Ozone Control Strategies for Certain Source Categories, adopted June 7, 2006 (OTC Resolution 06-02), two separate limits were proposed for preheater and precalciner kilns, 2.36 lb NOx/ton clinker and 1.52 lb NOx/ton clinker, respectively. The Department chose to adopt the 2.36 limit for both preheater and precalciner kilns because the Commonwealth has only one existing precalciner kiln, but of an early precalciner kiln technology. This kiln is more like a preheater kiln from an energy use perspective. The OTC, the EPA and the Department understand that the newest technology for kiln-types is precalciner. The annual NOx emission limit proposed by the EPA is 1.50 lb/ton clinker for new cement kilns constructed, modified, or reconstructed after June 16, 2008. (See 73 FR pages 34074, 34075 and 34089.) The Department maintains that all new kilns in this Commonwealth would be the precalciner type, and would therefore be required to meet not only the NOx limit established in the EPA's final NSPS but also the Best Available Technology (BAT) regulatory requirement for new cement kilns, which is to control emissions to the maximum degree possible. The NSPS will apply to all new cement kilns that commence operation in this Commonwealth, therefore, the Department determined that the NOx emission limit for new cement kilns in the proposed rulemaking is unnecessary and this requirement has been deleted from the final-form rulemaking.

8. **Comment:** The Department should provide the technical basis for the allowable emission limits and explain the data used to make the determination. If the emission limits are based upon an OTC resolution, then the Preamble to the final-form regulation should compare Pennsylvania's program with how other OTC states are complying with this resolution. (7)

**Response:** The NOx emission limits for cement kilns in the proposed rulemaking are those recommended by the OTC. The technical basis for the emission limits are based on OTC Resolution 06-02. This resolution used data and analysis from the following report prepared for the OTC: *Identification and Evaluation of Candidate Control Measures, Final Technical Support Document*, prepared by MACTEC Federal Programs, Inc. (February 28, 2007). The OTC's Control Measures workgroups collected pollutant data and source category information, and evaluated information regarding emission benefits, cost-effectiveness and implementation issues to determine the allowable limits that were published in the proposed rulemaking. The Department independently reviewed this information and concurred with the data and the decisions in the OTC resolution that recommended the emission limits. Regulations based on the OTC recommendations are being pursued by New York and Maryland. Maine has one cement kiln permitted to convert to a dry process, and this new kiln will be subject to Best Available Control Technology (BACT) under the Prevention of Significant Deterioration Program. This Commonwealth, New York, Maryland and Maine are the only states in the OTR that have

cement kilns. Therefore, it is not anticipated that the Department's final-form rulemaking will place cement plants in this Commonwealth at a competitive disadvantage.

9. **Comment:** Will the cement emission limits proposed by the EPA on June 16, 2008 (73 FR 34072), impact the proposed regulation and will they result in additional changes to Pennsylvania's NOx emission limits in the future? (7)

**Response:** The NSPS proposed by the EPA on June 16, 2008 (73 FR 34072), caused a minor change to the Department's final-form rulemaking. The cement emission limits proposed by the EPA on June 16, 2008, for Portland cement kilns apply to new cement kilns constructed, modified or reconstructed after June 16, 2008. The EPA proposed an annual NOx emission limit of 1.50 lb/ton clinker. (See 73 FR pages 34074, 34075 and 34089.) The Department maintains that all new kilns in this Commonwealth would be the precalciner type, and therefore must meet not only the NOx limit established in the EPA's final NSPS but also the Best Available Technology (BAT) regulatory requirement for new cement kilns, which is to control emissions to the maximum degree possible. Therefore, the Department determined that the NOx emission limit in the proposed rulemaking for new cement kilns is unnecessary and this requirement has been deleted from the final-form rulemaking. Additionally, the decision was made to delete from the final-form rulemaking the emissions averaging provision for new kilns commencing operation after the effective date of adoption of the final-form rulemaking. The Department maintains that allowing owners or operators of new cement kilns to average the NOx emissions from the new kilns with NOx emissions from existing cement kilns in order to meet the regulatory obligation of existing kilns is inconsistent with the BAT regulatory obligation for new cement kilns, which is to control emissions to the maximum degree possible. Therefore, the Department determined that the emissions averaging provision in the proposed rulemaking for new cement kilns is inconsistent with existing regulatory obligations and this provision has also been deleted from the final-form rulemaking.

10. **Comment:** While other sections of the proposal mention an exact date for compliance with emission requirements, §§ 129.402(a) and (b), and 129.404(a)(1), (c)(1), (d) and (g)(1) refer to the period of May 1 through September 30 (2009). The final-form regulation should explain the need for this distinction and how it applies to each of the relevant sections listed above. (7)

**Response:** The Department disagrees with the commentator that the final-form rulemaking should explain the distinction. The compliance period for determining allowable emissions of NOx, regardless of year, is from May 1 through September 30. The requirements under proposed §§ 129.402(a) and (b) (relating to emission requirements), (which have been moved under new §§ 145.143(b)(1) and (2) (relating to standard requirements) at final) and 129.404(a)(1), (c)(1), (d) and (g)(1) (relating to compliance demonstration), (which have been both moved under new § 145.145(a)(1) (relating to compliance demonstration and reporting requirements) and retained under existing §§ 145.143(d), (e) and (h)(1) at final) refer to the first year of the compliance period under the regulation, and each year thereafter.

## **Vacatur of the EPA's CAIR**

11. **Comment:** The IRRC questioned the Board's statutory authority for the use of CAIR NOx allowances and revised NOx emission limits in the proposed regulation due to the fact that CAIR was vacated on July 11, 2008, by the D.C. Circuit Court. The Court in its ruling stated that the analysis done by the EPA was "fundamentally flawed" and that the agency (EPA) must start its analysis anew. (7)

**Response:** The decision by the D.C. Circuit Court in *North Carolina v. EPA* only addressed the EPA's CAIR (70 FR 25162, May 12, 2005), and did not address NOx emission limits for cement kilns. In its decision vacating the EPA's CAIR, the Court continued the NOx Budget Trading Program to "mitigate" any disruption that may result from the Court's vacatur of the CAIR program. However, in a later ruling on petitions for rehearing (December 23, 2008) the Court decided to remand the EPA's CAIR rather than to vacate, leaving it in place until the EPA revises it. The final Federal rule, expected in 2011, must be revised to be consistent with the Court's July 11, 2008, decision in *State of North Carolina v. Environmental Protection Agency*, 531 F.3d 896 (D.C. Cir. 2008). Therefore, the Board's statutory authority to propose a rulemaking to control NOx emissions from cement kilns is not limited and the Board may move forward with a final-form rulemaking. On May 23, 2008, the Department submitted to the EPA a SIP revision for the Department's CAIR regulatory requirements under §§ 145.201-145.223 (relating to CAIR NOx and SO<sub>2</sub> trading programs), effective on April 12, 2008 (38 *Pa.B.* 1705), that provide for a CAIR NOx Ozone Season Trading Program and a CAIR NOx Annual Trading Program. The Department's CAIR regulation also included amendments to existing § 145.143 to require the owners or operators of Portland cement kilns to surrender CAIR NOx Ozone Season and CAIR NOx annual allowances if the actual NOx emissions from the kilns exceed the allowable NOx emissions calculated for the kilns. The EPA approved the Department's CAIR regulation as a SIP revision effective December 10, 2009 (74 FR 65446).

12. **Comment:** The Senate Committee commented on the ability of the Board to move forward with the regulation if the D.C. Court vacated the CAIR budget and allowance system for NOx emissions in Pennsylvania and other states. Their concern is that on July 11, 2008, the U.S. Court of Appeals for the District of Columbia overturned CAIR, and specifically that the Court found that the state NOx budgets as determined by the EPA were "arbitrary and capricious." (5,6)

**Response:** Please see the response to comment # 11.

13. **Comment:** The commentator believes that the Department should address the concerns by the Senate Committee on the CAIR vacatur, and suggests that if the regulation requires substantial changes, to consider submitting an Advanced Notice of Final Rulemaking or publishing the changes as a new proposed regulation in the *Pennsylvania Bulletin*. (7)

**Response:** The final-form rulemaking will not require substantial changes as a result of the initial vacatur of the EPA's CAIR on July 11, 2008. In a later ruling on petitions for rehearing (December 23, 2008), the Court decided to remand the EPA's CAIR rather than to vacate, leaving it in place until the EPA revises it. The final Federal rule, expected in 2011, must be



revised to be consistent with the Court's July 11, 2008, decision in *State of North Carolina v. Environmental Protection Agency*, 531 F.3d 896 (D.C. Cir. 2008). On May 23, 2008, the Department submitted to the EPA a SIP revision for the Department's CAIR regulation, including requirements under § 145.143 that were effective on April 12, 2008 (38 Pa.B. 1705), that provide for a CAIR NOx Ozone Season Trading Program and a CAIR NOx Annual Trading Program. These amendments to § 145.143 require the owners or operators of Portland cement kilns to surrender CAIR NOx Ozone Season and CAIR NOx annual allowances if the actual NOx emissions from the kilns exceed the allowable NOx emissions calculated for the kilns. The EPA approved the Department's CAIR regulation as a SIP revision effective December 10, 2009 (74 FR 65446). The Department believes that the SIP-approved CAIR NOx Ozone Season and CAIR NOx allowance program under § 145.143 will preserve the requirement of the proposed rulemaking for an owner or operator of a Portland cement kiln or kilns to surrender CAIR NOx allowances for each ton of NOx by which the combined actual emissions of NOx from the kiln or kilns exceed the allowable emissions of NOx for the kiln or kilns at the facility.

### **System-Wide Averaging of NOx Emissions**

14. **Comment:** The Senate Committee and the IRRC commented on the proposed provision to allow facilities under common ownership to trade NOx allowances for system-wide averaging of NOx emissions, while prohibiting the trading of NOx allowances to average NOx emissions between facilities not under common corporate ownership. The Senate Committee commented that they support the concept of NOx allowance trading, and would favor removing the requirement for being "under common control of the same owner or operator in this Commonwealth" from the system-wide averaging section of the rulemaking. (5,6,7)

**Response:** The Department disagrees with the Senate Committee's suggestion to remove the requirement for being "under common control of the same owner or operator in this Commonwealth" from the system-wide averaging option under the compliance demonstration section of the rulemaking. The option to demonstrate compliance with the emission limits by averaging the NOx emissions of several cement kilns under the common control of the same owner or operator in this Commonwealth provides flexibility to the cement kiln owners and operators in this Commonwealth with more than one facility. Allowing multiple owners and operators of cement kilns in this Commonwealth to average their emissions in concert with each other in order to demonstrate compliance would essentially provide them the larger framework of an emissions trading program, which is beyond the scope of the final-form rulemaking provision to provide them an emissions averaging option.

### **Permitting of NOx Controls**

15. **Comment:** The use of different types of control technologies to achieve NOx emission reductions greater than 20% implies that facilities can use these technologies without the need for a permitting process. Is this the Board's intent? If this is not the Board's intent, has the Board considered streamlining the permitting process for installing the NOx reducing technologies? (7)

**Response:** The Department disagrees that the use of different types of control technologies to achieve NOx emission reductions greater than 20% implies that facilities can use these technologies without the need for a permitting process. It is not the intent of the Department to imply that there is not a need for a permitting process for the use of NOx control technologies. The permitting requirements for the installation of a control technology will be determined in accordance with *25 Pa Code* Chapter 127, Subchapter B (relating to plan approval requirements). The Department has several permit streamlining procedures in place, and plan approval applications are always acted on by the Department as expeditiously as possible, especially those that involve the installation of control equipment in order to meet a regulatory requirement.

16. **Comment:** The permitting process for installing the NOx control technologies to achieve the emission results of the proposed rulemaking should be streamlined. The authorizations should be issued within 30 days after an application is submitted. (4)

**Response:** The Department disagrees with the commentator that the authorizations should be issued within 30 days after an application is submitted. The permitting requirements for the installation of a control technology will be determined in accordance with the provisions under Chapter 127, Subchapter B. The Department has several permit streamlining procedures in place, and plan approval applications are always acted on by the Department as expeditiously as possible, especially those that involve the installation of control equipment in order to meet a regulatory requirement.

### **Invalid Data Substitution and Data Reporting Provisions**

17. **Comment:** The proposed rule contains punitive and unreasonable data substitution provisions for invalid data by substituting missing data with data calculated using the potential emission rate for the kiln, or with the highest valid 1-hour emission value. The provision is designed to substitute missing data with unfairly high emissions data. The data substitution provision should be revised to reasonably use the data from before and after the missing data period, or as previously agreed to under the current NOx rule (data based on a 30-day average), or at the very least pursuant to agreement with the Department. The Department should explain what method was used to determine the data substitution requirements. (3,7)

**Response:** The Department recognizes that substituted data should be representative of the actual emissions from the source during the time frame in question and not punitive in nature. The data substitution language in the final-form regulation has been modified to ensure that representative data is substituted while maintaining consistency with the procedures outlined in the Department's Continuous Source Monitoring Manual (DEP 274-0300-001). In addition, the data substitution procedures outlined in the final-form regulation are a combination of those contained in § 145.143 and the standard data substitution procedure contained in the Continuous Source Monitoring Manual. The Department believes that this change to the final-form rulemaking alleviates the concerns identified by the commentators related to unreasonable data substitution.

18. **Comment:** All kilns subject to the proposed rule will be subject to Title V reporting and compliance certification requirements, and additional reporting requirements are unnecessary and only add to the administrative burden. The proposed rule specifies certain information that must be included in the report to the Department, including the difference between the actual NOx emissions and the allowable NOx emissions over the ozone season, the CEMS data, and the clinker production data on a daily basis. The self-implementing and reporting under the Title V compliance certifications provision in the current NOx cement rule is sufficient to demonstrate compliance, and the proposed rule contains unnecessary and burdensome reporting requirements. (3)

**Response:** The Department disagrees with the commentator. The Department does not believe that maintaining records of daily clinker production will present a significant inconvenience to any owner or operator. Daily records may be needed to enable the Department to verify the relationship between NOx emissions recorded by CEMS, and clinker produced during the compliance period of May 1 through September 30 of each year. Records sufficiently precise to quantify clinker produced by each Portland cement kiln during that period are necessary to enable owners and operators to demonstrate compliance and determine allowances for surrender. Continuous emission monitoring is the most precise means of determining emissions over extended time periods. All Portland cement kilns subject to this rule are already equipped with CEMS that are either certified by the Department, or operating under a pending certification application, to monitor NOx in pounds per hour. Because CEMS data is recorded and reported quarterly, and the compliance period of May 1 through September 30 does not coincide precisely with the second and third calendar quarters, a separate report is required to make the required compliance demonstrations and calculate any allowances to be surrendered.

19. **Comment:** The IRRC commented on whether it is feasible for the owner or operator of a cement kiln to report their emission data to the Department by 10/31/09 and then be required to surrender their NOx allowances one day later (11/1/09). (7)

**Response:** The Department disagrees that this requirement is infeasible. The requirement to report information to the Department by October 31 of every compliance year is consistent with the same reporting requirements in the current regulation for cement kilns found under Chapter 145, Subchapter C. The affected owners and operators of cement kilns will know prior to October 31 of every compliance year whether they are required to surrender NOx allowances, because they will have the entire month of October to calculate their emissions for the previous May 1 through September 30 compliance period and determine if and how many allowances they need to surrender by or on the succeeding November 1 to comply with the regulation.

20. **Comment:** The IRRC commented that the proposed regulation requires cement kiln operators to report various information to the Department “by October 31, 2009,” while other sections of the regulation require compliance with emission limits by September 30, 2009. Will the owners or operators of cement plants be able to collect and deliver all the required reports within a month? (7)

**Response:** The Department believes that these reports can be delivered within a month. The requirement to report information to the Department by October 31 of each year is consistent

with the reporting requirements in the current regulation for cement kilns found under Chapter 145, Subchapter C. Reporting of CEMS data for the third calendar quarter (July through September) by October 30 of each year is already required by *25 Pa. Code* § 139.101 (relating to general requirements) and the Continuous Source Monitoring Manual.

21. **Comment:** The IRRC commented that the proposed regulation requires cement kiln operators to submit a report to the Department “in a format approved, in writing, by the Department,” and stated that this phrase is vague. The final-form regulation should provide more detail on the type of format. (7)

**Response:** The Department disagrees. The requirement to submit a report to the Department in a format approved, in writing, by the Department, is a standard requirement. This requirement is found in many Board-approved rulemakings, and neither the Department nor the regulated sources have had problems understanding or complying with this requirement. Portland cement kiln owners and operators already submit to the Department quarterly reports of CEMS monitoring data in pounds of NO<sub>x</sub> emitted per hour, in a format approved by the Department, in writing, and in compliance with Chapter 139, Subchapter C (relating to requirements for source monitoring for stationary sources). Section 139.101(1) states that “The submittal procedures specified in the publication entitled “Continuous Source Monitoring Manual,” available from the Department, shall be utilized to obtain Department approval.”

Each Portland cement kiln owner or operator in this Commonwealth currently has a certified CEMS installed on the kiln, and reports emissions in pounds of NO<sub>x</sub> emitted per hour, in a format approved by the Department. Portland cement kiln owners and operators will also provide sufficient documentation to demonstrate compliance with § 129.404 (new § 145.145). The Department will review each submittal and request additional information or clarification, as needed.

22. **Comment:** The IRRC commented that the proposed regulation requires cement kiln operators to submit a report to the Department “in a format approved, in writing, by the Department.” How will the cement kiln operators be notified of the acceptable reporting format? Will the report form be accessible on the Department’s website? This information should be included in the final-form regulation. (7)

**Response:** The Department disagrees that this information should be included in the final-form rulemaking. Cement kilns owners and operators should be provided the flexibility to discuss this report format with their Department contact personnel, and not be required to use a prescriptive format specified in the final-form rulemaking. This is a standard practice for other regulatory programs that benefits both the Department and the regulated industry.

### **Compliance Deadline Date**

23. **Comment:** The IRRC asked whether the cement kilns in this Commonwealth would be able to meet the May 1, 2009, compliance deadline. (7)

**Response:** Due to the remand of the EPA’s CAIR, the delayed proposed approval by the EPA of the Department’s CAIR regulation SIP revision and the lengthy rulemaking process overall, the final-form rulemaking has a revised compliance date of May 1, 2011, for the owners or operators of Portland cement kilns to meet the revised NOx emission limits. The compliance date in the final-form rulemaking by which the CEMS must be installed, operating and maintained is April 15, 2011.

### **Compliance Demonstration**

24. **Comment:** The IRRC commented that the difference between subsections 129.404(b) and (c) is unclear. Subsection (b) lists compliance options that cement kiln owners or operators **must** follow, while subsection (c) includes various requirements cement kiln owners or operators **may** fulfill. The final-form regulation should clarify what circumstances would necessitate compliance with subsection (c). (7)

**Response:** The Department believes that the final-form rulemaking clearly specifies what circumstances would necessitate compliance with these subsections. Proposed subsection 129.404(c) has been deleted at final and the requirements retained under existing subsection 145.143(d). Proposed subsection 129.404(b) has been deleted at final and the same requirements are specified at final under new subsection 145.145(b) and in the definition of the new term “system-wide” under § 145.142 (relating to definitions). New subsection 145.145(b) lists three options to demonstrate compliance with the allowable NOx emission limits. Cement kiln owners or operators shall choose one compliance option from the three listed to use as the basis for determining the amount of allowable and actual NOx emissions from their kiln or kilns. Existing subsection 145.143(d) lists the requirements that a cement kiln owner or operator shall follow to surrender NOx allowances if the owner or operator determines, after calculating the amount of actual NOx emissions in accordance with the requirements under §§ 145.144 (relating to compliance determination) and 145.145, that the actual NOx emissions from the kiln or kilns exceed the amount of allowable NOx emissions for the kiln or kilns, determined in accordance with the requirements under subsection 145.143(b).

25. **Comment:** Proposed subsection 129.404(b) refers to “a Portland cement kiln or multiple Portland cement kilns,” and subsection (c) only references “a Portland cement kiln.” Does this subsection also apply to multiple kilns? (7)

**Response:** The final-form rulemaking has deleted the requirements proposed under Chapter 129. The proposed requirements have been incorporated at final as amendments to the existing cement kiln regulatory provisions that were effective on December 11, 2004 (34 *Pa.B.* 6509) under Chapter 145, Subchapter C. The Department believes that the existing provisions of Subchapter C and the final-form amendments to Subchapter C accurately reflect that the final-form rulemaking applies to a Portland cement kiln or multiple kilns.

26. **Comment:** Proposed subsection 129.404(e) requires cement kiln operators to surrender the required CAIR NOx ozone allowances by “November 1, 2009, and each year thereafter.”

Subsection (c) includes this surrender as a possible method of compliance. The final-form regulation should explain when each of these subsections would apply. (7)

**Response:** The Department believes that the final-form regulation clearly specifies when the requirements are applicable. Proposed subsection 129.404(c) has been deleted at final and the requirements are retained under existing subsection 145.143(d) at final. Proposed subsection 129.404(e) has been deleted at final and the requirements are retained under existing subsection 145.143(f). Existing subsection 145.143(d) lists the requirements that a cement kiln owner or operator shall follow to surrender NOx allowances if their actual NOx emissions exceed their allowable NOx emissions. Existing subsection 145.143(f) specifies the date by when a cement kiln owner or operator shall surrender the NOx allowances if needed to comply with subsection 145.143(d).

27. **Comment:** Proposed subsection 129.404(g)(1) explains how to determine the number of days of violation if the facility has excess emissions for the period May 1 through September 30, and states that “each day in that period...constitutes a day in violation **unless the owner or operator of the Portland cement kiln demonstrates that a lesser number of days should be considered.**” The Board should explain what circumstances would warrant such consideration. (7)

**Response:** The Department disagrees. The Department maintains that it is the responsibility of the owner or operator of the affected cement kiln to demonstrate to the satisfaction of the Department what circumstance or circumstances would warrant consideration of a lesser number of days in violation. The requirements that were proposed under paragraph 129.404(g)(1) and deleted at final are consistent with the requirements specified under existing paragraph 145.143(h)(1) for determining the number of days of violation in the current regulation for cement kilns found under Chapter 145, Subchapter C. At final these requirements are retained under existing paragraph 145.143(h)(1).

### **Definitions – Reasonableness and Clarity**

28. **Comment:** The IRRC stated the program referenced in the Preamble, the Regional Compliance Assistance Program, did not appear to be defined by regulation or statute, and questioned how would cement operators access the program. (7)

**Response:** The Department agrees with the commentator that the term “Regional Compliance Assistance Program” is not defined by regulation or statute. The term refers to the Department’s regional, or “field,” staff that regularly assist their respective facilities in understanding and complying with applicable Department regulations.

29. **Comment:** The IRRC commented on the CEMS definition as it relates to an earlier, “original” definition that references Chapter 127, Subchapter E, and the reference in the proposed revision of the term in the proposed rulemaking to standards under Chapter 139, Subchapter C, and suggests the Department explain why a different chapter of Title 25 of the Pennsylvania Code now applies to the proposed definition. (7)

**Response:** The intent of the revision of the definition for the term “CEMS” in the proposed rulemaking under 25 Pa. Code § 121.1 (relating to definitions) is for the CEMS definition to apply more broadly to the entire air quality regulatory program. However, subsequent to the close of the public comment period for the proposed cement kilns rulemaking, the Department proposed a revised definition of the term “CEMS” under § 121.1 in a proposed rulemaking as part of the amendments to the air quality fee schedules (see 39 Pa.B. 6049, October 17, 2009). Therefore, the revision of the definition for the term “CEMS” in the proposed cement kilns rulemaking was deleted at final, and the existing definition of CEMS under § 145.142 that applies to cement kilns has been retained in the final-form rulemaking. The existing CEMS definition under § 145.142 ensures that the monitoring equipment complies with the requirements under Chapter 139 (relating to sampling and testing).

30. **Comment:** The final-form regulation should include a definition for “invalidated data.” In addition, the Board also should explain the difference between an “invalid data period” and an “alternative reporting period” as mentioned under § 129.403(b)(2)(ii). (7)

**Response:** The Department disagrees with the commentator that the final-form rulemaking should include a definition for “invalidated data.” Conditions that render data invalid, and procedures for substituting the invalid data with valid data, are defined throughout the Continuous Source Monitoring Manual. Owners or operators of each Portland cement kiln subject to this rule are familiar with those provisions, since they already operate Department-certified CEMS. An “alternative reporting period” is not specifically defined, since it is provided under proposed subparagraph 129.403(b)(2)(ii) (new subparagraph 145.144(b)(2)(ii) (relating to compliance determination)) as a means for an owner or operator to propose a unique alternative for the Department’s consideration. The phrase “under similar source operating conditions” was added in the final-form rulemaking to new subsections 145.144(b)(1) and (2)(i) and (ii) to provide added flexibility to the owners or operators of cement facilities proposing a data substitution method to the Department.

31. **Comment:** Proposed paragraph 129.403(b)(1) refers to the “potential emission rate” for the cement kiln, but does not explain how this rate is determined. The final-form regulation should define this term. (7)

**Response:** The Department disagrees. Proposed paragraph 129.403(b)(1) (new subsection 145.144(b) of the final-form rulemaking) has been modified to ensure that representative data is substituted and to maintain consistency with the procedures outlined in the Continuous Source Monitoring Manual. The modifications made to this section necessitated deleting the provision for the substitution of invalidated data with the potential emission rate for the kiln. Therefore, a definition for the term “potential emission rate” is not necessary.

32. **Comment:** Proposed subsection 129.403(c) states that Portland cement kiln operators shall submit quarterly reports of CEMS monitoring data in “pounds of NO<sub>x</sub> emitted per hour.” Why does this subsection not refer to data in “pounds of NO<sub>x</sub> per **ton of clinker**”, as proposed subsection 129.402(b) does? The final-form regulation should clarify this distinction. (7)

**Response:** The Department disagrees with the commentator that the final-form regulation should clarify this distinction. The CEMS currently being operated by the cement kiln owners and operators monitor emissions of NO<sub>x</sub>. CEMS cannot measure tons of clinker produced, since by definition, a CEMS can only monitor emissions per unit of time. Quarterly reports of pounds of NO<sub>x</sub> per ton of clinker would not satisfy the reporting requirements of proposed § 129.404 (new § 145.145 at final), since the compliance period of May 1 through September 30 does not coincide precisely with the second and third calendar quarters. The Department is not responsible for examining possible compliance implications for all compliance options available under proposed subsection 129.404(b) (new subsection 145.145(b) at final) for each Portland cement kiln. Owners or operators must select a compliance option and submit a report to demonstrate how that option is fulfilled.

33. **Comment:** Proposed paragraph 129.404(c)(1) refers to “CAIR NO<sub>x</sub> Ozone Season allowance,” as defined in § 145.202 (relating to definitions),” but this section of the Code does not include a definition for this term. The final-form regulation should provide the appropriate cross-reference in this subsection. (7)

**Response:** The Department agrees with the commentator. The final-form rulemaking, in existing subsection 145.143(d), includes the appropriate Code of Federal Regulations reference for the definitions of the terms “CAIR NO<sub>x</sub> Ozone season allowance” and “CAIR NO<sub>x</sub> allowance.”

### **Recordkeeping**

34. **Comment:** Proposed subsection 129.405(c) requires cement kiln owners or operators to maintain records for 5 years. How did the Board determine this was an appropriate timeframe? (7)

**Response:** Requiring regulated facilities to maintain records for 5 years is a standard requirement. This requirement is found in many Board-approved regulations, including §§ 127.11(b)(2) (relating to plan approval requirements) and 139.101(5). Neither the Department nor the regulated sources have had difficulty understanding or complying with this requirement.

35. **Comment:** Proposed subsection 129.405(c) requires cement kiln owners or operators to make their records available to the Department “upon request.” Since it is unclear if the Department’s requests will be in writing, the final-form regulation should specify that the Department will make these requests in writing. (7)

**Response:** The Department disagrees with the commentator that the final-form rulemaking should specify that the Department will make these requests in writing. The Department has never limited itself to requiring that requests for records from the regulated industry be made in writing. At site inspections, regulated industries are required to make all records available to the Department upon request. The commentator’s suggestion that the Department will make these requests in writing could severely hamper the Department’s investigative powers. Moreover,



section 4 of the Commonwealth's Air Pollution Control Act provides the Department with broad authority related to access and the production of documents.

### **Other Comments**

36. **Comment:** The commentator states their kilns are long dry-process cement kilns and are subject to the allowable emission limit of 3.44 lb NO<sub>x</sub>/ton clinker. Their kilns are not preheater kilns because the systems do not contain a series of multiple cyclones as defined by the EPA in its 1993 NO<sub>x</sub> Alternative Control Technologies (ACT) Document (which was updated in September 2000). The commentator requests that the Department establish its new NO<sub>x</sub> limit during the ozone season at 3.44 lbs/ton clinker starting with the 2009 Ozone Season. (1)

**Response:** The Department disagrees with the commentator. The comment is an implementation issue. The commentator must have discussions with the Department prior to the effective compliance date of the final regulation, if the final-form rulemaking is adopted by the Board, on how the final regulation will be implemented and complied with by their facility.

37. **Comment:** A provision to the proposed rule should be added to indicate that this rulemaking should supersede the case-by-case reasonably available control technology (RACT) determinations for cement kilns in this Commonwealth. The proposed rule should be more stringent than any existing NO<sub>x</sub> RACT requirement because this rulemaking provides an opportunity to streamline NO<sub>x</sub> requirements and "clean up" previous NO<sub>x</sub> requirements in various RACT plan approvals and permits. (3)

**Response:** The Department disagrees with the commentator. Should the final-form rulemaking requirements be more stringent than a RACT requirement previously established for the cement kiln on a case-by-case basis, complying with the more stringent provisions in the final-form rulemaking would ensure compliance with the other RACT requirements. Streamlining these NO<sub>x</sub> requirements could be done at the next renewal of the facility's Title V permit. In the event that there is a need to remove a restriction included as part of the RACT requirements, such a removal could only be done by a revision to the SIP, since the case-by-case RACT determinations were approved by the EPA as revisions to the Pennsylvania SIP. The owner or operator of a cement kiln may submit a request to revise their current NO<sub>x</sub> RACT requirements under the SIP revision process.

38. **Comment:** The proposal requires owners or operators of cement kilns to "install, operate and maintain CEMS for NO<sub>x</sub> emissions" by May 1, 2009. What will the costs be for owners and operators as a result of requiring this device to be installed on kilns in less than a year? (7)

**Response:** The owners and operators of the cement kilns in this Commonwealth who are affected by the proposed rulemaking currently have a CEMS as part of the existing cement kiln regulation requirement that limits NO<sub>x</sub> emissions from cement kilns during the period of May 1 through September 30 of each year to 6.0 lbs/ton clinker (see subsection 145.143(b) (34 *Pa.B.* 6509, December 11, 2004); this requirement is found under paragraph 145.143(b)(1) of the final-form rulemaking). The existing cement kiln requirements were effective December 11, 2004

(34 Pa.B. 6509), with a compliance date of May 1, 2005 (see § 145.141 (relating to applicability)) and amended effective April 12, 2008 (38 Pa.B. 1705). Therefore, there are no costs to the owners and operators of affected cement kilns to install a CEMS. In the final-form rulemaking, the compliance date under new subsection 145.144(a) by when the CEMS must be installed, operating and maintained is April 15, 2011, for the owner or operator of a Portland cement kiln subject to new paragraph 145.143(b)(2). This date will ensure that the CEMS equipment is running properly before the compliance date of May 1, 2011, which is the first day of the first compliance period for affected owners and operators for the determination of allowable emissions for the Portland cement kilns using the new emission limits specified under paragraph 145.143(b)(2) of the final-form rulemaking.