STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF PERMIT

In the Matter of an
Application for Permit by:

Mr. Michael A. Gonzales, Plant Manager
CEMEX Cement, Inc.
P.O. Box 6
Brooksville, Florida 34605-0006

DEP File No. 0530010-026-AC
Brooksville Cement Plant
Kilns No. 1 and No. 2
Hernando County

/

Enclosed is the Final Permit, number 0530010-026-AC, authorizing the installation of indirect firing systems and after-the-fact installation of selective non-catalytic reduction (SNCR) systems on Kilns 1 and 2 at the existing Brooksville Cement Plant northwest of Brooksville in Hernando County. This permit is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, F.S., by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Legal Office; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

Trina L. Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Notice of Final Permit (including the Final Permit) and all copies were sent electronically (with Received Receipt) before the close of business on 12/22/06 to the person(s) listed:

Michael A. Gonzales, CEMEX: michaelanthony.gonzales@cemexusa.com
Charles Walz, CEMEX: charles.walz@cemexusa.com
Amarjits Gill, CEMEX: amarjits.gill@cemexusa.com
Mara Nasca, DEP SWD: mara.nasca@dep.state.fl.us
Fawn Bergen, P.E., K&A: fbergen@kooglerassociates.com
Segundo J. Fernandez, Esq., OHF&C: sfernandez@ohfc.com
Jim Little, EPA Region 4: Little.James@epamail.epa.gov
John Koogler, P.E., K&A: jkoogler@kooglerassociates.com

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

(Clerk) 12/22/06 (Date)

Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

PERMITTEE:

CEMEX Cement, Inc.
Post Office Box 6
Brooksville, Florida 34605-0006

Authorized Representative:
Michael A. Gonzales, Plant Manager

DEP File No. 0530010-026-AC
Brooksville Cement Plant Kilns 1 and 2
SNCR and Indirect Firing Systems
Hernando County, Florida
Expiration date: June 30, 2007

PROJECT AND LOCATION

This permit authorizes installation of indirect firing systems, including after-the-fact authorization for burner replacements on Kilns 1 and 2, and installation of selective non-catalytic reduction systems on Kilns 1 and 2 at CEMEX Cement's Brooksville portland cement plant. For each kiln, the indirect firing system will also require the installation of an additional coal mill baghouse, a pulverized coal bin with associated baghouse, and a pump with associated baghouse. The transition to the indirect firing systems may involve replacement of, or modifications to, the burners currently in operation. The existing plant is located on Highway 98, northwest of Brooksville, in Hernando County, Florida.

STATEMENT OF BASIS

This permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to perform the proposed work in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department). This permit supplements all other air construction and operation permits for the affected emissions units and does not alter any requirements from such previously issued air permits.

The attached Appendices are made a part of this permit:

Appendix GC	Construction Permit General Conditions
Appendix SC	Standard Conditions

Joseph Kahn, Director
Division of Air Resource Management

FINAL DETERMINATION

CEMEX Cement, Inc.

Brooksville Cement Plant

DEP File No. 0530010-026-AC

On November 3, 2006 the Florida Department of Environmental Protection (Department) distributed an "Intent to Issue Air Construction Permit" authorizing the installation of indirect firing systems (including after the fact authorization for burner replacements on Kilns 1 and 2), and installation of selective non-catalytic reduction (SNCR) systems (after the fact) on Kilns 1 and 2 at the existing Brooksville Cement Plant northwest of Brooksville in Hernando County.

The package included the Department's Draft Air Construction Permit, the "Intent to Issue Air Construction Permit," the "Technical Evaluation and Preliminary Determination," and the "Public Notice of Intent to Issue Air Construction Permit." The Department sent copies of the package to various individuals and agencies. CEMEX Cement, Inc. (CEMEX) published the Public Notice in *Hernando Today* on November 15, 2006 and provided to the Department the required proof of publication.

The Department received no comments from agencies or the public regarding the Draft Air Construction Permit. Comments were received from Koogler & Associates on behalf of CEMEX on November 20, 2006. Each comment is summarized below followed by the Department's response.

Any additions to permit conditions are double underlined and deletions are indicated by double strike-through.

Comment

The applicant requested that the NO_X emissions limit of 1.21 pounds per ton of dry preheater feed be adjusted to 1.30 pounds per ton of dry preheater feed, consistent with future actual emissions (past actual plus a ten percent demand increase).

Response

The SNCR and semi-direct projects were submitted (and actually completed) prior to the effective date of the New Source Review Reform rules. CEMEX originally requested an after-the-fact air construction permit to install Selective Non-Catalytic Reduction (SNCR) systems on Kilns 1 and 2 to reduce NO_X emissions in conjunction with the change to a semi-direct firing system. In order to avoid PSD review under this project, the applicant requested a lower NO_X emissions limit of 1.21 lb/ton of preheater feed, and a maximum preheater feed rate of 1,300,000 TPY on both kilns so that emissions increases would fall below the significant emissions rate that would trigger PSD. The State Rules in effect at the time the original application was received and when the project was actually completed relied on past actual to future potential emissions to determine PSD applicability. Therefore, the comparison of past actual to future potential emissions is appropriate for determining PSD applicability for this pollutant.

No changes will be made to the draft permit.

Comment

CEMEX requested that the averaging time for the ammonia injection rate of 133 pounds per hour as 100 percent ammonia be changed to a 30-day rolling average which is consistent with the averaging time for the NO_X emission limit. An alternative suggestion was to set a maximum NH_3:NO_X molar ratio of 1.0.

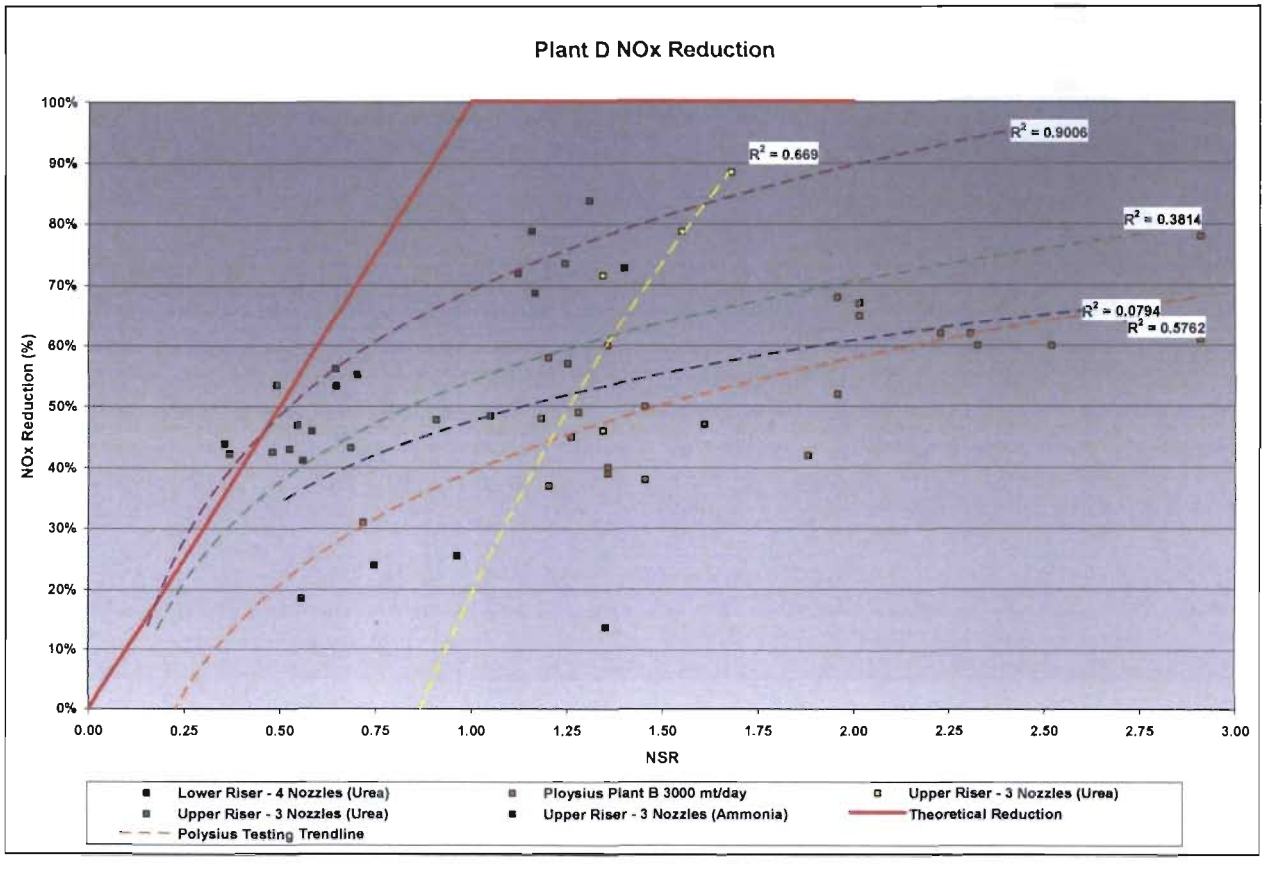
Response

The Department originally calculated the ammonia (NH_3) usage rate based on the theoretical amount of reagent needed to reduce NO_X emissions from a presumed "pre-control" value of approximately 4 pounds per ton of clinker (lb/ton) to zero. With a NO_X limit of approximately 2 lb/ton, the reasoning was that typical molar ratios will be on the order of 0.60 to effect a reduction of approximately 50%.

CEMEX has made, or plans to make, certain changes on the kilns including: changing out the main kiln burners and possibly changing them out again; switching from direct to semi-direct and then to indirect firing; installing or upgrading tire introduction systems to burn fuel near the kiln inlets; and future use of petroleum coke in the main kiln burner at high temperature and in a highly oxidizing environment.

The SNCR system will allow CEMEX to comply with the NO_X limits but the "pre-control" (i.e. level without reagent injection) might at times increase to values significantly greater than 4 lb/ton at least for short duration. This can make it difficult to maintain the proposed NH_3 injection rate at less than 133 lb/hr while achieving substantial NO_X reduction. For example, starting at 7 lb NO_X/ton the NH_3 injection rate would theoretically reduce emissions only to 3 lb/ton. Therefore, the 133 lb/hr NH_3 use limitation would in effect allow a molar ratio of only 4/7 or 0.57.

The following diagram shows NO_X abatement rates for various molar ratios at a particular preheater kiln in North America for various injector locations and configurations as well as reagent types (NH_3 versus urea). In many cases, only modest reductions are obtained even when molar ratios are high. The upper "straight line" plot represents the idealized behavior when one mole of NH_3 actually abates one mole of NO_X with no NH_3 combustion or NH_3 emissions (slip).



The "upper curve" (under the idealized plot) represents an experimentally determined optimal configuration peculiar to that kiln and its raw material, fuel and other operating features. For reference, a molar ratio of 0.57 would reduce NO_X emissions anywhere between 25 and 50% depending on optimization of the SNCR unit for the case of the kiln described above.

Because of recent and continuing changes at the facility, and establishment of the lowest NO_X limit for an operating kiln, the Department will allow additional time to optimize the SNCR system. Additionally, there is an economic incentive for CEMEX to minimize ammonia slip.

The Department believes that CEMEX can progressively optimize the SNCR systems to eventually achieve in the direction of the upper curve and towards the left hand side to achieve the best possible NO_X reduction efficiency with the lowest ammonia usage feasible for Brooksville Kilns 1 and 2. However this will require experimentation over the coming months as the various projects are completed (kiln burner, tire use, etc).

Although NH_3 is not a PSD pollutant per se, it is a fine particulate precursor and measures are needed to insure that its emissions are minimized especially given the proximity to the Class I Chassahowitzka National Wildlife Refuge.

The Department will require submittal of a report outlining the measures taken, and yet to be taken, to optimize reagent efficiency and minimize NH_3 oxidation (to NO_X) and NH_3 slip (emissions). The information will be used by the Department to establish reagent use conditions when processing the Kilns 1 and 2 permanent tire use applications. Appropriate reagent injection requirements will be added to future permits, pending results from the required study.

The Department will make the following changes to Section III, Subsection A, Specific Condition 4:

4. Ammonia Injection ~~Rate~~: ~~The ammonia injection rate shall not exceed 133 pounds per hour (1-hour block as 100% ammonia) in order to minimize ammonia emissions (slip).~~ Ammonia shall be injected at a rate sufficient to continuously meet the NO_X emission limits of this permit. The concentration of stored ammonia solutions shall be less than 20 percent (%) by weight.

   [Applicant Request; Rule 62-4.070, F.A.C.]

   {Note :~~The maximum ammonia injection rate is approximately equivalent to an NH_3/NO_x molar ratio of 1.0 presuming baseline uncontrolled NO_x emissions of 4 lb/ton of clinker~~. The stored ammonia concentration limitation avoids the requirement to prepare a Risk Management Plan pursuant to Section 112r of the Clean Air Act for this activity.}

The following reporting requirement will also be added to Section III, Subsection A of the permit:

20. Reagent Optimization Study: The permittee shall submit a report outlining the measures taken and yet to be taken to optimize reagent efficiency and minimize NH_3 oxidation (to NO_X) and NH_3 slip (emissions). The report shall be submitted to the Department no later than June 30, 2007 and shall contain at least the following information:
    a. Documentation of past and present operating data and stream characteristics from the pyroprocessing systems that will provide a baseline evaluation of the preheater systems in terms of performance and emissions, specifically concentrating on NO_X, NH_3, O_2 and CO.
    b. Documentation of NH_3 injection at various locations in the system to measure the effect of NH_3 at different temperature ranges and locations throughout the systems and under varying operational modes (e.g. kiln burning and raw material variations).
    c. Continuous NO_X stack emissions data and other parameter data as needed in the downcomer or kiln risers to demonstrate the effects of NH_3 injection.
    d. Identification of the optimal conditions to achieve the permitted NO_X limitation while minimizing NH_3 consumption and emissions (slip).

    [Rule 62-4.070. F.A.C.]

Comment

CEMEX requested that the requirement for a diluent gas monitor be removed from the permit.

Response

The draft permit includes no emissions limits requiring a correction to a specific oxygen concentration. Because there is no limit requiring the use of this monitor, Specific Condition 11 in Section III, Subsection A of the permit will be changed as follows:

11. CEMS Systems: The NO_X CEMS shall be operated and maintained to measure and record the emissions of NO_X in each kiln system exhaust stack in a manner sufficient to demonstrate continuous compliance with the emission limits specified in this permit. The CEMS shall express the results in 1-hr averages in units of pounds per ton of dry kiln feed, pounds per ton of clinker produced, pounds per hour, and ppmvd (parts per million dry volume).

a. *NO_X Monitors:* The NO_X monitors' span values shall be set appropriately, considering the expected range of emissions and corresponding emission standards.

~~b. *Diluent Monitor*: An oxygen monitor shall be installed to measure oxygen concentration in each stack.~~

b. ~~c.~~ *Continuous Flow Monitor*: A continuous flow monitor shall be installed in each stack to determine the stack exhaust flow rate to be used in determining mass emission rates. The flow monitors and NO_X monitors shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 6 as monitoring systems.

c. ~~d.~~ *Moisture Correction*: The owner or operator is responsible for establishing an appropriate means for determining the moisture content of the flue gas in order to express monitoring results in units of the standards.

Comment

Specific Condition 14 requires monitoring and recording of dry preheater feed rate and clinker production. Clinker production is not directly measured but is calculated based on preheater feed rate measurements. The applicant requested clarification of the method used to determine clinker production rate.

Response

A permitting note will be added to clarify that clinker production is not directly measured, but based on preheater feed rate.

The following specific changes will be made to Section III, Subsection A, Specific Condition 14:

14. Operational Records: To demonstrate compliance with the limitations specified in this permit, the owner or operator shall maintain the following records on site. All records shall be made available to the Department and Compliance Authority upon request.

a. For each 1-hour block of operation, continuously monitor and record the dry preheater feed rate and clinker production rate for each kiln. Records shall also document the dry preheater feed rate and clinker production rates for each consecutive12 month period for each kiln.

b. Estimates of NH_3/NO_X molar ratio and ammonia injection rate as 100% ammonia.

{Permitting Note: Clinker production is not directly measured. It is a computed value based on measured preheater feed rate, and fuel and raw material properties.}

[Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

Comment

CEMEX questions why specific condition 18 states that subparagraph 62-210.200(35)(b)4, F.A.C., does not apply.

Response

Definitions of Baseline Actual Emissions, Projected Actual Emissions, Actual Emissions, and Net Emissions Increase are defined in Specific Condition 18 of the draft permit as they appear in 62-210.200, F.A.C for reference and clarification. The permit language is taken directly from the definitions in 62-210.200. The definition of 'Baseline Actual Emissions' states that 62-210.200(35)(b)4 does not apply.

Comment

CEMEX requested that the initial PM/PM_{10} testing required for the two coal mill baghouses included in the coal grinding and transferring emissions unit be changed to require initial testing within 60 days following startup of the indirect firing systems.

Response

The draft permit requires initial PM/PM_{10} testing of these two baghouses within 60 days following installation of the indirect firing system. The Department will make the requested change. Additionally, a condition will be added requiring notification of startup of the indirect firing system.

The following specific changes will be made to Section III, Subsection B, Specific Condition 7:

7. Testing Requirements: Emission points PS-01 and PS-02 shall be stack tested to demonstrate initial compliance with the applicable emission standards for PM/PM_{10} and visible emissions. All other emission points shall be tested for visible emissions only. The initial tests shall be conducted within 60 days following startup ~~installation~~ of the indirect firing system. Thereafter, compliance with the visible emission limits shall be demonstrated during each federal fiscal year (October 1st to September 30th) for all emission points listed above (PS-01 through PS-06). [Rule 62-297.310(7)(a), F.A.C.]

The following Specific Condition will be added to the same subsection of the permit under Reporting and Record Keeping:

12. Notification: The permittee shall notify the compliance authority 5 days prior to startup of the indirect firing system. The notification shall include a tentative schedule for any required initial compliance testing for this unit.

The final decision by the Department is to issue the permit with the changes noted.

FACILITY DESCRIPTION

The existing facility consists of two Polysius GEPOL preheater kilns (Kilns 1 and 2), two clinker coolers and associated raw mills, finish mills, cement and clinker handling equipment, coal handling equipment, silos, and air pollution control devices. The nominal capacity of each kiln is 780,000 ton per year of clinker. The plant is located on Highway 98, northwest of Brooksville in Hernando County, Florida.

PROJECT DESCRIPTION

The projects under this permit include installation of indirect firing systems and selective non-catalytic reduction (SNCR) systems on Kilns 1 and 2. The indirect firing system project includes previous replacement of the older generation kiln burners with multi-channel burners, and the cyclones, fans, and fuel injectors associated with the indirect firing systems on Kilns 1 and 2. Modification to, or replacement of, the burners currently in operation may be necessary for completion of the indirect firing system. This project also authorizes the installation of an additional coal mill baghouse, a pulverized coal bin with associated baghouse, and one FK pump with associated baghouse all of which are needed to change to the indirect firing system on each kiln.

The SNCR project utilizes injection of ammonia solutions near the lowest part of the preheater. The equipment consists of a storage tank, piping, pumps, compressed air and one or more injectors.

EMISSIONS UNITS

This permit addresses the following emissions units:

EU ID	Emissions Unit Description
003	Cement Kiln No. 1
014	Cement Kiln No. 2
032	Coal Grinding and Transferring

REGULATORY CLASSIFICATION

Title I, Section 111, Clean Air Act (CAA): This facility is subject to certain Standards of Performance for New Stationary Sources. They are adopted and incorporated by reference in Rule 62-204.800, F.A.C. These inlcude:

- 40 CFR 60, Subpart A - General Provisions.
- 40 CFR 60, Subpart F - Standards of Performance for Portland Cement Plants. Certain requirements from Subpart F are replaced by requirements from 40 CFR 63, Subpart LLL listed below.
- 40 CFR 60, Subpart Y - Standards of Performance for Coal Preparation Plants.
- 40 CFR 60, Subpart OOO - New Source Performance Standards For Nonmetallic Mineral Processing Plants.

Title I, Section 112 CAA: The facility has the potential to emit 10 tons per year or more of any one hazardous air pollutant (HAP) or 25 tons per year or more of any combination of HAPs. This facility is subject to the Major Source provisions of:

- 40 CFR 63 Subparts A - National Emission Standards for Hazardous Air Pollutants – General Provisions.
- 40 CFR, Subpart LLL - National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry.

Title I, Part C (PSD): The facility is located in an area designated as "attainment", "maintenance", or "unclassifiable" for each pollutant subject to a National Ambient Air Quality Standard. The facility is considered a "portland cement plant", which is one of the 28 Prevention of Significant Deterioration (PSD) source categories with the lower PSD applicability threshold of 100 tons per year. Potential emissions of at least one regulated pollutant exceed 100 tons per year. Therefore, the facility is classified as a PSD-major source of air pollution with respect to Rule 62-212.400, F.A.C., Prevention of Significant Deterioration.

Title IV, CAA: The facility does not operate any units subject to the Acid Rain provisions of the Clean Air Act.

Title V, CAA: The facility is a Title V or "Major Source" of air pollution because the potential emissions of at least one regulated pollutant exceed 100 tons per year or because it is a major source of HAPS. Regulated pollutants include pollutants such as carbon monoxide (CO), nitrogen oxides (NO_X), particulate matter (PM/PM_{10}), sulfur dioxide (SO_2), and volatile organic compounds (VOC).

State Rules: The cement plant is subject to state Rule 62-296.407, F.A.C. (Portland Cement Plants).

PERMITTING AUTHORITY

All documents related to applications for permits to construct, operate or modify an emissions unit shall be submitted to the Bureau of Air Regulation of the Florida Department of Environmental Protection (DEP) at 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400. Copies of all such documents shall also be submitted to the Compliance Authority.

COMPLIANCE AUTHORITY

All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Department of Environmental Protection Southwest District, 13051 N. Telecom Parkway, Temple Terrace, Florida 33637-3767.

RELEVANT DOCUMENTS

The documents listed below are not a part of this permit; however, this information is specifically related to the permitting action and is on file with the Department.

- Application for installation of SNCR systems received October 14, 2005.
- Application for installation of indirect firing systems and kiln burner replacement received August 22, 2006.
- Application revision received September 5, 2006.
- Additional details received September 15, 2006.
- Department's Technical Evaluation and Preliminary Determination issued November 3, 2006.
- Department's Final Determination issued concurrently with this Final Permit.

1. General Conditions: The permittee shall operate under the attached General Conditions listed in Appendix GC of this permit. General Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [Rule 62-4.160, F.A.C.]

2. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of the subject emissions unit shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403 of the Florida Statutes (F.S.); Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.); and the Title 40, Parts 51, 52, 60, and 63 of the Code of Federal Regulations (CFR), adopted by reference in Rule 62-204.800, F.A.C. The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]

3. Construction and Expiration: Authorization to construct shall expire if construction is not commenced within 18 months after receipt of the permit, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. The Department may extend the 18-month period upon a satisfactory showing that an extension is justified.
[Rules 62-4.070(4), 62-4.080, and 62-210.300(1), F.A.C.]

4. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]

5. Source Obligation:

   a. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   b. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   [Rule 62-212.400(12), F.A.C.]

6. Modifications: No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Chapters 62-210 and 62-212, F.A.C.]

7. Title V Permit: This permit authorizes construction or modification of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V operation permit is required for regular operation of the permitted emissions units. The permittee shall apply for a Title V operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220 and Chapter 62-213, F.A.C.]

A. Cement Kilns 1 and 2 (EU ID 003 and 014)

This section of the permit addresses the following existing emissions unit.

Emissions Unit 003 and 014 (Kilns 1 and 2)
Description: Dry preheater process kiln and clinker cooler systems employing the Polysius GEPOL preheater design. *Fuels*: Each kiln is limited to a fuel heat input of 300 million British thermal units (MMBtu) per hour. Allowable fuels include: coal, Nos. 2, 4, 5, and 6 fuel oil, natural gas, and on-site generated non-hazardous waste used oil and grease. Kiln No. 1 is also permitted to fire whole tire derived fuel. *Capacity*: Each kiln is limited to 150 tons of preheater feed per hour (rolling 30-day average), with a maximum of 165 tons in any one hour, and a maximum annual limit of 1,300,000 TPY. *Controls*: A baghouse is used on each kiln for the control of PM emissions. Raw material properties, chemical reactions in the kiln, absorption into the clinker, and combustion controls minimize emissions of NO_X, SO_2, CO, and VOC. SNCR has been installed for NO_X control. *Monitors*: Emissions of CO and NO_X are continuously monitored on both kilns. *Stack Parameters*: The stack for Kiln No. 1 has the following characteristics: stack height is 150 feet, exit diameter is 13 feet, exit temperature is 285 °F, and actual volumetric flow rate is approximately 315,000 acfm. The stack for Kiln No. 2 has the following characteristics: stack height is 105 feet, exit diameter is 14 feet, exit temperature is 250 °F, and actual volumetric flow rate is approximately 315,000 acfm.

ADMINISTRATIVE REQUIREMENTS

1. Relation to Other Permits: The conditions of this permit, unless otherwise noted, are in addition to those of any other air construction or operation permits. [Rule 62-4.030, 62-4.210, and 62-210.300(1)(b), F.A.C.]

EQUIPMENT AND CONTROL TECHNOLOGY

2. NO_X Controls:

   a) Low-NO_X Burners: This permit authorizes the previous installation of multi-channel, low-NO_X burners on kilns 1 and 2 including the associated fuel injection systems. The low-NO_X burners will create distinct combustion zones within the flame. An indirect firing system will be used to reduce the amount of primary air injected with the fuel used in the main kiln burner. This permit also authorizes the replacement of, or modification to, the currently installed burners if necessary for optimization of the indirect firing system. [Application; Rule 62-4.070(3), F.A.C.]

   b) Selective Non-Catalytic Reduction (SNCR): This permit authorizes the installation of an SNCR system designed, constructed and capable of lowering NO_X emissions in the kiln exhaust to meet the NO_X emission limits of this permit on each kiln. The SNCR systems consists of an aqueous ammonia tank, pumps, piping, compressed air delivery, injectors, control systems, and other ancillary equipment. Aqueous ammonia solution will be injected at a location(s) in the preheater with an appropriate temperature profile to support the SNCR process. The systems shall be operated and maintained to continuously meet the required NO_X emissions limits.
   [Applicant Request; Rules 62-4.070, and 62-210.650, F.A.C.]

PERFORMANCE REQUIREMENTS

3. Process Rate Limitations: The maximum process dry preheater feed rate for each kiln shall not exceed 165 tons per hour (one-hour maximum) and 150 tons per hour (rolling 30-operating day average). In addition to the short-term preheater feed rate limits, the dry preheater feed rate for each kiln shall not exceed 1,300,000

tons during any consecutive 12-month period. [Application; Rule 62-4.070(3), F.A.C.; construction permits AC27-186923, AC27-240349, AC-258571, and 0530010-003-AC]

4. Ammonia Injection: Ammonia shall be injected at a rate sufficient to continuously meet the NO_X emission limits of this permit. The concentration of stored ammonia solutions shall be less than 20 percent (%) by weight. [Applicant Request; Rule 62-4.070, F.A.C.]

{Note: The stored ammonia concentration limitation avoids the requirement to prepare a Risk Management Plan pursuant to Section 112r of the Clean Air Act for this activity.}

EMISSIONS AND TESTING REQUIREMENTS

5. Emissions Standards: Upon complete installation of the indirect firing system, but no later than June 30, 2007 emissions from each kiln shall not exceed the following emissions standards for NO_X. These limits replace any previous NO_X emission limits for Kilns 1 and 2.

Pollutant	Emission Limit	Averaging Time	Compliance Method	Basis
NO_X	1.21 lb/ton of dry preheater feed	30-day rolling	CEMS	Applicant Request/ PSD Avoidance
	181.5 lb/hr (as NO_2)			

NO_X emissions from each kiln shall not exceed 1.21 lb/ton of dry preheater feed and 181.5 lb/hour on a rolling 30-operating day average as measured by the required CEMS. Mass emission rates for NO_X shall be calculated as NO_2.

{Note: In combination with the annual dry preheater feed rate limitation of 1,300,000 tons per year per kiln, the above emissions standard effectively limits annual potential NO_X emissions from each unit to 786.5 tons/year. The NO_X limit is equivalent to approximately 2.0 lb/ton of clinker.}

[Applicant Request; Rules 62-4.070(3), 62-212.400(12), F.A.C.]

6. Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]

7. Supplemental Dioxin/Furan and PM/PM_{10} Tests: The owner or operator shall notify the Compliance Authority prior to initiating any significant change in the feed or fuel used in the most recent compliant performance test for dioxin/furan or PM/PM_{10}. For purposes of this condition, a significant change includes but is not limited to the following: a physical or chemical change in the kiln feed material or fuel from that which was used in the most recent compliant performance test; the use of a raw material not previously used; a change in the percentage of a raw material employed in the mix design; a change in the Loss on Ignition ("LOI") of the fly ash; a change in the use of non-beneficiated fly ash or beneficiated fly ash; an increase in the levels of total chlorine/chloride or total hydrocarbons in kiln feed materials or fuels above those levels where compliance has been demonstrated through performance testing; changes in the exhaust gas cooling system including the addition, deletion or movement of dampers; and changes to the combustion system or its operation. Use of a particular feed mix, fuel, or cooling system configuration for which compliance with the D/F and PM emission limits has previously been demonstrated, shall not be considered a significant change. [Rule 62-4.070(3), F.A.C. and 40 CFR 63.1349]

EXCESS EMISSIONS

{Note: The following conditions apply only to the SIP-based emissions standards specified in condition 5 of this section. Rule 62-210-700, F.A.C. (Excess Emissions) cannot vary or supersede any federal provision of the NSPS or the NESHAP programs.}

8. Definitions:

   a. *Startup* is defined as the commencement of operation of any emissions unit which has shut down or ceased operation for a period of time sufficient to cause temperature, pressure, chemical or pollution control device imbalances, which result in excess emissions.

   b. *Shutdown* means the cessation of the operation of an emissions unit for any purpose.

   c. *Malfunction* means any unavoidable mechanical and/or electrical failure of air pollution control equipment or process equipment or of a process resulting in operation in an abnormal or unusual manner.

   [Rule 62-210.200 (186, 263, and 279), F.A.C.]

9. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. All such preventable emissions shall be included in any compliance determinations based on CEMS data. [Rules 62-210.650, and 62-210.700(4),F.A.C.]

10. Allowable Data Exclusions: Each 30-day rolling average shall include all periods of operation (including startup, shutdown, and malfunction), but may exclude limited periods due to malfunctions of the SNCR system. "Malfunctions of the SNCR system" are defined as any unavoidable mechanical and/or electrical failure that prevents introduction of ammonia-based solutions into the kiln system. No more than 30 hours in any calendar month shall be excluded from the compliance determinations due to malfunctions of the SNCR system. This data may be excluded from the compliance demonstrations only in accordance with the above requirements, provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions are minimized. As provided by the authority in Rule 62-210.700(5), F.A.C., this condition replaces the provisions in Rule 62-210.700(1), F.A.C.

    The permittee shall notify the Compliance Authority within one working day of discovering any emissions in excess of a CEMS standard subject to the specified averaging period. Within one working day of occurrence, the owner or operator shall notify the Compliance Authority of any malfunction resulting in the exclusion of CEMS data. All such reasonably preventable emissions shall be included in any CEMS compliance determinations. All valid emissions data (including data collected during startup, shutdown and malfunction) shall be used to report emissions for the Annual Operating Report.

    [Rules 62-210.200, and 62-210.700, F.A.C.]

CONTINUOUS MONITORING REQUIREMENTS

11. CEMS Systems: The NO_X CEMS shall be operated and maintained to measure and record the emissions of NO_X in each kiln system exhaust stack in a manner sufficient to demonstrate continuous compliance with the emission limits specified in this permit. The CEMS shall express the results in 1-hr averages in units of pounds per ton of dry kiln feed, pounds per ton of clinker produced, pounds per hour, and ppmvd (parts per million dry volume).

    a. *NO_X Monitors:* The NO_X monitors' span values shall be set appropriately, considering the expected range of emissions and corresponding emission standards.

b. *Continuous Flow Monitor*: A continuous flow monitor shall be installed in each stack to determine the stack exhaust flow rate to be used in determining mass emission rates. The flow monitors and NO_X monitors shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 6 as monitoring systems.

c. *Moisture Correction*: The owner or operator is responsible for establishing an appropriate means for determining the moisture content of the flue gas in order to express monitoring results in units of the standards.

[Rules 62-4.070(3), and 62-297.520, F.A.C.]

12. CEMS Data Requirements: The NO_X CEMS shall be installed, calibrated, maintained, and operated in a manner sufficient to express results in units of pounds per ton of preheater feed, pounds per ton of clinker produced, and pounds per hour.

a. *Valid Hourly Averages:* Each CEMS shall be designed and operated to sample, analyze, and record data evenly spaced over the hour at a minimum of one measurement per minute. All valid measurements collected during an hour shall be used to calculate a 1-hour block average that begins at the top of each hour. Each 1-hour block average shall be computed using at least one data point in each fifteen-minute quadrant of an hour, where the unit combusted fuel (or produced clinker) during that quadrant of an hour. Notwithstanding this requirement, a 1-hour average shall be computed from at least two data points separated by a minimum of 15 minutes (where the unit operates for more than one quadrant of an hour). If less than two such data points are available, there is insufficient data and the 1-hour block average is not valid.

- Hours during which there is no kiln feed and no fuel fired are not valid hours.
- Hours during which the plant is firing fuel but producing no clinker are valid, but these hours are excluded from the production-normalized emission rate computation (pounds per ton of clinker). These hours are included in any pollutant mass emission rate computation (pounds per hour).

b. *30-day Rolling Averages*: Compliance with the emission limits for NO_X shall be based on a 30-day rolling average. Each 30-day rolling average shall be the arithmetic average of all valid hourly averages collected during the last 30 operating days. A new 30-day rolling average shall be recomputed after every day of operation for the new day and the preceding 29 operating days. For purposes of computing these emission limits, an operating day is any day that the kiln produces clinker or fires fuel.

c. *Data Exclusion*: Except for monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments, each CEMS shall monitor and record emissions during all operations including episodes of startups, shutdowns, and malfunctions. Limited amounts of CEMS emissions data recorded during some of these episodes may be excluded from the corresponding compliance demonstration subject to the provisions of Condition 10 of this section. The permittee shall minimize the duration of data excluded for such episodes to the extent practicable.

d. *Availability:* Monitor availability for each CEMS used to demonstrate compliance shall be 95% or greater in any calendar quarter. Monitor availability shall be reported in the quarterly excess emissions report. In the event 95% availability is not achieved, the permittee shall provide the Department with a report identifying the problems in achieving 95% availability and a plan of corrective actions that will be taken to achieve 95% availability. The permittee shall implement the reported corrective actions within the next calendar quarter. Failure to take corrective actions or continued failure to achieve the minimum monitor availability shall be violations of this permit, except as otherwise authorized by the Compliance Authority.

[Rules 62-4.070(3), F.A.C.]

13. Ammonia Injection: A monitoring system to continuously monitor and record the ammonia injection rate of the SNCR system (1-hour block averages) shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations. The injection rate of ammonia solution measured in terms of volumetric flow rate shall be converted to pounds per hour as 100% ammonia. [Rules 62-4.070(3), F.A.C.]

REPORTING AND RECORD KEEPING REQUIREMENTS

14. Operational Records: To demonstrate compliance with the limitations specified in this permit, the owner or operator shall maintain the following records on site. All records shall be made available to the Department and Compliance Authority upon request.

    a. For each 1-hour block of operation, continuously monitor and record the dry preheater feed rate and clinker production rate for each kiln. Records shall also document the dry preheater feed rate and clinker production rate for each consecutive12-month period for each kiln.

    b. Estimates of NH_3/NO_X molar ratio and ammonia injection rate as 100% ammonia.

    {Permitting Note: Clinker production is not directly measured. It is a computed value based on measured preheater feed rate, and fuel and raw material properties.}

    [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

15. Stack Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Compliance Authority on the results of each such test. The required test report shall be filed with the Compliance Authority as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Compliance Authority to determine if the test was properly conducted and the test results properly computed. At a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the information specified in Rule 62-297.310(8), F.A.C. [Rule 62-297.310(8), F.A.C.]

16. Malfunction Notifications: If temporarily unable to comply with any condition of the permit due to breakdown of equipment (malfunction) or destruction by hazard of fire, wind or by other cause, the permittee shall immediately (within one working day) notify the Compliance Authority. Notification shall include pertinent information as to the cause of the problem, and what steps are being taken to correct the problem and to prevent its recurrence, and where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with Department rules. [Rules 62-210.700(6) and 62-4.130, F.A.C.]

17. SIP Quarterly Report: Within 30 days following the end of each calendar quarter, the permittee shall submit a report to the Compliance Authority summarizing: equipment malfunctions resulting in excluded CEMS data and/or excess emissions; and the monitor availability of each CEMS. The report shall contain the information and follow the general format specified in 40 CFR 60.7(c). [Rules 62-4.070(3), 62-4.130, 62-210.700(6), F.A.C., and 40 CFR 60.7]

18. Monitoring for PSD Applicability: The permittee shall monitor the emissions of CO, PM/PM_{10}, SO_2, and VOC from each kiln using the most reliable information available. The permittee shall calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of 5 years following resumption of regular operations after installation of the indirect firing systems. Emissions shall be computed in accordance with Rule 62-210.370, F.A.C. [Rule 62-212.300(1)(e), F.A.C.]

{Note: For reference, definitions of Baseline Actual Emissions, Projected Actual Emissions, Actual Emissions, and Net Emissions Increase are defined below as they appear in 62-210.200, F.A.C.}

Baseline Actual Emissions: The rate of emissions, in tons per year, of a PSD pollutant, as follows:

For an existing emissions unit (other than an electric utility steam generating unit), baseline actual emissions means the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the 10-year period immediately preceding the date a complete permit application is received by the Department, except that the 10-year period shall not include any period earlier than November 15, 1990.

1. The average rate shall include fugitive emissions to the extent quantifiable, and emissions associated with startups and shutdowns.
2. The average rate shall be adjusted downward to exclude any non-compliant emissions that occurred while the source was operating above an emission limitation that was legally enforceable during the consecutive 24-month period.
3. The average rate shall be adjusted downward to exclude any emissions that would have exceeded an emission limitation with which the major stationary source must currently comply, had such major stationary source been required to comply with such limitations during the consecutive 24-month period.
4. For a PSD pollutant, when a project involves multiple emissions units, only one consecutive 24-month period must be used to determine the baseline actual emissions for all the emissions units being changed. A different consecutive 24-month period can be used for each PSD pollutant.
5. The average rate shall not be based on any consecutive 24-month period for which there is inadequate information for determining annual emissions, in tons per year, and for adjusting this amount if required by subparagraphs 2 and 3 above.

Projected Actual Emissions: The maximum annual rate, in tons per year, at which an existing emissions unit is projected to emit a PSD pollutant in any one of the 5 years following the date the unit resumes regular operation after the project, or in any one of the 10 years following that date, if the project involves increasing the emissions unit's design capacity or its potential to emit that PSD pollutant and full utilization of the unit would result in a significant emissions increase or a significant net emissions increase at the major stationary source. One year is one 12-month period. In determining the projected actual emissions, the Department:

(a) Shall consider all relevant information, including historical operational data, the company's own representations, the company's expected business activity and the company's highest projections of business activity, the company's filings with the State or Federal regulatory authorities, and compliance plans or orders, including consent orders; and

(b) Shall include fugitive emissions to the extent quantifiable and emissions associated with startups and shutdowns; and

(c) Shall exclude that portion of the unit's emissions following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions and that are also unrelated to the particular project including any increased utilization due to product demand growth; or

(d) In lieu of using the method set out in paragraphs (a) through (c) above, may be directed by the owner or operator to use the emissions unit's potential to emit, in tons per year.

Actual Emissions: The actual rate of emission of a pollutant from an emissions unit as determined in accordance with the following provisions:

(a) In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during a consecutive 24-month period which precedes the particular date and which is representative of the normal operation of the emissions unit. The Department shall allow the use of a different time period upon a determination that it is more representative of the normal operation of the emissions unit. Actual emissions shall be calculated using the emissions unit's actual operating hours, production rates and types of materials processed, stored, or combusted during the selected time period.

(b) The Department may presume that unit-specific allowable emissions for an emissions unit are equivalent to the actual emissions of the emissions unit provided that such unit-specific allowable emissions limits are federally enforceable.

(c) For any emissions unit that has not begun normal operations on a particular date, actual emissions shall equal the potential emissions of the emissions unit on that date.

Net Emissions Increase: With respect to any PSD pollutant emitted by a major stationary source, the amount by which the sum of the following exceeds zero:

1. The increase in emissions from a particular physical change or change in the method of operation as calculated pursuant to paragraph 62-212.400(2)(a), F.A.C.; and

2. Any other increases and decreases in actual emissions at the major stationary source that are contemporaneous with the particular change and are creditable. Baseline actual emissions for calculating increases and decreases under this subparagraph 62-210.200(200)(a)2., F.A.C., shall be determined as provided in subsection 62-210.200(35), F.A.C., except that subparagraphs 62-210.200(35)(a)3. and (b)4., F.A.C., shall not apply.

19. PSD Applicability Report: For a period of 5 years following resumption of regular operations after installation of the indirect firing systems, the permittee shall report to the Department each unit's annual emissions of CO, PM/PM_{10}, SO_2, and VOC during the preceding calendar year. The report shall be submitted within 60 days after the end of each calendar year and shall contain the following information:

    a. The name, address and telephone number of the owner or operator of the major stationary source;

    b. The annual emissions as calculated pursuant to subparagraph 62-212.300(1)(e)1., F.A.C.;

    c. If the emissions differ from the preconstruction projection, an explanation as to why there is a difference; and

    d. Any other information that the owner or operator wishes to include in the report.

    [Rule 62-212.300(1)(e), F.A.C.]

20. Reagent Optimization Study: The permittee shall submit a report outlining the measures taken and yet to be taken to optimize reagent efficiency and minimize NH_3 oxidation (to NO_X) and NH_3 slip (emissions). The report shall be submitted to the Department no later than June 30, 2007 and shall contain at least the following information:

    a. Documentation of past and present operating data and stream characteristics from the pyroprocessing systems that will provide a baseline evaluation of the preheater systems in terms of performance and emissions, specifically concentrating on NO_X, NH_3, O_2 and CO.

b. Documentation of NH_3 injection at various locations in the system to measure the effect of NH_3 at different temperature ranges and locations throughout the systems and under varying operational modes (e.g. kiln burning and raw material variations).

c. Continuous NO_X stack emissions data and other parameter data as needed in the downcomer or kiln risers to demonstrate the effects of NH_3 injection.

d. Identification of the optimal conditions to achieve the permitted NO_X limitation while minimizing NH_3 consumption and emissions (slip).

[Rule 62-4.070. F.A.C.]

B. Coal Grinding and Transferring

This section of the permit addresses the following emissions unit.

EU ID	Emissions Unit Description
032	Coal Grinding and Transferring

The following new emission points, controlled by fabric filter baghouses, will be added as part of the indirect firing systems:

Point ID	Emissions Point Description
PS-01	#1 Coal Mill Baghouse
PS-02	#2 Coal Mill Baghouse
PS-03	#1 FK Pump Baghouse
PS-04	#2 FK Pump Baghouse
PS-05	#1 Coal Mill Pulverized Fuel Bin
PS-06	#2 Coal Mill Pulverized Fuel Bin

APPLICABLE STANDARDS AND REGULATIONS

1. NSPS Requirements: This unit is subject to 40 CFR 60, Subpart A (Identification of General Provisions) and 40 CFR 60, Subpart Y (Standards of Performance for Coal Preparation Plants). The Department determines that the emissions performance requirements of this permit are as stringent as, or more stringent than the limits imposed by the applicable NSPS provisions. Some separate reporting and monitoring may be required by the individual subpart.

EQUIPMENT AND CONTROLS

2. Indirect Firing System: The permittee is authorized to install indirect firing systems for Kilns 1 and 2 (EU 003 and 014) to reduce the amount of primary air injected with the fuel used in the main kiln burner. The indirect firing system for each kiln includes one pulverized coal bin, one FK pump, and associated fans, filters, and conveying equipment. This system will be incorporated into the existing coal conveying, storage, and handling equipment. [Application; and 62-4.070(3), F.A.C.]

3. Baghouse Controls: Each new emissions point identified above for the new indirect firing systems shall be controlled by a baghouse system. Each required baghouse shall be designed, operated, and maintained to achieve a PM design specification of 0.01 grains per dry standard cubic feet (gr/dscf) and a PM_{10} design specification of 0.007 gr/dscf. [Application; and Rule 62-4.070(3), F.A.C.]

PERFORMANCE REQUIREMENTS

4. Hours of Operation: The hours of operation for this emissions unit are not limited (8760 hours per year). [Rule 62-210.200(PTE), F.A.C.]

EMISSIONS AND TESTING REQUIREMENTS

5. Particulate Matter Standards: Particulate matter emissions from the coal mills (Point ID PS-01 and PS-02) shall not exceed 0.007 gr/dscf of exhaust as determined by EPA method 5. All PM emitted from the baghouse exhaust is assumed to be PM_{10}. These requirements do not waive or vary any applicable NESHAP monitoring or record keeping requirements. [Rule 62-4.070(3), F.A.C.]

6. Visible Emissions Standards: Visible emissions from each baghouse shall not exceed 10% opacity as determined by EPA Method 9. [Rule 62-4.070(3), F.A.C.]

7. Testing Requirements: Emission points PS-01 and PS-02 shall be stack tested to demonstrate initial compliance with the applicable emission standards for PM/PM_{10} and visible emissions. All other emission points shall be tested for visible emissions only. The initial tests shall be conducted within 60 days following startup of the indirect firing system. Thereafter, compliance with the visible emission limits shall be demonstrated during each federal fiscal year (October 1st to September 30th) for all emission points listed above (PS-01 through PS-06). [Rule 62-297.310(7)(a), F.A.C.]

8. Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]

9. Test Methods: Any required tests shall be performed in accordance with the following reference methods and the applicable requirements of Appendix C of this permit, and the applicable NSPS provisions.

Method	Description of Method and Comments
1 - 4	Determination of Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content. Methods shall be performed as necessary to support other methods.
5	Determination of Particulate Matter from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources

REPORTING AND RECORD KEEPING

10. Baghouse O&M Plan: For each baghouse the permittee shall prepare an operation and maintenance (O&M) plan to address proper operation, parametric monitoring, and a schedule for conducting periodic inspections and preventive maintenance. Baghouse inspections and maintenance activities shall be recorded in a written log. The O&M plan shall be submitted to the Compliance Authority prior to the initial compliance tests for this unit. [Rule 62-4.070(3)]

11. Test Reports: For each test conducted, the permittee shall file a test report including the information specified in Rule 62-297.310(8), F.A.C. with the compliance authority no later than 45 days after the last run of each test is completed. [Rules 62-297.310(8), F.A.C.]

12. Notification: The permittee shall notify the compliance authority 5 days prior to startup of the indirect firing system. The notification shall include a tentative schedule for any required initial compliance testing for this unit. [Rule 62-297.310, F.A.C.]

GENERAL CONDITIONS

The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

   a. Have access to and copy and records that must be kept under the conditions of the permit;
   b. Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
   c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

   Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

   a. A description of and cause of non-compliance; and

   b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

   The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida

Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

    a. Determination of Best Available Control Technology ( );
    b. Determination of Prevention of Significant Deterioration ( );
    c. Compliance with National Emssion Standards for Hazardous Air Pollutants ( ); and
    d. Compliance with New Source Performance Standards ( ).

14. The permittee shall comply with the following:

    a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

    b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

    c. Records of monitoring information shall include:

        1) The date, exact place, and time of sampling or measurements;
        2) The person responsible for performing the sampling or measurements;
        3) The dates analyses were performed;
        4) The person responsible for performing the analyses;
        5) The analytical techniques or methods used; and
        6) The results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SECTION IV. APPENDIX SC

STANDARD CONDITIONS

Unless otherwise specified in the permit, the following conditions apply to all emissions units and activities at this facility.

EMISSIONS AND CONTROLS

1. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]

2. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]

3. Excess Emissions Allowed: Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]

4. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]

5. Excess Emissions - Notification: In case of excess emissions resulting from malfunctions, the permitee shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]

6. VOC or OS Emissions: No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]

7. Objectionable Odor Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and62-210.200(203), F.A.C.]

8. General Visible Emissions: No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20 percent opacity. [Rule 62-296.320(4)(b)1, F.A.C.]

9. Unconfined Particulate Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

TESTING REQUIREMENTS

10. Required Number of Test Runs: For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]

11. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. [Rule 62-297.310(2), F.A.C.]

12. Calculation of Emission Rate: For each emissions performance test, the indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. [Rule 62-297.310(3), F.A.C.]

13. Test Procedures: Tests shall be conducted in accordance with all applicable requirements of Chapter 62-297, F.A.C.

    a. Required Sampling Time. Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes. The minimum observation period for a visible emissions compliance test shall be thirty (30) minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur.

    b. Minimum Sample Volume. Unless otherwise specified in the applicable rule or test method, the minimum sample volume per run shall be 25 dry standard cubic feet.

    c. Calibration of Sampling Equipment. Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1, F.A.C.

    [Rule 62-297.310(4), F.A.C.]

14. Determination of Process Variables

    a. Required Equipment. The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.

    b. Accuracy of Equipment. Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

    [Rule 62-297.310(5), F.A.C.]

15. Sampling Facilities: The permittee shall install permanent stack sampling ports and provide sampling facilities that meet the requirements of Rule 62-297.310(6), F.A.C.

16. Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]

17. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information:

    1) The type, location, and designation of the emissions unit tested.

2) The facility at which the emissions unit is located.
3) The owner or operator of the emissions unit.
4) The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
5) The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
6) The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
7) A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
8) The date, starting time and duration of each sampling run.
9) The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
10) The number of points sampled and configuration and location of the sampling plane.
11) For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
12) The type, manufacturer and configuration of the sampling equipment used.
13) Data related to the required calibration of the test equipment.
14) Data on the identification, processing and weights of all filters used.
15) Data on the types and amounts of any chemical solutions used.
16) Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
17) The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
18) All measured and calculated data required to be determined by each applicable test procedure for each run.
19) The detailed calculations for one run that relate the collected data to the calculated emission rate.
20) The applicable emission standard, and the resulting maximum allowable emission rate for the emissions unit, plus the test result in the same form and unit of measure.
21) A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

RECORDS AND REPORTS

18. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rules 62-4.160(14) and 62-213.440(1)(b)2, F.A.C.]

19. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(2), F.A.C.]

Florida Department of Environmental Protection

Memorandum

TO: Joseph Kahn, Director, DARM

Through: Trina L. Vielhauer, Chief, BAR

From: A.A. Linero, P.E., PA/Cindy Mulkey South Permitting Section

DATE: December 18, 2006

SUBJECT: CEMEX Cement, Inc. – Brooksville Cement Plant
DEP File No. 0530010-026-AC

Attached is the Final Permit authorizing installation of indirect firing systems, including (after the fact) burner replacements and SNCR, on Kilns 1 and 2 at the existing CEMEX Cement Plant in Brooksville.

Kilns 1 and 2 were originally equipped with direct firing systems and mono-channel burners. During the spring of 2005, semi-direct firing systems, and SNCR systems were installed on both kilns. Late in 2005 CEMEX applied for an after-the-fact air construction permit for the installation of the burners associated with the semi-direct firing systems, and the installation of the SNCR systems.

In the fall of 2006, CEMEX applied for the installation of indirect firing systems. The indirect firing system now proposed by CEMEX will either use the existing burners installed for the semi-direct systems, or the burners will be replaced again for the new project.

The State Rules in effect at the time the original application for SNCR was received, and actually completed, relied on past actual to future potential emissions comparisons to determine PSD applicability. Therefore, a comparison of past actual to future potential emissions was used for determining PSD applicability for NO_X.

NO_X emission reductions are necessary to avoid PSD and a BACT determination for the SNCR project. This permit includes a NO_X limitation of 1.21 lb/ton of preheater feed (~2.0 lb/ton clinker). This is the lowest NO_X limit of any currently operating kiln in the state of Florida. The SNCR systems provide CEMEX with the ability to comply with the new NO_X limits.

We will also require submittal of a report outlining the measures taken and yet to be taken to optimize reagent efficiency and minimize NH_3 oxidation (to NO_X) and NH_3 slip (emissions). The information will be used by the Department to establish reagent use conditions when processing future permits.

For all other pollutants, a past actual to projected actual comparison was used for determining PSD applicability for the indirect firing systems. We determined that PSD was not triggered for any pollutant based on the information provided by CEMEX.

Comments were received from the applicant and have been addressed in the Final Determination.

We recommend your approval of the attached Final Permit.

AAL/cm

Attachments

HERNANDO TODAY

Published Daily
BROOKSVILLE, HERNANDO, FLORIDA
STATE OF FLORIDA
COUNTY OF HERNANDO:

Before the undersigned authority personally appeared Sylvia Spivey, who on oath says that he/she is Legal Ad Coordinator of the Hernando Today/Hernando Sunday, a daily newspaper published at Brooksville in Hernando County, Florida: that the attached copy of the advertisement, being a Legal Notice ..... in the matter of ...Cemex/Air Construction Permit. dep file# 0530010-026-AC..... in the ...n/a..... Court, was published in said newspaper in the issues of .....November 15, 2006..... .....

Affiant further says that the said Hernando Today/Hernando Sunday is a newspaper published at Brooksville, in said Hernando County, Florida, and that the said newspaper has heretofore been continuously published in said Hernando County, Florida, each week and has been entered as a second class mail matter at the post office in Brooksville, in said Hernando County, Florida for a period of 1 year next preceding the first publication of the attached copy of advertisement; and affiant further says that he/she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Sylvia Spivey
(Signature of Affiant)

Sworn to and subscribed before me this 28 day of November, 2006

Denise Nohejl
(Signature of Notary Public)

DENISE NOHEJL
Notary Public - State of Florida
My Commission Expires Dec 19, 2008
Commission # DD 361938

(Name of Notary typed, printed or stamp)

Personally Known X or
Produced Identification _____
Type of Identification Produced

RECEIVED
NOV 29 2006
BY:.....

Legal Notices

CEMEX/1935130

Public Notice

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP File No.
0530010-026-AC

CEMEX Cement, Inc.
Brooksville Cement Plant
Kilns 1 and 2

Hernando County

The Department of Environmental Protection (Department) gives notice of its intent to issue an Air Construction Permit to CEMEX Cement, Inc. The permit authorizes the installation of indirect firing systems, including after the-fact burner replacements on Kilns 1 and 2, and installation of selective non-catalytic reduction (SNCR) systems on Kilns 1 and 2. The applicant's name and address are CEMEX Cement, Inc, Brooksville Cement Plant, Post Office Box 6, Brooksville, Florida 34605-0006.

The existing facility consists of two dry process preheater kilns (Kilns 1 and 2). Both kilns were originally equipped

of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400 or the e-mail address provided below. Any written comments filed shall be made available for public inspection. If comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen (14) days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen (14) days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service

The application, key correspondence, draft permit and technical evaluation can be accessed at: www.dep.state.fl.us/Air/permitting/construction/cemex.htm.
Publish: November 15, 2006

with direct firing systems and mono-channel burners. The indirect firing system consists of the changeout to kiln burners that use a low amount of the cool, moist primary air from the coal mill to convey pulverized coal into the kiln firing zone. This allows greater use of hot secondary air from the clinker cooler and kiln hood. The result is greater energy efficiency, and in theory less pollution generation. The burners are typically of multichannel design with greater flexibility in the manner by which the fuel and air are mixed and possible flame shapes and lengths. The transition to the indirect firing systems may also involve replacement of, or modifications to, the burners currently in operation.

For each kiln, the indirect firing system will also require the installation of an additional coal mill baghouse, a pulverized coal bin with associated baghouse, and one pump with associated baghouse.

The SNCR system will be used to inject sufficient amounts of aqueous ammonia into the preheater, just above the kiln inlet, to meet a new limit of 1.21 pounds (lb) of nitrogen oxides (NOX) per ton of preheater feed on each kiln. This equates to approximately 2.0 lb NOX/ton of clinker. The current limits are 1.83 and 1.72 lb NOX/ton preheater feed for Kilns 1 and 2 respectively. The use of SNCR for NOX control has been tested and successfully demonstrated at other cement plants in Florida.

Emissions of particulate matter from the new baghouses are expected to be less than 17 tons per year, which is below the significant emission rate that would require PSD review. No significant increases in any other criteria pollutant emissions are expected from the installation of the indirect firing system. Emissions of nitrogen oxides (NOX) will actually decrease due to the SNCR systems if not due to the indirect firing systems. Because there are no significant increases in emissions of criteria pollutants, a PSD review is not required.

The Department will issue the Final Permit, in accordance with the conditions of the Draft Permit, unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of 14 (fourteen) days from the date of publication of this Public Notice of Intent to Issue Permit. Written comments or requests for public meetings should be provided to the Department's Bureau

Legal Notices

purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C. Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Department of Environmental Protection
Bureau of Air Regulation
Southwest District Office
111 S. Magnolia Drive, Suite 4
13051 N. Telecom Parkway
Tallahassee, Florida, 32301
Temple Terrace, Florida 33637-0926
Telephone: 850/488-0114
Telephone: 813/744-6100
Fax: 850/922-6979
Fax: 813/744-6084

The complete project file includes the application, technical evaluation, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact Program Administrator, South Permitting Section, Bureau of Air Regulation at 850/921-8968 or call 850/488-0114 for additional information.

Adams, Patty

From: Harvey, Mary
Sent: Tuesday, December 26, 2006 1:09 PM
To: Adams, Patty; Sheplak, Scott
Subject: FW: FINAL PERMIT #0530010-026-AC - CEMEX Cement, Inc.

From: Nasca, Mara
Sent: Tuesday, December 26, 2006 1:02 PM
To: Harvey, Mary
Cc: Zhang-Torres; Prickett, Patricia; Zell, David
Subject: RE: FINAL PERMIT #0530010-026-AC - CEMEX Cement, Inc.

Thanks Mary

From: Harvey, Mary
Sent: Friday, December 22, 2006 1:10 PM
To: 'michaelanthony.gonzales@cemexusa.com'; 'charles.walz@cemexusa.com'; 'amarjits.gill@cemexusa.com'; Nasca, Mara; 'fbergen@kooglerassociates.com'; 'sfernandez@ohfc.com'; 'Little.James@epamail.epa.gov'; 'jkoogler@kooglerassociates.com'
Subject: FW: FINAL PERMIT #0530010-026-AC - CEMEX Cement, Inc.

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: http://www.adobe.com/products/acrobat/readstep.html.

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you,

DEP, Bureau of Air Regulation

Adams, Patty

From: Harvey, Mary
Sent: Tuesday, December 26, 2006 8:24 AM
To: Adams, Patty
Subject: FW: FINAL PERMIT #0530010-026-AC - CEMEX Cement, Inc.

-----Original Message-----
From: Amarjit S Gill [mailto:amarjits.gill@cemexusa.com]
Sent: Sunday, December 24, 2006 12:36 PM
To: Harvey, Mary
Subject: FW: FINAL PERMIT #0530010-026-AC - CEMEX Cement, Inc.

Return Receipt

Your document:	FW: FINAL PERMIT #0530010-026-AC - CEMEX Cement, Inc.
was received by:	amarjits.gill@cemexusa.com
at:	12/24/2006 11:36:17

Adams, Patty

From: Harvey, Mary
Sent: Tuesday, December 26, 2006 8:24 AM
To: Adams, Patty
Subject: FW: FINAL PERMIT #0530010-026-AC - CEMEX Cement, Inc.

-----Original Message-----
From: michaelanthony.gonzales@cemexusa.com [mailto:michaelanthony.gonzales@cemexusa.com]
Sent: Monday, December 25, 2006 12:58 PM
To: Harvey, Mary
Subject: FW: FINAL PERMIT #0530010-026-AC - CEMEX Cement, Inc.

Return Receipt

Your document:	FW: FINAL PERMIT #0530010-026-AC - CEMEX Cement, Inc.
was received by:	michaelanthony.gonzales@cemexusa.com
at:	12/25/2006 12:57:46 PM EST

Adams, Patty

From: Harvey, Mary
Sent: Friday, December 22, 2006 3:09 PM
To: Adams, Patty; Mulkey, Cindy
Subject: FW: FINAL PERMIT #0530010-026-AC - CEMEX Cement, Inc.

-----Original Message-----
From: Charles E Walz [mailto:charles.walz@cemexusa.com]
Sent: Friday, December 22, 2006 2:14 PM
To: Harvey, Mary
Subject: FW: FINAL PERMIT #0530010-026-AC - CEMEX Cement, Inc.

Return Receipt

Your document:	FW: FINAL PERMIT #0530010-026-AC - CEMEX Cement, Inc.
was received by:	charles.walz@cemexusa.com
at:	12/22/2006 13:14:03

Adams, Patty

From: Harvey, Mary
Sent: Friday, December 22, 2006 3:07 PM
To: Mulkey, Cindy; Adams, Patty
Subject: FW: FINAL PERMIT #0530010-026-AC - CEMEX Cement, Inc.

From: John Koogler [mailto:jkoogler@kooglerassociates.com]
Sent: Friday, December 22, 2006 2:35 PM
To: Harvey, Mary
Cc: Mulkey, Cindy
Subject: RE: FINAL PERMIT #0530010-026-AC - CEMEX Cement, Inc.

Thanks Cindy and Mary. Have a good Christmas.

John

John B Koogler
Koogler & Associates, Inc
4014 NW 13th St
Gainesville, Fl 32609
352/377-5822
jkoogler@kooglerassociates.com

From: Harvey, Mary [mailto:Mary.Harvey@dep.state.fl.us]
Sent: Friday, December 22, 2006 1:10 PM
To: michaelanthony.gonzales@cemexusa.com; charles.walz@cemexusa.com; amarjits.gill@cemexusa.com; Nasca, Mara; fbergen@kooglerassociates.com; sfernandez@ohfc.com; Little.James@epamail.epa.gov; jkoogler@kooglerassociates.com
Subject: FW: FINAL PERMIT #0530010-026-AC - CEMEX Cement, Inc.

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: http://www.adobe.com/products/acrobat/readstep.html.

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you,

DEP, Bureau of Air Regulation

Adams, Patty

From: Harvey, Mary
Sent: Friday, December 22, 2006 1:54 PM
To: Mulkey, Cindy; Adams, Patty
Subject: FW: FINAL PERMIT #0530010-026-AC - CEMEX Cement, Inc.

From: Nasca, Mara
Sent: Friday, December 22, 2006 1:48 PM
To: Harvey, Mary
Subject: Read: FW: FINAL PERMIT #0530010-026-AC - CEMEX Cement, Inc.

Your message

To:	'michaelanthony.gonzales@cemexusa.com'; 'charles.walz@cemexusa.com'; 'amarjits.gill@cemexusa.com'; Nasca, Mara; 'fbergen@kooglerassociates.com'; 'sfernandez@ohfc.com'; 'Little.James@epamail.epa.gov'; 'jkoogler@kooglerassociates.com'
Subject:	FW: FINAL PERMIT #0530010-026-AC - CEMEX Cement, Inc.
Sent:	12/22/2006 1:10 PM

was read on 12/22/2006 1:48 PM.

Adams, Patty

From: Harvey, Mary
Sent: Friday, December 22, 2006 1:11 PM
To: Mulkey, Cindy; Adams, Patty; Gibson, Victoria
Subject: FW: FINAL PERMIT #0530010-026-AC - CEMEX Cement, Inc.
Attachments: 0530010.026.AC.F_pdf.zip

From: Harvey, Mary
Sent: Friday, December 22, 2006 1:10 PM
To: 'michaelanthony.gonzales@cemexusa.com'; 'charles.walz@cemexusa.com'; 'amarjits.gill@cemexusa.com'; Nasca, Mara; 'fbergen@kooglerassociates.com'; 'sfernandez@ohfc.com'; 'Little.James@epamail.epa.gov'; 'jkoogler@kooglerassociates.com'
Subject: FW: FINAL PERMIT #0530010-026-AC - CEMEX Cement, Inc.

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: http://www.adobe.com/products/acrobat/readstep.html.

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you,

DEP, Bureau of Air Regulation

Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
Telephone: (850) 488-0114 FAX: (850) 922-6979

Colleen M. Castille
Secretary

November 3, 2006

Electronically sent – Received Receipt requested.

Mr. Michael A. Gonzales, Plant Manager
CEMEX Cement, Inc.
Post Office Box 6
Brooksville, Florida 34605-006

Re: DEP File No. 0530010-026-AC
Indirect Firing System/SNCR
Brooksville Plant – Kilns 1 and 2

Dear Mr. Gonzales:

Enclosed is one copy of the Draft Air Construction Permit to install indirect firing systems and selective non-catalytic reduction (ammonia injection) on Kilns 1 and 2 for the Brooksville Cement Plant on U.S. Highway 98, Brooksville, Hernando County. The Department's Intent to Issue Air Construction Permit, the Technical Evaluation, and the "Public Notice of Intent to Issue Air Construction Permit" are also included.

The "Public Notice" must be published one time only as soon as possible in a newspaper of general circulation in the area affected, pursuant to the requirements of Chapter 50, Florida Statutes. Proof of publication, such as a newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in denial of the permit.

Please submit any written comments you wish to have considered concerning the Department's proposed action to A.A. Linero, Program Administrator, at the letterhead address. If you have any questions regarding this matter, please contact Cindy Mulkey at (850)921-8968 or Mr. Linero at (850)921-9523.

Sincerely,

Trina L Vielhauer

Trina Vielhauer, Chief
Bureau of Air Regulation

TLV/aal/cm

Enclosures

Memorandum

Florida Department of Environmental Protection

TO: Trina Vielhauer

THROUGH: Al Linero

FROM: Cindy Mulkey

DATE: November 2, 2006

SUBJECT: CEMEX Cement, Inc. - Brooksville
Indirect Firing Systems, new burners, and SNCR on Kilns 1 & 2
DEP File No. 0530010-026-AC

Attached is the Intent to Issue package for the installation of indirect firing systems, including (after the fact) burner replacements, on Kilns 1 and 2 at the existing CEMEX Cement Plant in Brooksville. We included in this action their unprocessed request for (after the fact) installation of selective non-catalytic reduction (SNCR) systems on both kilns.

The new indirect firing system makes it possible to use less moist, cool air from the coal mill as primary air in the main kiln burner and allows greater use of hot secondary air from the kiln hood/clinker cooler. The new burner design is an integral part of the indirect firing system and is consistent with the principles of a "Low NO_X" kiln burner.

In principle the net overall effect of the indirect firing system and new burners should be less fuel consumption. The burner can provide greater combustion control. We would expect the same or lower kiln emissions of all pollutants, if all other factors are equal. There will be a small increase in PM/PM_{10} due to six new emission points for baghouses related to pulverized coal/air conveyance and separation.

The SNCR systems (already installed) provide CEMEX with the ability to comply with their present NO_X limits (and lower) following their installation of semi-direct firing systems with new kiln burners (accomplished without permits).

The applicant submitted information for the indirect firing project showing there will not be significant emission increases on the basis of "past actual to future actual" emissions. However, the applicant had already submitted an earlier request for the pre-installed SNCR and semi-direct firing projects based on the "past actual to future potential" emissions test for PSD applicability. That submittal indicated it is necessary to reduce the NO_X emission limits to avoid PSD and a BACT determination. Because they installed the systems when the previous rules were applicable, we drafted this permit with a NO_X limitation of 1.21 lb/ton of preheater feed (~2.0 lb/ton clinker) based on the previous PSD rules.

Because SO_2 emissions are minimal from cement kilns in Florida, very little particulate matter can be formed by reaction with excess NH_3 emissions (slip). Although there is no reason to inject as much NH_3 as it takes to react with all NO_X, the Department will limit the maximum NH_3 injection rate to that level, at a molar ratio of 1.0 as a further precaution to ensure minimal particulate formation. According to the applicant, for a reduction from 4.0 to 2.0 lb/ton of clinker, the required molar ratio is in the range of 0.6-0.7.

We may need to set BACT or PSD avoidance limitations on other pollutants upon completion of tire or petcoke usage trials.

We determined that the indirect firing project does not trigger PSD on the basis of base-line actual to future actual emissions information provided by CEMEX.

We recommend your approval of the attached Intent to Issue.

AAL/cm

Attachments

Adams, Patty

From: Harvey, Mary

Sent: Friday, November 03, 2006 3:34 PM

To: 'michaelanthony.gonzales@cemexusa.com'; 'charles.walz@cemexusa.com'; 'amarjits.gill@cemexusa.com'; Nasca, Mara; 'fbergen@kooglerassociates.com'; 'sfernandez@ohfc.com'; 'Little.James@epamail.epa.gov'

Cc: Mulkey, Cindy; Adams, Patty; Gibson, Victoria

Subject: Permit Facility #0530010-026-AC-D - CEMEX Cement, Inc.

Attachments: 0530010.026.AC.D_pdf[1].zip

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: http://www.adobe.com/products/acrobat/readstep.html.

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you,

DEP, Bureau of Air Regulation

Adams, Patty

From: Harvey, Mary
Sent: Monday, November 06, 2006 8:58 AM
To: Adams, Patty
Subject: FW: Permit Facility #0530010-026-AC-D - CEMEX Cement, Inc.

From: Segundo J. Fernandez [mailto:sfernandez@ohfc.com]
Sent: Friday, November 03, 2006 3:55 PM
To: Harvey, Mary
Subject: Read: Permit Facility #0530010-026-AC-D - CEMEX Cement, Inc.

Your message

To: sfernandez@ohfc.com
Subject:

was read on 11/3/2006 3:55 PM.

Adams, Patty

From: Harvey, Mary
Sent: Monday, November 06, 2006 8:57 AM
To: Adams, Patty
Subject: FW: Permit Facility #0530010-026-AC-D - CEMEX Cement, Inc.

From: charles.walz@cemexusa.com [mailto:charles.walz@cemexusa.com]
Sent: Friday, November 03, 2006 4:16 PM
To: Harvey, Mary
Subject: Re: Permit Facility #0530010-026-AC-D - CEMEX Cement, Inc.

Yes I have received these documents.

Thanks.

Charles Walz
Environmental Manager
CEMEX Brooksville Cement Plant
352-799-2011
Charles.Walz@CEMEXUSA.COM

Adams, Patty

From: Harvey, Mary
Sent: Monday, November 06, 2006 8:56 AM
To: Adams, Patty
Subject: FW: Permit Facility #0530010-026-AC-D - CEMEX Cement, Inc.

-----Original Message-----
From: michaelanthony.gonzales@cemexusa.com [mailto:michaelanthony.gonzales@cemexusa.com]
Sent: Friday, November 03, 2006 5:15 PM
To: Harvey, Mary
Subject: Permit Facility #0530010-026-AC-D - CEMEX Cement, Inc.

Return Receipt

Your document:	Permit Facility #0530010-026-AC-D - CEMEX Cement, Inc.
was received by:	michaelanthony.gonzales@cemexusa.com
at:	11/03/2006 05:14:35 PM EST

Adams, Patty

From: Harvey, Mary
Sent: Monday, November 06, 2006 8:56 AM
To: Adams, Patty
Subject: FW: Permit Facility #0530010-026-AC-D - CEMEX Cement, Inc.

-----Original Message-----
From: ivonee.delrio@cemexusa.com [mailto:ivonee.delrio@cemexusa.com]
Sent: Friday, November 03, 2006 4:51 PM
To: Harvey, Mary
Subject: Permit Facility #0530010-026-AC-D - CEMEX Cement, Inc.

Return Receipt

Your document:	Permit Facility #0530010-026-AC-D - CEMEX Cement, Inc.
was received by:	ivonee.delrio@cemexusa.com
at:	11/03/2006 03:50:42 PM

Adams, Patty

From: Harvey, Mary
Sent: Monday, November 06, 2006 8:55 AM
To: Adams, Patty
Subject: FW: Permit Facility #0530010-026-AC-D - CEMEX Cement, Inc.

From: Nasca, Mara
Sent: Friday, November 03, 2006 9:17 PM
To: Harvey, Mary
Subject: Read: Permit Facility #0530010-026-AC-D - CEMEX Cement, Inc.

Your message

To:	'michaelanthony.gonzales@cemexusa.com'; 'charles.walz@cemexusa.com'; 'amarjits.gill@cemexusa.com'; Nasca, Mara; 'fbergen@kooglerassociates.com'; 'sfernandez@ohfc.com'; 'Little.James@epamail.epa.gov'
Cc:	Mulkey, Cindy; Adams, Patty; Gibson, Victoria
Subject:	Permit Facility #0530010-026-AC-D - CEMEX Cement, Inc.
Sent:	11/3/2006 3:34 PM

was read on 11/3/2006 9:17 PM.

Adams, Patty

From: Harvey, Mary
Sent: Monday, November 06, 2006 2:10 PM
To: Adams, Patty
Subject: FW: Permit Facility #0530010-026-AC-D - CEMEX Cement, Inc.

From: Fawn Bergen [mailto:fbergen@kooglerassociates.com]
Sent: Monday, November 06, 2006 1:01 PM
To: Harvey, Mary
Subject: RE: Permit Facility #0530010-026-AC-D - CEMEX Cement, Inc.

I received the email.

Fawn W. Bergen, PE
Project Engineer
Koogler & Associates, Inc.
4014 NW 13th Street
Gainesville, FL 32609
(352)377-5822 x29
(352)377-7158 fax
fbergen@kooglerassociates.com

From: Harvey, Mary [mailto:Mary.Harvey@dep.state.fl.us]
Sent: Friday, November 03, 2006 3:34 PM
To: michaelanthony.gonzales@cemexusa.com; charles.walz@cemexusa.com; amarjits.gill@cemexusa.com; Nasca, Mara; fbergen@kooglerassociates.com; sfernandez@ohfc.com; Little.James@epamail.epa.gov
Cc: Mulkey, Cindy; Adams, Patty; Gibson, Victoria
Subject: Permit Facility #0530010-026-AC-D - CEMEX Cement, Inc.

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: http://www.adobe.com/products/acrobat/readstep.html.

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you,

In the Matter of an
Application for Permit by:

CEMEX Cement, Inc
Post Office Box 6
Brooksville, Florida 34605-0006

Authorized Representative:
Mr. Michael A. Gonzales, Plant Manager

DEP File No. 0530010-026-AC
Brooksville Cement Plant Kilns 1 and 2
Installation of Indirect Firing Systems
Selective Non-Catalytic Reduction System
Hernando County, Florida

INTENT TO ISSUE AIR CONSTRUCTION PERMIT

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit, copy of Draft Permit attached, for the proposed project as detailed in their applications and the attached Technical Evaluation for the reasons stated below.

The applicant, CEMEX Cement, Inc., applied on August 22, 2006 to the Department for a permit to install indirect firing systems on Kilns 1 and 2, and for after-the-fact authorization for burner replacements on Kilns 1 and 2 at the existing Brooksville Cement Plant northwest of Brooksville in Hernando County. Each of the indirect firing systems will include an additional coal mill baghouse, and a pulverized coal bin and pump with associated baghouses. The transition to the indirect firing systems may also involve replacement of, or modifications to, the burners currently in operation. An earlier application, received on October 14, 2005, included installation of selective non-catalytic reduction for both kilns.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212. The above actions are not exempt from permitting procedures. The Department has determined that an Air Construction Permit is required.

The Department intends to issue this air construction permit based on the belief that reasonable assurances have been provided to indicate that operation of these emissions units will not adversely impact air quality, and the emissions units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297, F.A.C.

Pursuant to Section 403.815, F.S., and Rule 62-110.106(7)(a)1., F.A.C., you (the applicant) are required to publish at your own expense the enclosed Public Notice of Intent to Issue Permit. The notice shall be published one time only in the legal advertisement section of a newspaper of general circulation in the area affected. Rule 62-110.106(7)(b), F.A.C., requires that the applicant cause the notice to be published as soon as possible after notification by the Department of its intended action. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 850/488-0114; Fax 850/ 921-9533). You must provide proof of publication within seven days of publication, pursuant to Rule 62-110.106(5), F.A.C. No permitting action for which published notice is required shall be granted until proof of publication of notice is made by furnishing a uniform affidavit in substantially the form prescribed in section 50.051, F.S. to the office of the Department issuing the permit. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rules 62-110.106(9) & (11), F.A.C.

The Department will issue the final permit with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of 14 (fourteen) days from the date of publication of the enclosed Public Notice of Intent to Issue Permit. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by
Rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above. Mediation is not available in this proceeding.

Executed in Tallahassee, Florida.

Trina L. Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Intent to Issue Air Construction Permit (including the Public Notice, Technical Evaluation, and the Draft permit) and all copies were sent electronically (with Received Receipt) before the close of business on 11/3/06 to the persons listed:

Michael A. Gonzales, CEMEX (michaelanthony.gonzales@cemexusa.com)
Charles Walz, CEMEX (charles.walz@cemexusa.com)
Amarjits Gill, CEMEX (amarjits.gill@cemexusa.com)
Mara Nasca, DEP SWD (mara.nasca@dep.state.fl.us)
Fawn Bergen, P.E., K&A (fbergen@kooglerassociates.com)
Segundo J. Fernandez, Esq., OHF&C (sfernandez@ohfc.com)
Jim Little, EPA Region 4 (Little.James@epamail.epa.gov)

Clerk Stamp

FILING AND ACKNOWLEDGMENT
FILED, on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

(Clerk) 11/3/06 (Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP File No. 0530010-026-AC

CEMEX Cement, Inc.
Brooksville Cement Plant Kilns 1 and 2

Hernando County

The Department of Environmental Protection (Department) gives notice of its intent to issue an Air Construction Permit to CEMEX Cement, Inc. The permit authorizes the installation of indirect firing systems, including after-the-fact burner replacements on Kilns 1 and 2, and installation of selective non-catalytic reduction (SNCR) systems on Kilns 1 and 2. The applicant's name and address are CEMEX Cement, Inc, Brooksville Cement Plant, Post Office Box 6, Brooksville, Florida 34605-0006.

The existing facility consists of two dry process preheater kilns (Kilns 1 and 2). Both kilns were originally equipped with direct firing systems and mono-channel burners. The indirect firing system consists of the change-out to kiln burners that use a low amount of the cool, moist primary air from the coal mill to convey pulverized coal into the kiln firing zone. This allows greater use of hot secondary air from the clinker cooler and kiln hood. The result is greater energy efficiency, and in theory less pollution generation. The burners are typically of multi-channel design with greater flexibility in the manner by which the fuel and air are mixed and possible flame shapes and lengths. The transition to the indirect firing systems may also involve replacement of, or modifications to, the burners currently in operation.

For each kiln, the indirect firing system will also require the installation of an additional coal mill baghouse, a pulverized coal bin with associated baghouse, and one pump with associated baghouse.

The SNCR system will be used to inject sufficient amounts of aqueous ammonia into the preheater, just above the kiln inlet, to meet a new limit of 1.21 pounds (lb) of nitrogen oxides (NO_X) per ton of preheater feed on each kiln. This equates to approximately 2.0 lb NO_X/ton of clinker. The current limits are 1.83 and 1.72 lb NO_X/ton preheater feed for Kilns 1 and 2 respectively. The use of SNCR for NO_X control has been tested and successfully demonstrated at other cement plants in Florida.

Emissions of particulate matter from the new baghouses are expected to be less than 17 tons per year, which is below the significant emission rate that would require PSD review. No significant increases in any other criteria pollutant emissions are expected from the installation of the indirect firing system. Emissions of nitrogen oxides (NO_X) will actually decrease due to the SNCR systems if not due to the indirect firing systems. Because there are no significant increases in emissions of criteria pollutants, a PSD review is not required.

The Department will issue the Final Permit, in accordance with the conditions of the Draft Permit, unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of 14 (fourteen) days from the date of publication of this Public Notice of Intent to Issue Permit. Written comments or requests for public meetings should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400 or the e-mail address provided below. Any written comments filed shall be made available for public inspection. If comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must

contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen (14) days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen (14) days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C. Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida, 32301
Telephone: 850/488-0114
Fax: 850/922-6979

Department of Environmental Protection
Southwest District Office
13051 N. Telecom Parkway
Temple Terrace, Florida 33637-0926
Telephone: 813/744-6100
Fax: 813/744-6084

The complete project file includes the application, technical evaluation, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact Program Administrator, South Permitting Section, Bureau of Air Regulation at 850/921-8968 or call 850/488-0114 for additional information. The application, key correspondence, draft permit and technical evaluation can be accessed at: www.dep.state.fl.us/Air/permitting/construction/cemex.htm

PERMITTEE:

CEMEX Cement, Inc.
Post Office Box 6
Brooksville, Florida 34605-0006

Authorized Representative:
Michael A. Gonzales, Plant Manager

DEP File No. 0530010-026-AC
Brooksville Cement Plant Kilns 1 and 2
SNCR and Indirect Firing Systems
Hernando County, Florida
Expiration date: June 30, 2007

PROJECT AND LOCATION

This permit authorizes installation of indirect firing systems, including after-the-fact authorization for burner replacements on Kilns 1 and 2, and installation of selective non-catalytic reduction systems on Kilns 1 and 2 at CEMEX Cement's Brooksville portland cement plant. For each kiln, the indirect firing system will also require the installation of an additional coal mill baghouse, a pulverized coal bin with associated baghouse, and a pump with associated baghouse. The transition to the indirect firing systems may involve replacement of, or modifications to, the burners currently in operation. The existing plant is located on Highway 98, northwest of Brooksville, in Hernando County, Florida.

STATEMENT OF BASIS

This permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to perform the proposed work in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department). This permit supplements all other air construction and operation permits for the affected emissions units and does not alter any requirements from such previously issued air permits.

The attached Appendices are made a part of this permit:

Appendix GC	Construction Permit General Conditions
Appendix SC	Standard Conditions

(DRAFT)

Joseph Kahn, Director
Division of Air Resource Management

FACILITY DESCRIPTION

The existing facility consists of two Polysius GEPOL preheater kilns (Kilns 1 and 2), two clinker coolers and associated raw mills, finish mills, cement and clinker handling equipment, coal handling equipment, silos, and air pollution control devices. The nominal capacity of each kiln is 780,000 ton per year of clinker. The plant is located on Highway 98, northwest of Brooksville in Hernando County, Florida.

PROJECT DESCRIPTION

The projects under this permit include installation of indirect firing systems and selective non-catalytic reduction (SNCR) systems on Kilns 1 and 2. The indirect firing system project includes previous replacement of the older generation kiln burners with multi-channel burners, and the cyclones, fans, and fuel injectors associated with the indirect firing systems on Kilns 1 and 2. Modification to, or replacement of, the burners currently in operation may be necessary for completion of the indirect firing system. This project also authorizes the installation of an additional coal mill baghouse, a pulverized coal bin with associated baghouse, and one FK pump with associated baghouse all of which are needed to change to the indirect firing system on each kiln.

The SNCR project utilizes injection of ammonia solutions near the lowest part of the preheater. The equipment consists of a storage tank, piping, pumps, compressed air and one or more injectors.

EMISSIONS UNITS

This permit addresses the following emissions units:

EU ID	Emissions Unit Description
003	Cement Kiln No. 1
014	Cement Kiln No. 2
XXX	Coal Grinding and Transferring

REGULATORY CLASSIFICATION

Title I, Section 111, Clean Air Act (CAA): This facility is subject to certain Standards of Performance for New Stationary Sources. They are adopted and incorporated by reference in Rule 62-204.800, F.A.C. These inlcude:

- 40 CFR 60, Subpart A - General Provisions.
- 40 CFR 60, Subpart F - Standards of Performance for Portland Cement Plants. Certain requirements from Subpart F are replaced by requirements from 40 CFR 63, Subpart LLL listed below.
- 40 CFR 60, Subpart Y - Standards of Performance for Coal Preparation Plants.
- 40 CFR 60, Subpart OOO - New Source Performance Standards For Nonmetallic Mineral Processing Plants.

Title I, Section 112 CAA: The facility has the potential to emit 10 tons per year or more of any one hazardous air pollutant (HAP) or 25 tons per year or more of any combination of HAPs. This facility is subject to the Major Source provisions of:

- 40 CFR 63 Subparts A - National Emission Standards for Hazardous Air Pollutants – General Provisions.
- 40 CFR, Subpart LLL - National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry.

Title I, Part C (PSD): The facility is located in an area designated as "attainment", "maintenance", or "unclassifiable" for each pollutant subject to a National Ambient Air Quality Standard. The facility is considered a "portland cement plant", which is one of the 28 Prevention of Significant Deterioration (PSD) source categories with the lower PSD applicability threshold of 100 tons per year. Potential emissions of at least one regulated pollutant exceed 100 tons per year. Therefore, the facility is classified as a PSD-major source of air pollution with respect to Rule 62-212.400, F.A.C., Prevention of Significant Deterioration.

Title IV, CAA: The facility does not operate any units subject to the Acid Rain provisions of the Clean Air Act.

Title V, CAA: The facility is a Title V or "Major Source" of air pollution because the potential emissions of at least one regulated pollutant exceed 100 tons per year or because it is a major source of HAPS. Regulated pollutants include pollutants such as carbon monoxide (CO), nitrogen oxides (NO_X), particulate matter (PM/PM_{10}), sulfur dioxide (SO_2), and volatile organic compounds (VOC).

State Rules: The cement plant is subject to state Rule 62-296.407, F.A.C. (Portland Cement Plants).

PERMITTING AUTHORITY

All documents related to applications for permits to construct, operate or modify an emissions unit shall be submitted to the Bureau of Air Regulation of the Florida Department of Environmental Protection (DEP) at 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400. Copies of all such documents shall also be submitted to the Compliance Authority.

COMPLIANCE AUTHORITY

All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Department of Environmental Protection Southwest District, 13051 N. Telecom Parkway, Temple Terrace, Florida 33637-3767.

RELEVANT DOCUMENTS

The documents listed below are not a part of this permit; however, this information is specifically related to the permitting action and is on file with the Department.

- Application for installation of SNCR systems received October 14, 2005.
- Application for installation of indirect firing systems and kiln burner replacement received August 22, 2006.
- Application revision received September 5, 2006.
- Additional details received September 15, 2006.
- Department's Technical Evaluation and Preliminary Determination issued November 3, 2006.
- Department's Final Determination issued concurrently with this Final Permit.

1. General Conditions: The permittee shall operate under the attached General Conditions listed in Appendix GC of this permit. General Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [Rule 62-4.160, F.A.C.]

2. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of the subject emissions unit shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403 of the Florida Statutes (F.S.); Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.); and the Title 40, Parts 51, 52, 60, and 63 of the Code of Federal Regulations (CFR), adopted by reference in Rule 62-204.800, F.A.C. The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]

3. Construction and Expiration: Authorization to construct shall expire if construction is not commenced within 18 months after receipt of the permit, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. The Department may extend the 18-month period upon a satisfactory showing that an extension is justified.
[Rules 62-4.070(4), 62-4.080, and 62-210.300(1), F.A.C.]

4. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]

5. Source Obligation:

   a. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   b. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   [Rule 62-212.400(12), F.A.C.]

6. Modifications: No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Chapters 62-210 and 62-212, F.A.C.]

7. Title V Permit: This permit authorizes construction or modification of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V operation permit is required for regular operation of the permitted emissions units. The permittee shall apply for a Title V operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220 and Chapter 62-213, F.A.C.]

A. Cement Kilns 1 and 2 (EU ID 003 and 014)

This section of the permit addresses the following existing emissions unit.

Emissions Unit 003 and 014 (Kilns 1 and 2)
Description: Dry preheater process kiln and clinker cooler systems employing the Polysius GEPOL preheater design.
Fuels: Each kiln is limited to a fuel heat input of 300 million British thermal units (MMBtu) per hour. Allowable fuels include: coal, Nos. 2, 4, 5, and 6 fuel oil, natural gas, and on-site generated non-hazardous waste used oil and grease. Kiln No. 1 is also permitted to fire whole tire derived fuel.
Capacity: Each kiln is limited to 150 tons of preheater feed per hour (rolling 30-day average), with a maximum of 165 tons in any one hour, and a maximum annual limit of 1,300,000 TPY.
Controls: A baghouse is used on each kiln for the control of PM emissions. Raw material properties, chemical reactions in the kiln, absorption into the clinker, and combustion controls minimize emissions of NO_X, SO_2, CO, and VOC. SNCR has been installed for NO_X control.
Monitors: Emissions of CO and NO_X are continuously monitored on both kilns.
Stack Parameters:
The stack for Kiln No. 1 has the following characteristics: stack height is 150 feet, exit diameter is 13 feet, exit temperature is 285 °F, and actual volumetric flow rate is approximately 315,000 acfm.
The stack for Kiln No. 2 has the following characteristics: stack height is 105 feet, exit diameter is 14 feet, exit temperature is 250 °F, and actual volumetric flow rate is approximately 315,000 acfm.

ADMINISTRATIVE REQUIREMENTS

1. Relation to Other Permits: The conditions of this permit, unless otherwise noted, are in addition to those of any other air construction or operation permits. [Rule 62-4.030, 62-4.210, and 62-210.300(1)(b), F.A.C.]

EQUIPMENT AND CONTROL TECHNOLOGY

2. NO_X Controls:

   a) Low-NO_X Burners: This permit authorizes the previous installation of multi-channel, low-NO_X burners on kilns 1 and 2 including the associated fuel injection systems. The low-NO_X burners will create distinct combustion zones within the flame. An indirect firing system will be used to reduce the amount of primary air injected with the fuel used in the main kiln burner. This permit also authorizes the replacement of, or modification to, the currently installed burners if necessary for optimization of the indirect firing system. [Application; Rule 62-4.070(3), F.A.C.]

   b) Selective Non-Catalytic Reduction (SNCR): This permit authorizes the installation of an SNCR system designed, constructed and capable of lowering NO_X emissions in the kiln exhaust to meet the NO_X emission limits of this permit on each kiln. The SNCR systems consists of an aqueous ammonia tank, pumps, piping, compressed air delivery, injectors, control systems, and other ancillary equipment. Aqueous ammonia solution will be injected at a location(s) in the preheater with an appropriate temperature profile to support the SNCR process. The systems shall be operated and maintained to continuously meet the required NO_X emissions limits.
   [Applicant Request; Rules 62-4.070, and 62-210.650, F.A.C.]

PERFORMANCE REQUIREMENTS

3. Process Rate Limitations: The maximum process dry preheater feed rate for each kiln shall not exceed 165 tons per hour (one-hour maximum) and 150 tons per hour (rolling 30-operating day average). In addition to the short-term preheater feed rate limits, the dry preheater feed rate for each kiln shall not exceed 1,300,000 tons during any consecutive 12-month period. [Application; Rule 62-4.070(3), F.A.C.; construction permits AC27-186923, AC27-240349, AC-258571, and 0530010-003-AC]

4. Ammonia Injection Rate: The ammonia injection rate shall not exceed 133 pounds per hour (1-hour block as 100% ammonia) in order to minimize ammonia emissions (slip). The concentration of stored ammonia solutions shall be less than 20 percent (%) by weight. [Applicant Request; Rule 62-4.070, F.A.C.]

{Note: The maximum ammonia injection rate is approximately equivalent to an NH_3/NO_X molar ratio of 1.0 presuming baseline uncontrolled NO_X emissions of 4 lb/ton of clinker. The stored ammonia concentration limitation avoids the requirement to prepare a Risk Management Plan pursuant to Section 112r of the Clean Air Act for this activity.}

EMISSIONS AND TESTING REQUIREMENTS

5. Emissions Standards: Upon complete installation of the indirect firing system, but no later than June 30, 2007 emissions from each kiln shall not exceed the following emissions standards for NO_X. These limits replace any previous NO_X emission limits for Kilns 1 and 2.

Pollutant	Emission Limit	Averaging Time	Compliance Method	Basis
NO_X	1.21 lb/ton of dry preheater feed	30-day rolling	CEMS	Applicant Request/ PSD Avoidance
	181.5 lb/hr (as NO_2)			

NO_X emissions from each kiln shall not exceed 1.21 lb/ton of dry preheater feed and 181.5 lb/hour on a rolling 30-operating day average as measured by the required CEMS. Mass emission rates for NO_X shall be calculated as NO_2.

{Note: In combination with the annual dry preheater feed rate limitation of 1,300,000 tons per year per kiln, the above emissions standard effectively limits annual potential NO_X emissions from each unit to 786.5 tons/year. The NO_X limit is equivalent to approximately 2.0 lb/ton of clinker.}

[Applicant Request; Rules 62-4.070(3), 62-212.400(12), F.A.C.]

6. Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]

7. Supplemental Dioxin/Furan and PM/PM10 Tests: The owner or operator shall notify the Compliance Authority prior to initiating any significant change in the feed or fuel used in the most recent compliant performance test for dioxin/furan or PM/PM10. For purposes of this condition, a significant change includes but is not limited to the following: a physical or chemical change in the kiln feed material or fuel from that which was used in the most recent compliant performance test; the use of a raw material not previously used; a change in the percentage of a raw material employed in the mix design; a change in the Loss on Ignition ("LOI") of the fly ash; a change in the use of non-beneficiated fly ash or beneficiated fly ash; an increase in

the levels of total chlorine/chloride or total hydrocarbons in kiln feed materials or fuels above those levels where compliance has been demonstrated through performance testing; changes in the exhaust gas cooling system including the addition, deletion or movement of dampers; and changes to the combustion system or its operation. Use of a particular feed mix, fuel, or cooling system configuration for which compliance with the D/F and PM emission limits has previously been demonstrated, shall not be considered a significant change. [Rule 62-4.070(3), F.A.C. and 40 CFR 63.1349]

EXCESS EMISSIONS

{Note: The following conditions apply only to the SIP-based emissions standards specified in condition 5 of this section. Rule 62-210-700, F.A.C. (Excess Emissions) cannot vary or supersede any federal provision of the NSPS or the NESHAP programs.}

8. Definitions:

   a. *Startup* is defined as the commencement of operation of any emissions unit which has shut down or ceased operation for a period of time sufficient to cause temperature, pressure, chemical or pollution control device imbalances, which result in excess emissions.

   b. *Shutdown* means the cessation of the operation of an emissions unit for any purpose.

   c. *Malfunction* means any unavoidable mechanical and/or electrical failure of air pollution control equipment or process equipment or of a process resulting in operation in an abnormal or unusual manner.

   [Rule 62-210.200 (186, 263, and 279), F.A.C.]

9. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. All such preventable emissions shall be included in any compliance determinations based on CEMS data. [Rules 62-210.650, and 62-210.700(4),F.A.C.]

10. Allowable Data Exclusions: Each 30-day rolling average shall include all periods of operation (including startup, shutdown, and malfunction), but may exclude limited periods due to malfunctions of the SNCR system. "Malfunctions of the SNCR system" are defined as any unavoidable mechanical and/or electrical failure that prevents introduction of ammonia-based solutions into the kiln system. No more than 30 hours in any calendar month shall be excluded from the compliance determinations due to malfunctions of the SNCR system. This data may be excluded from the compliance demonstrations only in accordance with the above requirements, provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions are minimized. As provided by the authority in Rule 62-210.700(5), F.A.C., this condition replaces the provisions in Rule 62-210.700(1), F.A.C.

    The permittee shall notify the Compliance Authority within one working day of discovering any emissions in excess of a CEMS standard subject to the specified averaging period. Within one working day of occurrence, the owner or operator shall notify the Compliance Authority of any malfunction resulting in the exclusion of CEMS data. All such reasonably preventable emissions shall be included in any CEMS compliance determinations. All valid emissions data (including data collected during startup, shutdown and malfunction) shall be used to report emissions for the Annual Operating Report.

    [Rules 62-210.200, and 62-210.700, F.A.C.]

CONTINUOUS MONITORING REQUIREMENTS

11. CEMS Systems: The NO_X CEMS shall be operated and maintained to measure and record the emissions of NO_X in each kiln system exhaust stack in a manner sufficient to demonstrate continuous compliance with the emission limits specified in this permit. The CEMS shall express the results in 1-hr averages in units of pounds per ton of dry kiln feed, pounds per ton of clinker produced, pounds per hour, and ppmvd (parts per million dry volume).

    a. *NO_X Monitors:* The NO_X monitors' span values shall be set appropriately, considering the expected range of emissions and corresponding emission standards.

    b. *Diluent Monitor*: An oxygen monitor shall be installed to measure oxygen concentration in each stack.

    c. *Continuous Flow Monitor*: A continuous flow monitor shall be installed in each stack to determine the stack exhaust flow rate to be used in determining mass emission rates. The flow monitors and NOX monitors shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 6 as monitoring systems.

    d. *Moisture Correction*: The owner or operator is responsible for establishing an appropriate means for determining the moisture content of the flue gas in order to express monitoring results in units of the standards.

    [Rules 62-4.070(3), and 62-297.520, F.A.C.]

12. CEMS Data Requirements: The NO_X CEMS shall be installed, calibrated, maintained, and operated in a manner sufficient to express results in units of pounds per ton of preheater feed, pounds per ton of clinker produced, and pounds per hour.

    a. *Valid Hourly Averages:* Each CEMS shall be designed and operated to sample, analyze, and record data evenly spaced over the hour at a minimum of one measurement per minute. All valid measurements collected during an hour shall be used to calculate a 1-hour block average that begins at the top of each hour. Each 1-hour block average shall be computed using at least one data point in each fifteen-minute quadrant of an hour, where the unit combusted fuel (or produced clinker) during that quadrant of an hour. Notwithstanding this requirement, a 1-hour average shall be computed from at least two data points separated by a minimum of 15 minutes (where the unit operates for more than one quadrant of an hour). If less than two such data points are available, there is insufficient data and the 1-hour block average is not valid.

        - Hours during which there is no kiln feed and no fuel fired are not valid hours.
        - Hours during which the plant is firing fuel but producing no clinker are valid, but these hours are excluded from the production-normalized emission rate computation (pounds per ton of clinker). These hours are included in any pollutant mass emission rate computation (pounds per hour).

    b. *30-day Rolling Averages*: Compliance with the emission limits for NO_X shall be based on a 30-day rolling average. Each 30-day rolling average shall be the arithmetic average of all valid hourly averages collected during the last 30 operating days. A new 30-day rolling average shall be recomputed after every day of operation for the new day and the preceding 29 operating days. For purposes of computing these emission limits, an operating day is any day that the kiln produces clinker or fires fuel.

    c. *Data Exclusion*: Except for monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments, each CEMS shall monitor and record emissions during all operations including episodes of startups, shutdowns, and malfunctions. Limited amounts of CEMS emissions data recorded during some of these episodes may be excluded from the corresponding compliance demonstration

subject to the provisions of Condition 10 of this section. The permittee shall minimize the duration of data excluded for such episodes to the extent practicable.

d. *Availability:* Monitor availability for each CEMS used to demonstrate compliance shall be 95% or greater in any calendar quarter. Monitor availability shall be reported in the quarterly excess emissions report. In the event 95% availability is not achieved, the permittee shall provide the Department with a report identifying the problems in achieving 95% availability and a plan of corrective actions that will be taken to achieve 95% availability. The permittee shall implement the reported corrective actions within the next calendar quarter. Failure to take corrective actions or continued failure to achieve the minimum monitor availability shall be violations of this permit, except as otherwise authorized by the Compliance Authority.

[Rules 62-4.070(3), F.A.C.]

13. Ammonia Injection: A monitoring system to continuously monitor and record the ammonia injection rate of the SNCR system (1-hour block averages) shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations. The injection rate of ammonia solution measured in terms of volumetric flow rate shall be converted to pounds per hour as 100% ammonia. [Rules 62-4.070(3), F.A.C.]

REPORTING AND RECORD KEEPING REQUIREMENTS

14. Operational Records: To demonstrate compliance with the limitations specified in this permit, the owner or operator shall maintain the following records on site. All records shall be made available to the Department and Compliance Authority upon request.

    a. For each 1-hour block of operation, continuously monitor and record the dry preheater feed rate, and clinker production rate. Records shall also document the dry preheater feed rate and clinker production rates for each consecutive12 month period.

    b. Estimates of NH_3/NO_X molar ratio and ammonia injection rate as 100% ammonia.

    [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

15. Stack Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Compliance Authority on the results of each such test. The required test report shall be filed with the Compliance Authority as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Compliance Authority to determine if the test was properly conducted and the test results properly computed. At a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the information specified in Rule 62-297.310(8), F.A.C. [Rule 62-297.310(8), F.A.C.]

16. Malfunction Notifications: If temporarily unable to comply with any condition of the permit due to breakdown of equipment (malfunction) or destruction by hazard of fire, wind or by other cause, the permittee shall immediately (within one working day) notify the Compliance Authority. Notification shall include pertinent information as to the cause of the problem, and what steps are being taken to correct the problem and to prevent its recurrence, and where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with Department rules. [Rules 62-210.700(6) and 62-4.130, F.A.C.]

17. SIP Quarterly Report: Within 30 days following the end of each calendar quarter, the permittee shall submit a report to the Compliance Authority summarizing: equipment malfunctions resulting in excluded CEMS data and/or excess emissions; and the monitor availability of each CEMS. The report shall contain the information and follow the general format specified in 40 CFR 60.7(c).
[Rules 62-4.070(3), 62-4.130, 62-210.700(6), F.A.C., and 40 CFR 60.7]

18. Monitoring for PSD Applicability: The permittee shall monitor the emissions of CO, PM/PM_{10}, SO_2, and VOC from each kiln using the most reliable information available. The permittee shall calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of 5 years following resumption of regular operations after installation of the indirect firing systems. Emissions shall be computed in accordance with Rule 62-210.370, F.A.C. [Rule 62-212.300(1)(e), F.A.C.]

{Note: For reference, definitions of Baseline Actual Emissions, Projected Actual Emissions, Actual Emissions, and Net Emissions Increase are defined below as they appear in 62-210.200, F.A.C.}

Baseline Actual Emissions: The rate of emissions, in tons per year, of a PSD pollutant, as follows:

For an existing emissions unit (other than an electric utility steam generating unit), baseline actual emissions means the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the 10-year period immediately preceding the date a complete permit application is received by the Department, except that the 10-year period shall not include any period earlier than November 15, 1990.

1. The average rate shall include fugitive emissions to the extent quantifiable, and emissions associated with startups and shutdowns.
2. The average rate shall be adjusted downward to exclude any non-compliant emissions that occurred while the source was operating above an emission limitation that was legally enforceable during the consecutive 24-month period.
3. The average rate shall be adjusted downward to exclude any emissions that would have exceeded an emission limitation with which the major stationary source must currently comply, had such major stationary source been required to comply with such limitations during the consecutive 24-month period.
4. For a PSD pollutant, when a project involves multiple emissions units, only one consecutive 24-month period must be used to determine the baseline actual emissions for all the emissions units being changed. A different consecutive 24-month period can be used for each PSD pollutant.
5. The average rate shall not be based on any consecutive 24-month period for which there is inadequate information for determining annual emissions, in tons per year, and for adjusting this amount if required by subparagraphs 2 and 3 above.

Projected Actual Emissions: The maximum annual rate, in tons per year, at which an existing emissions unit is projected to emit a PSD pollutant in any one of the 5 years following the date the unit resumes regular operation after the project, or in any one of the 10 years following that date, if the project involves increasing the emissions unit's design capacity or its potential to emit that PSD pollutant and full utilization of the unit would result in a significant emissions increase or a significant net emissions increase at the major stationary source. One year is one 12-month period. In determining the projected actual emissions, the Department:

(a) Shall consider all relevant information, including historical operational data, the company's own representations, the company's expected business activity and the company's highest projections of

business activity, the company's filings with the State or Federal regulatory authorities, and compliance plans or orders, including consent orders; and

(b) Shall include fugitive emissions to the extent quantifiable and emissions associated with startups and shutdowns; and

(c) Shall exclude that portion of the unit's emissions following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions and that are also unrelated to the particular project including any increased utilization due to product demand growth; or

(d) In lieu of using the method set out in paragraphs (a) through (c) above, may be directed by the owner or operator to use the emissions unit's potential to emit, in tons per year.

Actual Emissions: The actual rate of emission of a pollutant from an emissions unit as determined in accordance with the following provisions:

(a) In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during a consecutive 24-month period which precedes the particular date and which is representative of the normal operation of the emissions unit. The Department shall allow the use of a different time period upon a determination that it is more representative of the normal operation of the emissions unit. Actual emissions shall be calculated using the emissions unit's actual operating hours, production rates and types of materials processed, stored, or combusted during the selected time period.

(b) The Department may presume that unit-specific allowable emissions for an emissions unit are equivalent to the actual emissions of the emissions unit provided that such unit-specific allowable emissions limits are federally enforceable.

(c) For any emissions unit that has not begun normal operations on a particular date, actual emissions shall equal the potential emissions of the emissions unit on that date.

Net Emissions Increase: With respect to any PSD pollutant emitted by a major stationary source, the amount by which the sum of the following exceeds zero:

1. The increase in emissions from a particular physical change or change in the method of operation as calculated pursuant to paragraph 62-212.400(2)(a), F.A.C.; and

2. Any other increases and decreases in actual emissions at the major stationary source that are contemporaneous with the particular change and are creditable. Baseline actual emissions for calculating increases and decreases under this subparagraph 62-210.200(200)(a)2., F.A.C., shall be determined as provided in subsection 62-210.200(35), F.A.C., except that subparagraphs 62-210.200(35)(a)3. and (b)4., F.A.C., shall not apply.

19. PSD Applicability Report: For a period of 5 years following resumption of regular operations after installation of the indirect firing systems, the permittee shall report to the Department each unit's annual emissions of CO, PM/PM_{10}, SO_2, and VOC during the preceding calendar year. The report shall be submitted within 60 days after the end of each calendar year and shall contain the following information:

    a. The name, address and telephone number of the owner or operator of the major stationary source;

    b. The annual emissions as calculated pursuant to subparagraph 62-212.300(1)(e)1., F.A.C.;

    c. If the emissions differ from the preconstruction projection, an explanation as to why there is a difference; and

    d. Any other information that the owner or operator wishes to include in the report.

    [Rule 62-212.300(1)(e), F.A.C.]

B. Coal Grinding and Transferring

This section of the permit addresses the following emissions unit.

EU ID	Emissions Unit Description
XXX	Coal Grinding and Conveying

The following new emission points, controlled by fabric filter baghouses, will be added as part of the indirect firing systems:

Point ID	Emissions Point Description
PS-01	#1 Coal Mill Baghouse
PS-02	#2 Coal Mill Baghouse
PS-03	#1 FK Pump Baghouse
PS-04	#2 FK Pump Baghouse
PS-05	#1 Coal Mill Pulverized Fuel Bin
PS-06	#2 Coal Mill Pulverized Fuel Bin

APPLICABLE STANDARDS AND REGULATIONS

1. NSPS Requirements: This unit is subject to 40 CFR 60, Subpart A (Identification of General Provisions) and 40 CFR 60, Subpart Y (Standards of Performance for Coal Preparation Plants). The Department determines that the emissions performance requirements of this permit are as stringent as, or more stringent than the limits imposed by the applicable NSPS provisions. Some separate reporting and monitoring may be required by the individual subpart.

EQUIPMENT AND CONTROLS

2. Indirect Firing System: The permittee is authorized to install indirect firing systems for Kilns 1 and 2 (EU 003 and 014) to reduce the amount of primary air injected with the fuel used in the main kiln burner. The indirect firing system for each kiln includes one pulverized coal bin, one FK pump, and associated fans, filters, and conveying equipment. This system will be incorporated into the existing coal conveying, storage, and handling equipment. [Application; and 62-4.070(3), F.A.C.]
3. Baghouse Controls: Each new emissions point identified above for the new indirect firing systems shall be controlled by a baghouse system. Each required baghouse shall be designed, operated, and maintained to achieve a PM design specification of 0.01 grains per dry standard cubic feet (gr/dscf) and a PM_{10} design specification of 0.007 gr/dscf. [Application; and Rule 62-4.070(3), F.A.C.]

PERFORMANCE REQUIREMENTS

4. Hours of Operation: The hours of operation for this emissions unit are not limited (8760 hours per year). [Rule 62-210.200(PTE), F.A.C.]

EMISSIONS AND TESTING REQUIREMENTS

5. Particulate Matter Standards: Particulate matter emissions from the coal mills (Point ID PS-01 and PS-02) shall not exceed 0.007 gr/dscf of exhaust as determined by EPA method 5. All PM emitted from the baghouse exhaust is assumed to be PM_{10}. These requirements do not waive or vary any applicable NESHAP monitoring or record keeping requirements. [Rule 62-4.070(3), F.A.C.]

6. Visible Emissions Standards: Visible emissions from each baghouse shall not exceed 10% opacity as determined by EPA Method 9. [Rule 62-4.070(3), F.A.C.]

7. Testing Requirements: Emission points PS-01 and PS-02 shall be stack tested to demonstrate initial compliance with the applicable emission standards for PM/PM_{10} and visible emissions. All other emission points shall be tested for visible emissions only. The initial tests shall be conducted within 60 days following installation of the indirect firing system. Thereafter, compliance with the visible emission limits shall be demonstrated during each federal fiscal year (October 1st to September 30th) for all emission points listed above (PS-01 through PS-06). [Rule 62-297.310(7)(a), F.A.C.]

8. Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]

9. Test Methods: Any required tests shall be performed in accordance with the following reference methods and the applicable requirements of Appendix C of this permit, and the applicable NSPS provisions.

Method	Description of Method and Comments
1 - 4	Determination of Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content. Methods shall be performed as necessary to support other methods.
5	Determination Particulate Matter from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources

REPORTING AND RECORD KEEPING

10. Baghouse O&M Plan: For each baghouse the permittee shall prepare an operation and maintenance (O&M) plan to address proper operation, parametric monitoring, and a schedule for conducting periodic inspections and preventive maintenance. Baghouse inspections and maintenance activities shall be recorded in a written log. The O&M plan shall be submitted to the Compliance Authority prior to the initial compliance tests for this unit. [Rule 62-4.070(3)]

11. Test Reports: For each test conducted, the permittee shall file a test report including the information specified in Rule 62-297.310(8), F.A.C. with the compliance authority no later than 45 days after the last run of each test is completed. [Rules 62-297.310(8), F.A.C.]

GENERAL CONDITIONS

The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

   a. Have access to and copy and records that must be kept under the conditions of the permit;
   b. Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
   c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

   Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

   a. A description of and cause of non-compliance; and

   b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

   The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida

Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

    a. Determination of Best Available Control Technology ( );
    b. Determination of Prevention of Significant Deterioration ( );
    c. Compliance with National Emssion Standards for Hazardous Air Pollutants ( ); and
    d. Compliance with New Source Performance Standards ( ).

14. The permittee shall comply with the following:

    a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

    b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

    c. Records of monitoring information shall include:

        1) The date, exact place, and time of sampling or measurements;
        2) The person responsible for performing the sampling or measurements;
        3) The dates analyses were performed;
        4) The person responsible for performing the analyses;
        5) The analytical techniques or methods used; and
        6) The results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

STANDARD CONDITIONS

Unless otherwise specified in the permit, the following conditions apply to all emissions units and activities at this facility.

EMISSIONS AND CONTROLS

1. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]

2. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]

3. Excess Emissions Allowed: Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]

4. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]

5. Excess Emissions - Notification: In case of excess emissions resulting from malfunctions, the permitee shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]

6. VOC or OS Emissions: No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]

7. Objectionable Odor Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and62-210.200(203), F.A.C.]

8. General Visible Emissions: No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20 percent opacity. [Rule 62-296.320(4)(b)1, F.A.C.]

9. Unconfined Particulate Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

TESTING REQUIREMENTS

10. Required Number of Test Runs: For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]

11. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. [Rule 62-297.310(2), F.A.C.]

12. Calculation of Emission Rate: For each emissions performance test, the indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. [Rule 62-297.310(3), F.A.C.]

13. Test Procedures: Tests shall be conducted in accordance with all applicable requirements of Chapter 62-297, F.A.C.

    a. Required Sampling Time. Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes. The minimum observation period for a visible emissions compliance test shall be thirty (30) minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur.

    b. Minimum Sample Volume. Unless otherwise specified in the applicable rule or test method, the minimum sample volume per run shall be 25 dry standard cubic feet.

    c. Calibration of Sampling Equipment. Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1, F.A.C.

    [Rule 62-297.310(4), F.A.C.]

14. Determination of Process Variables

    a. Required Equipment. The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.

    b. Accuracy of Equipment. Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

    [Rule 62-297.310(5), F.A.C.]

15. Sampling Facilities: The permittee shall install permanent stack sampling ports and provide sampling facilities that meet the requirements of Rule 62-297.310(6), F.A.C.

16. Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]

17. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information:

    1) The type, location, and designation of the emissions unit tested.

2) The facility at which the emissions unit is located.
3) The owner or operator of the emissions unit.
4) The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
5) The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
6) The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
7) A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
8) The date, starting time and duration of each sampling run.
9) The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
10) The number of points sampled and configuration and location of the sampling plane.
11) For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
12) The type, manufacturer and configuration of the sampling equipment used.
13) Data related to the required calibration of the test equipment.
14) Data on the identification, processing and weights of all filters used.
15) Data on the types and amounts of any chemical solutions used.
16) Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
17) The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
18) All measured and calculated data required to be determined by each applicable test procedure for each run.
19) The detailed calculations for one run that relate the collected data to the calculated emission rate.
20) The applicable emission standard, and the resulting maximum allowable emission rate for the emissions unit, plus the test result in the same form and unit of measure.
21) A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

RECORDS AND REPORTS

18. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rules 62-4.160(14) and 62-213.440(1)(b)2, F.A.C.]

19. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(2), F.A.C.]

TECHNICAL EVALUATION

CEMEX Cement, Inc.
Brooksville Cement Plant

Indirect Firing System, Burner Replacement
and Selective Non-Catalytic Reduction (SNCR)

Kilns 1 and 2

Hernando County

DEP File No. 0530010-026-AC

Department of Environmental Protection
Division of Air Resource Management
Bureau of Air Regulation

November 3, 2006

I. APPLICATION INFORMATION

A. APPLICANT

CEMEX Cement, Inc.
Brooksville Plant
16301 Ponce de Leon Blvd.
Brooksville, Florida 34601

Authorized Representative

Michael A. Gonzales, Plant Manager
Post Office Box 6
Brooksville, Florida 34605-0006

B. PROCESSING SCHEDULE

- Received application for installation of selective non-catalytic reduction (SNCR) system October 14, 2005.
- Received application for installation of indirect firing system and kiln burner replacement August 22, 2006.
- Received application revision September 5, 2006.
- Received additional details on September 15, 2006.
- Department's Intent to Issue and Public Notice Package dated November 3, 2006.

C. FACILITY LOCATION

The CEMEX Brooksville Cement Plant is located on Highway 98, northwest of Brooksville in Hernando County.

Figure 1. Location of the CEMEX Brooksville Cement Plant in Hernando County & Aerial Photo.

D. FACILITY CLASSIFICATION CODE (SIC)

Major Group No. 32, Clay, Glass, and Concrete Products
Industry Group No. 324 Cement, Hydraulic

E. REGULATORY CATEGORIES

The following regulatory classifications apply to the subject facility:

Title I, Section 111, Clean Air Act (CAA): This facility is subject to certain Standards of Performance for New Stationary Sources. They are adopted and incorporated by reference in Rule 62-204.800, F.A.C. These inlcude:

- 40 CFR 60, Subpart A - General Provisions.
- 40 CFR 60, Subpart F - Standards of Performance for Portland Cement Plants. Certain requirements from Subpart F are replaced by requirements from 40 CFR 63, Subpart LLL listed below.
- 40 CFR 60, Subpart Y - Standards of Performance for Coal Preparation Plants.
- 40 CFR 60, Subpart OOO - New Source Performance Standards For Nonmetallic Mineral Processing Plants.

Title I, Section 112 CAA: The facility has the potential to emit 10 tons per year or more of any one hazardous air pollutant (HAP) or 25 tons per year or more of any combination of HAPs. This facility is subject to the Major Source provisions of:

- 40 CFR 63 Subparts A - National Emission Standards for Hazardous Air Pollutants – General Provisions.
- 40 CFR, Subpart LLL - National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry.

Title I, Part C: The facility is located in an area designated as "attainment", "maintenance", or "unclassifiable" for each pollutant subject to a National Ambient Air Quality Standard. The facility is considered a "portland cement plant", which is one of the 28 Prevention of Significant Deterioration (PSD) source categories with the lower PSD applicability threshold of 100 tons per year. Potential emissions of at least one regulated pollutant exceed 100 tons per year. Therefore, the facility is classified as a PSD-major source of air pollution with respect to Rule 62-212.400, F.A.C., Prevention of Significant Deterioration.

Title IV, CAA: The facility does not operate any units subject to the Acid Rain provisions of the Clean Air Act.

Title V, CAA: The facility is a Title V or "Major Source" of air pollution because the potential emissions of at least one regulated pollutant exceed 100 tons per year or because it is a major source of HAPS. Regulated pollutants include pollutants such as carbon monoxide (CO), nitrogen oxides (NO_X), particulate matter (PM/PM_{10}), sulfur dioxide (SO_2), and volatile organic compounds (VOC).

State Rules: The cement plant is subject to state Rule 62-296.407, F.A.C. (Portland Cement Plants).

F. FACILITY DESCRIPTION

The existing Brooksville portland cement plant consists of two Polysius GEPOL preheater kilns (Kilns 1 and 2). A picture of one of the kilns, with preheater tower, can be seen in Figure 2. Each kiln and clinker cooler combination is separately permitted with respect to preheater material feed rates and fuel heat input rates. Ancillary equipment at the plant includes raw mills, finish mills, cement and clinker handling equipment, coal handling equipment and silos, and particulate control/dust collection and recycling equipment.

A single, large, fabric filter system (baghouse) is used to capture particulate matter from each kiln and from each clinker cooler (four total). Smaller baghouses are used to limit particulate emissions from other process emissions points. There are no other permitted add-on controls for any pollutants emitted from the cement kilns. However, selective non-catalytic reduction (SNCR) was recently installed on both kilns for NO_X control (permanent authorization is being addressed by this action). Raw material properties, chemical reactions in the kilns, absorption into the clinker, and combustion controls minimize emissions of NO_X, SO_2, CO, and VOC.

Figure 2. Polysius GEPOL Preheater Kiln at CEMEX Brooksville Plant

Current permits limit the production capacity by setting maximum preheater feed rates and emission limits in terms of mass of pollutant per mass of preheater feed. Both CEMEX Brooksville kilns are limited to 150 tons dry preheater feed per hour (30 day average) with a maximum of 165 tons preheater feed in any given hour.

Both kilns are permitted to burn a variety of fuels, including coal, No. 2 fuel oil, No. 4 fuel oil, No. 5 fuel oil, No. 6 fuel oil, natural gas, and on-site generated, non-hazardous waste used oil, grease, and rags. Kiln No. 1 is also permitted to fire whole tire derived fuel (TDF) at a rate up to 20 percent of the total heat input on a British thermal unit (Btu) basis, or 2.14 tons TDF per hour.

G. PROJECT BACKGROUND AND APPLICANT'S PROPOSAL

Project 018

Kilns 1 and 2 were originally equipped with direct firing systems and mono-channel burners. During the spring of 2005, semi-direct firing systems, including Pillard Rotflam® burners and associated cyclone, fans and fuel injectors, and SNCR systems were installed on both kilns. In October of 2005, CEMEX applied for an after-the-fact air construction permit (0530010-018-AC) for the installation of the burners associated with the semi-direct firing systems, and the installation of the SNCR systems. Several other miscellaneous changes were also requested with the same application.

Project 026

In the fall of 2006, CEMEX applied for the installation of indirect firing systems. The indirect firing system now proposed by CEMEX may utilize the existing Pillard Rotoflam® burners, or as an alternative, the existing burners will be replaced with F.L. Smidth Duoflex® burners. The following new components for the indirect firing systems must also be installed for each kiln: one coal mill baghouse; one pulverized coal bin with baghouse; one FK pump with associated baghouse; and other associated fans, filters, and conveyance piping. The Department is also incorporating the previously installed SNCR systems (from 0530010-018-AC) into this project.

II. RULE APPLICABILITY

A. STATE REGULATIONS

The project is subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The Florida Statutes authorize the Department to establish rules and regulations regarding air quality as part of the Florida Administrative Code (F.A.C.). The state rules and regulations of the Florida Administrative Code applicable to this project include but are not limited to the following:

State Regulations Applicable to Portland Cement Plants.

Chapter 62-4	Permits.
Rule 62-204.220	Ambient Air Quality Protection
Rule 62-204.240	Ambient Air Quality Standards
Rule 62-204.260	Prevention of Significant Deterioration Increments
Rule 62-204.360	Designation of Prevention of Significant Deterioration Areas
Rule 62-204.800	Federal Regulations Adopted by Reference
Rule 62-210.300	Permits Required
Rule 62-210.350	Public Notice and Comments
Rule 62-210.370	Reports
Rule 62-210.550	Stack Height Policy
Rule 62-210.650	Circumvention
Rule 62-210.700	Excess Emissions
Rule 62-210.900	Forms and Instructions
Rule 62-212.300	General Preconstruction Review Requirements
Rule 62-212.400	Prevention of Significant Deterioration
Chapter 62-213	Operation Permits for Major Sources of Air Pollution
Rule 62-296.320	General Pollutant Emission Limiting Standards
Rule 62-297.310	General Test Requirements
Rule 62-297.401	Compliance Test Methods
Rule 62-297.570	Test Reports
Rule 62-297.520	EPA Continuous Monitor Performance Specifications
Rule 62-297.701	Portland Cement Plants

B. FEDERAL REGULATIONS

This project is also subject to certain applicable federal provisions regarding air quality as established by the EPA in the Code of Federal Regulations (CFR) and summarized below.

Federal Regulations Applicable to Portland Cement Plants.

40 CFR 50	National Primary and Secondary Ambient Air Quality Standards
40 CFR 60, Subpart A	General Provisions
40 CFR 60, Subpart F	Standards of Performance for Portland Cement Plants
40 CFR 60, Subpart Y	Standards of Performance for Coal Preparation Plants
40 CFR 60, Subpart OOO	Standards of Performance for Nonmetallic Mineral Processing Plants
40 CFR 63, Subpart A	General Provisions
40 CFR 63, Subpart LLL	National Emissions Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry – Major Sources

Under the provisions of Subpart LLL (National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry), if a source plans to undertake a change in operations that may adversely affect compliance with an applicable D/F or PM standard, the source must notify the Administrator and conduct a performance test in accordance with the subpart.

The Department recognizes a change that would adversely affect compliance with an applicable D/F or PM standard as a "significant" change in operations. A significant change includes but is not limited to the following: a physical or chemical change in the kiln feed material or fuel from that which was used in the most recent compliant performance test; the use of a raw material not previously used; a change in the percentage of a raw material employed in the mix design; a change in the Loss on Ignition ("LOI") of the fly ash; a change in the use of non-beneficiated fly ash or beneficiated fly ash; an increase in the levels of total chlorine/chloride or total hydrocarbons in kiln feed materials or fuels above those levels where compliance has been demonstrated through performance testing; changes in the exhaust gas cooling system including the addition, deletion or movement of dampers; and changes to the combustion system or its operation. Use of a particular feed mix, fuel, or cooling system configuration for which compliance with the D/F and PM emission limits has previously been demonstrated, shall not be considered a significant change.

PSD APPLICABILITY

The Department regulates major air pollution sources in accordance with Florida's Prevention of Significant Deterioration (PSD) program, as described in Rule 62-212.400, F.A.C. A PSD review is only required in areas that are currently in attainment with the National Ambient Air Quality Standard (AAQS) for a given pollutant or areas designated as "unclassifiable" for the pollutant. A new facility is considered "major" with respect to PSD if the facility emits or has the potential to emit:

- 250 tons per year or more of any regulated air pollutant; or
- 100 tons per year or more of any regulated air pollutant and the facility belongs to one of the 28 Major Facility Categories; or
- 5 tons per year of lead.

For new PSD-major facilities and modifications to existing PSD-major sources, each regulated pollutant is reviewed for PSD applicability based on emissions thresholds known as the Significant Emission Rates (SERs) identified in Rule 62-210.200(243), F.A.C. Each pollutant exceeding the respective SER is considered "significant" and the applicant must employ the Best Available Control Technology (BACT) to minimize emissions, and evaluate the air quality impacts. Although a facility may be considered a "major stationary source" with respect to PSD because of only one regulated pollutant, it is required to implement BACT for each "PSD-significant" pollutant.

III. DEPARTMENT REVIEW

A. Burner Technology and Kiln Firing Systems

Direct Firing

In a direct firing system the coal is fed directly to the kiln through a mono-channel burner from the pulverizer, with no intermediate storage area. This means that all of the cool, moist air used to "sweep" the coal from the coal mill is introduced into the kiln with the fuel. In other words, the amount of primary air being fed into the combustion zone with the fuel is the amount of air needed to move coal through the conveyance system, not the amount of air needed for optimum flame production.[1] According to the application, the extra axial momentum caused by the additional primary air also leads to entrainment of secondary air, which theoretically causes greater thermal NO_X formation. The mono-channel burner is basically a single pipe through which the air and fuel are channeled for combustion. This configuration lacks any flame shaping flexibility, making adjustments for fuel type and quality impossible.[2]

Indirect Firing

An indirect firing system includes a buffer silo for intermediate storage of the pulverized coal, from which the "sweep" air has been separated before introduction into the kiln through the injector nozzle of the burner. A schematic of a Pillard indirect firing system with components identified are shown in the Figure below.

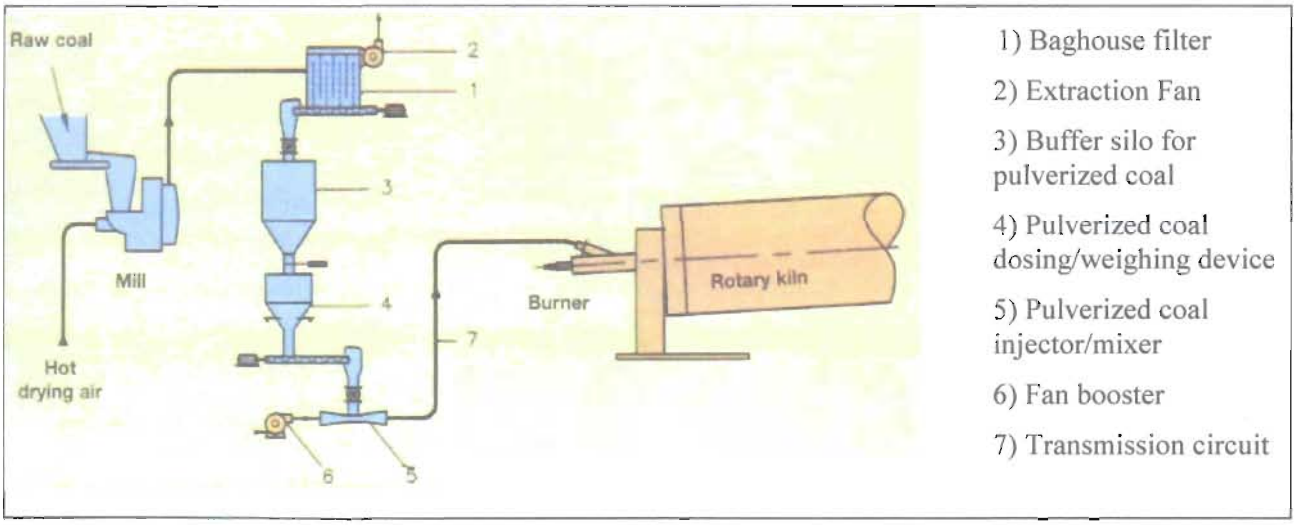
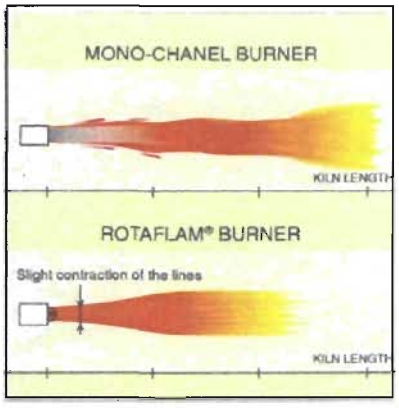


Figure 3. Components of Indirect Firing System[3]

The indirect system, utilizes a low amount of the cool, moist primary air from the coal mill to convey pulverized coal and a controlled amount of air into the kiln firing zone through a multi-channel burner. This allows greater use of hot secondary air from the clinker cooler and kiln hood. The result is more efficient energy use, and in theory less pollution generation. The multi-channel design offers greater flexibility in the manner in which the fuel and air are mixed, and in possible flame shapes and lengths (Refer to Figure 4. below). Such burners are often designated as Low NO_X burners depending on the way they are employed.



Flame Shape Comparison

Multi-Channel Nozzle[4]

Burner in Operation at a Cement Plant

Figure 4 Pillard Rotoflam® Burner

Semi-Direct Firing

A semi-direct firing system offers some of the advantages of the direct firing system with less capital and maintenance costs, and without the potential risks related to the intermediate pulverized fuel storage.[5] The semi-direct system must still utilize all of the "sweep" air from the coal mill. However, the air and coal are separated in a cyclone prior to introduction to the burner, so that the coal and air can be delivered to different channels of a multi-channel burner in a more controlled manner. The ability to utilize the multi-channel burner is a definite advantage, but because the "sweep" air is still exclusively used, the full benefits cannot be realized. None of the "sweep" air is being replaced with the warmer, dry air from the clinker cooler as with the indirect firing system, and all of the "sweep" air must be injected as either primary or secondary air.

The applicant, although committed to the change to indirect firing systems on Kilns 1 and 2, has not made the final decision as to the burner manufacturer. Regardless of the manufacturer, the technology and principles of operation are the same. CEMEX may either keep the currently installed Pillard Rotoflam® burners, or replace these with the F.L. Smidth Duoflex® burners pursuant to this permit.

Effect of Indirect Firing on Emissions

According to the applicant, the only increase in emissions as a result of the indirect firing system will be the increase in PM/PM_{10} emissions resulting from the new coal handling components of the system. Emissions of NO_X may actually decrease. Particulate emissions from the new components will be controlled by fabric filter baghouses. The potential PM/PM_{10} emissions for the indirect firing system are estimated by the applicant to be 16.82 and 11.77 tons per year (TPY) respectively. Emission rates and design details for the new baghouses are listed in the table below.

The applicant claims that increases in emissions of CO, SO_2, and VOCs are not likely to occur as a direct result of the installation of indirect firing systems. The Department agrees that, in general, emission increases should not occur as a result of such firing system conversions if all other factors remain equal.

Table 1. Potential PM/PM_{10} Emissions Resulting From Indirect Firing System

EU ID	Baghouse Location	Flow Rate (dscfm)	PM Emission Factor (grains/scf)	PM Emissions (TPY)	PM_{10} Emission Factor (grains/scf)	PM_{10} Emissions (TPY)
PS-01	#1 Coal Mill	21,200	0.01	7.63	0.007	5.34
PS-02	#2 Coal Mill	21,200	0.01	7.63	0.007	5.34
PS-03	#1 FK Pump	360	0.01	0.13	0.007	0.09
PS-04	#2 FK Pump	360	0.01	0.13	0.007	0.09
PS-05	#1 Coal Meal Bin	1,800	0.01	0.65	0.007	0.45
PS-06	#2 Coal Meal Bin	1,800	0.01	0.65	0.007	0.45
Total				**16.82**		**11.76**

Emissions of SO_2 and VOCs are largely controlled by raw material selection. An increase in CO emissions is more likely to occur as a result in a change at the exit end of the kiln resulting in insufficient amounts of excess air required for carbon burnout, or use of high loss on ignition (LOI) fly ash as a raw material. The Department does not necessarily agree that lower NO_X emissions will occur due to the new firing system, but concludes that NO_X emissions will decrease in consideration of the SNCR project as discussed below.

B. Selective Non-Catalytic Reduction

Applicant Request

CEMEX requested an after-the-fact air construction permit to install Selective Non-Catalytic Reduction (SNCR) systems on Kilns 1 and 2 to reduce NO_X emissions in conjunction with the change to indirect firing. In order to avoid PSD review under project 018, the applicant requested an emissions limit of 1.21 lb per ton of preheater feed (equivalent to approximately 2.0 lb/ton of clinker) on each kiln. Note that the State Rules in effect at the time this application was received relied on past actual to future potential emissions to determine PSD applicability. The application also includes a maximum annual preheater feed rate of 1,300,000 TPY.

The SNCR system consists of a storage tank, piping, pumps, injection nozzles, and a control system. The CEMEX systems have four injection nozzles on each kiln: three in the riser duct and one at the kiln inlet. According to the applicant, "there is sufficient ammonia delivery capability using only the single kiln inlet injector to stay within the requested NO_X emission limit of 2.0 lb/ton of clinker". The following diagram illustrates the typical equipment needed for permanent ammonia (NH_3) solution storage and piping at a power plant. Cement plant requirements are similar.

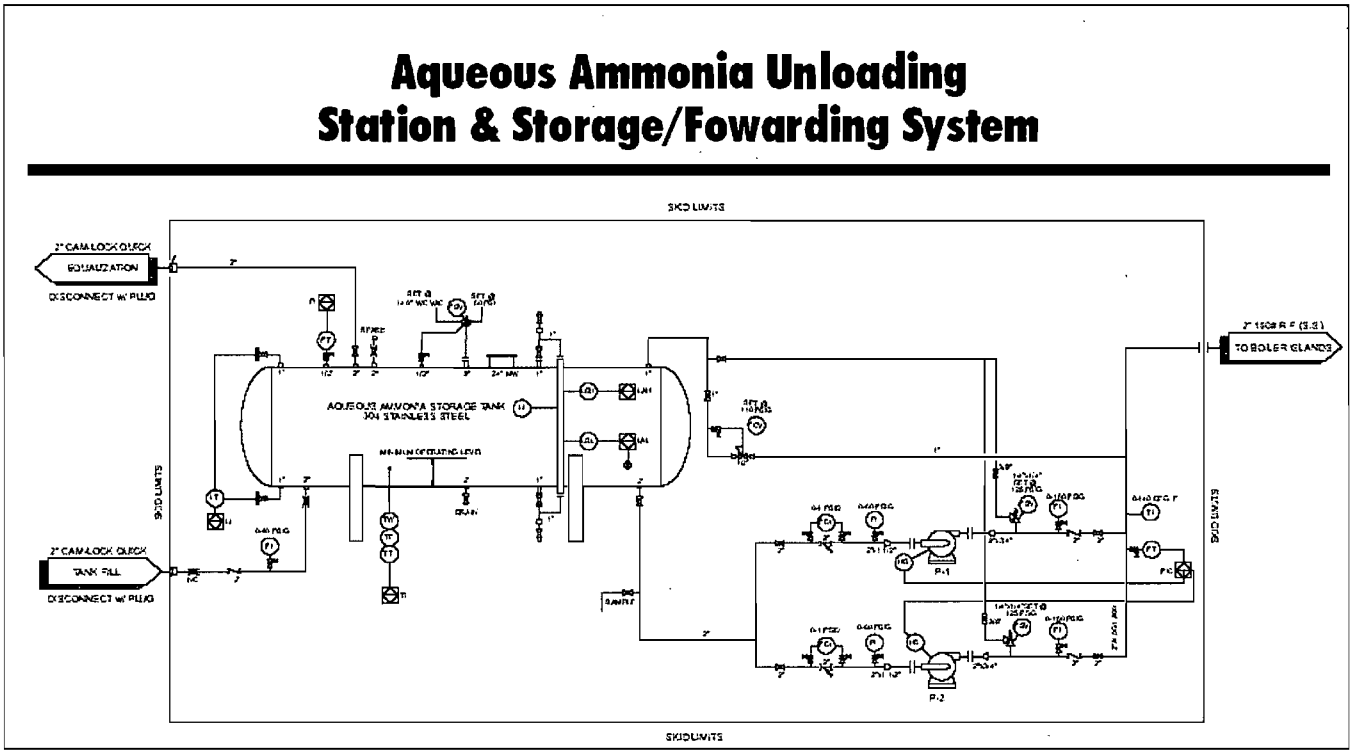


Figure 5. Diagram of Typical SNCR Ammonia Storage and Piping/Pumping System

CEMEX Preheater/Kiln Configuration and NO_X Formation

CEMEX kilns 1 and 2 are of the preheater design in which all of the fuel is typically fired in the kiln burner at the exit end of the kiln. Similar to other designs, the raw meal is continuously weighed on feed scales and introduced at the top of the preheater tower. As it falls through the preheater it is contacted and progressively heated by exhaust gases from the kiln. The calcined materials make their way down the kiln where they are further heated and transformed into nodules of clinker.

The graph below shows the gas and material temperature profiles throughout pyroprocessing. Raw materials flow from left to right while exhaust gases flow counter currently. Very high material temperatures and even greater gas temperatures must be attained within an oxidizing environment to transform the calcined material to clinker. Because of this, there is a high potential for thermal NO_X formation (even with the use of low NO_X burners and indirect firing systems).

The NO_X-containing exhaust gas leaving the sintering portion of the kiln is characterized by excess air and high temperature. Calcination of limestone occurs at approximately 900 degrees Celsius (°C) and liberates carbon dioxide to produce lime according to the following endothermic reaction:

Equation 1. $CaCO_3 \rightarrow CaO + CO_2$

In preheater kilns, like the ones at CEMEX, all calcination of the limestone takes place somewhere between the lower end of the preheater tower and just inside the kiln entrance. The calcination reaction rapidly cools the kiln exhaust gas and tends to limit the temperature of exhaust gases in and around the kiln entrance to temperatures less than 900 °C.

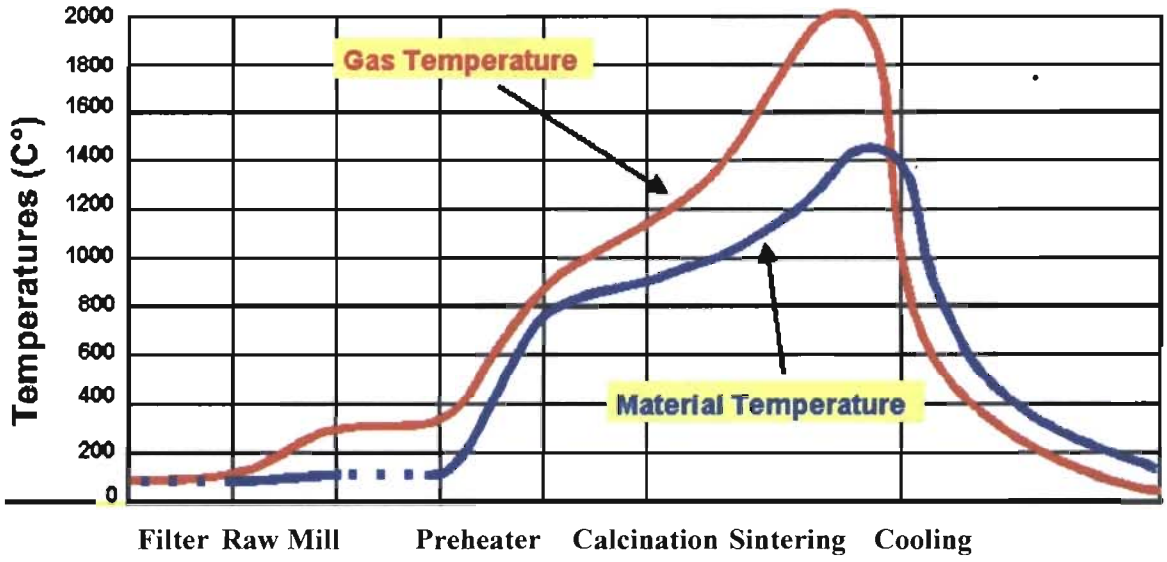


Figure 6. Kiln Exhaust Gas and Materials Pyroprocessing Thermal Profiles

With other kiln designs, such as staged combustion utilizing a calciner (SCC), much of the fuel can be combusted in the calciner at the lower "calcination" temperature atmosphere so there is less potential for thermal NO_X formation in the kiln. In addition, fuel, air, and raw materials can be sequenced within the calciner in such a manner that some of the thermal NO_X coming from the kiln is actually destroyed, and fuel NO_X formation within the calciner can be limited.

In the preheater design, because all of the fuel is introduced at the kiln burner, there is no opportunity for lowering thermal NO_X production through staged combustion, and pre-calcination of the raw materials.

Mechanisms of Selective Non-Catalytic Reduction (SNCR)

Selective non-catalytic reduction can be utilized to destroy NO_X within the preheater tower. NH_3 in the form of ammonia water or urea is injected at a point in the process characterized by a suitable temperature window between 850 and 1050 °C depending on residence time, turbulence, oxygen content, and a number of other factors specific to the given gas stream. Note that the "calcination" temperature discussed above neatly falls within this temperature window. SNCR destroys NO_X by a two-step process as follows:

Equation 2. Ammonia reacts with available hydroxyl radicals to form amine radicals and water per the following theoretical equation:

$$NH_3 + OH^* \rightarrow NH_2^* + H_2O$$

Equation 3. Amine radicals combine with nitrogen oxides to form nitrogen and water.

$$NH_2^* + NO \rightarrow N_2 + H_2O$$

Equation 4. The two steps are typically expressed as a single "global reaction".

$$4NO + 4NH_3 + O_2 \rightarrow 4N_2 + 6H_2O$$

The simplified equation does not convey the kinetics. But it suggests that, theoretically, SNCR will function best in an oxidizing atmosphere.

Equation 5. In a reducing atmosphere, CO competes with ammonia for available OH radicals.

$$CO + OH^* \rightarrow CO_2 + H^*$$

The necessary temperature window for a preheater design kiln exists between the lower part of the preheater and just before the sintering zone. In selecting a level (or levels) for ammonia injection there must be some optimization of temperature and oxygen. For this type of kiln, it is practicable to inject reagent only into the riser duct/lower preheater.

SNCR Experience in Florida

There has been a lot of experience with SNCR at European cement plants. In recent years, there have been numerous tests and some permanent installations of SNCR at cement kilns in North America.

In November 2004, tests were conducted at the Suwannee American Cement preheater/calciner to assess the viability of SNCR. The following figure shows some of the equipment and test points for the test program designed by Polysius. Not shown is the metering system or the additional continuous emission monitoring equipment. Suwanee American Cement received a permit for permanent authorization of SNCR for this kiln in March 2005.

Figure 7. Aqueous Ammonia Supply Truck, Compressed Air, One of Four Ports, an Injector

In the fall of 2004 the Department authorized tests to assess the viability of SNCR in controlling NO_X emissions produced in the preheater/calciner kiln at Florida Rock Industries in Newberry, Florida. These tests were conducted by Polysius during the period December 6-11, 2004. The summary report is available at: www.dep.state.fl.us/Air/permitting/construction/flrock.htm

The Department reviewed the report and summarized the performance of the SNCR system in the graphs shown in the figure below. The graph on the left hand side represents the performance of the SNCR system while burning tires and maintaining mildly reducing or mildly oxidizing conditions in the calciner.

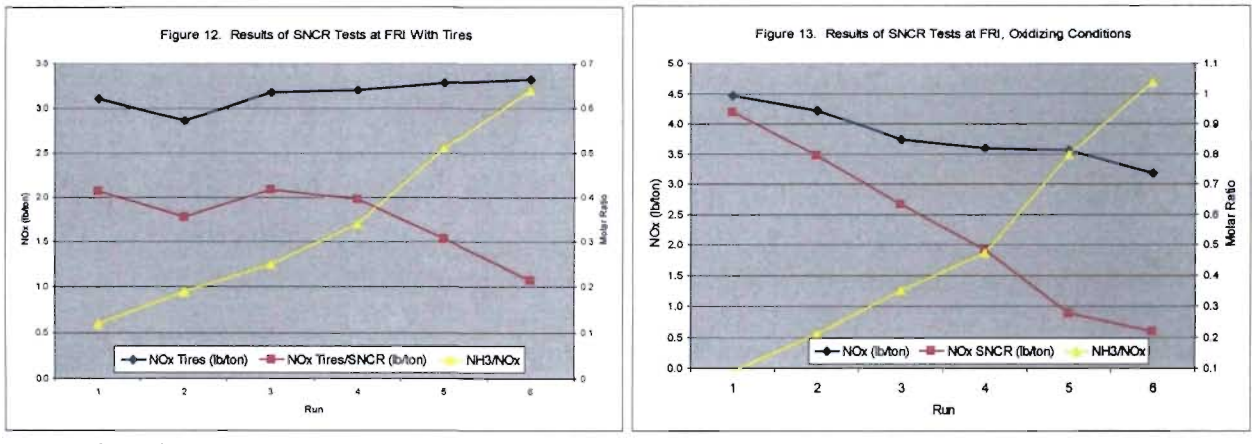


Figure 8. NO_X Emissions (middle lines) vs. Molar Ratio (lower lines) during Testing at FRI.

The Department issued a final permit for a permanent SNCR installation at the existing Florida Rock Kiln No. 1 in October 2006.

In 2005, CEMEX and F.L. Smidth also successfully tested SNCR systems at the Balcones preheater kiln in New Braunfels, Texas. CEMEX installed the SNCR systems at the Brooksville, Florida kilns in early 2005 for which the present approval has been requested.

All of the tests and permanent installation data suggest that emissions less than 2.0 lb NO_X/ton clinker can be achieved at existing kilns with molar ratios substantially less than unity. The key point is that the target emission rate can be met with relatively low NH_3 usage. This insures minimal CO increase or NH_3 slip.

C. PSD APPLICABILITY FOR THE PROJECT

The proposed indirect firing system includes the installation of six new baghouses and a resulting overall increase in emissions of particulate matter. Included in the current information submitted by the applicant are calculations of base-line actual emissions of CO, NO_X, PM/PM_{10}, SO_2, and VOC for each kiln based on a representative 2-year production period, and an emission factor derived from the average of 5 annual stack tests. An applicability analysis, comparing baseline actual to projected actual emissions, was carried out by the applicant based on a 10 percent future demand increase. The applicant proposes that future actual emissions will not reach significant levels, therefore will not trigger PSD review for any pollutant as a result of the indirect firing systems.

Table 2 below represents the Department's comparison of baseline actual emissions from Kilns 1 and 2, to projected actual emissions from the indirect firing project (including emissions from the existing kilns and the new coal conveying emissions points) for CO, PM/PM_{10}, SO_2, and VOC.

Table 2. Department's Comparison of Baseline Actual to Projected Actual Emissions.

Pollutant	Kiln	Potential to Emit (TPY)[a]	Baseline Actual Emissions[b]	Project Projected Actual Emissions	Project Increases/ Decreases	PSD Significant Emission Rate	Trigger PSD? (Yes/No)
CO	Kiln No. 1	788.0	597	597.0	0.0		
	Kiln No. 2	788.0	591.3	591.3	0.0		
	Total	1576.0	1188.3	1188.3	0.0	100.0	No
PM	Kiln No. 1	118.0	33	33.0	0.0		
	Kiln No. 2	118.0	17.4	17.4	0.0		
	Coal Mills	16.8		16.8	16.8		
	Total	252.8	50.4	67.2	16.8	25.0	No
PM_{10}	Kiln No. 1	118.0	33	33.0	0.0		
	Kiln No. 2	118.0	17.4	17.4	0.0		
	Coal Mills	11.8		11.8	11.8		
	Total	247.8	50.4	62.2	11.8	15.0	No
SO_2	Kiln No. 1	66.0	5	5.0	0.0		
	Kiln No. 2	66.0	4.8	4.8	0.0		
	Total	132.0	9.8	9.8	0.0	40.0	No
VOC	Kiln No. 1	59.0	43.4	0.0	0.0		
	Kiln No. 2	59.0	49	0.0	0.0		
	Total	118.0	92.4	92.4	0.0	40.0	No

a Based on current permitted emission limits and/or maximum preheater feed rate.
b Based on emission factors derived from average of five annual stack tests, and preheater feed rates from 1999 and 2000.

According to CEMEX's previous application (including after-the-fact installation of SNCR and a semi-direct firing system) the acceptance of a lower NO_X emissions limit of 1.21 lb/ton of preheater feed, and a maximum preheater feed rate of 1,300,000 TPY on both kilns would result in emissions increases below

the significant emissions rate that would trigger PSD. The SNCR and semi-direct projects were submitted (and actually completed) prior to the effective date of the New Source Review Reform rules. Therefore the comparison of past actual to future potential emissions is appropriate for determining PSD applicability for this pollutant. As seen in the table below, past actual emissions were compared to future potential emissions for NO_X (as presented in the previous application) using the requested limits of 1.21 lbs per ton of preheater feed associated with installation of the SNCR system, and the proposed maximum annual preheater feed rate limit. Based on these comparisons and the proposed emission limits, the Department agrees that the project is not subject to PSD preconstruction review for NO_X.

Table 3. Department's Comparison of Past Actual to Potential Emissions.

Pollutant	Kiln	Potential to Emit (TPY)[a]	Past Actual Emissions[b]	Future Potential Emissions	Project Increases/ Decreases	PSD Significant Emission Rate	Trigger PSD? (Yes/No)
NO_X	Kiln No. 1	1202.0	715	786.5	71.5		
	Kiln No. 2	1130.0	819.5	786.5	-33.0		
	Total	2332.0	1534.5	1573	38.5	40.0	No

D. CONCLUSIONS

A burner change-out required for semi-firing has already been accomplished. The increased emissions of NO_X have been mitigated by an SNCR system, and PSD has been avoided. The burner change-outs and the SNCR installations systems are being approved in this permitting action together with the further conversion of the semi-direct firing system to an indirect firing system.

Indirect Firing Project

The indirect firing system conversion was assessed under the new definition of Projected Actual Emissions given in 62-210.200 as "The maximum annual rate, in tons per year, at which an existing emissions unit is projected to emit a PSD pollutant in any one of the five years following the date the unit resumes regular operation after the project,..." and ten years following the project under certain circumstances.

When the Department issues a construction permit which avoids the requirements of PSD review based on projected actual emissions, the permittee will be required to monitor and report annual emissions for a five or ten year period, depending on the circumstances. If the projected actual emissions are exceeded, the PSD requirements apply as if construction of the modification had never commenced.

Because the indirect firing system is considered a change in the method of operation, and PSD (non) applicability for CO, PM/PM_{10}, SO_2, and VOC has been based on projected actual emissions, the permit will require specific monitoring of future actual emissions for comparison to baseline actual emissions for a period of five years for those pollutants. Specific PM/PM_{10} limits, baghouse design criteria based on potential emissions calculations submitted by the applicant, and operation and maintenance plans for each baghouse will also be requirements of the permit.

Prior Installation of Semi-Direct Firing System & SNCR

The Department has concluded that the pre-installed SNCR system on Kilns 1 and 2 will not cause a significant increase in NO_X emissions if operated in accordance with the attached conditions. Therefore, the projects will not trigger PSD or require a BACT determination.

The final permit will include the requested limits of 1.21 pounds of NO_X per ton of preheater feed for both kilns. A maximum annual preheater feed rate of 1,300,000 TPY for each kiln will also be added. The recently certified NO_X CEMS will become the required method of compliance.

Because SO_2 emissions are minimal from cement kilns in Florida, very little particulate matter can be formed by reaction with excess NH_3 emissions (slip). Although there is no reason to inject as much NH_3 as it takes to react with all NO_X, the Department will limit the maximum NH_3 injection rate to that level, at a molar ratio of 1.0. This equates to approximately 139 pounds per hour of ammonia (as 100% ammonia) assuming pretreatment emissions of 4.0 lb/ton of clinker. According to the applicant, for a reduction from 4.0 to 2.0 lb/ton of clinker, the required molar ratio is in the range of 0.6-0.7. The actual ammonia delivered to the plant will be a 19 percent aqueous ammonia solution according to the application.

E. ADDITIONAL COMMENTS

The Department's determination is strictly limited to this specific case and should not be used as a precedent for other cases, or lead to unintended consequences construed from the language contained in this determination. Ultimately, it is the Department that interprets its own regulations and opinions.

REFERENCES

[1] Letter, National Lime Association, Comments on VISTAS' Draft Regional Haze Modeling Protocol, October 21, 2005.

[2] Leaflet, Pillard Combustion Equipment & Control Systems, "Directflam® Systems Semi-direct Fired Rotaflam® low NO_X Kiln Burner, 9903G Rev.1

[3] Bulletin, Pillard Thermique & Automatique, "Conversion of Coal-Fired Rotary Kiln From Direct to Indirect Mode", 9507 G.

[4] Leaflet, Pillard Combustion Equipment & Control Systems, "Directflam® Systems Semi-direct Fired Rotaflam® low NO_X Kiln Burner, 9903G Rev.1

[5] Leaflet, Pillard Combustion Equipment & Control Systems, "Directflam® Systems Semi-direct Fired Rotaflam® low NO_X Kiln Burner, 9903G Rev.1

CEMEX

November 29, 2006

UPS Overnight Delivery

Ms. Cindy Mulkey
Engineer, Bureau of Air Regulation
Division of Air Resource Management
2600 Blair Stone Rd MS #5505
Tallahassee, Fl 32399-2400

RE: CEMEX Cement, Inc.
Brooksville Cement Plant
CEMEX DEP File No 0530010-026-AC
Indirect Firing System and SNCR System for Kilns 1 and 2

Dear Cindy:

Please find enclosed the original Proof of Publication of the public notice for the above referenced construction project. The public notice is dated November 15, 2006 and ran in the Hernando Today section of the Tampa Tribune.

If there are any questions concerning this information please contact me at (352) 799-2011

Sincerely,

CEMEX Cement, Inc.

Charles E. Walz
Environmental Manager

cc: File

Brooksville Plant
16301 Ponce De Leon Boulevard, Brooksville, FL 34614. USA, (352) 796-7241, Fax (352) 754-9836

BEST AVAILABLE COPY

HERNANDO TODAY

Published Daily
BROOKSVILLE, HERNANDO, FLORIDA
STATE OF FLORIDA
COUNTY OF HERNANDO:

Before the undersigned authority personally appeared Sylvia Spivey, who on oath says that he/she is Legal Ad Coordinator of the Hernando Today/Hernando Sunday, a daily newspaper published at Brooksville in Hernando County, Florida: that the attached copy of the advertisement, being a Legal Notice ..... in the matter of ...Cemex/Air Construction Permit. dep file# 0530010-026-AC..... in the ...n/a..... Court, was published in said newspaper in the issues of .....November 15, 2006..... .....

Affiant further says that the said Hernando Today/Hernando Sunday is a newspaper published at Brooksville, in said Hernando County, Florida, and that the said newspaper has heretofore been continuously published in said Hernando County, Florida, each week and has been entered as a second class mail matter at the post office in Brooksville, in said Hernando County, Florida for a period of 1 year next preceding the first publication of the attached copy of advertisement; and affiant further says that he/she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Sylvia Spivey
(Signature of Affiant)

Sworn to and subscribed before me this 28 day of November, 2006

Denise Nohejl
(Signature of Notary Public)

DENISE NOHEJL
Notary Public - State of Florida
My Commission Expires Dec 19, 2008
Commission # DD 361938

(Name of Notary Typed, printed or stamp)

Personally Known X or
Produced Identification _____
Type of Identification Produced

.....

RECEIVED
NOV 29 2006
BY:.....

Legal Notices

CEMEX/1935130

Public Notice of Intent to Issue Air Construction Permit

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP File No. 0530010-026-AC

CEMEX Cement, Inc.
Brooksville Cement Plant
Kilns 1 and 2
Hernando County

The Department of Environmental Protection (Department) gives notice of its intent to issue an Air Construction Permit to CEMEX Cement, Inc. The permit authorizes the installation of indirect firing systems, including after the-fact burner replacements on Kilns 1 and 2, and installation of selective non-catalytic reduction (SNCR) systems on Kilns 1 and 2. The applicant's name and address are CEMEX Cement, Inc., Brooksville Cement Plant, Post Office Box 5, Brooksville, Florida 34605-0005.

The existing facility consists of two dry process preheater kilns (Kilns 1 and 2). Both kilns were originally equipped with direct firing systems and mono-channel burners. The indirect firing system consists of the changeout to kiln burners that use a low amount of the cool, moist primary air from the coal mill to convey pulverized coal into the kiln firing zone. This allows greater use of hot secondary air from the clinker cooler and kiln hood. The result is greater energy efficiency, and in theory less pollution generation. The burners are typically of multichannel design with greater flexibility in the manner by which the fuel and air are mixed and possible flame shapes and lengths. The transition to the indirect firing systems may also involve replacement of, or modifications to, the burners currently in operation.

For each kiln, the indirect firing system will also require the installation of an additional coal mill, baghouse, a pulverized coal bin with associated baghouse, and one pump with associated baghouse.

The SNCR system will be used to inject sufficient amounts of aqueous ammonia into the preheater, just above the kiln inlet, to meet a new limit of 1.21 pounds (lb) of nitrogen oxides (NOX) per ton of preheater feed on each kiln. This equates to approximately 2.0 lb NOX/ton of clinker. The current limits are 1.83 and 1.72 lb NOX/ton preheater feed for Kilns 1 and 2 respectively. The use of SNCR for NOX control has been tested and successfully demonstrated at other cement plants in Florida.

Emissions of particulate matter from the new baghouses are expected to be less than 17 tons per year, which is below the significant emission rate that would require PSD review. No significant increases in any other criteria pollutant emissions are expected from the installation of the indirect firing system. Emissions of nitrogen oxides (NOX) will actually decrease due to the SNCR systems if not due to the indirect firing systems. Because there are no significant increases in emissions of criteria pollutants, a PSD review is not required.

The Department will issue the Final Permit, in accordance with the conditions of the Draft Permit, unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of 14 (fourteen) days from the date of publication of this Public Notice of Intent to Issue Permit. Written comments or requests for public meetings should be provided to the Department's Bureau of Air Regulation, Permitting Section, Mail Station #5505, Tallahassee, FL 32399-2400 or the e-mail address provided below. Any written comments filed shall be made available for public inspection. If comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen (14) days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen (14) days of publication of the public notice or within fourteen (14) days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S. or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C. Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Department of Environmental Protection
Bureau of Air Regulation
Southwest District Office
111 S. Magnolia Drive, Suite 4
13051 N. Telecom Parkway
Tallahassee, Florida, 32301
Temple Terrace, Florida 33637-0926
Telephone: 850/488-0114
Telephone: 813/744-6100
Fax: 850/922-6979
Fax: 813/744-6084

The complete project file includes the application, technical evaluation, the Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact Program Administrator, South Permitting Section, Bureau of Air Regulation at 850/921-8968 or call 850/488-0114 for additional information.

Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400 or the e-mail address provided below. Any written comments filed shall be made available for public inspection. If comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen (14) days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen (14) days of publication of the public notice or within fourteen (14) days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S. or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service

correspondence, draft permit and technical evaluation can be accessed at: www.dep.state.fl.us/Air/permitting/construction/cemex.htm.

Publish: November 15, 2006

KOOGLER & ASSOCIATES, INC.
ENVIRONMENTAL SERVICES
4014 NW 13th STREET
GAINESVILLE, FL 32609-1923
352/377-5822 • FAX/377-7158

KA 521-06-20
September 15, 2006

Via Email and USPS

RECEIVED
SEP 20 2006
BUREAU OF AIR REGULATION

Ms. Trina Vielhauer
Florida Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road MS 5500
Tallahassee, FL 32399-2400

RE: Cemex Cement, Inc.
Brooksville Cement Plant
FDEP File No.: 0530010-026-AC - Indirect Firing Systems for Kiln No. 1 and Kiln No. 2
Additional Information

Dear Trina,

On behalf of Cemex Cement, Inc. (Cemex), I would like to express our appreciation for you, Al Linero, Cindy Mulkey and the staff of the Department's Southwest District Office meeting with us at the Brooksville Cement Plant on September 12, 2006 to tour the plant and to discuss the various permitting projects that are currently under review by the Department. The purpose of this letter is to confirm the discussion we had regarding alternative burners for the indirect firing systems proposed for Kiln No. 1 and Kiln No. 2.

In the original air construction permit application, we stated that the indirect firing systems proposed for Kiln No. 1 and Kiln No. 2 would incorporate the Pillard Rotoflam® burners installed in or around April 2005 as part of the semi-direct firing systems. Since that application was submitted, Cemex has discussed the indirect firing systems in more detail with Pillard and has also requested a proposal from F.L. Smidth. As a result of these discussions, Cemex would like to amend the above-captioned application to allow for potential modifications to the existing Pillard burners and to allow for the alternative of replacing the Pillard burners with F.L. Smidth (FLS) burners.

The potential modifications to the Pillard burners are shown in Attachment 1. These modifications may include, but are not necessarily limited to, new controls on the radial and axial air supplies, new solid fuel (coal and/or petroleum coke) feed to the burners, and new burner tips. None of these modifications will affect the principle of operation of the Pillard burners as described in the original application nor will the modifications adversely affect the performance of the burners or the potential air pollutant emissions from the two kiln systems.

The indirect firing system conceptually proposed by FLS is the same as that described in the original permit application. The conceptual proposal from FLS is included as Attachment 2 and shows the same indirect firing system as originally described with only the burners and the air/fuel controls associated with the burner being replaced. It is expected that if the FLS proposal is accepted, the Pillard burners will be replaces with FLS Duoflex® burner systems. The general operating principles of the FLS Duoflex® burner is the same as that described for the Pillard Rotoflam® burner. Hence, the choice of either of these burners will not change the principles of operation described in the original application, the expected performance nor emissions from the pyroprocessing system.

The Duoflex® burner as described by FLS is a multi-channel burner. The burner features a central duct for gaseous and liquid fuel firing mounted inside of an annular coal channel. The coal channel is surrounded by the radial and axial air channels. The air and fuel from the three channels are mixed into a single stream before being discharged through a conical air nozzle at the burner tip.

The primary air, which comprises approximate 6-8 percent of the stochiometric combustion air, is supplied by a high pressure fan. When coupled with a variable area discharge nozzle, this allows the adjustment of burner exit momentum (and therefore

flame shape) independent of the primary air flow rate. The advantages cited by FLS for the Duoflex® burner system are similar to those described in the original permit application or the Pillard Rotoflam® burner system.

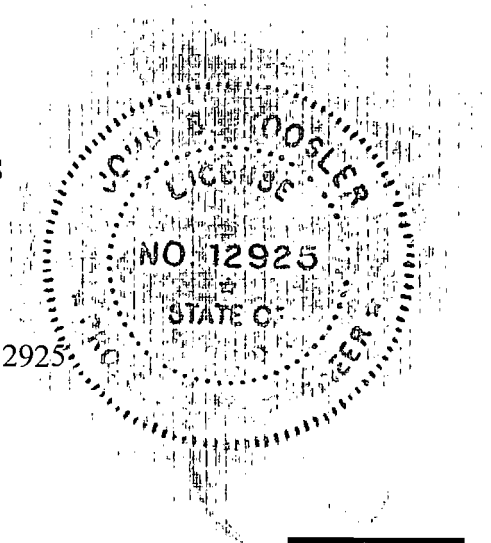
In summary, Cemex will use the existing Pillard Rotoflam® burner systems, those same systems with some modification, FLS Duoflex® burner systems or the equivalent in the proposed indirect firing systems. Whichever burner systems are decided upon, the principles of operation, the performance, and the expected emissions will be as described in the original permit application. Cemex will provide the Department with the final burner system description once a final decision has been made.

Again, I would like to express our appreciation for the meeting we had in Brooksville and for the effort you and your staff have put into reviewing the application and supplemental information for the indirect firing systems and the other air construction permit applications submitted by Cemex.

If there are any questions regarding information that I've provided herein or if there are any other questions related to the indirect firing systems, please contact me as soon as possible.

Very truly yours,

KOOGLER & ASSOCIATES



John B. Koogler, Ph.D., P.E.
State of Florida License No. 12925

JBK/lt

Attachment

KOOGLER & ASSOCIATES, INC.
ENVIRONMENTAL SERVICES

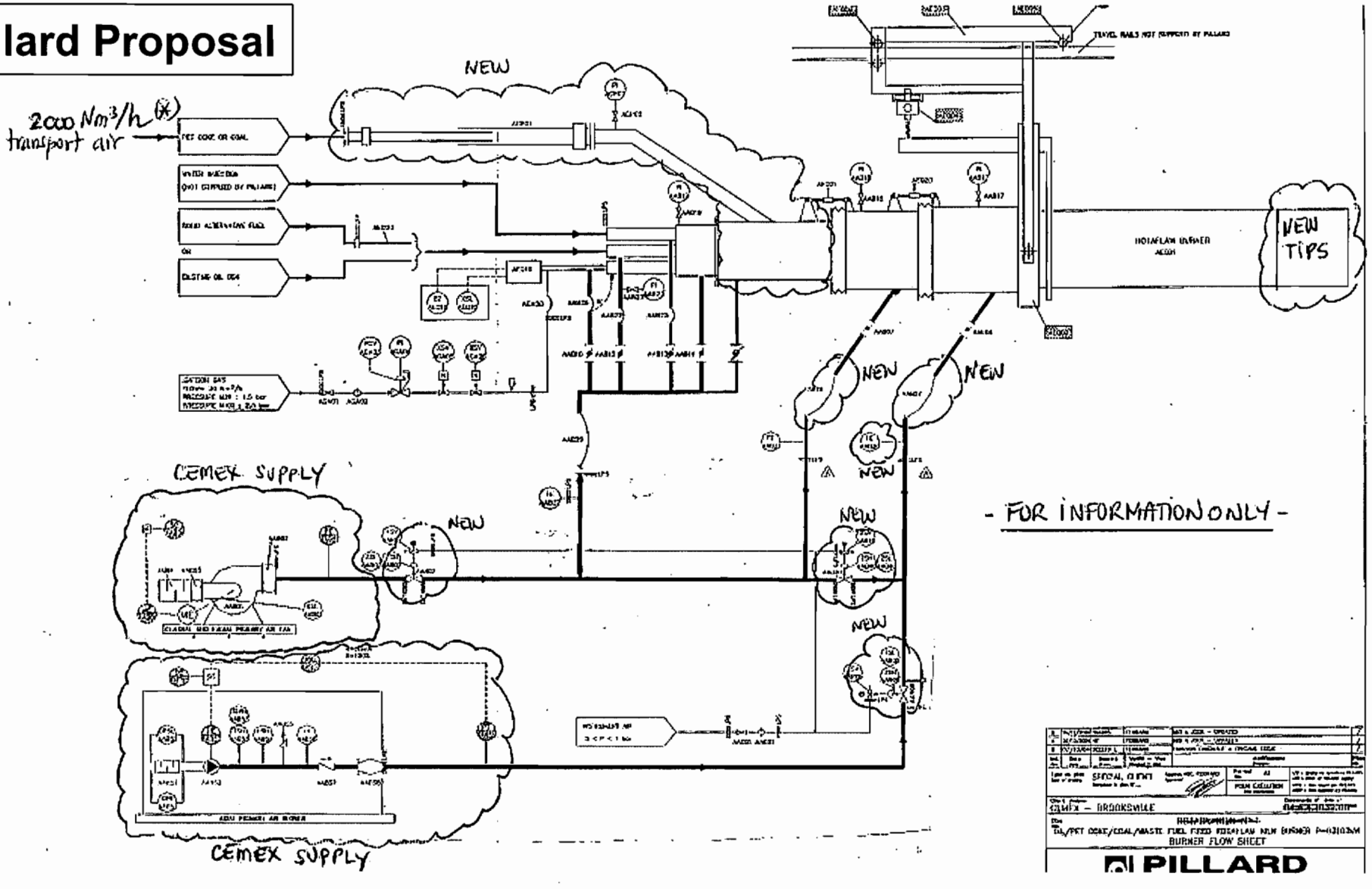
cc: Al Linero
Cindy Mulkey
Mara Nasca, SWD
Jeet Gill, Cemex
Mike Gonzales, Cemex
Charlie Walz, Cemex

Attachment 1
Pillard Burner Modifications

Best Available Copy

Brooksville: Fuel Firing Upgrade Proposal- Pillard Burner

Pillard Proposal

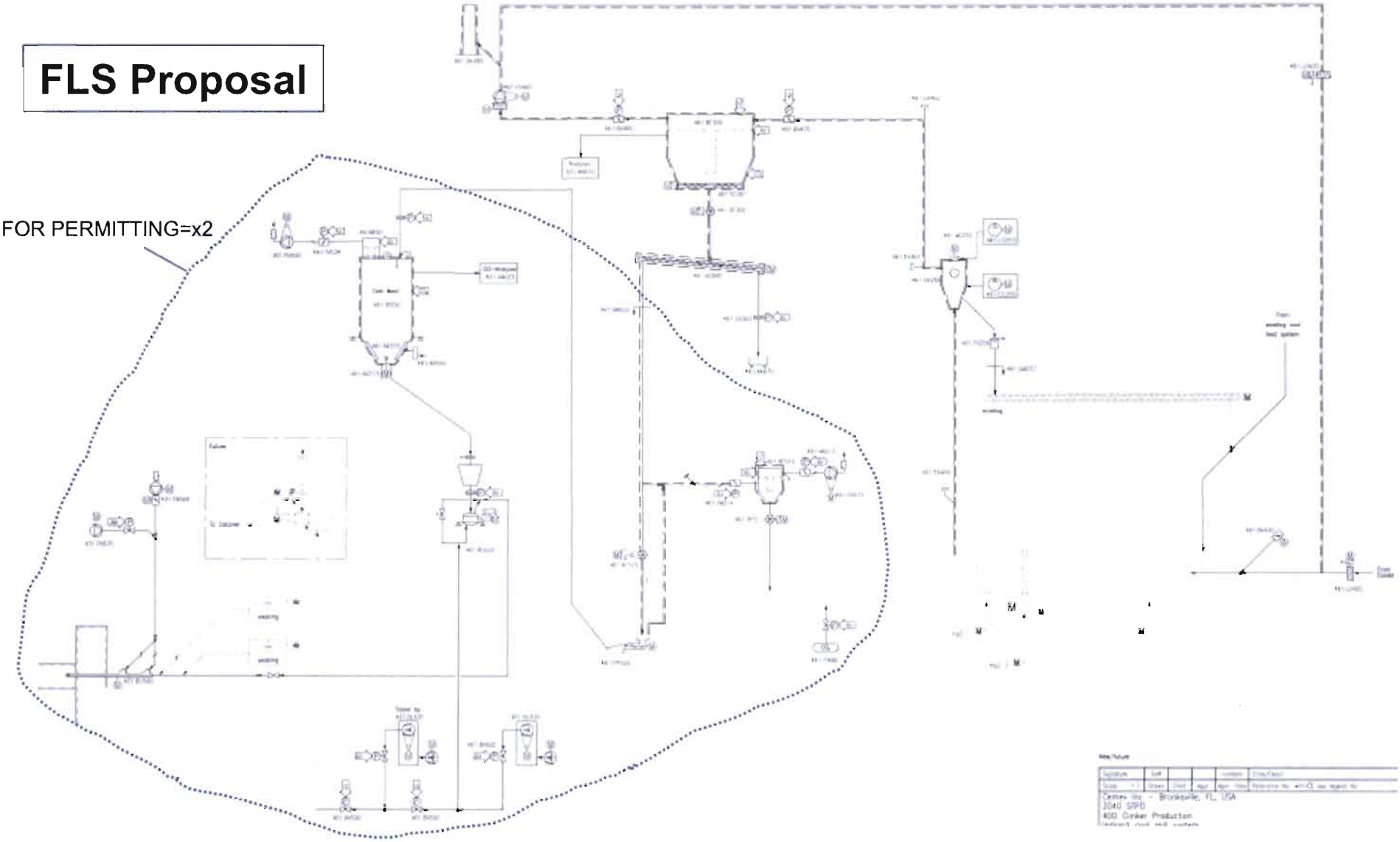


Attachment 2
Conceptual FL Smidth Burner Proposal

Brooksville: Fuel Firing Upgrade Proposal

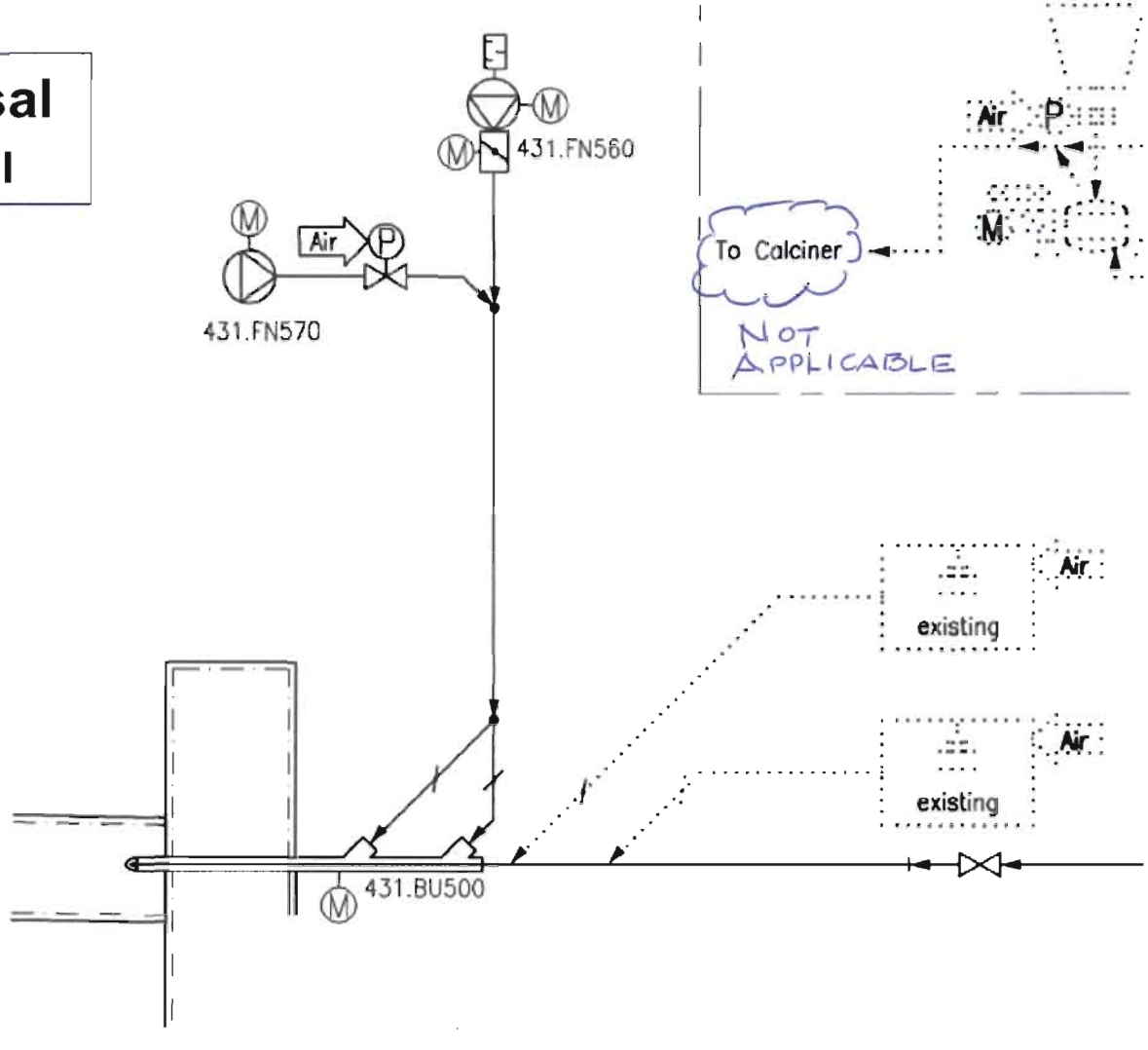
FLS Proposal

FOR PERMITTING=x2



Brooksville: Fuel Firing Upgrade Proposal- FLS Burner

FLS Proposal
Burner Detail



KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
352/377-5822 ▪ FAX/377-7158

KA 521-06-20
September 5, 2006

Ms. Trina Vielhauer
Florida Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road MS 5500
Tallahassee, Florida 32399-2400

RE: ***CEMEX Cement, Inc.***
Brooksville Cement Plant
Indirect Firing Systems for Kilns No. 1 and 2, Application Revision

Dear Trina:

Enclosed please find three (3) copies of the original signed responsible official (RO) signature page for the letter submitted September 1, 2006 regarding a revision to the air construction permit application to install indirect firing systems on Kilns 1 and 2 at CEMEX Cement, Inc.'s Brooksville Cement Plant (Facility ID No. 0530010). The RO pages were accidentally sent to the Koogler & Associates' offices instead of directly to FDEP.

Please feel free to contact me at (352) 377-5822 or FBergen@kooglerassociates.com, or Mr. Charles Walz, CEMEX Cement Inc., at (352) 799-2011, if you have any questions regarding this submittal.

Very truly yours,

KOOGLER & ASSOCIATES

Fawn W. Bergen, P.E.
Project Engineer

FB

Enclosure: RO Signature Page

cc: J. Gill, CEMEX
A. Linero, FDEP
C. Mulkey, FDEP
C. Walz, CEMEX

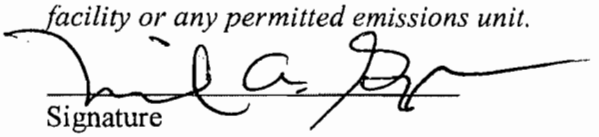
APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name :
   Michael A. Gonzales, Plant Manager
2. Owner/Authorized Representative Mailing Address...
   Organization/Firm: **CEMEX Cement, Inc.**
   Street Address: **Post Office Box 6**
   City: **Brooksville** State: **Florida** Zip Code: **34605-0006**
3. Owner/Authorized Representative Telephone Numbers...
   Telephone: **(352) 799-2057** ext. Fax: **(352) 754-9836**
4. Owner/Authorized Representative Email Address:
   Michaelanthony.gonzales@cemexusa.com
5. Owner/Authorized Representative Statement:

   I, the undersigned, am the owner or authorized representative of the facility addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other requirements identified in this application to which the facility is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit.



Signature

9/1/06.

Date

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name :
   Michael A. Gonzales, Plant Manager

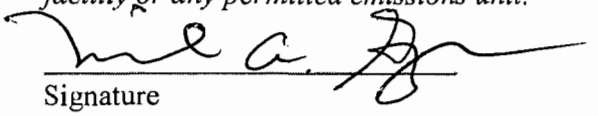
2. Owner/Authorized Representative Mailing Address...
   Organization/Firm: **CEMEX Cement, Inc.**
   Street Address: **Post Office Box 6**
   City: **Brooksville** State: **Florida** Zip Code: **34605-0006**

3. Owner/Authorized Representative Telephone Numbers...
   Telephone: **(352) 799-2057** ext. Fax: **(352) 754-9836**

4. Owner/Authorized Representative Email Address:
   Michaelanthony.gonzales@cemexusa.com

5. Owner/Authorized Representative Statement:

   I, the undersigned, am the owner or authorized representative of the facility addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other requirements identified in this application to which the facility is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit.



Signature

9/1/06.

Date

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name :
   Michael A. Gonzales, Plant Manager

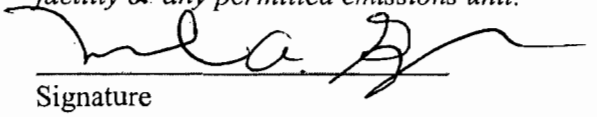
2. Owner/Authorized Representative Mailing Address...
   Organization/Firm: **CEMEX Cement, Inc.**
   Street Address: **Post Office Box 6**
   City: **Brooksville** State: **Florida** Zip Code: **34605-0006**

3. Owner/Authorized Representative Telephone Numbers...
   Telephone: **(352) 799-2057** ext. Fax: **(352) 754-9836**

4. Owner/Authorized Representative Email Address:
   Michaelanthony.gonzales@cemexusa.com

5. Owner/Authorized Representative Statement:

   I, the undersigned, am the owner or authorized representative of the facility addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other requirements identified in this application to which the facility is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit.



Signature

9/1/06.

Date

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
352/377-5822 ▪ FAX/377-7158

KA 521-06-20
September 1, 2006

Ms. Trina Vielhauer
Florida Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road MS 5500
Tallahassee, Florida 32399-2400

RE: CEMEX Cement, Inc.
Brooksville Cement Plant
Indirect Firing Systems for Kilns No. 1 and 2, Application Revision

Dear Trina:

Enclosed please find a revision to the air construction permit application to install indirect firing systems on Kilns 1 and 2 at CEMEX Cement, Inc.'s Brooksville Cement Plant (Facility ID No. 0530010). The construction permit application was submitted to FDEP on August 18. A description of the revision is a described below.

The past actual and future actual emission calculations presented in Table 3 of Attachment A to the permit application, have been revised in accordance with Rule 62-210.370, F.A.C. The past actual emissions for Kilns 1 and 2 have been calculated using stack test data and actual production data for the consecutive 24-month period of calendar year 1999 through 2000. Stack test data were used since certified CEMS data are not available for Kilns 1 and 2.

Emission factors were derived (in lb/ton of preheater feed) by using the average of all stack test data for the 5-year period of 1999 through 2003 for PM, PM_{10} (assumed all PM is PM_{10}), NO_x, CO, and SO_2. Since only 1 stack test was performed on Kilns 1 and 2 to determine VOC emissions during this 5-year period (in 2001), these data were used for the VOC emission factor. Stack test data from 2003 for Kiln 1 were excluded since the test was performed while the Kiln was burning coal only. Refer to Table 4 for the derivation of the emission factors.

For each pollutant except VOC, an average emission factor was derived for each kiln and was then applied to the actual production data for that specific year to calculate annual emissions (tons

per year). These calculations are presented in Table 5. The highest consecutive 24-month period of emissions (1999 through 2000) represents the "past actual" emissions in Table 3.

Future actual emissions were calculated based on the past actual emissions plus a 10% demand increase to account for the increase in cement production and a PSD netting factor (taken as the PSD significant emission rate minus 1 TPY).

Please feel free to contact me at (352) 377-5822 or FBergen@kooglerassociates.com, or Mr. Charles Walz, CEMEX Cement Inc., at (352) 799-2011, if you have any questions regarding this submittal.

Very truly yours,

KOOGLER & ASSOCIATES

Fawn W. Bergen, P.E.
Project Engineer

FB

Enclosure: Tables 3, 4, and 5
PE Signature Page
RO Signature Page

cc: J. Gill, CEMEX
A. Linero, FDEP
C. Mulkey, FDEP
C. Walz, CEMEX

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name :
   Michael A. Gonzales, Plant Manager

2. Owner/Authorized Representative Mailing Address...
   Organization/Firm: **CEMEX Cement, Inc.**
   Street Address: **Post Office Box 6**
   City: **Brooksville** State: **Florida** Zip Code: **34605-0006**

3. Owner/Authorized Representative Telephone Numbers...
   Telephone: **(352) 799-2057** ext. Fax: **(352) 754-9836**

4. Owner/Authorized Representative Email Address:
   Michaelanthony.gonzales@cemexusa.com

5. Owner/Authorized Representative Statement:

   I, the undersigned, am the owner or authorized representative of the facility addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other requirements identified in this application to which the facility is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit.

   _____ _____
   Signature Date

Note: Original being sent under separate cover.

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: **Fawn Bergen, P.E.**
   Registration Number: **61614**
2. Professional Engineer Mailing Address...
   Organization/Firm: **Koogler & Associates, Inc.**
   Street Address: **4014 N.W. 13th Street**
   City: **Gainesville** State: **Florida** Zip Code: **32609**
3. Professional Engineer Telephone Numbers...
   Telephone: **(352) 377-5822** ext.**29** Fax: **(352) 377-7158**
4. Professional Engineer Email Address: **fbergen@kooglerassociates.com**
5. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here ☐, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

(4) If the purpose of this application is to obtain an air construction permit (check here ☒, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here , if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here ☐, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

Fawn Bergen
Signature

9/1/06
Date

(seal)

* Attach any exception to certification statement.

Table 3. Summary of Past Actual and Future Actual Emissions and PSD Applicability Analysis

	Annual Emissions (TPY)					
	CO	NO_x	PM	PM_{10}	SO_2	VOC
Past Actual[a]						
Kiln No. 1	597.0	763.5	33.0	33.0	5.0	43.4
Kiln No. 2	591.3	835.9	17.4	17.4	4.8	49.0
Total Past Actual	1,188.3	1,599.4	50.4	50.4	9.8	92.5
Demand Increase	118.8	159.9	5.0	5.0	1.0	9.2
PSD Netting Factor	99.0	39.0	24.0	14.0	39.0	39.0
Future Actual, Total[b]	1,406.2	1,798.3	79.4	69.4	49.8	140.7
Future Actual, per Kiln	703.1	899.2	39.7	34.7	24.9	70.3

[a] Refer to Tables 4 and 5 for emission calculations.

[b] Future actual emissions based on past actual + 10% demand increase from past actual + PSD netting factor (PSD significant emission rate - 1 TPY)

Table 4. Stack Test Data and Emission Factor Derivation, 1999-2003, Cement Kilns 1 and 2, CEMEX Brooksville

Kiln 1

	PH Feed Rate (TPH) [a]	Clinker Produced (TPY) [b]	Converted to Preheater Feed [c] (TPY)	Emissions PM lb/hr	PM lb/ton [d]	NO_x lb/hr	NO_x lb/ton [d]	CO lb/hr	CO lb/ton [d]	SO_2 lb/hr	SO_2 lb/ton [d]	VOC lb/hr	VOC lb/ton [d]
1999	152.0	698,700	1,164,500	10.72	0.07	262.25	1.73	127.78	0.84	0.80	0.005	ND	ND
2000	150.0	683,564	1,139,273	8.27	0.06	174.9	1.17	164.6	1.10	1.67	0.011	ND	ND
2001	150.0	618,572	1,030,953	9.58	0.06	184.0	1.23	171.0	1.14	1.29	0.009	11.31	0.075
2002	146.4	488,014	813,357	5.80	0.04	173.4	1.18	156.4	1.07	1.42	0.010	ND	ND
2003*	150.0	381,572	635,953	7.02	0.05	171.5	1.14	130.7	0.87	3.49	0.023	ND	ND
5-yr Average (99-03)=				**8.59**	**0.057**	**198.64**	**1.326**	**154.95**	**1.037**	**1.30**	**0.009**	**11.31**	**0.075**
Current Permit Limit (No. 0530010-002-AV)=					**0.18**		**1.83**		**1.20**		**0.10**		**0.09**

*Test was performed while Kiln was burning coal only.

Kiln 2

	PH Feed Rate (TPH)	Clinker Produced (TPY) [b]	Converted to Preheater Feed [c] (TPY)	Emissions PM lb/hr	PM lb/ton [d]	NO_x lb/hr	NO_x lb/ton [d]	CO lb/hr	CO lb/ton [d]	SO_2 lb/hr	SO_2 lb/ton [d]	VOC lb/hr	VOC lb/ton [d]
1999	150.0	676,345	1,127,242	3.00	0.02	159.76	1.07	156.00	1.04	0.88	0.006	ND	ND
2000	150.0	694,955	1,158,258	4.47	0.03	221.85	1.48	176.63	1.18	0.89	0.006	ND	ND
2001	150.0	589,000	981,667	8.19	0.05	229.00	1.53	170.00	1.13	0.60	0.004	12.87	0.086
2002	149.9	485,768	809,613	4.18	0.03	230.00	1.53	165.40	1.10	2.46	0.016	ND	ND
2003	155.1	600,728	1,001,213		0.02		1.71		0.72		0.010	ND	ND
5-yr Average (99-03)=				**4.96**	**0.030**	**210.15**	**1.46**	**167.01**	**1.03**	**1.21**	**0.008**	**12.87**	**0.086**
Current Permit Limit (No. 0530010-002-AV)=					**0.18**		**1.72**		**1.20**		**0.10**		**0.09**

ND = No data

[a] From stack test data.

[b] From AORs.

[c] Calculated from the clinker production and a factor of 0.60 x preheater feed = clinker.

[d] lb/ton of preheater feed

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
352/377-5822 ▪ FAX/377-7158

KA 521-06-20
August 18, 2006

RECEIVED
AUG 22 2006
BUREAU OF AIR REGULATION

Ms. Trina Vielhauer
Florida Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road MS 5500
Tallahassee, Florida 32399-2400

RE: ***CEMEX Cement, Inc.***
Brooksville Cement Plant
Indirect Firing Systems for Kilns No. 1 and 2

Dear Trina:

Enclosed please find four (4) copies of an application to install indirect firing systems on Kilns 1 and 2 at CEMEX Cement, Inc.'s Brooksville Cement Plant (Facility ID No. 0530010). The requested construction project was recently discussed with the Department in a meeting on August 9, 2006. The original responsible official signature page was submitted directly to Mr. Al Linero on August 18.

Please feel free to contact me at (352) 377-5822 or FBergen@kooglerassociates.com, or Mr. Charles Walz, CEMEX Cement Inc., at (352) 799-2011, if you have any questions regarding this submittal.

Very truly yours,

KOOGLER & ASSOCIATES

Fawn W. Bergen, P.E.
Project Engineer

FB

Enclosure: 4 copies-Air Construction Permit Application

cc: J. Gill, CEMEX
A. Linero, FDEP
C. Mulkey, FDEP
C. Walz, CEMEX
M. Nacca, SWD

Department of Environmental Protection

Division of Air Resource Management

RECEIVED
AUG 22 2006
BUREAU OF AIR REGULATION

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit for a proposed project:
- subject to prevention of significant deterioration (PSD) review, nonattainment area (NAA) new source review, or maximum achievable control technology (MACT) review; or
- where the applicant proposes to assume a restriction on the potential emissions of one or more pollutants to escape a federal program requirement such as PSD review, NAA new source review, Title V, or MACT; or
- at an existing federally enforceable state air operation permit (FESOP) or Title V permitted facility.

Air Operation Permit – Use this form to apply for:
- an initial federally enforceable state air operation permit (FESOP); or
- an initial/revised/renewal Title V air operation permit.

Air Construction Permit & Revised/Renewal Title V Air Operation Permit (Concurrent Processing Option) – Use this form to apply for both an air construction permit and a revised or renewal Title V air operation permit incorporating the proposed project.

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: **CEMEX Cement, Inc.**	
2. Site Name: **Brooksville Plant**	
3. Facility Identification Number: **0530010**	
4. Facility Location...: Street Address or Other Locator: **1630 Ponce de Leon Blvd.** City: **Brooksville** County: **Hernando** Zip Code: **34601**	
5. Relocatable Facility? ☐ Yes ☒ No	6. Existing Title V Permitted Facility? ☒ Yes ☐ No

Application Contact

1. Application Contact Name: **Fawn Bergen, PE, Project Engineer**
2. Application Contact Mailing Address... Organization/Firm: **Koogler & Associates, Inc.** Street Address: **4014 N.W. 13th Street** City: **Gainesville** State: **Florida** Zip Code: **32609**
3. Application Contact Telephone Numbers... Telephone: **(352) 377-5822** ext.**29** Fax: **(352) 377-7158**
4. Application Contact Email Address: **fbergen@kooglerassociates.com**

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	8-22-06
2. Project Number(s):	0530010-026-AC
3. PSD Number (if applicable):	
4. Siting Number (if applicable):	

APPLICATION INFORMATION

Purpose of Application

This application for air permit is submitted to obtain: (Check one)

Air Construction Permit

☒ Air construction permit.

Air Operation Permit

☐ Initial Title V air operation permit.
☐ Title V air operation permit revision.
☐ Title V air operation permit renewal.
☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.
☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

☐ Air construction permit and Title V permit revision, incorporating the proposed project.
☐ Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

☐ I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

Application Comment

This application is for a non-PSD Air Construction Permit to authorize the modification of the Cement Kilns Nos. 1 and 2 to utilize an indirect firing system. There will not be any changes to operating or production rates or changes to maximum potential emissions.

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Proc. Fee
003	No. 1 Cement Kiln	AC1B	
014	No. 2 Cement Kiln	AC1B	

Application Processing Fee

Check one: ☐ Attached - Amount: $ _____ ☒ Not Applicable

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name :
   Michael A. Gonzales, Plant Manager
2. Owner/Authorized Representative Mailing Address...
   Organization/Firm: **CEMEX Cement, Inc.**
   Street Address: **Post Office Box 6**
   City: **Brooksville** State: **Florida** Zip Code: **34605-0006**
3. Owner/Authorized Representative Telephone Numbers...
   Telephone: **(352) 799-2057** ext. Fax: **(352) 754-9836**
4. Owner/Authorized Representative Email Address: **mike.gonzales@cemexusa.com**
5. Owner/Authorized Representative Statement:

   I, the undersigned, am the owner or authorized representative of the facility addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other requirements identified in this application to which the facility is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit.

   Signature

   8/17/2006
   Date

NOTE: Original to be provided under separate cover.

APPLICATION INFORMATION

Application Responsible Official Certification

Complete if applying for an initial/revised/renewal Title V permit or concurrent processing of an air construction permit and a revised/renewal Title V permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name:

2. Application Responsible Official Qualification (Check one or more of the following options, as applicable):

   ☐ For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C.

   ☐ For a partnership or sole proprietorship, a general partner or the proprietor, respectively.

   ☐ For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official.

   ☐ The designated representative at an Acid Rain source.

3. Application Responsible Official Mailing Address...
   Organization/Firm:
   Street Address:
   City: State: Zip Code:

4. Application Responsible Official Telephone Numbers...
   Telephone: ext. Fax:

5. Application Responsible Official Email Address:

6. Application Responsible Official Certification:

   I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.

   Signature Date

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: **Fawn Bergen, P.E.**
   Registration Number: **61614**
2. Professional Engineer Mailing Address...
   Organization/Firm: **Koogler & Associates, Inc.**
   Street Address: **4014 N.W. 13th Street**
   City: **Gainesville** State: **Florida** Zip Code: **32609**
3. Professional Engineer Telephone Numbers...
   Telephone: **(352) 377-5822** ext.**29** Fax: **(352) 377-7158**
4. Professional Engineer Email Address: **fbergen@kooglerassociates.com**
5. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here ☐, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

(4) If the purpose of this application is to obtain an air construction permit (check here ☒, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here , if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here ☐, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

Signature 8/8/06
Date

(seal)

* Attach any exception to certification statement.

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates... Zone **17** East (km) **356.9** North (km) **3169.0**		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) **28/38/34** Longitude (DD/MM/SS) **82/28/25**	
3. Governmental Facility Code: **0**	4. Facility Status Code: **A**	5. Facility Major Group SIC Code: **32**	6. Facility SIC(s): **3241**
7. Facility Comment :			

Facility Contact

1. Facility Contact Name: **Charles E. Walz, Environmental Manager**
2. Facility Contact Mailing Address... Organization/Firm: **CEMEX Cement, Inc.** Street Address: **Post Office Box 6** City: **Brooksville** State: **Florida** Zip Code: **34605-0006**
3. Facility Contact Telephone Numbers: Telephone: **(352) 796-7241** ext. Fax: **(352) 754-9836**
4. Facility Contact Email Address: **cwalz@cemexusa.com**

Facility Primary Responsible Official

Complete if an "application responsible official" is identified in Section I. that is not the facility "primary responsible official."

1. Facility Primary Responsible Official Name:
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
3. Facility Primary Responsible Official Telephone Numbers... Telephone: ( ) - ext. Fax: ( ) -
4. Facility Primary Responsible Official Email Address:

FACILITY INFORMATION

Facility Regulatory Classifications

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a "major source" and a "synthetic minor source."

1. ☐ Small Business Stationary Source	☒ Unknown
2. ☐ Synthetic Non-Title V Source	
3. ☒ Title V Source	
4. ☒ Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. ☐ Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. ☒ Major Source of Hazardous Air Pollutants (HAPs)	
7. ☐ Synthetic Minor Source of HAPs	
8. ☒ One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. ☐ One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. ☒ One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. ☐ Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment:	

FACILITY INFORMATION

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
PM	**A**	**N**
PM_{10}	**A**	**N**
NO_X	**A**	**N**
SO_2	**A**	**N**
CO	**A**	**N**
VOC	**A**	**N**
HCl	**A**	**N**

B. EMISSIONS CAPS

Facility-Wide or Multi-Unit Emissions Caps

1. Pollutant Subject to Emissions Cap	2. Facility Wide Cap [Y or N]? (all units)	3. Emissions Unit ID Nos. Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap

7. Facility-Wide or Multi-Unit Emissions Cap Comment:

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☐ Attached, Document ID: _____ ☒ Previously Submitted, Date: **10/05**
2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☐ Attached, Document ID:_____ ☒ Previously Submitted, Date: **10/05**
3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☐ Attached, Document ID:_____ ☒ Previously Submitted, Date: **10/05**

Additional Requirements for Air Construction Permit Applications

1. Area Map Showing Facility Location: ☐ Attached, Document ID:_____ ☒ Not Applicable (existing permitted facility)
2. Description of Proposed Construction or Modification: ☒ Attached, Document ID: **Attachment A**
3. Rule Applicability Analysis: ☒ Attached, Document ID: **Attachment A**
4. List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.): ☐ Attached, Document ID:_____ ☒ Not Applicable (no exempt units at facility)
5. Fugitive Emissions Identification (Rule 62-212.400(2), F.A.C.): ☐ Attached, Document ID:_____ ☒ Not Applicable
6. Preconstruction Air Quality Monitoring and Analysis (Rule 62-212.400(5)(f), F.A.C.): ☐ Attached, Document ID:_____ ☒ Not Applicable
7. Ambient Impact Analysis (Rule 62-212.400(5)(d), F.A.C.): ☐ Attached, Document ID:_____ ☒ Not Applicable
8. Air Quality Impact since 1977 (Rule 62-212.400(5)(h)5., F.A.C.): ☐ Attached, Document ID:_____ ☒ Not Applicable
9. Additional Impact Analyses (Rules 62-212.400(5)(e)1. and 62-212.500(4)(e), F.A.C.): ☐ Attached, Document ID:_____ ☒ Not Applicable
10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.): ☐ Attached, Document ID:_____ ☒ Not Applicable

FACILITY INFORMATION

Additional Requirements for FESOP Applications

1. List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.):
   ☐ Attached, Document ID: ☒ Not Applicable (no exempt units at facility)

Additional Requirements for Title V Air Operation Permit Applications

1. List of Insignificant Activities (Required for initial/renewal applications only):
   ☐ Attached, Document ID:_____ ☒ Not Applicable (revision application)

2. Identification of Applicable Requirements (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought):
   ☐ Attached, Document ID:_____
   ☒ Not Applicable (revision application with no change in applicable requirements)

3. Compliance Report and Plan (Required for all initial/revision/renewal applications):
   ☐ Attached, Document ID:_____
   Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.

4. List of Equipment/Activities Regulated under Title VI (If applicable, required for initial/renewal applications only):
   ☐ Attached, Document ID:_____
   ☐ Equipment/Activities On site but Not Required to be Individually Listed
   ☒ Not Applicable

5. Verification of Risk Management Plan Submission to EPA (If applicable, required for initial/renewal applications only) :
   ☐ Attached, Document ID:_____ ☒ Not Applicable

6. Requested Changes to Current Title V Air Operation Permit:
   ☐ Attached, Document ID: _____ ☒ Not Applicable

Additional Requirements Comment

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application – Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

☐ The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

☐ The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

☒ This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

☐ This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

☐ This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section: **Cement Kiln No. 1**

3. Emissions Unit Identification Number: **003**

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A	**N/A**	**N/A**	**32**	☐ Yes ☒ No

9. Package Unit:
Manufacturer: Model Number:

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment: **There will not be any change in maximum permitted emission rates or production rates from the proposed project.**

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description:

016 – Baghouse – High Temperature (Fuller Draco Custom ID No. E-55)
018 – Baghouses (3) – Low Temperature (NEW)
205 – Low NO_x burners
032 – Ammonia injection (SNCR)

2. Control Device or Method Code(s): **016, 018, 205, 032**

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate: **165 TPH, 1,300,000 TPY preheater feed (12-consecutive 12-month period)**	
2. Maximum Production Rate:	
3. Maximum Heat Input Rate: **300** million Btu/hr	
4. Maximum Incineration Rate: pounds/hr tons/day	
5. Requested Maximum Operating Schedule: **24** hours/day **52** weeks/year	 **7** days/week **8,760** hours/year
6. Operating Capacity/Schedule Comment:	

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: **No. 1 Kiln Stack**	2. Emission Point Type Code: **3**	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: **Kiln No. 1 Stack** **Pulverized Fuel Dust Collector** **FK Pump Hopper Vent Filter** **Clean Out Screw Hopper (fugitive)** **Pulverized Fuel Storage Bin Vent Filter**		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: **V**	6. Stack Height: **150 feet**	7. Exit Diameter: **13.0 feet**
8. Exit Temperature: **285°F**	9. Actual Volumetric Flow Rate: **315,00 acfm**	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: **195,785 dscfm**	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):	14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	

15. Emission Point Comment:
Stack parameters shown above are for the No. 1 Kiln Stack. All other stack parameters are as follows:

Pulverized Fuel Dust Collector:
Discharge Type = V; H = 50 ft; D = 3.0 ft; T = 160°F ; Flow = 26,550 acfm, 21,200 dscfm; Moisture = 6.5%

FK Pump Hopper Vent:
Discharge Type = H; H = 40 ft; D = 0.5 ft; T = 100°F; Flow = 390 acfm, 360 dscfm; Moisture = 2.0%

Pulverized Fuel Storage Bin Vent:
Discharge Type = H; H = 60 ft; D = 1.0 ft; T = 150°F; Flow = 2,130 acfm, 1,800 dscfm; Moisture = 2.0%

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 10

1. Segment Description (Process/Fuel Type): **Industrial Processes; Mineral Products; Cement Manufacturing (Dry Process); Preheater Kiln**		
2. Source Classification Code (SCC): **3-05-006-22**	3. SCC Units: **Tons Processed**	
4. Maximum Hourly Rate: **165**	5. Maximum Annual Rate: **1,300,000**	6. Estimated Annual Activity Factor: **N/A**
7. Maximum % Sulfur: **N/A**	8. Maximum % Ash: **N/A**	9. Million Btu per SCC Unit: **N/A**
10. Segment Comment: **Segment represents preheater feed rate. Annual rate based on 150 TPH and 8,760 hr/yr and an operating factor of 99%. Based on Permit No. 0530010-002-AV.**		

Segment Description and Rate: Segment 2 of 10

1. Segment Description (Process/Fuel Type): **Industrial Processes; Mineral Products; Cement Manufacturing (Dry Process); Preheater Kiln**		
2. Source Classification Code (SCC): **3-05-006-22**	3. SCC Units: **Tons Clinker Produced**	
4. Maximum Hourly Rate: **99.0**	5. Maximum Annual Rate: **780,000**	6. Estimated Annual Activity Factor: **N/A**
7. Maximum % Sulfur: **N/A**	8. Maximum % Ash: **N/A**	9. Million Btu per SCC Unit: **N/A**
10. Segment Comment: **The maximum rates are based on the maximum preheater rates times 0.60:** **Maximum hourly rate = 165 TPH x 0.60 = 99.0 TPH** **Maximum annual rate = 1,300,000 TPY x 0.60 = 780,000 TPY**		

D. SEGMENT (PROCESS/FUEL) INFORMATION (CONTINUED)

Segment Description and Rate: Segment 3 of 10

1. Segment Description (Process/Fuel Type): **Industrial Processes; In-Process Fuel Use; Distillate Oil (No. 2); Cement Kiln**		
2. Source Classification Code (SCC): **3-90-005-02**	3. SCC Units: **1,000 Gallons Burned**	
4. Maximum Hourly Rate: **2.116**	5. Maximum Annual Rate: **18,536.2**	6. Estimated Annual Activity Factor: **N/A**
7. Maximum % Sulfur: **N/A**	8. Maximum % Ash: **N/A**	9. Million Btu per SCC Unit: **141.3**
10. Segment Comment: **Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr.**		

Segment Description and Rate: Segment 4 of 10

1. Segment Description (Process/Fuel Type): **Industrial Processes; In-Process Fuel Use; Distillate Oil (No. 4); Cement Kiln**		
2. Source Classification Code (SCC): **3-90-005-02**	3. SCC Units: **1,000 Gallons Burned**	
4. Maximum Hourly Rate: **2.06**	5. Maximum Annual Rate: **18,045.6**	6. Estimated Annual Activity Factor: **N/A**
7. Maximum % Sulfur: **N/A**	8. Maximum % Ash: **N/A**	9. Million Btu per SCC Unit: **145.6**
10. Segment Comment: **Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr.**		

D. SEGMENT (PROCESS/FUEL) INFORMATION (CONTINUED)

Segment Description and Rate: Segment 5 of 10

1. Segment Description (Process/Fuel Type): **Industrial Processes; In-Process Fuel Use; Residual Oil (No. 5); Cement Kiln**		
2. Source Classification Code (SCC): **3-90-004-02**	3. SCC Units: **1,000 Gallons Burned**	
4. Maximum Hourly Rate: **2.016**	5. Maximum Annual Rate: **17,660.16**	6. Estimated Annual Activity Factor: **N/A**
7. Maximum % Sulfur: **N/A**	8. Maximum % Ash: **N/A**	9. Million Btu per SCC Unit: **148.8**
10. Segment Comment: **Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr.**		

Segment Description and Rate: Segment 6 of 10

1. Segment Description (Process/Fuel Type): **Industrial Processes; In-Process Fuel Use; Residual Oil (No. 6); Cement Kiln**		
2. Source Classification Code (SCC): **3-90-004-02**	3. SCC Units: **1,000 Gallons Burned**	
4. Maximum Hourly Rate: **1.982**	5. Maximum Annual Rate: **17,362.32**	6. Estimated Annual Activity Factor: **N/A**
7. Maximum % Sulfur: **N/A**	8. Maximum % Ash: **N/A**	9. Million Btu per SCC Unit: **151.3**
10. Segment Comment: **Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr.**		

D. SEGMENT (PROCESS/FUEL) INFORMATION (CONTINUED)

Segment Description and Rate: Segment 7 of 10

1. Segment Description (Process/Fuel Type): **Industrial Processes; In-Process Fuel Use; Natural Gas; Cement Kiln**		
2. Source Classification Code (SCC): **3-90-006-02**	3. SCC Units: **Million Cubic Feet Burned**	
4. Maximum Hourly Rate: **0.293**	5. Maximum Annual Rate: **2,563.9**	6. Estimated Annual Activity Factor: **N/A**
7. Maximum % Sulfur: **N/A**	8. Maximum % Ash: **N/A**	9. Million Btu per SCC Unit: **1,025**
10. Segment Comment: **Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr.**		

Segment Description and Rate: Segment 8 of 10

1. Segment Description (Process/Fuel Type): **Industrial Processes; In-Process Fuel Use; Bituminous Coal; Cement Kiln**		
2. Source Classification Code (SCC): **3-90-002-01**	3. SCC Units: **Tons Burned**	
4. Maximum Hourly Rate: **12.0**	5. Maximum Annual Rate: **10,5120**	6. Estimated Annual Activity Factor: **N/A**
7. Maximum % Sulfur: **N/A**	8. Maximum % Ash: **N/A**	9. Million Btu per SCC Unit: **25**
10. Segment Comment: **Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr.**		

D. SEGMENT (PROCESS/FUEL) INFORMATION (CONTINUED)

Segment Description and Rate: Segment 9 of 10

1. Segment Description (Process/Fuel Type): **Industrial Processes; In-Process Fuel Use; Solid Waste; Tires [Whole Tire-Derived Fuel (WTDF)]**		
2. Source Classification Code (SCC): **3-90-012-99**	3. SCC Units: **Tons Burned**	
4. Maximum Hourly Rate: **2.14**	5. Maximum Annual Rate: **18,746.4**	6. Estimated Annual Activity Factor: **N/A**
7. Maximum % Sulfur: **N/A**	8. Maximum % Ash: **N/A**	9. Million Btu per SCC Unit: **28**
10. Segment Comment: **Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr. The maximum utilization/firing rate of WTDF shall not exceed 20% of the total Btu heat input, or 2.14 TPH (daily average).**		

Segment Description and Rate: Segment 10 of 10

1. Segment Description (Process/Fuel Type): **Industrial Processes; In-Process Fuel Use; Liquid Waste – On-site Generate Non-Hazardous Waste Used Oil and Grease**		
2. Source Classification Code (SCC): **3-90-013-89**	3. SCC Units: **1,000 Gallons Burned**	
4. Maximum Hourly Rate:	5. Maximum Annual Rate: **5.0 (rolling-monthly basis)**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: **Maximum rate based on Permit No. 0530010-002-AV.**		

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	**018**		**EL**
PM_{10}	**018**		**EL**

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **2.0** lb/hour **8.8** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.01 gr/dscf for 3 new baghouses** Reference: **Proposed Permit Limit**	7. Emissions Method Code: **0**
8. Calculation of Emissions: **0.01 gr/dscf x 23,360 dscfm x 1 lb/7,000 gr x 60 minutes/hour = 2.0 lb/hr** **2.0 lb/hr x 8,400 hr/yr x 1 ton/2,000 lb = 8.4 TPY**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Potential emissions based on the combined flow rate of the three new baghouses associated with the indirecting firing system. PM emissions represent the combined emissions from the 3 new baghouses only.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions **1** of **1**

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.01 gr/dscf**	4. Equivalent Allowable Emissions: **2.0** lb/hour **8.4** tons/year
5. Method of Compliance: **Annual compliance testing using EPA Method 9 in lieu of Method 5.**	
6. Allowable Emissions Comment (Description of Operating Method): **Based on proposed permit limit. Represents the combined PM emissions from the three new baghouses associated with the indirect firing system.**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **PM_{10}**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **1.4** lb/hour **6.1** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.007 gr/dscf for 3 new baghouses** Reference: **Proposed Permit Limit**	7. Emissions Method Code: **0**

8. Calculation of Emissions:

0.007 gr/dscf x 23,360 dscfm x 1 lb/7,000 gr x 60 minutes/hour = 1.4 lb/hr
1.4 lb/hr x 8,400 hr/yr x 1 ton/2,000 lb = 5.9 TPY

9. Pollutant Potential/Estimated Fugitive Emissions Comment:
Potential emissions based on the combined flow rate of the three new baghouses associated with the indirecting firing system. PM_{10} emissions represent the combined emissions from the 3 new baghouses only.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.007 gr/dscf**	4. Equivalent Allowable Emissions: **1.4** lb/hour **5.9** tons/year
5. Method of Compliance: **Annual compliance testing using EPA Method 9 in lieu of Method 5.**	
6. Allowable Emissions Comment (Description of Operating Method): **Based on proposed permit limit. Represents the combined PM_{10} emissions from the three new baghouses associated with the indirect firing system.**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

G. VISIBLE EMISSIONS INFORMATION

Complete if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation **1** of **1**

1. Visible Emissions Subtype: **VE05**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: **5%** Exceptional Conditions: **5%** Maximum Period of Excess Opacity Allowed: **0** min/hour	
4. Method of Compliance: **Method 9 in lieu of Method 5**	
5. Visible Emissions Comment: **Based on Rule 62-297.620(4), F.A.C.**	

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **Flow Diagram** ☐ Previously Submitted, Date _____

2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☒ Previously Submitted, Date **10/05**

3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **Control Equipment** ☐ Previously Submitted, Date _____

4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☒ Not Applicable (construction application)

5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☒ Previously Submitted, Date **Unknown**
   ☐ Not Applicable

6. Compliance Demonstration Reports/Records
   ☐ Attached, Document ID: _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☐ Previously Submitted, Date: _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☐ To be Submitted, Date (if known):_____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☒ Not Applicable

   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute
   ☐ Attached, Document ID: _____ ☒ Not Applicable

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e))
   ☐ Attached, Document ID: _____ ☒ Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.)
   ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only)
   ☐ Attached, Document ID: _____ ☒ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements
   ☐ Attached, Document ID: _____
2. Compliance Assurance Monitoring
   ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Alternative Methods of Operation
   ☐ Attached, Document ID: _____ ☒ Not Applicable
4. Alternative Modes of Operation (Emissions Trading)
   ☐ Attached, Document ID: _____ ☒ Not Applicable
5. Acid Rain Part Application
   - ☐ Certificate of Representation (EPA Form No. 7610-1)
     - ☐ Copy Attached, Document ID:_____
   - ☐ Acid Rain Part (Form No. 62-210.900(1)(a))
     - ☐ Attached, Document ID:_____
     - ☐ Previously Submitted, Date:_____
   - ☐ Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
     - ☐ Attached, Document ID:_____
     - ☐ Previously Submitted, Date:_____
   - ☐ New Unit Exemption (Form No. 62-210.900(1)(a)2.)
     - ☐ Attached, Document ID:_____
     - ☐ Previously Submitted, Date:_____
   - ☐ Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
     - ☐ Attached, Document ID:_____
     - ☐ Previously Submitted, Date:_____
   - ☐ Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
     - ☐ Attached, Document ID:_____
     - ☐ Previously Submitted, Date:_____
   - ☐ Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
     - ☐ Attached, Document ID:_____
     - ☐ Previously Submitted, Date:_____
   - ☒ Not Applicable

Additional Requirements Comment

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application – Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

☐ The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

☐ The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

☒ This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

☐ This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

☐ This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section: **Cement Kiln No. 2**

3. Emissions Unit Identification Number: **014**

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A	**N/A**	**N/A**	**32**	☐ Yes ☒ No

9. Package Unit:
Manufacturer: Model Number:

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment: **There will not be any changes to the maximum permitted emission rates or process/production rates due to the proposed project.**

Emissions Unit Control Equipment

2. Control Equipment/Method(s) Description:

016 – Baghouse – High Temperature (Fuller Draco Custom ID No. E-55)
018 – Baghouses (3) – Low Temperature (NEW)
205 – Low NO_x burners
032 – Ammonia injection (SNCR)

2. Control Device or Method Code(s): **016, 018, 205, 032**

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate: **165 TPH, 1,300,000 TPY preheater feed (12-consecutive 12-month period)**
2. Maximum Production Rate:
3. Maximum Heat Input Rate: **300** million Btu/hr
4. Maximum Incineration Rate: pounds/hr tons/day **N/A**
5. Requested Maximum Operating Schedule: hours/day days/week weeks/year **8,760** hours/year
6. Operating Capacity/Schedule Comment:

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: **No. 2 Kiln Stack**	2. Emission Point Type Code: **3**	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: **Kiln No. 2 Stack** **Pulverized Fuel Dust Collector** **FK Pump Hopper Vent Filter** **Clean Out Screw Hopper (fugitive)** **Pulverized Fuel Storage Bin Vent Filter**		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: **V**	6. Stack Height: **105 feet**	7. Exit Diameter: **14.0 feet**
8. Exit Temperature: **250°F**	9. Actual Volumetric Flow Rate: **315,000 acfm**	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):	14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	

15. Emission Point Comment:
Stack parameters shown above are for the No. 2 Kiln Stack. All other stack parameters are as follows:

Pulverized Fuel Dust Collector:
Discharge Type = V; H = 50 ft; D = 3.0 ft; T = 160°F ; Flow = 26,550 acfm, 21,200 dscfm; Moisture = 6.5%

FK Pump Hopper Vent:
Discharge Type = H; H = 40 ft; D = 0.5 ft; T = 100°F; Flow = 390 acfm, 360 dscfm; Moisture = 2.0%

Pulverized Fuel Storage Bin Vent:
Discharge Type = H; H = 60 ft; D = 1.0 ft; T = 150°F; Flow = 2,130 acfm, 1,800 dscfm; Moisture = 2.0%

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 10

1. Segment Description (Process/Fuel Type): **Industrial Processes; Mineral Products; Cement Manufacturing (Dry Process); Preheater Kiln**		
2. Source Classification Code (SCC): **3-05-006-22**	3. SCC Units: **Tons Processed**	
4. Maximum Hourly Rate: **165**	5. Maximum Annual Rate: **1,300,000**	6. Estimated Annual Activity Factor: **N/A**
7. Maximum % Sulfur: **N/A**	8. Maximum % Ash: **N/A**	9. Million Btu per SCC Unit: **N/A**
10. Segment Comment: **Segment represents preheater feed rate. Annual rate based on 150 TPH and 8,760 hr/yr and an operating factor of 99%.**		

Segment Description and Rate: Segment 2 of 10

1. Segment Description (Process/Fuel Type): **Industrial Processes; Mineral Products; Cement Manufacturing (Dry Process); Preheater Kiln**		
2. Source Classification Code (SCC): **3-05-006-22**	3. SCC Units: **Tons Clinker Produced**	
4. Maximum Hourly Rate: **99.0**	5. Maximum Annual Rate: **780,000**	6. Estimated Annual Activity Factor: **N/A**
7. Maximum % Sulfur: **N/A**	8. Maximum % Ash: **N/A**	9. Million Btu per SCC Unit: **N/A**
10. Segment Comment: **The maximum rates are based on the maximum preheater rates times 0.60: Maximum hourly rate = 165 TPH x 0.60 = 99.0 TPH Maximum annual rate = 1,300,000 TPY x 0.60 = 780,000 TPY**		

D. SEGMENT (PROCESS/FUEL) INFORMATION (CONTINUED)

Segment Description and Rate: Segment 3 of 10

1. Segment Description (Process/Fuel Type): **Industrial Processes; In-Process Fuel Use; Distillate Oil (No. 2); Cement Kiln**		
2. Source Classification Code (SCC): **3-90-005-02**	3. SCC Units: **1,000 Gallons Burned**	
4. Maximum Hourly Rate: **2.116**	5. Maximum Annual Rate: **18,536.2**	6. Estimated Annual Activity Factor: **N/A**
7. Maximum % Sulfur: **N/A**	8. Maximum % Ash: **N/A**	9. Million Btu per SCC Unit: **141.3**
10. Segment Comment: **Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr.**		

Segment Description and Rate: Segment 4 of 10

1. Segment Description (Process/Fuel Type): **Industrial Processes; In-Process Fuel Use; Distillate Oil (No. 4); Cement Kiln**		
2. Source Classification Code (SCC): **3-90-005-02**	3. SCC Units: **1,000 Gallons Burned**	
4. Maximum Hourly Rate: **2.06**	5. Maximum Annual Rate: **18,045.6**	6. Estimated Annual Activity Factor: **N/A**
7. Maximum % Sulfur: **N/A**	8. Maximum % Ash: **N/A**	9. Million Btu per SCC Unit: **145.6**
10. Segment Comment: **Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr.**		

D. SEGMENT (PROCESS/FUEL) INFORMATION (CONTINUED)

Segment Description and Rate: Segment 5 of 10

1. Segment Description (Process/Fuel Type): **Industrial Processes; In-Process Fuel Use; Residual Oil (No. 5); Cement Kiln**		
2. Source Classification Code (SCC): **3-90-004-02**	3. SCC Units: **1,000 Gallons Burned**	
4. Maximum Hourly Rate: **2.016**	5. Maximum Annual Rate: **17,660.16**	6. Estimated Annual Activity Factor: **N/A**
7. Maximum % Sulfur: **N/A**	8. Maximum % Ash: **N/A**	9. Million Btu per SCC Unit: **148.8**
10. Segment Comment: **Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr.**		

Segment Description and Rate: Segment 6 of 10

1. Segment Description (Process/Fuel Type): **Industrial Processes; In-Process Fuel Use; Residual Oil (No. 6); Cement Kiln**		
2. Source Classification Code (SCC): **3-90-004-02**	3. SCC Units: **1,000 Gallons Burned**	
4. Maximum Hourly Rate: **1.982**	5. Maximum Annual Rate: **17,362.32**	6. Estimated Annual Activity Factor: **N/A**
7. Maximum % Sulfur: **N/A**	8. Maximum % Ash: **N/A**	9. Million Btu per SCC Unit: **151.3**
10. Segment Comment: **Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr.**		

D. SEGMENT (PROCESS/FUEL) INFORMATION (CONTINUED)

Segment Description and Rate: Segment 7 of 10

1. Segment Description (Process/Fuel Type): **Industrial Processes; In-Process Fuel Use; Natural Gas; Cement Kiln**		
2. Source Classification Code (SCC): **3-90-006-02**	3. SCC Units: **Million Cubic Feet Burned**	
4. Maximum Hourly Rate: **0.293**	5. Maximum Annual Rate: **2,563.9**	6. Estimated Annual Activity Factor: **N/A**
7. Maximum % Sulfur: **N/A**	8. Maximum % Ash: **N/A**	9. Million Btu per SCC Unit: **1,025**
10. Segment Comment: **Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr.**		

Segment Description and Rate: Segment 8 of 10

1. Segment Description (Process/Fuel Type): **Industrial Processes; In-Process Fuel Use; Bituminous Coal; Cement Kiln**		
2. Source Classification Code (SCC): **3-90-002-01**	3. SCC Units: **Tons Burned**	
4. Maximum Hourly Rate: **12.0**	5. Maximum Annual Rate: **10,5120**	6. Estimated Annual Activity Factor: **N/A**
7. Maximum % Sulfur: **N/A**	8. Maximum % Ash: **N/A**	9. Million Btu per SCC Unit: **25**
10. Segment Comment: **Maximum rates based on Permit No. 0530010-002-AV. Maximum annual rate based on the hourly rate and 8,760 hr/yr.**		

D. SEGMENT (PROCESS/FUEL) INFORMATION (CONTINUED)

Segment Description and Rate: Segment 9 of 10

1. Segment Description (Process/Fuel Type): **Industrial Processes; In-Process Fuel Use; Solid Waste; Tires [Whole Tire-Derived Fuel (WTDF)] per Permit 0530010-022-AC**		
2. Source Classification Code (SCC): **3-90-012-99**	3. SCC Units: **Tons Burned**	
4. Maximum Hourly Rate: **2.14**	5. Maximum Annual Rate: **18,746.4**	6. Estimated Annual Activity Factor: **N/A**
7. Maximum % Sulfur: **N/A**	8. Maximum % Ash: **N/A**	9. Million Btu per SCC Unit: **28**
10. Segment Comment: **Rates based on the current permitted rates (Permit No. 0530010-002-AV) for the Cement Kiln No. 1. The maximum utilization/firing rate of WTDF shall not exceed 20% of the total Btu heat input, or 2.14 TPH (daily average).**		

Segment Description and Rate: Segment 10 of 10

1. Segment Description (Process/Fuel Type): **Industrial Processes; In-Process Fuel Use; Liquid Waste – On-site Generate Non-Hazardous Waste Used Oil and Grease**		
2. Source Classification Code (SCC): **3-90-013-89**	3. SCC Units: **1,000 Gallons Burned**	
4. Maximum Hourly Rate:	5. Maximum Annual Rate: **5.0 (rolling-monthly basis)**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: **Maximum rate based on Permit No. 0530010-002-AV.**		

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	**018**		**EL**
PM_{10}	**018**		**EL**

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **2.0** lb/hour **8.8** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.01 gr/dscf for 3 new baghouses** Reference: **Proposed Permit Limit**	7. Emissions Method Code: **0**

8. Calculation of Emissions:

0.01 gr/dscf x 23,360 dscfm x 1 lb/7,000 gr x 60 minutes/hour = 2.0 lb/hr
2.0 lb/hr x 8,400 hr/yr x 1 ton/2,000 lb = 8.4 TPY

9. Pollutant Potential/Estimated Fugitive Emissions Comment:
Potential emissions based on the combined flow rate of the three new baghouses associated with the indirecting firing system. PM emissions represent the combined emissions from the 3 new baghouses only.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.01 gr/dscf**	4. Equivalent Allowable Emissions: **2.0** lb/hour **8.4** tons/year
5. Method of Compliance: **Annual compliance testing using EPA Method 9 in lieu of Method 5.**	
6. Allowable Emissions Comment (Description of Operating Method): **Based on proposed permit limit. Represents the combined PM emissions from the three new baghouses associated with the indirect firing system.**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **PM_{10}**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **1.4** lb/hour **6.1** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.007 gr/dscf for 3 new baghouses** Reference: **Proposed Permit Limit**	7. Emissions Method Code: **0**
8. Calculation of Emissions: **0.007 gr/dscf x 23,360 dscfm x 1 lb/7,000 gr x 60 minutes/hour = 1.4 lb/hr** **1.4 lb/hr x 8,400 hr/yr x 1 ton/2,000 lb = 5.9 TPY**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Potential emissions based on the combined flow rate of the three new baghouses associated with the indirecting firing system. PM_{10} emissions represent the combined emissions from the 3 new baghouses only.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.007 gr/dscf**	4. Equivalent Allowable Emissions: **1.4** lb/hour **5.9** tons/year
5. Method of Compliance: **Annual compliance testing using EPA Method 9 in lieu of Method 5.**	
6. Allowable Emissions Comment (Description of Operating Method): **Based on proposed permit limit. Represents the combined PM_{10} emissions from the three new baghouses associated with the indirect firing system.**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

G. VISIBLE EMISSIONS INFORMATION

Complete if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation **1** of **1**

1. Visible Emissions Subtype: **VE05**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: **5%** Exceptional Conditions: **5%** Maximum Period of Excess Opacity Allowed: **0** min/hour	
4. Method of Compliance: **Method 9 in lieu of Method 5**	
5. Visible Emissions Comment: **Based on Rule 62-297.620(4), F.A.C.**	

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **Flow Diagram** ☐ Previously Submitted, Date _____

2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☒ Previously Submitted, Date **10/05**

3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **ControlEquipment** ☐ Previously Submitted, Date _____

4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☒ Previously Submitted, Date **Unknown**
   ☐ Not Applicable (construction application)

5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☒ Previously Submitted, Date **Unknown**
   ☐ Not Applicable

6. Compliance Demonstration Reports/Records
   ☐ Attached, Document ID: _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☐ Previously Submitted, Date: _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☐ To be Submitted, Date (if known):_____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☒ Not Applicable

   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute
   ☐ Attached, Document ID: _____ ☒ Not Applicable

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e))
   ☐ Attached, Document ID: _____ ☒ Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.)
   ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only)
   ☐ Attached, Document ID: _____ ☒ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements
   ☐ Attached, Document ID: **Not Applicable**
2. Compliance Assurance Monitoring
   ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Alternative Methods of Operation
   ☐ Attached, Document ID: _____ ☒ Not Applicable
4. Alternative Modes of Operation (Emissions Trading)
   ☐ Attached, Document ID: _____ ☒ Not Applicable
5. Acid Rain Part Application
   - ☐ Certificate of Representation (EPA Form No. 7610-1)
     - ☐ Copy Attached, Document ID:_____
   - ☐ Acid Rain Part (Form No. 62-210.900(1)(a))
     - ☐ Attached, Document ID:_____
     - ☐ Previously Submitted, Date:_____
   - ☐ Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
     - ☐ Attached, Document ID:_____
     - ☐ Previously Submitted, Date:_____
   - ☐ New Unit Exemption (Form No. 62-210.900(1)(a)2.)
     - ☐ Attached, Document ID:_____
     - ☐ Previously Submitted, Date:_____
   - ☐ Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
     - ☐ Attached, Document ID:_____
     - ☐ Previously Submitted, Date:_____
   - ☐ Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
     - ☐ Attached, Document ID:_____
     - ☐ Previously Submitted, Date:_____
   - ☐ Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
     - ☐ Attached, Document ID:_____
     - ☐ Previously Submitted, Date:_____
   - ☒ Not Applicable

Additional Requirements Comment

Attachment A
Description of Proposed Project

DOCUMENT IN SUPPORT OF
A PERMIT APPLICATION

CEMEX Cement, Inc.
Cement Plant
Brooksville, Hernando County, Florida

August 18, 2006

TABLE OF CONTENTS

ATTACHMENTS

1.0 Applicant

CEMEX Cement, Inc.
Brooksville Cement Plant
PO Box 6
Brooksville, Florida 34605-0006
Responsible Official: Michael A. Gonzales, Plant Manager
Facility ID: 0530010

1.1 Project Overview

During or about April 2005, Cemex installed semi-direct firing systems on Kiln No. 1 and Kiln No. 2 at the Brooksville Cement Plant. The firing system included Pillard Rotoflam® burners and the associated cyclone, fans and fuel injectors. In October 2005, Cemex applied for an after-the-fact air construction permit for these burners. The application was assigned FDEP File No. 0530010-018-AC.

Cemex has since decided to replace the semi-direct firing systems with indirect firing systems. The purpose of this application is to request approval for the installation of the indirect firing systems. By letter to the Department dated August 15, 2006, Cemex requested that the review of the semi-direct firing system under File 0530010-018-AC be discontinued upon receipt of this application.

The indirect firing systems for Kiln No. 1 and Kiln No. 2 will utilize the Pillard Rotoflam® burners installed as part of the semi-direct firing system. The specifications for these burners (from File 0530010-018-AC) are included as Attachment 1. The project will also involve the installation of two coal mill baghouses, two pulverized coal bins each with a baghouse dust collector, and two FK pumps to transfer the pulverized coal from the baghouses to the coal bins. Both pumps will have small baghouses associated with them. Details related to these Emission Points are included in Table 1 and Attachments 2 and 3.

The total expected increase in particulate matter (PM) emissions from these six emission points combined will be 16.8 tons per year and the increase in PM10 emissions is expected to be 11.8 tons per year (Table 1). There is expected to be no change in the emissions of regulated air pollutants from Kiln No. 1 and Kiln No. 2 as a result of the installation of the indirect firing systems. This project will be a non-PSD project.

1.2 Project Description

Cemex has made the decision to install indirect firing systems on Kiln No. 1 and Kiln No. 2 to improve the overall performance of the kilns while firing coal. The indirect firing systems will incorporate the Pillard Rotoflam® burners presently in place on both kilns.

Cement Kiln No. 1 is currently permitted to burn whole tire-derived fuel (WTDF), coal, Nos. 2, 4, 5, and 6 fuel oils, natural gas, and on-site generated non-hazardous waste used oil and grease. The maximum process preheater feed rate is 165 tons per hour (TPH), 1-hour maximum, and 150 TPH, rolling 30-calendar day average. The maximum heat input rate is 300 million British thermal units per hour (MMBtu/hr), daily average.

Cement Kiln No. 2 is currently permitted to burn coal, Nos. 2, 4, 5, and 6 fuel oils, natural gas, and on-site generated non-hazardous waste used oil and grease and a permit (0530010-022-AC) has just been issued for a trial period to evaluate the use of WTDF in Kiln No. 2. The maximum process preheater feed rate is 165 tons per hour (TPH), 1-hour maximum, and 150 TPH, rolling 30-calendar day average. The maximum heat input rate is 300 million British thermal units per hour (MMBtu/hr), daily average.

The maximum preheater feed rate of each kiln will remain at 165 TPH and the annual feed rate will remain at 1,300,000 TPY.

CEMEX recently installed selective non-catalytic reduction (SNCR) systems on Kiln No. 1 and Kiln No. 2. These systems will not be affected by the proposed indirect firing systems. The construction permit application in File 0530010-018-AC addresses the addition of the SNCR system.

It has been well established that indirect firing systems are the most efficient firing systems for rotary kilns. Some of the advantages of indirect firing are:

- The moisture from coal drying is no longer injected into the flame,
- Since the primary air flow is substantially less than with either direct firing or semi-direct firing, the peak flame temperature is reduced and the potential for thermal NOx generation is reduced,
- As the primary combustion air is reduced and the excess coal mill sweep air is replaced by hot clinker cooler air as secondary combustion air, the fuel consumption (mmBTU per ton of clinker) can be reduced by approximately 2-5 percent,
- As the indirect firing system includes a pulverized coal storage bin, the coal mill can be taken down for maintenance without shutting the kiln down,
- NOx emissions can be reduced as much as 30-35 percent over emissions from a typical direct fired, mono-channel burner,
- The indirect firing system coupled with a multi-channel burner can be adjusted to accommodate fuels of varying characteristics; i.e., coal and petroleum coke,
- The flame shaping with the multi-channel burner improves combustion efficiency and eliminates flame impingement on refractory.

In the following sections, rotary kiln firing systems are described, the multi-channel burner (as a pulverized solid fuel burner) is described, the effect of the indirect firing systems on emissions is described and historic plant operating records are documented.

2.0 Description of Rotary Kiln Firing Systems

The firing systems for rotary kilns at Portland cement plants typically fall into one of three categories:

- Direct firing systems with mono-channel burners,
- Semi-direct firing systems with multi-channel burners, and
- Indirect firing systems with multi-channel burners.

The direct firing systems were common in older cement plants such as the two Cemex kilns constructed in the 1970's and early 1980's. With new modern Portland cement plants, it is typical to have indirect firing systems because of the many advantages of this type of system. The semi-direct firing systems are systems installed at plants originally firing with direct firing systems as a means of taking advantage of the more efficient multi-channel burners without incurring the cost of switching entirely to an indirect firing system.

2.1 Direct Firing Systems

With direct firing systems, the coal or petroleum coke is dried, pulverized and classified in a continuous system and fired directly into the kiln through a mono-channel burner with all of the air used to sweep the coal mill introduced as primary combustion air. This leads to high levels of primary air being introduced with the fuel; 20-40 percent of the stochiometric combustion air. The introduction of the high levels of primary air with fuel results in excessive axial momentum resulting in the entrainment of secondary air. As a result, the flame ignites further downstream in the kiln where the higher levels of entrained secondary air are present. This leads to higher thermal NOx formation.

Additionally, the use of the mono-channel burner does not allow any flame shaping possibilities. This can result in isolated reducing zones, refractory wear and the potential for operating at higher levels of excess air to assure complete burnout of the fuel within the kiln.

Because of the characteristics of this type firing system, the use of the more efficient multi-channel burner is not possible.

2.2 Semi-Direct Firing Systems

To overcome many of the disadvantages of the direct firing system without incurring the cost of switching to indirect firing, semi-direct firing offers an alternative. One major advantage of the semi-direct firing system is the use of a multi-channel burner.

With semi-direct firing, all of the air that sweeps the coal mill is still fired to the kiln but the air and coal are separated with a high efficiency cyclone so that the coal can be delivered to the burner in a concentrated stream with only a small fraction of air from the cyclone. The remaining air from the cyclone is delivered to the other channels of a multi-channel burner and the excess air is fired as secondary air. The use of a multi-channel burner offers the advantages of better combustion control and flame shaping and, in most cases, a reduction in NOx emissions and an improvement in fuel use efficiency.

The conversion from direct firing to semi-direct firing involves the installation of a high efficiency cyclone to separate the pulverized coal from the air sweeping the coal mill. The air stream leaving the cyclone passes through a booster fan and is then split into multiple streams. One stream passes through a mixing injector where it picks up the pulverized coal from the cyclone and delivers it to the fuel channel of a multi-channel burner. Two other streams of the air leaving the cyclone pass through the swirl air channel and the axial air channel of the multi-channel burner. The remaining air from the cyclone is fired as secondary air.

This configuration allows the initial combustion of the fuel to occur under stabilized conditions near the burner. As the amount of air delivering the coal is much less than with the direct firing system, the coal stream momentum is easily controlled. The volume of air and the momentum of air introduced through the swirl air and axial air channels are also controlled for combustion efficiency and flame shaping.

With the semi-direct firing system, the primary air (that used to deliver the coal and that delivered through the swirl air and axial air channels) can be reduced to about 10 percent of the stochiometric combustion air. This compares with a primary air flow of 20-40 percent with the direct firing system. The fact still remains however that all of the air used to sweep the coal mill is introduced to the kiln as combustion air. This air stream includes all of the moisture removed from the coal in the coal mill and the fraction of the air that is added as additional secondary air is at a relatively low temperature when compared to the alternative of using hot gases from the clinker cooler for secondary combustion air.

Regarding fuel efficiency, semi-direct firing should reduce the specific heat of production (mmBTU per ton of clinker) because of better combustion efficiency offered by the multi-channel burner. However, the relatively cool excess combustion air from the coal mill sweep prevents the full potential for fuel saving from being realized.

2.3 Indirect Firing Systems

In modern cement plants, indirect firing systems are most commonly used. With these systems, the coal is ground in the coal mill, it passes through a classifier and is delivered to a coal mill baghouse. The baghouse separates the pulverized coal from the air that sweeps the coal mill. The sweep air is discharged from the baghouse to the atmosphere while the coal is delivered to a pulverized coal silo. From the silo, the pulverized coal is delivered to a multi-channel burner with a controlled amount of air. As a result of the small amount of air introduced into the root of the flame, combustion will occur in an oxygen deficient environment; thereby reducing thermal NOx formation. The remainder of the primary air is introduced through the swirl air and axial air channels under conditions dictated by fuel characteristics.

This process for coal grinding, coupled with a multi-channel burner, results in the volume of primary combustion air being reduced to 8-10 percent of the stochiometric air. The remainder of the combustion air; the secondary air is derived from hot clinker cooler

gases thus improving the overall thermal efficiency of the combustion system. Various sources have reported fuel savings of 2-5 percent with indirect firing systems when compared with direct firing systems.

3.0 Multi-Channel Burner Technology

Multi-channel burners were introduced approximately 30 years ago for firing pulverized coal to steam boilers. The multi-channel burners were a departure from the traditional mono-channel burner where fuel and primary air were delivered through a single channel with secondary combustion air supplied elsewhere around the burner. With the mono-channeled burners, 20-40 percent of the combustion air was delivered as primary air with the fuel. Because of the volume and momentum of the primary combustion air, fuel ignition typically took place some distance from the burner thus allowing even more combustion air to be entrained into the flame. This burner configuration resulted in relatively high thermal NOx formation and offered no opportunity for flame shaping.

With the multi-channel burner, the basic principles are to introduce the coal with a small amount of primary combustion air at a low injection velocity. The remainder of the primary air is then added through two other concentric channels. One channel delivers swirl or radial air and the other channel delivers axial air. Combined, the total primary air delivered to the multi-channel burner is 8-10 percent of the stochiometric combustion air. This design allows for the initial combustion of coal to occur in an oxygen deficient environment close to the burner. The swirl air provides internal mixing of the flame, and the axial air allows for flame shaping.

The typical multi-channel burner is a three channel burner with the channels being concentric openings within the burner tube. The inner channel is the pulverized coal channel, the middle channel is where swirl or radial air is introduced, and the outer channel is for axial air. Typically, the outer wall of the burner tube (the outer wall of the axial air channel) extends beyond the burner face to prevent a rapid expansion of the axial air. This enables better flame shaping. With this design, the multi-channel burner allows for flame shaping, it minimizes the oxygen concentration at the flame root in order to lower thermal NOx emissions, and it allows for variability in fuel characteristics without sacrificing performance and efficiency.

The aims of the multi-channel burner are achieved through the following design features:

- In the center of a coal/coke firing burner tube is a plug. This forms the inner wall of the fuel channel and functions to introduce recirculating core eddies at the root of the flame. These recirculating eddies promote the early ignition of the fuel in an oxygen deficient atmosphere. The early ignition was found to be important because as the flame propagates away from the burner face, more air is entrained and the potential for thermal NOx generation is greater.
- Pulverized coal/coke is introduced through the inner channel with a minimal amount of air at a low injection velocity. The combination of volume and momentum can be varied to conform to fuel characteristics, but the overall purpose of the low flow/low momentum is to assure early ignition of the fuel and to minimize entrained oxygen thus minimizing the potential for thermal NOx formation.
- The center channel of a three channel burner is for the introduction of swirl or radial air. The swirl motion created is by swirl vanes built into this channel. The purpose of this air component is to expand the pulverized fuel flow and stabilize the flame by generating an internal recirculation zone. This, in conjunction with the axial air component, makes it possible to control the flame shape. The swirl air volume and momentum can be varied depending on fuel characteristics.
- The outer air channel is the axial air channel. This channel is constructed with axial vanes; the purpose of which is to maintain the concentricity of the axial air flow. This promotes the recirculation of combustion gases (from within the flame) thus minimizing the free oxygen level. As with the swirl air, the volume and momentum of axial air can be controlled based on fuel characterisitics.
- The outer wall of the burner tube, the outer wall of the axial air channel, extends beyond the face of the burner, preventing the premature mixing of the flame with hot secondary air introduced from the clinker cooler.

This overall design allows flame shaping with minimal primary air flow and maximum swirl air and axial air momentum. The design results in a primary air flow that is 8-10 percent of the stochiometric combustion air requirement. These characteristics result in

the initial combustion occurring in an oxygen deficient atmosphere that reduces both the peak flame temperature and the potential for the formation of thermal NOx. The design also allows for flame shaping which eliminates flame impingement on the kiln refractory and results in a more even and better controlled heat distribution. And, as stated previously, the firing characteristics of a multi-channel burner can be altered to match the characteristics of the pulverized fuel being fired.

In addition to improving combustion characteristics, the multi-channel burner is quite effective in reducing thermal NOx emissions. Studies by Pillard and others have indicated that NOx emissions can potentially be reduced 30-35 percent over emissions from a mono-channel burner. This is achieved through the reduction in primary air and by controlling combustion as previously described. It should be noted that the reduction of primary air below 8-10 percent of stochiometric combustion air is not practical as further reduction will result in kiln instability and overheating of the burner tip.

Improvements in the thermal efficiency of the multi-channel burner over a mono-channel burner result from the improved and controlled combustion process and from the fact that all secondary air is hot air from the clinker cooler. The moisture laden, relatively cool coal mill sweep air that is introduced with direct and semi-direct firing systems is no longer introduced to the kiln. Various reports have cited improvements in fuel use ranging from 2-5 percent.

4.0 Effect of Indirect Firing on Emissions and Kiln Production

The installation of the indirect firing systems on Kiln No. 1 and Kiln No. 2 is not expected to have any adverse effects on emissions from the two kilns or to increase the annual production rates of the two kilns. The only effect on emissions, as discussed in previous sections, will be an expected reduction in NOx emissions.

4.1 Effect on Production

To establish base line production rates for the two kilns, production records for the past 10 years were reviewed. These records are documented in Table 2.

For the base line period, calendar years 1999 and 2000 were selected both kilns. During this two year period, the clinker production rate from Kiln No. 1 averaged 691,132 tons per year and the clinker production rate for Kiln No. 2 averaged 685,650 tons per year. The total average clinker production rate for the two kilns combined averaged 1,376,782 tons per year. For permitting purposes, it is requested that this total average production rate be divided equally between the two kilns as the production rates of the two kilns are within 0.4 percent of one another.

The resulting actual annual average base line production rate for the two kilns would be 688,391 tons per year. To this, a demand increase of 10 percent (68,839 tons per year) is added; making the total base line production plus demand increase equal to 757,230 tons of clinker per year for each kiln. This compares to the presently permitted clinker production rate of 780,000 tons of clinker per year, each kiln.

4.2 Effect on Emissions

The indirect firing systems are not expected to increase the emission rates of any regulated air pollutants. Conversely, the indirect firing is expected to reduce NOx

emissions as described in preceding sections. The rationale for the statement that there will be no emission increases is set forth in the following paragraphs.

4.2.1 Nitrogen Oxides

As described in preceding sections, indirect firing could reduce NOx emissions by as much as 30-35 percent over emission rate experienced with the direct firing systems. In addition to reductions in NOx emissions that may result from indirect firing, Cemex has installed SCNR systems on both Kiln No. 1 and Kiln No. 2.

As a result of the indirect firing systems and SNCR, it is reasonable to expect that the past actual NOx emissions from Kiln No. 1 and Kiln No. 2 will not exceed the future actual emissions. For purposes of this application, the future actual emissions are defined as the past actual emissions plus a 10 percent demand increase (See Table 3).

4.2.2 Carbon Monoxide

Carbon monoxide emissions from cement kilns is a function of the excess air (excess oxygen) in the kiln and, in particular, at the kiln exit. Additionally, carbon monoxide can result from carbonaceous material in the kiln feed. Fortunately, plants in Florida operate with feed materials that historically have been very low in carbonaceous material.

The carbon monoxide emissions from the two kilns can be controlled by raw material selection and by controlling the oxygen levels in the kilns. These emissions from both kilns will be controlled so that past actual emissions plus a 10 percent demand increase will not be exceeded in the future (See Table 3).

4.2.3. Particulate Matter and PM10

Particular matter (PM) and PM10 emissions from cement kilns are a function of recirculating kiln dust and dust from the raw mill. The PM/PM10 emissions are not a function of fuel or firing systems. Both PM and PM10 emissions will be controlled so that past actual emissions plus a demand increase of 10 percent will not be exceeded in the future (See Table 3).

4.2.4 Sulfur Dioxide and VOC

It has been established that with fuel sulfur levels experienced at Cemex, and with efficient combustion in the pyroprocessing system (as offered by the indirect firing systems), both SO_2 and VOC emissions from Florida cement plants are a function of sulfur bearing materials and organic materials in the kiln feed. The emission rate of neither SO_2 nor VOC is a function of kiln fuel or the kiln firing system.

The SO_2 and VOC emissions will be controlled by raw material selection so that the past actual emissions plus a 10 percent demand increase will not be exceeded in the future (See Table 3).

4.2.5 Emission Summary

A summary of past actual emissions and future actual emissions (defined as past actual emissions plus a demand increase) is presented in Table 3 for Kiln No. 1 and Kiln No. 2. The past actual emission rates shown in Table 3 are the emission rates for Kiln No. 1 and Kiln No. 2 that were included in the air construction permit application that is now part of File 0530010-018-AC.

PM/PM10 emissions from the baghouses associated with the indirect firing systems are addressed in the permit application.

Table 1

BROOKSVILLE CEMENT PLANT
Brooksville, Florida

DUST COLLECTOR EMISSIONS SUMMARY

$$E = \frac{FR \times EF \times 60 \text{ min/hour} \times OP}{7000 \text{ grains/lb} * 2000 \text{ lbs/ton}}$$

where:

E = Emission rate (tons/year)
FR = flow rate (acfm)
EF = emission factor grain loading (grain/scf)
OP = operational time (hours/year)

EPN	Activity	Flow Rate (dscfm)	Emission Factor (grains/scf)	Annual Hours of Operation (hours)	PM Annual Emissions (tons/yr)	PM_{10} Annual Emissions (tons/yr)
PS-01	#1 Coal Mill Baghouse	21,200	0.01	8,400	7.63	5.34
PS-02	#2 Coal Mill Baghouse	21,200	0.01	8,400	7.63	5.34
PS-03	#1 FK Pump Baghouse	360	0.01	8,400	0.13	0.09
PS-04	#2 FK Pump Baghouse	360	0.01	8,400	0.13	0.09
PS-05	#1Coal Meal Bin	1,800	0.01	8,400	0.65	0.45
PS-06	#2Coal Meal Bin	1,800	0.01	8,400	0.65	0.45
				Total =	**16.82**	**11.77**

Table 2

HISTORIC CLINKER PRODUCTION RECORDS FOR KILN No. 1 AND KILN No. 2

CLINKER PRODUCTION FOR KILNS (Tons/year)			
Year	*KILN 1*	*KILN 2*	*Totals*	*COMMENTS*
1995	560,457	572,742	1,133,199	Florida Sales Market Conditions poor, weather wet, kiln feed supply problems
1996	607,055	619,556	1,226,611	Ran normal
1997	590,900	638,286	1,229,186	Ran normal
1998	574,256	672,606	1,246,862	Most Kiln System improvements completed for Kiln #2 in March and by December on Kiln #1.
1999	698,700	676,345	1,375,045	Second Best Production
2000	683,564	694,955	1,378,519	Best production
Average	691,132	685,650	1,376,782	
Avg each Kiln			**688,391**	
Demand Increase @ 10%			**68,839**	
Total Baseline + Demand Increase, each Kiln			**757,230**	**Total Baseline + Demand Increase, each Kiln**
2001	618,572	589,000	1,207,572	Experiencing Kiln feed problems, Premature failures of kiln brick, kilns down for brick repairs.
2002	488,014	485,768	973,782	Kiln #1 preheater tower failure. Both kilns down November and December. Experienced Kiln feed problems, Premature failures of kiln brick
2003	381,572	600,728	982,300	Kiln #1 down until May, Both Kilns experiencing feed problems, Dioxin Furan Testing, low kiln feed inventory due to testing with raw mills down. Numerous kiln outages for brick
2004	512,253	416,554	928,807	Both Kilns experiencing feed problems, Dioxin Furan Testing. Kiln feed supply problems testing raw mills down. Poor refractory life. Numerous kiln outages for brick
2005	490,007	453,637	943,644	Both Kilns experiencing feed problems, Poor refractory life. Numerous kiln outages for brick

Table 3. Summary of Past Actual and Future Actual Emissions and PSD Applicability Analysis

	Annual Emissions (TPY)					
	CO	NO_x	PM	PM_{10}	SO_2	VOC
Past Actual						
Kiln No. 1	666.5	715.0	35.5	30.0	6.0	45.3
Kiln No. 2	620.0	819.5	54.0	45.0	6.0	47.2
Total Past Actual	**1,286.5**	**1,534.5**	**89.5**	**75.0**	**12.0**	**92.5**
Demand Increase	**128.7**	**153.5**	**9.0**	**7.5**	**1.2**	**9.3**
Future Actual, Total	**1,415.2**	**1,688.0**	**98.5**	**82.5**	**13.2**	**101.8**
Future Actual, per Kiln	**707.6**	**844.0**	**49.2**	**41.3**	**6.6**	**50.9**

Attachment 1
Burner Specifications

PILLARD

COMBUSTION EQUIPMENT & CONTROL SYSTEMS

VISIT OUR WEB SITE
www.pillard.com

CEMEX - USA

BROOKSVILLE

USA

Quotation n° 040194 Rev. 2
dated October 5, 2004

PILLARD 13, rue Raymond Teissère - 13272 Marseille Cedex 8 - France
Phone (33) 4 91 80 90 21 - Fax (33) 4 91 25 72 71 - E-mail : info@pillard.com - Web http://www.pillard.com

Chapter 2 - SPECIFICATIONS

Each system comprising:

ONE (1) ROTAFLAM® ROTARY KILN BURNER FOR COAL/PETCOKE FIRING.

- Burner output	MW max.	83.1
	MMBtu/hr	*283.6*
- Burner hot end length	m	5
	Ft	*16.4*
- Total length (approx.)	m	10.5
	Ft	*34.44*
- Weight with refractory lining (approx.)	kg	8 000
	Lb	*17 637*
- Refractory lining (recommended thickness)	mm	80
	In	*3.15*
- Total combustion air flow	Nm^3/hr	89 242
	SCFM	*48 847*
- Coal flow rate	kg/hr max.	11 000
	lb/hr	*24 250*
- Petcoke flow rate	kg/hr max.	9 300
	lb/hr	*20 500*

comprising :

- One burner with swirl, axial, central primary air and coal streams. The outer firing tube hot end is easily replaceable.
- The relative position of axial air and radial air pipes is adjustable so as to be able to modify the tip flow rate of each stream and hence enable flame shaping to suit the kiln (jacks are supplied for axial and radial air circuits).
- Burner tips made out of heat resisting cast iron, and easily replaceable.
- Coal inlet section complete with interchangeable wear insert.
- Throttle valves for swirl/axial/central air adjustment during start-up only, with locking device.
- Air flow measuring elements for total, axial and radial primary air amount delivered loose, to be installed by others on the primary air ducts.
- One (1) set of pressure gauges for primary air, and coal conveying air.
- One (1) central jacket tube with internal diameter 70mm for water injection. Water lance is to be supplied by others.
- One (1) central jacket tube for ignitor.
- One (1) central jacket tube with swirling device for solid alternative fuels injection with internal diameter 100mm. The existing oil gun will be fitted inside this jacket tube for burner start-up operation.
- Anchors and refractory lining of outer pipe are to be supplied and installed by others. PILLARD to provide full specification and drawings for installation at site.

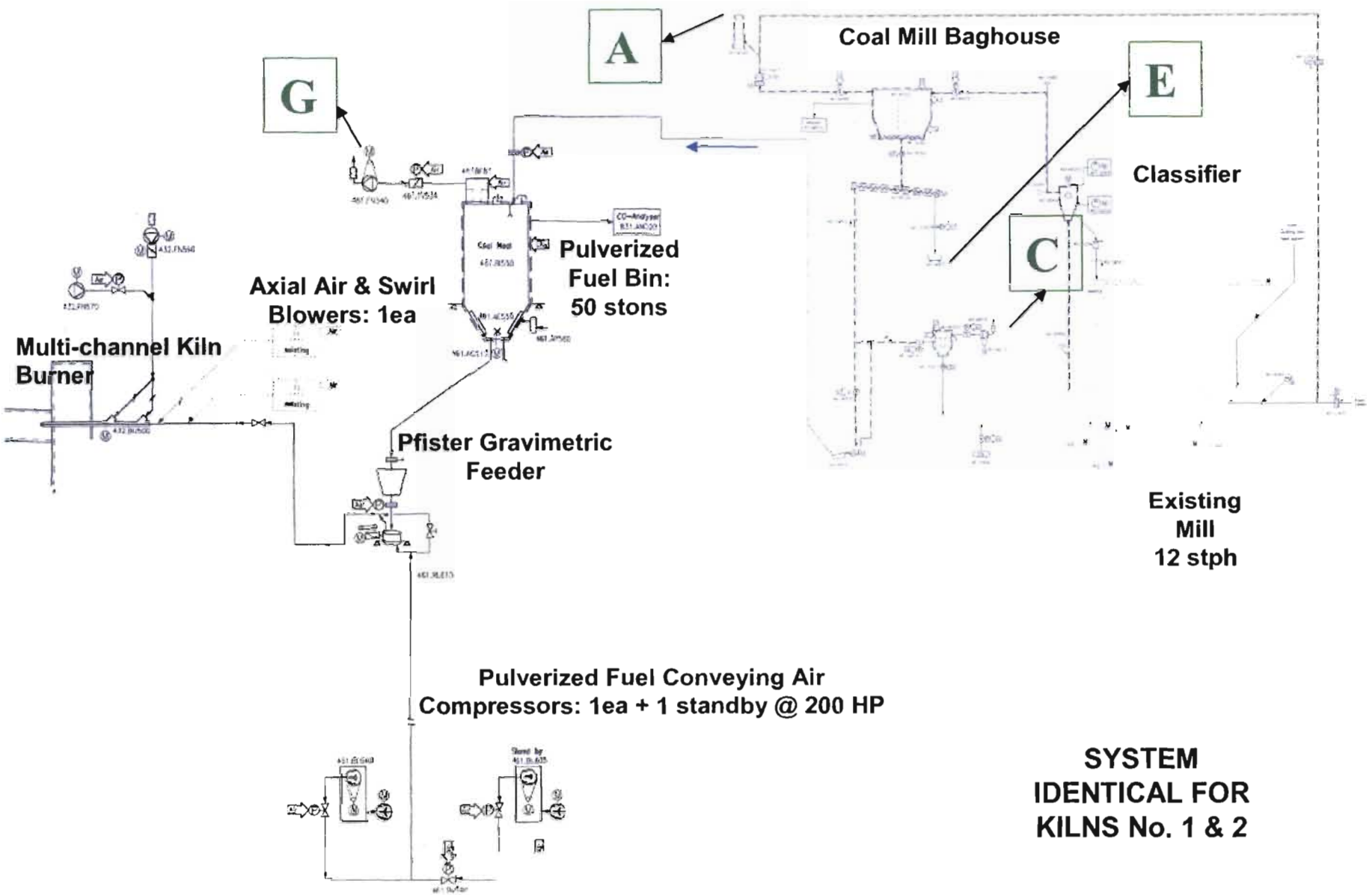
ONE (1) GAS ELECTRIC IGNITOR

- One (1) gas/electric ignitor with :
  - one (1) HT transformer.
  - two (2) flexible hoses for gas and air
  - one (1) ionization rod c/w flame relay
  - one (1) ignition electrode.
  - one (1) manual isolating valve at gas line inlet
  - one (1) Y filter.
  - one (1) hand operated pressure control valve
  - one (1) pressure indicator
  - two (2) 2-way safety shut-off valves
  - one (1) control panel including :
    - circuit breaker on power supply
    - two (2) push buttons : stop and start
    - two (2) lights : flame detection and power on
    - one (1) set of terminal strips for connection of instruments and interfaces

The ignitor panel is supplied internally wired and shop tested. All the internal wiring is tagged.

Attachment 2 - Flow Diagram
Process Flow Diagram - Indirect Firing System

Indirect Firing System Flow Sheet



Attachment 3 - Control Equipment
Description of Control Equipment

Indirect Firing System Emissions Potential

Emissions for each of two Identical Mills

Point A Emission Potential

Each Stack - Pulverized Fuel Dust Collector

- Min Stack Height: 50ft above grade
- Filter Inlet Design: 11.8 m3/s (25,000 ACFM)
- Filter Outlet Loading: 25 mg/Nm^3 dry (.01 gr/dscf)
- Filter Fan Design : 21,200 dscfm
- CO2 vapor after inerting for fire suppression

Point C Emission Potential

Each FK Pump Hopper Vent Filter

- Filter Fan Design : 360 dscfm
- Filter Outlet Loading: 25 mg/Nm^3 dry (.01 gr/dscf)
- CO2 vapor after inerting for fire suppression

Point E Emission Potential

Each Clean Out Screw Hopper

- Fugitive dust – Water spray for dust suppression. Screw only used during malfunction to clean out dust collector

Point G Emission Potential

Pulverized Fuel Storage Bin Vent Filter

- Filter Fan Design : 1800 dscfm
- Filter Outlet Loading: 25 mg/Nm^3 dry (.01 gr/dscf)
- CO2 vapor for inerting during continuous operation & malfunction

Table 5. Past Actual Emission Calculations, Cement Kilns 1 and 2, CEMEX Brooksville

Kiln 1

	PH Feed	PM		NO_x		CO		SO_2		VOC	
	(TPY)	lb/ton PH[a]	TPY	lb/ton PH[a]	TPY	lb/ton PH[a]	TPY	lb/ton PH[a]	TPY	lb/ton PH[b]	TPY
1999	1,164,500	0.057	**33.4**	1.33	**771.8**	1.04	**603.6**	0.0087	**5.05**	0.075	**43.9**
2000	1,139,273	0.057	**32.6**	1.33	**755.1**	1.04	**590.5**	0.0087	**4.94**	0.075	**43.0**
2001	1,030,953	0.057	29.5	1.33	683.3	1.04	534.4	0.0087	4.47	0.075	38.9
2002	813,357	0.057	23.3	1.33	539.1	1.04	421.6	0.0087	3.53	0.075	30.7
2003	635,953	0.057	18.2	1.33	421.5	1.04	329.6	0.0087	2.76	0.075	24.0

Kiln 2

	PH Feed	PM		NO_x		CO		SO_2		VOC	
	(TPY)	lb/ton PH[a]	TPY	lb/ton PH[a]	TPY	lb/ton PH[a]	TPY	lb/ton PH[a]	TPY	lb/ton PH[b]	TPY
1999	1,127,242	0.030	**17.2**	1.46	**824.6**	1.03	**583.3**	0.0084	**4.76**	0.086	**48.4**
2000	1,158,258	0.030	**17.6**	1.46	**847.3**	1.03	**599.3**	0.0084	**4.89**	0.086	**49.7**
2001	981,667	0.030	14.9	1.46	718.1	1.03	507.9	0.0084	4.14	0.086	42.1
2002	809,613	0.030	12.3	1.46	592.2	1.03	418.9	0.0084	3.42	0.086	34.7
2003	1,001,213	0.030	15.2	1.46	732.4	1.03	518.1	0.0084	4.23	0.086	43.0

[a] Based on the average for 1999-2003 (for Kiln 1, 2003 was excluded because test was performed while firing coal only) of stack test data. Refer to Table 4.

[b] Based on stack test data for 2001 only, since this is the only stack test performed during this 5-year period. Refer to Table 4.