

Tate, Michele

2682

**From:** Amarjit S Gill [amarjits.gill@cemex.com]  
**Sent:** Friday, June 20, 2008 4:58 PM  
**To:** RegComments  
**Cc:** Allan C Stubna; German Fraustro; Kevin C Kelley; Leslie White; Lillian F Deprimo; Mauricio Naranjo; Regina Henry; William Ciro  
**Subject:** PROPOSED RULEMAKING - Control of NOx Emissions From Cement Kilns



COMMENTS ON pic31792.gif (4 KB)  
PROPOSED RULEMAKING

Environmental Quality Board  
Rachel Carson State Office Building, 16th Floor  
400 Market Street  
Harrisburg, PA 17101-2301

CEMEX hereby submits its comments on the Proposed Rulemaking related to Control of NOx Emissions from Cement Kilns

(See attached file: COMMENTS ON PROPOSED RULEMAKING 129.401 - 129.405.pdf)

(Embedded image moved to file: pic31792.gif)

Amarjit S. Gill

Director, Environmental - Environmental Affairs - United States of America

Office : (713)722-5944 , Fax: (713)722-5116 , Mobile: (713)249-7609

Address: 840 Gessner Road Houston, TX 77024

e-Mail: amarjits.gill@cemex.com

www.cemexusa.com

INDEPENDENT REGULATORY  
REVIEW COMMISSION

2008 JUN 27 AM 10:20

RECEIVED





RECEIVED

2008 JUN 27 AM 10: 20

INDEPENDENT REGULATORY  
REVIEW COMMISSION

June 20, 2008

Environmental Quality Board  
Rachel Carson State Office Building, 16<sup>th</sup> Floor  
400 Market Street  
Harrisburg, PA 17101-2301

Re: Proposed Rulemaking  
25 PA. CODE CHS. 121, 129 and 145

Dear Madam/Sir:

CEMEX owns and operates the Wampum, PA cement plant which consists of 3 long, dry-process kilns. Under the Proposed Rulemaking, the NO<sub>x</sub> emission rate for these three kilns would be 3.44 lbs/ton of clinker. Compliance would be demonstrated as follows:

**§129.404(b):** The owner or operator of a Portland cement kiln or multiple Portland cement kilns shall demonstrate compliance with the emission requirements in **§129.402** on either:

- (1) A kiln-by-kiln basis.
- (2) A facility-wide emissions averaging basis.
- (3) A system-wide averaging basis among Portland cement kilns under the common control of the same owner or operator in this Commonwealth.

**§129.404(c):** The owner or operator of a Portland cement kiln may demonstrate compliance with the emission requirements of **§129.402** in accordance with the following:

- (1) For the period from May 1 through September 30, 2009, and each year thereafter, the owner or operator of a Portland cement kiln shall surrender to the Department one CAIR NO<sub>x</sub> Ozone Season allowance, as defined in §145.202 (relating to definitions), for each ton of NO<sub>x</sub> by which the combined actual emissions exceed the allowable emissions of the Portland cement kilns at a facility subject to this section.
- (2) The surrendered CAIR NO<sub>x</sub> Ozone Season allowances shall be of current year vintage.

The Environmental Quality Board (EQB) should be commended for providing the three options for demonstrating compliance in **§129.404(b)**. If the overall intent of the Proposed Rulemaking is truly to reduce the NO<sub>x</sub> emissions to the environment during the ozone season, then there is a deficiency with this approach.

CEMEX respectfully recommends that a fourth option be included, which would consist of establishing an absolute limit for a facility in tons of NO<sub>x</sub> for the ozone season. This limit could be established upon a mutual agreement between the Department and the facility based upon the rated

United States Operations

840 Gessner, Suite 1400, Houston, Texas. 77024. USA. Phone: (713) 650-6200

capacity of the kiln(s) or upon maximum historical production of clinker during the previous 10 years and using the appropriate kiln emission factor in §129.402 (b).

**BASIS FOR THE RECOMMENDATION**

The following is an example showing that even though huge reductions in actual NO<sub>x</sub> emissions can be achieved at the CEMEX Wampum cement plant, the facility is deemed to be out of compliance with the Proposed Rulemaking and would require Ozone Season NO<sub>x</sub> Allowances in accordance with §129.404(c)(1).

**Uncontrolled Emissions**

TABLE I below shows the rated hourly clinker production capacity for the three cement kilns at CEMEX's Wampum plant in tons/hour, the ozone season clinker production in tons and the corresponding NO<sub>x</sub> emissions in tons. Based on the existing NO<sub>x</sub> emission rates in lbs/ton of clinker, the total NO<sub>x</sub> emissions are calculated to be 1,001 tons.

	Clinker	Ozone	Ozone	2007	2007
Kiln	Production Rate	Season	Season	Emission Rate	Ozone Season
#	Tons/Hour	Days	Production	NOx lbs/ton clinker	NOx Emis. Tons
1	35	153	128,520	5.3	341
2	35	153	128,520	5.2	334
3	37	153	135,864	4.8	326
<b>TOTAL</b>			<b>392,904</b>		<b>1,001</b>

TABLE I: UNCONTROLLED NO<sub>x</sub> EMISSIONS

**Controlled Emissions**

For the same operating conditions, and using the proposed NO<sub>x</sub> emission rate of 3.44 lbs/ton of clinker, the ozone season limit is 676 tons/year for this facility as shown in TABLE II below.

	Clinker	Ozone	Ozone	Allowable	Allowable
Kiln	Production Rate	Season	Season	Emission Rate	Ozone Season
#	Tons/Hour	Days	Production	NOx lbs/ton clinker	NOx Emis. Tons
1	35	153	128,520	3.44	221
2	35	153	128,520	3.44	221
3	37	153	135,864	3.44	234
<b>TOTAL</b>			<b>392,904</b>		<b>676</b>

TABLE II: CONTROLLED NO<sub>x</sub> EMISSIONS

This is an actual reduction of 32.4% from the uncontrolled emissions. If this reduction is not achieved by add-on controls, then 325 tons of Ozone Season NO<sub>x</sub> allowances would be required under

§129.404(c). If such allowances are available, then CEMEX would purchase them and turn those over to the Department.

**Reductions by Curtailing Production**

In the example shown in TABLE III, CEMEX calculates the effect of shutting down two of three kilns for the entire ozone season and continue to operate kiln #3. The total emissions for the ozone season are now 326 tons which is less than 50% of the allowable of 676 tons calculated in TABLE II above. However, the facility is still out of compliance with the Proposed Rulemaking, because the emission factor is 4.8 lbs/ton of clinker for kiln #3. An emission factor of 3.44 lbs/ton of clinker would establish an allowable limit of 234 tons. The facility would still have to purchase 92 tons of Ozone Season NO<sub>x</sub> Allowances.

	Clinker	Ozone	Ozone	2007	2007
Kiln	Production Rate	Season	Season	Emission Rate	Ozone Season
#	Tons/Hour	Days	Production	NO <sub>x</sub> lbs/ton clinker	NO <sub>x</sub> Emis. Tons
1	0	153	0	5.3	0
2	0	153	0	5.2	0
3	37	153	135,864	4.8	326
TOTAL			135,864		326

TABLE III: TWO OF THREE KILNS SHUTDOWN

If this situation is not corrected, then this rulemaking, may be seen as a method for creating and perpetuating a market for Ozone Season NO<sub>x</sub> allowances. Upon approval this rule will be in effect for a number of years to come. What happens when there are no more Ozone Season NO<sub>x</sub> allowances available?

**PERMITTING FOR INSTALLATION OF CONTROL TECHNOLOGIES**

In the preamble it is stated: *“Control technologies are readily available to achieve NO<sub>x</sub> emission reductions of greater than 20% from cement kilns. These technologies include: conversion to indirect firing systems with low-NO<sub>x</sub> burners with approximately 20-30% reduction: mid-kiln firing of whole tires in long kilns with approximately 20-40% reduction: staged combustion in precalciner kilns with approximately 30-40% reduction: selective noncatalytic reduction (SNCR) in precalciner kilns with approximately 30-70% reduction; and selective catalytic reduction (SCR) with approximately 80-90% reduction. SNCR has been used on preheater kilns and has been proposed for long kiln applications. All of these technologies, except SCR, are demonstrated on kilns in the United States.”*

This seems to indicate that the EQB is satisfied with the use of any of these control technologies for lowering NO<sub>x</sub> emissions. It also implies that the EQB has reviewed the impact of these technologies on other emissions such as sulfur dioxide (SO<sub>2</sub>), carbon monoxide (CO) volatile organic compounds (VOC), etc. and has found no significant adverse impact. If this is the case, then the Proposed Rulemaking should state that the affected facility can use any of these technologies to meet their NO<sub>x</sub>

reduction targets, without having to go through a rigorous permitting process. The permitting process adds time which could delay the implementation of these technologies for the 2009 ozone season and force the affected companies to purchase allowances.

### Emission Factors

Out of nowhere we see a new emission factor of **1.52 pounds of NO<sub>x</sub> per ton of clinker** in §129.404(d): "...The owner or operator of a kiln that commences operation after the effective date of adoption of this proposal, may average only those emissions that are below the permitted NO<sub>x</sub> limit for the kiln or **below 1.52 pounds of NO<sub>x</sub> per ton of clinker**, whichever is lower."

To this date we have not seen any permit issued to any cement plant, in final form, with this as BACT emission limit. The EQB cannot put such numbers out there without adequate justification. The EQB needs to justify how it arrived at this emission factor in an open forum for the record.

### RECOMMENDATIONS

- 1) CEMEX strongly urges the EQB to add a fourth option under §129.404(b), which would allow establishing a site specific emission limit in tons of NO<sub>x</sub> during the ozone season. The Department should retain the authority to review this limit on a periodic basis. This limit could be arrived at, on a mutually agreed basis between the Department and the facility, using:
  - i. The applicable emission factor for the kiln
  - ii. Clinker production based on the design rating or the highest historical actual production during the previous 10 years.
- 2) The EQB should streamline the permitting process for installing the NO<sub>x</sub> reducing technologies that would help achieve the results intended under this Proposed Rulemaking. The authorizations should be issued within 30 days after an application is submitted.
- 3) The EQB should provide basis for the 1.52 lbs/ton of clinker

We thank you for this opportunity to comment on the Proposed Rulemaking related to the Control of NO<sub>x</sub> Emissions from Cement Kilns, §129.401 – 129.405. If you have any questions, I can be reached via email at [amarjits.gill@cemex.com](mailto:amarjits.gill@cemex.com) or by phone at 713-722-5944.

Sincerely,

  
Amarjit Singh Gill, P.E.  
Director, Environmental

C: Regina Henry  
Melanie Lloyd  
Alan Stubna  
German Fraustro  
Kevin Kelley  
William Ciro  
Mauricio Naranjo  
Leslie White

