UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

JUL 10 2006

Mr. Carlos Jacks, President
CEMEX de Puerto Rico, Inc.
P.O. Box 364487
San Juan, Puerto Rico 00936-4487

Re: Administrative Amendments to the February 25, 1997, Prevention of Significant Deterioration of Air Quality (PSD) Permit and Non-Applicability Requirements

Dear Mr. Jacks:

On February 22, 2006, the Region 2 Office of the U.S. Environmental Protection Agency (EPA) received a PSD non-applicability request from Toro, Colon, Mullet, Rivera & Sifre, on behalf of the Puerto Rican Cement Company (PRCC). PRCC's new owner is CEMEX de Puerto Rico, Inc. EPA also received additional submittals dated March 14, April 26, May 4, and May 25, 2006. In its request, CEMEX proposed to replace the Electrostatic Precipitators (ESPs), the particulate controls for the kiln, and associated equipment with baghouses and co-combust tire derived fuel (TDF) in the cement kiln no. 6. These modifications will result in lower particulate emissions while the emissions of Nitrogen Oxides, Carbon Monoxide, Volatile Organic Compounds, and Sulfur Dioxide will not increase. Further, these changes will not affect the air quality demonstration made in support of the original PSD permit.

Our analyses of this request indicate that these modifications will affect both the PSD and non-PSD conditions of the 1997 permit. The PSD permit is being amended to reflect the addition of TDF as a fuel. EPA considers the addition of TDF as a change in the method of operation because its use does not fall within the "alternative fuel" exemption. CEMEX was not capable of co-combusting TDF in accordance with the requirements of 40 CFR Section 52.21(b)(2)(iii)(e). Since these changes (i.e., addition of TDF and baghouse substitution) will not result in any emission increase or have any effect on air quality, the PSD permit can be amended administratively. The non-PSD conditions are amended to reflect the lower particulate emissions resulting from the proposal to replace the ESPs with baghouses and CEMEX's agreement to begin the operation of the baghouses before beginning to co-combust TDF in the kiln.

Since CEMEX will continue to meet the annual and hourly emission limits, EPA has determined that these PSD and PSD non-applicability changes are approvable. This determination is final Agency action under the Clean Air Act (CAA). Under Section 307(b)(2) of the CAA, judicial review of this final action is available only by filing of a petition for review in the United States Court of Appeals for the appropriate circuit within

60 days from the date on which this final action is published in the Federal Register. Under Section 307(b)(2) of the CAA, this final permit decision shall not be subject to later judicial review in civil or criminal proceedings for enforcement. Note that the PSD permit related changes can be found in Enclosure II and the PSD non-applicability related changes can be found in Enclosure III. Enclosure I provides the facility description, summary of changes, and the facility impacts.

Although EPA has made these changes administratively and no public review is required, EPA requests that CEMEX provide outreach to the surrounding communities to inform and educate them about these changes. If you have any questions, please contact Mr. Steven C. Riva at (212) 637-4074.

Sincerely,

Walter Mugdan, Director
Division of Environmental Planning and Protection

Enclosures

cc: Evelyn Rodriguez, PREQB w/
Carlos Colon-Franceschi w/

Enclosure I

CEMEX de Puerto Rico, Inc.
(Formerly Puerto Rican Cement Company, Inc.- PRCC)
Cement Kiln No. 6
Project Description- July 2006

Background and General Project Description:

The Ponce Plant of Puerto Rican Cement Company, Inc., now owned by CEMEX de Puerto Rico, Inc., is located in the outskirts of the city of Ponce on the southern plain of the island of Puerto Rico facing the Caribbean Sea. The plant has produced Portland cement since 1942. From 1942 to the early 1980s the plant expanded from one kiln to six kilns. These kilns used the wet process to manufacture cement.

In early 1981, CEMEX made a decision to convert Kilns 4, 5 and 6 from oil to coal burning using a roller mill in an indirect, pulverized coal firing system. Subsequently, the three smaller oil-fired kilns (Kilns 1, 2, and 3) were idled due to overcapacity.

In 1987, CEMEX proposed to convert Kiln 6 from the wet process to the dry preheater/precalciner process and to construct new crushing facilities as the first phase of the CEMEX plant modernization.

Based upon information submitted to EPA by CEMEX on October 3, 1995, CEMEX obtained a construction permit from the Puerto Rico Environmental Quality Board (PREQB) to convert Kiln 6 to the dry preheater/precalciner process on February 21, 1989. The preheater/precalciner construction commenced on April 4, 1989. The October 3, 1995 letter also stated that Kiln 6 was shut down for the dry process conversion on July 31, 1990 and that, once re-started, the modified Kiln 6 reached normal operations on December 27, 1991. At that time, Kilns 1, 2, and 3 were permanently disabled and Kilns 4 and 5 were placed on stand-by duty.

In 1995, CEMEX proposed to further modify Kiln 6 to increase its daily throughput. The modifications requested to increase clinker production from the current 3,100 tons per day (tpd) and 971,030 tons per year (tpy) to 4,100 tpd and 1,238,100 tpy. This modification increased the potential emissions for CO, VOCs, NOx and Pb. However, based on the information submitted, EPA concluded that only CO and VOC were subject to PSD whereas PSD did not apply to SO2 and PM/PM10, NOx and Pb. EPA subsequently issued a PSD permit to CEMEX on February 25, 1997.

In February 2006, CEMEX, the new owner of PRCC, proposed to co-combust tire derived fuel (TDF) with coal and also replace the Electrostatic Precipitators (ESP) with baghouses for particulate control from the kiln and associated equipment. CEMEX agreed to begin co-

combusting TDF after the baghouses begin operation. CEMEX will also physically disconnect kilns 1, 2 and 3.

Today's Action-
EPA is approving the proposed modifications to co-combust TDF with coal and also replace three ESPs with two baghouses. The hourly/yearly particulate and PM10 emissions will be lower and emission rates of NOx, CO, Sulfur Dioxide and VOC will not change.

The following Project Details were provided with the February 25, 1997, PSD Permit:

Existing Kiln 6 Process (1995)

Raw materials are crushed, dried, ground, and fed into a blending silo. The blended materials are conveyed to the kiln feed system. Drying, decarbonating, calcining, and clinkering are accomplished as the raw materials travel through the preheater/kiln system and form clinker. The clinker is transported to the clinker storage silos where it is combined with gypsum, milled to a fine particle size and conveyed to cement silos for storage.

Proposed Modifications to Kiln 6 (Synopsis) (1995)

CEMEX has proposed to boost clinker capacity by replacing the entire first drive section of the Folax Cooler with a Fuller's Controlled Flow Grate (CFG) system. A total of 180 controlled flow grate plates are to be installed in the first 18 rows of the clinker cooler. Of the 18 rows of CFG grate plates, the first 9 rows are 9 grates wide and the remaining 9 rows are 11 grates wide. Control of the airflow will be accomplished using 4 CFG fans equipped with piezometer sensors and radial inlet dampers. The existing first compartment fan (P1) will be used to pressurize the first drive section.

Each CFG fan and the P1 fan will be equipped with an outlet manifold and a series of manual control dampers which subdivide the air longitudinally along the cooler. The airflow is also subdivided across the width of the cooler by the location of the fans. In this way, airflow is independently controlled to every grate plates. The CFG system will reduce the amount of air to 0.6755 kg air per kg of clinker (excluding pressurization air). Together with the proposed modifications to the kiln feed system and the kiln I.D. fan, a future clinker production approaching 4,100 TPD is expected.

As described, the proposed project is a modification to an existing facility and identification of the specific items to be modified fall into two categories: 1) modifications that will certainly be made, and 2) modifications that may be made. For the second category of items, CEMEX will know whether these need to be made until after the first category of items have been made and 6 to 9 months of actual operation have occurred. This operating experience is necessary to evaluate the need to make the second category of modifications. Table 1. below presents those items that will certainly be modified or added. Table 2. below presents the types of items which may be modified or added after evaluating the Kiln 6 clinker production capability after making the Table 1. modifications.

The first four modifications on Table 1. will be made initially. The Pre-heater Gas Conditioning Tower modification will be made after the initial phase because of the lead time required to engineer, procure, and install the cooling vessel. The Table 2. modifications will begin within 18 months of completing the Table 1. modifications. All modifications will be completed within 24 months of first startup after the initial Table 1. modifications.

Table 1. Kiln 6 Modifications that will be Made

	Description and Comments
Clinker Cooler Fans	Replace the Folax Cooler first stage section with CFG system and reconfigure the P1 fan. In addition cooler fans 4-7 will be replaced with fans with higher pressure rating.
Kiln Feed System	The kiln feed system will be modified by upgrading the "air-lift" system to feed around 315 TPH.
Kiln I.D. Fan	The kiln I.D. fan will be replaced with a larger fan.
Raw Feed Roller Mill	The roller mill drive motor will be replaced with a new motor rated at 2500 HP and insulation will be added to the roller mill body. The roller mill feeder capacity will be increased to 400 tph.
Pre-heater Gas Conditioning Tower	A new gas cooling tower will replace the existing tower to handle the increase in kiln flue gas flow rate. This tower is important to the successful operation of the electrostatic precipitators.

Table 2. Types of Kiln 6 Modifications That May be Made

Equipment Item	Description and Comments
Clinker Cooler CFG Fans	If not enough cooling is provided by new CFG fans, replace with larger fans.
Raw Feed Roller Mill	If raw mill production rate is not high enough for a clinker production rate of 4100 tpd, add an auxiliary dryer to pre-dry raw feed.
Roller Mill Cyclones	If pressure drop across cyclones is excessive, modify or replace to reduce pressure losses.
Preheater and Precalciner	If pressure drop across the preheater and precalciner is too high, modify inlet scrolls and/or center tubes of the preheater vessels.
Alkali By-pass	If additional capacity to by-pass kiln gases is required, add a new cooling tower ahead of the alkali by-pass electrostatic precipitator.

PSD-Affected Pollutants Emitted at CEMEX (Formerly Puerto Rican Cement)

Kiln 6 will have as constituents in the combustion by-products the PSD-affected pollutants listed below which are formed in the following ways:

Carbon Monoxide (CO) - formed as a result of the incomplete combustion of the carbon contained in the fuel. Incomplete combustion can be caused mainly by fuel-rich conditions, insufficient combustion oxygen, and/or low combustion temperatures. Carbon monoxide

formation can be reduced by using good combustion practices such as providing sufficient gas residence time within the combustion region, maintaining a sufficiently high combustion temperature, and providing adequate turbulence so the fuel can mix with the combustion air. As a result of the Kiln 6 modification, the total CO emissions will be increased by 1,026 tons of CO per year from pre-modification (wet process) days. Total CO Kiln 6 emissions will be 1,078 tons/year.

Volatile Organic Compounds (VOCs) - VOCs are formed through the incomplete combustion of the fuel. Most VOCs are oxidized to form carbon dioxide and water. Similar to CO, VOC emissions can be reduced through the implementation of good combustion practices. As a result of the Kiln 6 modification, the total VOC emissions will be increased by 63 tons of VOC per year from pre-modification (wet process) days. Total VOC Kiln 6 emissions will be 75 tons/year.

CEMEX (Formerly Puerto Rican Cement) Kiln No. 6 Control Equipment:

CEMEX will employ Best Available Control Technology to control the pollutants described above. The pollutants and corresponding emission rates are listed in Enclosure II.

Enclosure II

CEMEX de Puerto Rico, Inc.
(Formerly Puerto Rican Cement Company, Inc.)
Kiln No. 6 Wet to Dry Conversion and Capacity Expansion
PSD Permit Conditions- 2006

Kiln 6, as described in Enclosure I, is subject to the following conditions:

I. Permit Expiration

This PSD Permit shall become invalid if construction:

a. has not commenced (as defined in 40 CFR Part 52.21(b)(9)) within 18 months after the approval takes effect;
b. is discontinued for a period of 18 months or more; or
c. is not completed within a reasonable time.

II. Notification of Commencement of Construction and Startup

The Regional Administrator (RA) shall be notified in writing of the anticipated date of initial startup (as defined in 40 CFR Part 60.2) of each facility of the source not more than sixty (60) days nor less than thirty (30) days prior to such date. The RA shall be notified in writing of the actual date of commencement of construction and startup within fifteen (15) days after such date.

III. Facilities Operation

All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this PSD Permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. The continuous emission monitoring systems required by this permit shall be on-line and in operation 95% of the time when kiln is operating.

IV. Right to Entry

The Regional Administrator and/or his authorized representatives, upon the presentation of credentials shall be permitted:

1. to enter at any time upon the premises where the source is located or in which any records are required to be kept under the terms and conditions of this PSD Permit;

2. at reasonable times to have access to and copy any records required to be kept under the terms and conditions of this PSD Permit;

3. to inspect any equipment, operation, or method required in this PSD Permit; and

4. to sample emissions from the source.

V. Transfer of Ownership

In the event of any changes in control or ownership of facilities to be constructed or modified, this PSD Permit shall be binding on all subsequent owners and operators. The applicant shall notify the succeeding owner and operator of the existence of this PSD Permit and its conditions by letter, a copy of which shall be forwarded to the Regional Administrator.

VI. Maximum Clinker Production/Kiln Fuels

CEMEX shall limit the maximum annual clinker production from Kiln 6 to 1,238,100 tons of clinker per 365-day rolling average period. CEMEX shall also limit the maximum daily clinker production from Kiln 6 to 4,100 tons of clinker per 24-hour block average period. CEMEX may request an increase in the clinker production limits provided CEMEX can demonstrate that the emission factor for NO_x is lower than 5.17 lbs of NO_x/ton of clinker. In addition, when using a revised emission factor, the netting calculation for NO_x shall not exceed the PSD de minimis value for NO_x (see Enclosure III).

CEMEX shall only use coal, fuel oil and tires as fuel in kiln no. 6. The use of tire derived fuel shall be permitted up to a maximum of 25% Btu heat input.

VII. Best Available Control Technology (BACT) and Emission Limitations for Kiln 6

1. **Carbon Monoxide (CO)**

a. CEMEX shall employ combustion controls to reduce CO emissions by increasing the oxidation of CO to CO_2 by: 1) improving contact with oxygen, which can be accomplished by improved mixing and/or increased excess air; and 2) increasing the time/temperature relationship.

b. Emissions of CO shall not exceed, during any 8-hour average basis, 1.74 lbs/ton of clinker, 381 ppm_{dv} corrected to 7% oxygen, and 296.6 lbs/hour, whichever is more stringent.

2. **Volatile Organic Compounds (VOCs)**

a. CEMEX shall employ combustion controls to reduce VOC emissions by increasing the oxidation of VOC to CO_2 by: 1) improving contact with oxygen, which can be accomplished by improved mixing and/or increased excess air; and 2) increasing the time/temperature relationship.

b. Emissions of VOCs shall not exceed, during any twenty-four-hour average basis, 0.12 lb/ton of clinker and 20.5 lbs/hour, whichever is more stringent.

VIII. Continuous Emission Monitoring (CEM) Requirements

1. Prior to the date of startup and thereafter, CEMEX shall install, calibrate, maintain, and operate the following continuous monitoring systems:

   a. A continuous monitoring system to measure stack gas volumetric flow rates. The system shall meet EPA monitoring performance specifications (40 CFR Part 52, Appendix E).

   b. Continuous emission monitoring (CEM) systems to measure CO and oxygen. These systems, at a minimum, shall meet EPA monitoring performance specifications of 40 CFR Part 60, Appendix B, Performance Specifications 3 and 4, and 40 CFR Part 60, Appendix F.

2. Not less than 60 days prior to the date of startup of the modified Kiln 6, CEMEX shall submit to the EPA a Quality Assurance Project Plan for the certification of the CEM systems. CEM performance testing may not begin until the Quality Assurance Project Plan has been approved by EPA.

3. CEMEX shall notify EPA 15 days in advance of the date upon which demonstration of the CEM system performance will commence (40 CFR Part 60.13(c)). The CEM system performance date shall be no later than the date of the initial performance testing required under Permit Condition IX.1. of this permit.

4. CEMEX shall submit a written report to EPA of the results of all monitor performance specification tests conducted on the monitoring system(s) within 45 days of the completion of the tests. The continuous emission monitors must meet all the requirements of the applicable performance specification test in order for the monitors to be certified.

5. CEMEX shall submit a written report of all excess emissions to EPA for every calendar quarter. All quarterly reports shall be postmarked by the 30th day following the end of each quarter and shall include the information specified below:

   a. The magnitude of excess emissions computed in accordance with 40 CFR Part 60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions.

   b. Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions for Kiln 6. The nature and cause of any malfunction (if known) and the corrective action taken or preventive measures adopted shall also be reported.

c. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

d. When no excess emissions have occurred or the CEM system has not been inoperative, repaired, or adjusted, such information shall be stated in the report.

e. Results of quarterly monitor performance audits, as required in 40 CFR Part 60, Appendix F.

f. Excess emissions shall be defined as:

i) all eight-hour periods during which the average emission of CO, as measured by the CEM system, exceed the corresponding mass or concentration emission limit set for CO in Condition VII.1.b. above.

g. For the purposes of this permit, excess emissions indicated by the CEM systems, except during startup or shutdown, shall be considered violations of the applicable emission limits.

6. CEMEX shall maintain a file of all measurements, including CEM system performance evaluations; all CEM systems or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by 40 CFR Part 60 recorded in a permanent form suitable for inspection. The file shall be retained for at least five years following the date of such measurement, maintenance, reports, and records.

7. Emissions in excess of the applicable emission limit listed under Condition VII. of this permit, during periods of startup and shutdown, shall not be considered a violation of the applicable emission limit.

8. For the purposes of this permit, startup and shutdown for Kiln 6 shall be defined as:

a. **Cold startup** is defined as the period beginning with the initial firing of oil in the kiln for preheating and ending eight (8) hours after raw meal and coal are fed to the calciner. The duration of the start up shall not exceed thirty six (36) consecutive hours for any cold start up exclusive of brick curing.

b. **Hot startup** (no kiln preheating) is defined as the period beginning with the resumption of raw meal and coal being fed to the calciner. The duration of the hot start up shall not exceed eight (8) consecutive hours for any hot start up.

c. **Partial Shutdown** is defined as the period beginning with the stopping of a raw feed and coal to the calciner and ending at the time when coal to the kiln is resumed to start a "hot startup" or stopped to start a "total shutdown." The duration of the shutdown shall not exceed twenty four (24) consecutive hours for any shutdown"; and

d. **Total shutdown** is defined as the period between stopping of raw feed and coal to the calciner and coal to the kiln and ending with the initial firing of oil in the kiln for pre-heating during a "cold startup."

9. CEMEX shall continue to maintain and operate a continuous opacity monitor which meets the New Source Performance Standards requirements of 40 CFR Part 60, Appendix B, Performance Specification 2, and Appendix F.

IX. Performance Test Requirements

1. Within 60 days after achieving the desired maximum production rate in Kiln 6 after completion of Table 1. changes, but no later than 180 days after initial startup as defined in 40 CFR Part 60.2, and at such other times as specified by the EPA, CEMEX shall conduct performance tests for CO and VOCs emissions in Kiln 6. A new set of performance testing shall be conducted within 60 to 180 days after startup from completion of Table 2. modifications that result in an increase in clinker production from the desired maximum production rate defined above. All performance tests shall be conducted at the maximum operating capacity of the unit(s) being tested and/or other loads specified by EPA.

2. At least 60 days prior to actual testing, CEMEX shall submit to the EPA a Quality Assurance Project Plan detailing methods and procedures to be used during the performance stack testing. A Quality Assurance Project Plan that does not have EPA approval may be grounds to invalidate any test and require a re-test.

3. CEMEX shall use the following test methods, or a test method which would be applicable at the time of the test and detailed in a test protocol approved by EPA:

   a. Performance tests to determine the stack gas velocity, sample area, volumetric flowrate, molecular composition, excess air of flue gases, and moisture content of flue gas shall be conducted using 40 CFR Part 60, Appendix A, Methods 1, 2, 3, and 4.

   b. Performance tests for the emissions of CO shall be conducted using 40 CFR Part 60, Appendix A, Method 10.

   c. Performance tests for the emissions of volatile organic compounds shall be conducted using 40 CFR Part 60, Appendix A, Method 25A.

4. To ensure that the emission factors used in the netting analyses have not changed significantly after the Kiln 6 modification, CEMEX shall also conduct stack tests for NO_x, SO_2, PM and PM_{10}. CEMEX shall use the following test methods, or a test method which would be applicable at the time of the test and detailed in a test protocol approved by EPA:

    a. Performance tests for the emissions of NO_x shall be conducted using 40 CFR Part 60, Appendix A, Method 7E.

    b. Performance tests for the emissions of SO_2 shall be conducted using 40 CFR Part 60, Appendix A, Method 6C.

    c. Performance tests for the emissions of PM shall be conducted using 40 CFR Part 60, Appendix A, Method 5.

    d. Performance tests for the emissions of PM_{10} shall be conducted using 40 CFR Part 51, Appendix M, Method 201 (exhaust gas recycle) or Method 201A (constant flow rate), and Method 202.

5. Test results indicating that emissions are below the limits of detection shall be deemed to be in compliance.

6. Additional performance tests may be required at the discretion of the EPA or EQB for any or all of the above pollutants.

7. For performance test purposes, sampling ports, platforms and access shall be provided by CEMEX on the combustion exhaust system in accordance with 40 CFR Part 60.8(e).

8. Results of emission testing must be submitted to EPA within 60 days after completion of performance tests.

9. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test.

10. EPA may require CEMEX to install, maintain and operate a NO_x CEMS if the performance stack test results show that the NO_x actual emission rate exceeded the value proposed in the permit application or the actual NO_x values show significant variability during the tests so as to question CEMEX's ability to achieved the proposed annual NO_x emission rate.

X. Malfunction

Any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in emissions above any allowable emission limit stated in Condition VII of this Enclosure II and actions taken on any unit must be reported by telephone within 24 hours to:

Chief, Air Permit Division
Puerto Rico Environmental Quality Board
Santurce, Puerto Rico 00910
(787) 767-8071

In addition, the Regional Administrator (RA) and the Puerto Rico Environmental Quality Board (EQB) shall be notified in writing within (15) days of any such failure. This notification shall include: a description of the malfunctioning equipment or abnormal operation; the date of the initial failure; the period of time over which emissions were increased due to the failure; the cause of the failure; the estimated resultant emissions in excess of those allowed under Condition VII of this Enclosure II; and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause.

XI. Recordkeeping and Reporting Requirements

1. All records required to be maintained by this permit shall be kept for a period of at least five (5) years.

2. All reports required by this permit shall be submitted to:

Chief, Air Compliance Branch
United States Environmental Protection Agency
Region II
290 Broadway - 21st Floor
New York, New York 100007-1866

Copies of the reports shall also be submitted to:

Region II CEM Coordinator
United States Environmental Protection Agency
Region II
Air and Water Section
Monitoring Management Branch
2890 Woodbridge Avenue - MS-102
Edison, New Jersey 08837-3679

Director, Air Quality Area
Puerto Rico Environmental Quality Board
P.O. Box 11488
Santurce, Puerto Rico 00910

XI. Other Requirements

1. CEMEX may implement a phased construction schedule as delineated in Enclosure I of this permit under the following conditions:

    a. Construction shall not be discontinued for more than 18 months once it has begun.

b. A complete set of performance tests shall be conducted as delineated in Condition IX. of Enclosure II of this permit after completion of Table 1. and Table 2. changes, separately.

    c. Performance tests shall be completed prior to the increase in the clinker production rate and shall comply with the New Source Performance Standards timing requirements.

    d. After completion of Table 1. changes, if the stack test protocol submitted by CEMEX indicates that the facility will be tested at a lower clinker production rate than the maximum one allowed in this PSD permit to be used during the duration of the construction (as a temporary measure) then this lower production rate shall become the enforceable rate until Table 2. changes are completed or until the higher throughput has been stack tested, whichever comes first.

Enclosure III

CEMEX de Puerto Rico, Inc.
(Formerly Puerto Rican Cement Company, Inc.)
Cement Kiln No. 6
Non-applicability Conditions based on PSD Netting Analyses/other changes, Air Quality Impacts, and Stack Parameters Summary

Previously, on June 6, 1989, CEMEX received a PSD non-applicability determination from EPA based upon a maximum clinker production of 3,100 tons/day. On May 23, 1995, CEMEX submitted a PSD application to EPA. On February 25, 1997, EPA concluded and issued a permit indicating that PSD did not apply to sulfur dioxides (SO_2), nitrogen oxides (NO_x), particulate matter (PM/PM_{10}), and lead (Pb). However, PSD applied to carbon monoxide (CO) and volatile organic compounds (VOCs). The 1997 permit decision, based upon a maximum production limit of 4,100 tons/day of clinker and 1,238,100 tons/year of clinker, superseded the June 6, 1989 non-applicability determination. At this new production limit, there was no significant increase in emissions of sulfur dioxides (SO_2), nitrogen oxides (NO_x), particulate matter (PM/PM_{10}), and lead (Pb).

In February 2006, CEMEX submitted another non-applicability request to co-combust tire derived fuel with coal and to replace the Electrostatic Precipitators with baghouses. These changes will lower PM/PM_{10} emissions and will not cause any increase in emissions of SO_2, NO_x, and lead (Pb). The CO and VOC emissions will also not increase. Further, there will be no change to the air quality impacts. The PSD non-applicability of these 2006 changes is based on the following conditions:

1. CEMEX shall replace Electrostatic Precipitators with baghouses.

2. CEMEX shall begin co-combusting tire derived fuel with coal only after beginning the operation of the baghouses.

3. The maximum fuel oil usage shall be limited to 14,570 gallons (for the boilers) and 267,820 gallons (for the burners) on a 365-day rolling average. The fuel oil's sulfur content shall not exceed 1.5% by weight.

4. CEMEX shall meet the following emission limits:

NOx-	5.17 lbs/ton of clinker
Sulfur Dioxide-	1.00 lbs/ton clinker
PM-	0.155 lbs/ton clinker
PM10-	0.131 lbs/ton clinker
Pb-	0.00071 lbs/ton clinker

5. CEMEX shall conduct performance tests for CO, VOC, NOx, Sulfur Dioxide, PM/PM10 and Pb according to the methods in IX (Enclosure II) within 180 days of

beginning the use of tires as fuel in the kiln. The tests shall be conducted at the maximum tire burning capacity.

6. Kiln no. 1, 2 and 3 shall be physically disconnected and removed from the Puerto Rico Environmental Quality Board's emission inventory by November 30, 2006.

The following non-applicability summary was issued as part of the February 1997 PSD Permit:

Summary of 1995 PSD Netting Analyses

Description of Emissions	SO_2	NO_x	PM/PM_{10}	VOC	CO	Pb
Kilns 1-6 (Wet) Prior to Kiln 6 Process Conversion (Dry)	3506	3165	385	12	52	0.30
Proposed Kiln 6 Operation 1,238,100 tpy of clinker	651	3204	145	75	1078	0.44
Change in Emissions	-2855	+39	-240	+63	+1026	+0.14
PSD Significance Level	40	40	15	40	100	0.6
PSD Significant?	No	No	No	Yes	Yes	No

Assumptions:

1. Kiln 1-6 (Wet) Prior to Kiln 6 Process Conversion (Dry) uses clinker production data from August 1988 through July 1990.
2. AP-42 emission factors for industrial boilers firing No. 6 fuel oil are used.
3. Maximum clinker production of 1,238,100 tons per 365-day rolling average is assumed.
4. For post Kiln 6 modification, maximum fuel oil usage of 14,570 gallons (for the boilers) and 276,820 gallons (for the burners) per 365-day rolling average with a 1.5% sulfur content by weight are used.
5. Emission factors for Kiln 6 are based on: 1) the January, 1995 test data results conducted by CEMEX; and 2) 1994 AP-42 Portland Cement emission factors (EPA, 1994, Pages 11.6-9 to 11.6-20).

I) Emission Factors for Wet Process Kiln:

a. SO_2: 8.2 lb SO_2/ton of clinker -- (AP-42)
b. NO_x: 7.4 lb NO_x/ton of clinker -- (AP-42)
c. PM/PM_{10}: 0.77 lb PM/ ton of clinker -- (AP-42)
d. VOC: 0.028 lb VOC/ton of clinker -- (AP-42)
e. CO: 0.12 lb CO/ton of clinker -- (AP-42)
f. Pb: 7.1×10^{-4} lb Pb/ton of clinker -- (AP-42)

II) Emission Factors for Preheater/Precalciner Kiln:

a. SO_2: 1.0 lb SO_2/ton of clinker (AP-42) (1/95 test: 0.033 lb/ton)

b. NO_x: 5.17 lb NO_x/ton of clinker (1/95 test: 5.17 lb/ton)
c. PM/PM_{10}:0.048 lb PM/ton of clinker (AP-42)
(1/95 test: 0.015 lb/ton)
d. VOC: 0.12 lb VOC/ton of clinker (AP-42)
(1/95 test: 0.108 lb/ton)
e. CO: 1.74 lb CO/ton of clinker (1/95 test: 0.108 lb/ton)
f. Pb: 7.1×10^{-4} lb Pb/ton of clinker (AP-42)

6. CO emission factor of 1.74 lb/ton of clinker is based on an 8-hour averaging period. The 1/95 test data value of 0.108 lb/ton of clinker for CO is based on a 24-hour averaging period.

Air Quality Impacts Due to Kiln 6 Modifications

Carbon Monoxide*

Averaging Period	Kiln 6 Impact	Sign.Impact Lev.	Total Impact (includes Background)	NAAQS
1-Hour	2,894	2000	3,228	40,000
8-Hour	461	500	N/A_1	10,000

* Measured in $\mu g/m^3$
1 Not Applicable (below significance level)

Location (UTM)

Source	Easting (m)	Northing (m)	Height (m)
Kiln 6	749932	1994105	25
Lime Kiln	749902	1994298	25

Stack Parameters

Source (m)	Emission Rate (g/sec)	Height (m)	Exit Temperature (K)	Exit Velocity (m/s)	Exit Diameter (m)
Kiln 6	37.37	60.96	394.0	15.80	3.04
Lime Kiln	3.97	10.67	422.0	14.14	1.21