Department of Environmental Protection

Jeb Bush
Governor

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

Colleen M. Castille
Secretary

December 16, 2005

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Mr. Cary O. Cohrs, General Manager
Natural Resources of Central Florida, Inc.
dba American Cement Company
Post Office Box 1209
Anthony, Florida 32617

Re: Sumterville Cement Plant
DEP File No. 1190042-001-AC (PSD-FL-361)

Dear Mr. Cohrs:

Enclosed is one copy of the Draft Air Construction Permit to construct a portland cement plant north of CR 470 and east of Sumterville in Sumter County. The Department's Intent to Issue Air Construction Permit, the Technical Evaluation and Preliminary Determination, 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 modification.

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, Debbie Nelson at (850)921-9537, or Mr. Linero at (850)921-9523.

Sincerely,

Trina L Vielhauer

Trina Vielhauer, Chief
Bureau of Air Regulation

TLV/aal

Enclosures

In the Matter of an
Application for Permit by:

Mr. Cary O. Cohrs, General Manager
Natural Resources of Central Florida, Inc.
dba American Cement Company
Post Office Box 1209
Anthony, Florida 32617

DEP File No. 1190042-001-AC
Draft Permit No. PSD-FL-361
Sumterville Cement Plant
Sumter County

_____/

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 enclosed) to American Cement Company for the proposed project as detailed in the application specified above and the attached Technical Evaluation and Preliminary Determination for the reasons stated below.

The applicant, American Cement Company, applied on September 30, 2005 to the Department for an air construction permit to construct a nominal 1,150,000 tons per year greenfield portland cement plant north of County Road 470, and east of Sumterville in Sumter County.

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 pursuant to the rules for the Prevention of Significant Deterioration of Air Quality (PSD) 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 emission units will not adversely impact air quality, and the emission 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 Air Construction 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/ 922-6979). 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 and requests for public meetings concerning the proposed permit issuance action for a period of 30 (thirty) days from the date of publication of the enclosed Public Notice. 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.

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

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 Preliminary Determination, and the DRAFT Permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 12/19/05 to the persons listed:

Cary O. Cohrs, American Cement Company*
Chair, Sumter County BCC*
Gregg Worley, U.S. EPA Region 4, Atlanta GA
John Bunyak, National Park Service, Denver CO
Mara Nasca, DEP SWD
John Koogler, P.E., Koogler & Associates.
Joe Horton, SCC
Marvin A. Beier*
Louise Racine*
Pauline T. Beie*r
Anton and Anke Brok*
Ruth E. Brown*
H. Callahan*
Ann Cantlin-Elkins*
Joyce Christie*
Carol Correa*
Margaret Dwyer*
Martin Farber*
Carol and Rudy Grossouw*
Everett Hadley*
Lorn and Judy Kerr*
Douglas R. Kinney*
John and Theresa McCormick*
Eugenie Mamarchev*
Ivan Mamarchev*
John Megan*
Sue Michalson*
Lawrence H. Paser*
June B. Paser*
Joel Rosenblum*
Karen J. Ross*
Joan L. Runyon*
Lenore Smiley*
Hans Thiemann*

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.

Mary J. Harrison 12/19/05
(Clerk) (Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

DEP File No. 1190042-001-AC (PSD-FL-361)
Natural Resources of Central Florida, Inc.
dba American Cement Company
Sumterville Cement Plant
Sumter County

The Department of Environmental Protection (Department) gives notice of its intent to issue an Air Construction Permit to Natural Resources of Central Florida, Inc. to construct a greenfield portland cement plant north of County Road 470 and east of Sumterville in Sumter County. A review under the rules for the Prevention of Significant Deterioration of Air Quality (PSD) and Best Available Control Technology (BACT) determinations were required for nitrogen oxides (NO_X), sulfur dioxide (SO_2), volatile organic compounds (VOC), carbon monoxide (CO), and particulate matter (PM/PM_{10}). The applicant's name and business address are Natural Resources of Central Florida, Inc., dba American Cement Company, Post Office 1209, Anthony, Florida 32617.

American Cement Company (ACC) proposes to construct a nominal 1,150,000 tons per year (TPY) dry process portland cement plant. The equipment will include: a primary crusher and conveyance equipment to transport limestone to raw material storage; a raw material storage building for limestone and materials containing silica, alumina, iron, and additives; stackers, reclaimers, and conveyance equipment to raw materials drying and milling; a homogenizing silo; a dry process preheater/calciner (PH/C) kiln with in-line raw mill capable of producing 3,000 tons per day (TPD) of clinker; a reciprocating clinker cooler; a coal and petroleum coke mill; conveyance equipment to clinker storage; conveyance equipment to the finish mill; cement silos and a truck loadout area; and a packhouse. Numerous baghouses will be included to contain dust from materials conveyance, transfer and handling. A single large baghouse will serve exhaust from the PH/C kiln, raw mill, and clinker cooler.

The heat necessary to convert the raw materials to clinker will be provided by coal and petroleum coke combustion in the main kiln burner and calcination burner. NO_X emissions will be minimized by indirect firing in a Low NO_X main kiln burner, staged combustion in the calciner, and a selective non-catalytic reduction (SNCR) ammonia injection system. SO_2 emissions will be controlled by use of inherently low sulfur raw materials and scrubbing by finely divided lime in the calciner. CO and VOC emissions will be controlled by promoting complete combustion in the kiln and calciner and minimizing carbon and oily content of raw materials. PM/PM_{10} from the PH/C kiln, in-line raw mill, and clinker cooler will be controlled by a single large fabric filter baghouse. Emissions points from handling, conveyance, and transfer will be controlled by baghouses. Emissions from raw materials piles, loading operations, transportation, etc. will be controlled by reasonable precautions including paving, road sweeping, watering, planting grass, etc.

The ACC Plant will be subject to the maximum achievable control technology (MACT) requirements in 40CFR63, Subpart LLL - National Emission Standards for Hazardous Air Pollutants for Portland Cement Manufacturing Industry. In addition, the plant will be subject to the Department's determination of best available control technology (BACT). The BACT determinations for the PH/C kiln, in-line calciner, and clinker cooler are: 1.95 pounds of NO_X per ton of clinker (lb/ton); 0.20 lb SO_2/ton, 2.9 lb CO/ton, 0.12 lb VOC/ton; and 0.153 lb PM/PM_{10}/ton. The BACT determinations are among the lowest emission limitations among recent determinations in the state and the country.

Mercury (Hg) emissions will be limited to 122 pounds per year. Initially compliance will be conservatively estimated based on the concentration of Hg in the fuels and raw materials entering the process. The Department has determined that by the second year of operation, reliable mercury continuous emission monitors (Hg-CEMS) will be available and requires that a Hg-CEMS be installed to measure actual emissions. This will be the first Hg-CEMS installation required at any facility in the State of Florida. This also represents the first Hg-CEMS monitor required at cement plants in the United States.

The Department reviewed the applicant's ambient air quality analysis for CO, NOx, SO_2, VOC and PM/PM_{10} pollutants subject to PSD for this project. All pollutants were less than their respective Significant Impact Levels for the Class II area (i.e. all areas except for the Class I Chassahowitzka Wilderness Area) except for PM/PM_{10} on a 24-hour and annual basis. Therefore, a refined increment modeling analysis, including nearby sources and proposed cement plants in the county, was completed for PM_{10}. The results of this analysis are given in the table below. This refined analysis demonstrated compliance with regulatory requirements which include demonstrating compliance with the ambient air quality standards.

Averaging Time	Maximum Predicted Impact ug/m^3	Allowable Increment ug/m^3	Compliance with Increment	Percent of Increment
24-hour	29	30	Yes	98%
Annual	6	17	Yes	36%

(Public Notice to be Published in the Newspaper)

Based on the required analyses, the Department has reasonable assurance that the proposed project will not cause or significantly contribute to a violation of any ambient air quality standard or PSD increment.

The Department will accept written comments concerning the proposed permit issuance action and requests for a public meeting for a period of thirty (30) days from the date of publication of "Public Notice of Intent to Issue Air Construction 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 written 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 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, as well as the rules and statutes which entitle the petitioner to relief; (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.

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, FL 33637-0926
Telephone: (813) 632-7600
Fax: (813) 632-7668

The complete project file includes the application, technical evaluations, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Program Administrator, South Permitting Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/921-9523, for additional information. Key documents can be viewed at www.dep.state.fl.us/air/permitting/construction/american.htm

(Public Notice to be Published in the Newspaper)

PERMITTEE:

Natural Resources of Central Florida
dba American Cement Company
Post Office Box 1209
Anthony, Florida 32617

Authorized Representative:
Cary O. Cohrs, General Manager

DEP File No. 1190042-001-AC
Air Permit No. PSD-FL-361
Sumterville Cement Plant
Expiration date: June 30, 2009

PROJECT AND LOCATION

This permit authorizes the construction of a nominal 1,150,000 tons per year greenfield portland cement plant with a dry process preheater/calciner kiln, in-line raw mill, clinker cooler and associated materials handling, storage, conveyance and shipping facilities. The project will be located east of Sumterville and north of County Road 470 in Sumter County.

STATEMENT OF BASIS

The 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 project was processed in accordance with the requirements of Rule 62-212.400, F.A.C., the preconstruction review program for the Prevention of Significant Deterioration (PSD) of Air Quality. 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).

The attached Appendices are made a part of this permit:

Appendix BD	Final BACT Determination and Emissions Standards
Appendix C	Common State Rules
Appendix GC	Construction Permit General Conditions
Appendix LLL	NESHAP Subpart LLL Requirements
Appendix OOO	NSPS Subpart OOO Requirements
Appendix Y	NSPS Subpart Y Requirements

(DRAFT)

Michael G. Cooke, Director
Division of Air Resources Management

Effective Date: _____

FACILITY DESCRIPTION

The proposed facility will be a nominal 1,150,000 tons per year (TPY) dry process portland cement plant incorporating a dry process kiln with a preheater and calciner (PH/C). Major equipment associated with the main components of the plant will include the following:

- A materials storage building (MSB);
- A primary crusher at the quarry and belt conveyors to MSB;
- Raw material piles stored inside of the MSB. The piles will include limestone, alumina sources (e.g. bauxite, clay, and coal ash), iron sources (e.g. mill scale and iron ore), silica sources (e.g. sand), and additives (e.g. feldspar);
- Materials handling equipment including portal reclaimers, stackers, belt conveyors, conveyor from the MSB to the raw mill, control system/analyzer, etc.;
- An in-line raw mill that simultaneously dries raw materials using the exhaust gas from the kiln, PH/C, and clinker cooler;
- A preheater with staged combustion and selective non-catalytic reduction (SNCR) system;
- An air heater for use when additional drying capacity is required;
- A nominal 10,000 ton blending silo;
- An indirect-firing system with a low-NO_X main kiln burner capable of burning coal, petroleum coke, fuel oil, and natural gas;
- A whole tire feeder system;
- A clinker cooler with reciprocating grates, cooling air fans, and hot air ducting to the kiln and PH/C;
- Clinker storage and grinding including a finish mill with air separator, clinker silos with metering device, limestone and gypsum piles, and associated conveyors;
- A cement transfer and storage facility including truck loadout and packhouse; and
- A nominal 18 TPH coal and petroleum coke grinding system with associated mill, storage facility, conveyors, including a fabric filter baghouse.

REGULATORY CLASSIFICATION

Title III: The Department has determined the cement plant will be a major source of hazardous air pollutants (HAPs).

Title V: The cement plant will be a Title V major source in accordance with Chapter 62-213, F.A.C. because the potential emissions of at least one regulated pollutant exceed 100 tons per year. 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).

PSD: The facility is located in an area that is designated as "attainment", "maintenance", or "unclassifiable" for each pollutant subject to a National Ambient Air Quality Standard. It is classified as a "portland cement plant", which is one of the 28 Prevention of Significant Deterioration (PSD) Major Facility 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 major source of air pollution with respect to Rule 62-212.400 F.A.C., Prevention of Significant Deterioration of Air Quality.

NSPS: Portions of the cement plant are subject to the following New Source Performance Standards (NSPS) in 40 CFR 60: Subpart A (General Provisions); Subpart Y (Coal Preparation Plants); and Subpart OOO (Non Metallic Mineral Processing). Any affected source subject to the provisions of 40 CFR 63, Subpart LLL

(Portland Cement Manufacturing Industry) is exempt from any otherwise applicable new source performance standard contained in 40 CFR 60, Subpart F (Portland Cement Plants).

NESHAP: Portions of the cement plant are subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) in 40 CFR 63: Subpart A (General Provisions); and Subpart LLL (Portland Cement Manufacturing Industry).

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

EMISSIONS UNITS

This permit authorizes the construction of a new Portland cement plant. The project includes the following new emissions units:

EU ID	Emissions Unit Description
001	Raw Material Quarrying, Crushing, and Storage. Includes raw material processing from quarry up to raw material storage, and additives handling from delivery to storage.
002	Raw Materials, Conveying, Storage, and Processing. From raw material and additive storage to preheater (includes conveyance of raw materials and raw meal to and from raw mill, and homogenizing silo).
003	Pyroprocessing System. Includes kiln, preheater/calciner, raw mill, air heater, and clinker cooler.
004	Clinker and Additives Storage and Handling. Includes clinker handling from clinker cooler to clinker silo discharge, and clinker and additive handling from storage to the finish mill.
005	Finish Mill (Cement Grinding)
006	Cement Handling, Storage, Packing, and Loadout. Includes cement conveyance to silos, cement silos, loadout to trucks from silos, and cement bagging operations.
007	Coal and Petroleum Coke Grinding System. Includes coal/petroleum coke handling from railcar unloading to the pulverized fuel bin.
008	Fugitive Dust From Storage Piles, Paved Roads, and Unpaved Roads

RELEVANT DOCUMENTS

The documents listed 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 received on September 30, 2005
- Supplementary Information received on October 13, 2005
- Public Notice of Application published November 24, 2005
- Department's Technical Evaluation and Preliminary Determination dated December 16, 2005
- Department's Intent to Issue and Public Notice Package dated December 16, 2005
- Department's Final Determination and Best Available Control Technology Determination issued concurrently with this Final Permit

SECTION II. ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: All documents related to PSD applications for permits to construct or modify emissions units 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. All documents related to applications for permits to construct minor sources of air pollution or to operate the facility shall be submitted to the Air Resources Section of the Department's Southwest District Office at 13051 N. Telecom Parkway, Temple Terrace, FL 33637-0926.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Air Resources Section of the Department's Southwest District Office at 13051 N. Telecom Parkway, Temple Terrace, FL 33637-0926.

3. 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 Title 40, Parts 51, 52, 60, 63, 72, 73, and 75 of the Code of Federal Regulations (CFR) adopted by reference in Rule 62-204.800, F.A.C. The terms used in this permit have specific meanings as defined in the applicable chapters of the Florida Administrative Code. 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.]

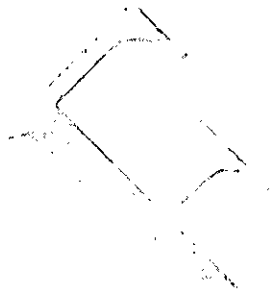
4. Construction and Expiration: The permit expiration date includes sufficient time to complete construction, perform required testing, submit test reports, and submit an application for a Title V operation permit to the Department. Approval to construct shall become invalid for any of the following reasons: construction is not commenced within 18 months after issuance of this permit; construction is discontinued for a period of 18 months or more; or 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. In conjunction with an extension of the 18-month period to commence or continue construction (or to construct the project in phases), the Department may require the permittee to demonstrate the adequacy of any previous determination of Best Available Control Technology (BACT) for emissions units regulated by the project. For good cause, the permittee may request that this PSD air construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation at least sixty (60) days prior to the expiration of this permit. [Rules 62-4.070(4), 62-4.080, 62-210.300(1), and 62-212.400(6)(b), F.A.C.; 40 CFR 52.21(r)(2); 40 CFR 51.166(j)(4)]

5. 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.]

6. Relaxations of Restrictions on Pollutant Emitting Capacity. If a previously permitted facility or modification becomes a facility or modification which would be subject to the preconstruction review requirements of this rule if it were a proposed new facility or modification solely by virtue of a relaxation in any federally enforceable limitation on the capacity of the facility or modification to emit a pollutant (such as a restriction on hours of operation), which limitation was established after August 7,1980, then at the time of such relaxation the preconstruction review requirements of this rule shall apply to the facility or modification as though construction had not yet commenced on it. [Rule 62-212.400(2)(g), F.A.C.]

7. 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. [Rule 62-4.030 and Chapters 62-210 and 62-212, F.A.C.]

8. Title V Permit: This permit authorizes construction 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. Raw Material Quarrying, Crushing, and Storage

The specific conditions of this subsection apply to the following emissions unit after construction is complete.

EU ID	Emission Unit Description
001	Raw Material Quarrying, Crushing, and Storage. Includes raw material processing from quarry up to raw material storage, and additives handling from delivery to storage.

Raw material quarrying, crushing, and storage contains the following emissions points.

- Primary crushing and all belt conveyor points to raw material storage.
- All conveyors and hoppers associated with additives handling and storage.

APPLICABLE STANDARDS AND REGULATIONS

1. BACT Determinations: A determination of the Best Available Control Technology (BACT) was made for particulate matter (PM/PM_{10}). To satisfy the BACT requirements for this unit the visible emissions limits are surrogate standards for PM.
2. NSPS Requirements: This unit shall comply with all applicable requirements of 40 CFR 60, Subparts A (General Provisions) and OOO (Nonmetallic Mineral Processing Plants) adopted by reference in Rule 62-204.800(7)(b), F.A.C. The Department determines that the BACT emissions performance requirements 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 subparts.

EQUIPMENT DESCRIPTION

3. Equipment Description: The permittee is authorized to construct, operate, and maintain equipment needed for the raw material quarrying, crushing, and storage operation. Equipment will include a primary crusher at the quarry, and a raw materials storage building (MSB). Belt conveyors will be constructed between the crusher and the MSB. Raw material piles stored inside of the MSB will include limestone, alumina sources (e.g. bauxite, clay and coal ash), iron sources (e.g. mill scale and iron ore), silica sources (e.g. sand), and additives (e.g. feldspar). Other materials handling equipment may include portal reclaimers, stackers, hoppers, belt conveyors, a conveyor from the MSB to the raw mill, and a control system/analyzer. [Applicant Request]

PERFORMANCE REQUIREMENTS

4. Hours of Operation: This emissions unit system is allowed to operate 8,760 hours per year. [Applicant Request, Rule 62-210.200(PTE), F.A.C.]
5. Process Rate Specification: The crusher may process up to 750 tons per hour on a 30-day average (dry basis) of raw materials. No more than 1,482,000 tons (dry basis) of raw materials shall be processed during any consecutive 12 months. [Rules 62-210.200 (PTE) and 62-4.070(3), F.A.C.]

EMISSIONS AND TESTING REQUIREMENTS

6. Visible Emission Standards: These opacity standards do not apply to truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher.
   a. Fugitive emissions from the crusher shall not exceed 15% opacity.
   b. Fugitive emissions from any transfer point on belt conveyors or from any other affected facility shall not exceed 10% opacity.

   [Rule 62-212.400(BACT), F.A.C.; and 40 CFR 60, Subpart OOO]

7. Visible Emissions Tests: Compliance with the visible emission limits shall be determined by conducting EPA Method 9 tests. Initial tests shall be conducted 60 days after achieving the maximum production rate at which the unit will be operated, but no later than 180 days after initial startup. Thereafter, the permittee shall demonstrate compliance during each federal fiscal year (October 1st to September 30th) for the primary crusher. Tests shall be conducted in accordance with the applicable requirements in Appendix C of this permit as well as the applicable NSPS provisions.

REPORTING AND RECORD KEEPING

8. 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., and 40 CFR 60, Subpart OOO]

9. Process Rate Information: The permittee shall maintain records of the monthly processing rate. Such reports shall be recorded and available for inspection no later than 10 days following the end of the month.

B. Raw Materials Conveying, Storage, and Processing

The specific conditions of this subsection apply to the following emissions unit after construction is complete.

EU ID	Emissions Unit Description
002	Raw Materials, Conveying, Storage, and Processing. From raw material and additive storage to preheater (includes conveyance of raw materials and raw meal to and from raw mill, and homogenizing silo).

The following emissions points in the raw materials conveying, storage, and processing system are controlled by baghouses:

Point ID	Emissions Point Description
F03	Dust collector for raw meal transfer from raw grinding mill
F10	Dust collector for raw meal transfer at air lift to homogenizing silo
G07	Dust collector for raw meal transfer to homogenizing silo
G10	Dust collector for homogenizing silo bin vent
E38	Dust collector for filter dust surge bin
H08	Dust collector for raw meal transfer from homogenizing silo

APPLICABLE STANDARDS AND REGULATIONS

1. BACT Determinations: A determination of the Best Available Control Technology (BACT) was made for, particulate matter (PM/PM_{10}). To satisfy the BACT requirements for this unit the visible emissions limits are surrogate standards for PM.

2. NESHAP Requirements: This unit is subject to 40 CFR 63, Subpart A (Identification of General Provisions) and 40 CFR 63, Subpart LLL (National Emissions Standard for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry). The Department determines that the BACT emissions performance requirements are as stringent as or more stringent than the limits imposed by the applicable NESHAP provisions. Some separate reporting and monitoring may be required by the individual subpart.

EQUIPMENT AND CONTROL TECHNOLOGY

3. Equipment Description: The permittee is authorized to construct, operate, and maintain equipment needed for the conveyance, storage, and processing of raw materials. Equipment will include one homogenizing silo (nominal 10,000 ton capacity), and associated transport system. [Applicant]

4. Baghouse Controls: Each emissions point specifically identified above for raw materials conveying, storage, and processing 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 gr/dscf and a PM_{10} design specification of 0.007 gr/dscf. [Rule 62-212.400(BACT), F.A.C.]

PERFORMANCE REQUIREMENTS

5. Hours of Operation: This emissions unit is allowed to operate 8,760 hours per year. [Applicant Request, Rule62-210.200(PTE), F.A.C.]

B. Raw Materials Conveying, Storage, and Processing

EMISSIONS AND TESTING REQUIREMENTS

6. Emissions Limits: The following standards apply to each emissions point of this unit including all raw material storage bins and conveying system transfer points:

   a. Visible emissions are limited to 5% opacity from each of the above listed emissions points controlled by a baghouse.

   b. Fugitive emissions are limited to 10% opacity from any emissions point not controlled by a baghouse.

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

   {Note: The baghouses are designed to control PM emissions to 0.01 grains/dry standard cubic foot (gr/dscf) and PM_{10} emissions to 0.007 gr/dscf. The 5% opacity limitation is consistent with this design and provides reasonable assurance that annual emissions of PM/PM_{10} for all emission points in this emission unit system will be less than 10.5 TPY. Exceedance of the 5% opacity limit shall be deemed an exceedance of this permit condition and not necessarily an exceedance of the opacity limitations given in 40 CFR 63, Subpart LLL.}

   [Rules 62-4.070(3), 62-212.400, F.A.C. and 40 CFR 63.1348]

7. Compliance Demonstrations: Each emission point shall be tested to demonstrate initial compliance with the emission standards for visible emissions in accordance with EPA Method 9. The tests shall be conducted within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after the initial startup. Thereafter, compliance with the visible emission limits for each emission point controlled by a baghouse and for each unenclosed transfer point shall be demonstrated during each federal fiscal year (October 1st to September 30th). [Rules 62-4.070(3), 62-297.310(7)(a), F.A.C. and 40 CFR 63.1349(b)(2)]

8. Periodic Monitoring Requirements: Each affected source subject to an opacity standard shall be periodically monitored using the procedures described in 40 CFR 63.1350(a) (4) (i) through (vii) to ensure compliance with the emissions limits of condition No. 6. [Rule 62-4.070(3), and 40 CFR, 63.1350, Subpart LLL]

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 NESHAP provisions.

Method	Description of Method and Comments
9	Visual Determination of the Opacity of Emissions from Stationary Sources
22	Visual Determination of Fugitive Emissions From Material 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), and 40 CFR 63.1350, Subpart LLL]

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.]

C. Pyroprocessing System

The following specific conditions apply to the following emissions unit after construction:

ID No.	Emissions Unit Description
003	Pyroprocessing System. Includes kiln, preheater/calciner, raw mill, air heater, and clinker cooler.

APPLICABLE STANDARDS AND REGULATIONS

1. BACT Determinations: A determination of the Best Available Control Technology (BACT) was made for carbon monoxide (CO), nitrogen oxides (NO_X), sulfur dioxide (SO_2), volatile organic compounds (VOC), and particulate matter (PM/PM_{10}).

2. NESHAP Requirements: This unit is subject to 40 CFR 63, Subpart A (Identification of General Provisions) and 40 CFR 63, Subpart LLL (National Emissions Standard for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry). The Department determines that the BACT emissions performance requirements are as stringent as or more stringent than the limits imposed by the applicable NESHAP provisions for particulate matter. Some separate reporting and monitoring may be required by the individual subpart.

EQUIPMENT AND CONTROL TECHNOLOGY

3. Pyroprocessing System: The permittee is authorized to construct a pyroprocessing system consisting of a dry process pre-heater/calciner rotary kiln with in-line raw mill that simultaneously dries raw materials using the exhaust gas from the kiln, PH/C, or cooler. The preheater is designed with a staged combustion calciner and a selective non-catalytic reduction (SNCR) system. The indirect-fired kiln with low-NO_X main kiln burner will be capable of burning coal, petroleum coke, natural gas, used oil, and fuel oil. A tire feed mechanism with an airlock/gate system will be capable of feeding tire derived fuel (TDF) into the area just prior to the kiln exhaust. Other equipment includes an air heater for use when additional drying capacity is required, and a clinker cooler with reciprocating grates, cooling air fans, and hot air ducting to the kiln, PH/C or in-line raw mill. The air heater will be capable of firing fuel oil and natural gas. All emissions from the pyroprocessing system are directed to a single stack. The exhaust stack shall be no more than 10.2 feet in diameter and no less than 350 feet tall. [Applicant request]

4. Kiln Design: The kiln will be designed to process approximately 208 tons per hour of dry preheater feed material (including baghouse dust recirculation) with an annual nominal throughput of 1,822,080 tons per year. However, preheater feed rate is ultimately restricted through clinker production limitations.

5. NO_X Controls

   a) *Low-NO_X Burners and Indirect Firing:* The main kiln will be equipped with a low NO_X burner that 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.

   b) *Staged Combustion in the Calciner (SCC):* The kiln system will be designed such that the introduction of fuel, air and meal to the calciner will be staged or sequenced for the reduction of NO_X emissions.

   c) *SNCR:* A selective non-catalytic reduction (SNCR) system shall be designed, constructed and operated to achieve the permitted levels for NO_X emissions from the pyroprocessing system. The SNCR system will consist of an aqueous ammonia tank, pumps, piping, compressed air delivery, injectors, control system, and other ancillary equipment. Aqueous ammonia will be injected at a location(s) in the preheater/calciner with an appropriate temperature profile to support the SNCR process.

6. Particulate Matter (PM/PM_{10}) Controls: The permittee shall install a baghouse control system to remove particulate matter emissions from the pyroprocessing exhaust gas stream to achieve the PM/PM_{10} emissions standards specified in this permit.
7. Sulfur Dioxide Controls: The use of low-sulfur raw materials will help to keep SO_2 emissions below permitted levels.

PERFORMANCE REQUIREMENTS

8. Hours of Operation: The hours of operation for this emissions unit are not limited (8760 hours per year). [Rule62-210.200(PTE), F.A.C.]
9. Process Rate Limitations: Kiln preheater feed rate shall be monitored and recorded for purposes of determining clinker production. The clinker production rate of the kiln shall not exceed 125 tons per hour (24-hour rolling average) and 1,095,000 tons during any consecutive 12 month period. The clinker production rate shall be determined using kiln feed and kiln feed loss on ignition (LOI) factors. The feed rates and kiln feed LOI shall be based on a 30 operating-day block average of daily measurements. For purposes of this requirement, an operating day is any day that the kiln produces clinker or burns fuel. [Rules 62-4.070(3), and 62-212.200(PTE), F.A.C.]
10. Authorized Fuels: Only the following authorized fuels shall be fired in the pyroprocessing system (kiln and calciner): coal, petroleum coke, whole or chipped tires, natural gas, and No. 2 fuel oil and/or on-specification used oil fuel. The maximum heat input rate to the pyroprocessing system (kiln and calciner) shall not exceed 9,600 MMBtu per day (nominally 400 MMBtu/hr).
    a. The maximum heat input rate from firing whole or chipped tire derived fuel (TDF) shall not exceed 15% of the total pyroprocessing heat input rate (kiln and calciner) and shall not exceed 60 MMBtu per hour. The remaining 85% of the total pyroprocessing heat input rate shall be from the firing of other authorized fuels. TDF shall be directly fed into the kiln system at the transition section between the base of the calciner and the point where gases exit the kiln. The tire feed mechanism shall be designed with an airlock/gate system. Tires shall be stored, handled and managed in accordance with the provisions of Chapter 62-711, F.A.C.
    b. The air heater shall fire only natural gas or distillate fuel oil (No. 2 or No. 4) with a design maximum heat input rate of 36 MMBtu per hour.
    c. The firing of "on-specification" used oil fuel shall not exceed 1000 gallons per hour and 1,500,000 gallons during any consecutive 12 months. On-Specification Used Oil Fuel shall meet the following specifications:
        1. Arsenic shall not exceed 5.0 ppm;
        2. Cadmium shall not exceed 2.0 ppm;
        3. Chromium shall not exceed 10.0 ppm;
        4. Lead shall not exceed 100.0 ppm;
        5. Total halogens shall not exceed 1000 ppm; and
        6. Flash point shall not be less than 100° F.

        Used oil fired as a fuel may be generated from on site sources or purchased from a vendor. Used oil shall not contain any PCB's. [40 CFR 279.61; 40 CFR 761.20(e); Rule 62-4.070(3), F.A.C.]

    [Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.; Application No. 1210465-014-AC]
11. Prohibited Fuels and Materials: The owner or operator shall not introduce into any part of the process any of the following fuels and materials: hazardous wastes; petroleum contaminated soil or materials; off-

specification used oil; or solid fuels other than those allowed by this permit; or solid wastes other than tires as allowed by this permit. [Rule 62-4.070(3), F.A.C.]

12. Cement Kiln Dust: Cement kiln dust shall be re-circulated in the process and shall not be directly discharged from process or emission control equipment. Cement kiln dust removed from process equipment during maintenance and repair shall be confined and controlled at all times and shall be managed in accordance with the applicable provisions of 40 CFR 261. [Rule 62-4.070(3), F.A.C.]

EMISSIONS AND TESTING REQUIREMENTS

13. Emissions Standards: Emissions from the pyroprocessing system (including the air heater) shall not exceed the following emissions standards.

Pollutant	Emission Limit	Averaging Time	Compliance Method	Basis
CO	2.9 lb/ton of clinker	30-day rolling	CEMS	BACT
	362.5 lb/hr			
NO_X[a]	1.95 lb/ton of clinker	30-day rolling	CEMS	BACT
	243.8 lb/hr			
PM/PM_{10}[b]	0.153 lb/ton of clinker	Three 1-hr runs	3-Run Test	BACT
	19.13 lb/hr			
	10 % opacity	6-minute block	COMS	
SO_2	0.20 lb/ton of clinker	24-hr rolling	CEMS	BACT
	25.0 lb/hr			
VOC[c]	0.12 lb/ton of clinker	30-day block	CEMS	BACT
	15.0 lb/hr			
Dioxin/Furan[d]	0.20 ng/dscm (TEQ) @ 7% O_2	Three 3-hr runs	Temperature Monitor	NESHAP LLL
	0.40 ng/dscm (TEQ) @ 7% O_2			
THC	50 ppmvd (as propane)@ 7% O_2	30-day block	CEMS	NESHAP LLL
Mercury[e]	122 lb/12-month period	12-month rolling	Fuel/Materials and/or CEMS	Avoid PSD

a. For an "initial startup period" NO_X emissions shall not exceed 3.0 lb/ton of clinker (375.0 lb/hour) based on a 30-day rolling average. The "initial startup" period shall begin after initial certification of the NO_X CEMS and shall end as soon as any of the following conditions are met:
   1) The Kiln system produces 77,500 tons of clinker or more in any 30-day rolling period.
   2) The Kiln system produces a total of 155,000 tons of clinker.
   3) 365 days calendar days elapse after initial certification of the NO_X CEMS.

   After the "initial startup" period ends, NO_X emissions shall not exceed 1.95 lb/ton of clinker (243.8 lb/hour) based on a 30-day rolling average. These requirements do not waive or vary any applicable NSPS or NESHAP monitoring or record keeping requirements.

b. All PM emitted from the baghouse exhaust is assumed to be PM10. The BACT standard for PM is equivalent to approximately 0.09 lb ton of preheater feed material. The emissions limits for particulate matter and visible emissions imposed by Rule 62-212.400(BACT) are as stringent as or more stringent than the limits imposed by the applicable NESHAP provisions. The BACT requirements do not waive or vary any applicable NESHAP monitoring or record keeping requirements.

c. Compliance shall be demonstrated by THC CEMS. VOC emissions shall be measured as total hydrocarbons (THC) and expressed as "propane" for the mass emissions rate.

d. Dioxin/furans shall not exceed 0.20 ng/dscm (TEQ) @ 7% oxygen when the average of the performance test run temperatures at the inlet to the particulate matter control device is 204° C (400° F) or more and shall not exceed 0.40 ng/dscm (TEQ) @ 7% oxygen when the average of the performance test run average temperatures at the inlet to the particulate matter control device is 204° C (400° F) or less.

e. Compliance shall be demonstrated using the sampling, analysis, and calculation methods specified in Condition No. 21.

{Permitting Note: In combination with the annual clinker production limitation of 1,095,000 tons per year, the above emissions standards effectively limit annual potential emissions from this unit to: 1,588 tons/year of CO; 1,068 tons/year of NO_X (after year one); 83.8 tons/year of PM/PM_{10}; 110 tons/year of SO_2; and 66 tons/year of VOC. Note that first year annual NO_X emissions could be as high as 1,643 tons/year.}

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

14. Test Methods: Any required stack tests shall be performed in accordance with the following methods.

EPA 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 Emissions. The minimum sample volume shall be 30 dry standard cubic feet.
6C	Determination of SO_2 Emissions (Instrumental).
7E	Determination of NO_X Emissions (Instrumental). NO_X emissions testing shall be conducted with the air heater operating at the highest heat input possible during the test.
9	Visual Determination of Opacity
10	Measurement of Carbon Monoxide Emissions (Instrumental). The method shall be based on a continuous sampling train.
23	Measurement of Dioxin/Furan Emissions
25A	Measurement of Gaseous Organic Concentrations (Flame Ionization – Instrumental)

The methods are specified in Appendix A of 40 CFR 60, adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. Tests shall be conducted in accordance with the appropriate test method and the applicable requirements specified in Appendix C of this permit, NSPS Subpart A in 40 CFR 60, and NESHAP Subparts A and LLL in 40 CFR 63. [Rules 62-204.800, F.A.C.; 40 CFR 60, Appendix A]

15. Testing Requirements: Initial tests shall be conducted between 90% and 100% of permitted capacity; otherwise, this permit shall be modified to reflect the true maximum capacity as constructed. Subsequent annual tests shall be conducted between 90% and 100% of permitted capacity in accordance with the requirements of Rule 62-297.310(2), F.A.C. Tests shall be conducted for each required pollutant under the fuel scenario representing the highest potential for generating emissions. In general, this fuel scenario is firing coal as the primary fuel and TDF and petroleum coke, as secondary fuels. If a secondary fuel listed above is not available at the time of testing, tests shall be based on the fuels that are available. If a secondary fuel is added later, additional tests shall be conducted with that fuel scenario within 60 days of first fire of the new secondary fuel.
[Rule 62-297.310(7)(a) and (b), F.A.C.; 40 CFR 60.8]

16. Initial Compliance Demonstration: Initial compliance stack tests shall be conducted within 60 days after achieving a daily average clinker production rate of 125 tons per hour, but not later than 180 days after the initial startup. In accordance with the test methods specified in this permit, the kiln system exhaust stack shall be tested to demonstrate compliance with the emission standards for particulate matter, CO, SO_2, NO_X, dioxin/furans, and THC. The initial compliance demonstration with the THC, and dioxin/furans emissions standards shall be carried out in accordance with 63.1349(b). The permittee shall provide the Compliance Authority with any other initial emissions performance tests conducted to satisfy vendor guarantees.
[Rule 62-297.310(7)(a) and (b), F.A.C.; 40 CFR 60.8]

17. Subsequent Compliance Testing: Annual compliance stack tests for particulate matter, CO, NO_X, and SO_2, shall be conducted during each federal fiscal year (October 1st to September 30th). Subsequent dioxins/furans tests shall be conducted in accordance with the provisions of 40 CFR 63.1349. Data collected from the reference method during the required RATA tests for CO, NO_X, and SO_2 may be used to satisfy the annual testing requirement provided the notification requirements and emission testing requirements for performance and compliance tests of this permit are satisfied. [Rules 62-297.310(7)(a) and (b), F.A.C.; 40 CFR 60.8]

18. Continuous Compliance: Continuous compliance with the permit standards for opacity and emissions of CO, NO_X, SO_2, and VOC/THC shall be demonstrated with data collected from the required continuous monitoring systems. [Rules 62-212.400(5)(c) and 62-297.310(7)(a) and (b), F.A.C.; 40 CFR 60.8, and 63.1350]

19. 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, significant means any of the following: a physical or chemical change in the feed or fuel; the use of a raw material not previously used; a change in the LOI of the coal ash outside the normal range of monitored parameters; a change between non-beneficiated coal ash and beneficiated coal ash. Based on the information provided, the Compliance Authority will promptly determine if performance testing pursuant to 40 CFR 63.1349 will be required for the new feed or fuel. A significant change shall not include switching to a feed/fuel mix for which the permittee already tested in compliance with the dioxin/furan and PM/PM10 emission limits. [Rule 62-4.070(3), F.A.C.]

20. 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.]

21. Mercury Compliance Demonstration:

a. *Material Balance Demonstration:* The owner or operator shall demonstrate compliance with the mercury throughput limitation by material balance and maintaining records of the monthly and rolling 12-month mercury throughput. Samples of the raw mill feed and all fuels shall be collected each day. A single composite daily sample shall be made from all samples collected during a day. A monthly composite sample shall be made from each of the daily composite samples. Each monthly composite sample shall be analyzed to determine the mercury concentration of the materials representative for the month. The analytical methods used to determine mercury concentration shall be EPA or ASTM methods such as EPA Method 7471A (Mercury in Solid or Semisolid Waste). No other methods may be used unless prior written approval is received from the Department. For each raw material and fuel, the monthly mercury throughput rate (pounds per month) shall be the product of the mercury concentration from the monthly composite sample and the mass of raw material or fuel used during the month. If the mercury concentration is below detection limit or below the limits of quantification, the detection limit will be assumed for the concentration of the raw material or fuel. For each month, the mass of mercury introduced into the pyroprocessing system (pounds per month) shall be the sum of the monthly mercury throughput rate for each raw material and fuel. The consecutive 12-month mercury throughput rate shall be the sum of the individual monthly records for the current month and the preceding eleven months (pounds of mercury per consecutive 12-months). Such records, including calculations and data, shall be completed no later than 25 days following the month of the records. [Rules 62-4.070(3) and 62-212.400(2)(g), F.A.C.]

b. *Mercury Continuous Emissions Monitoring System (Hg-CEMS):* Within 60 days following the first year of operation, the owner or operator shall install any model of Hg-CEMS that has been demonstrated to meet the requirements in Performance Specification 12A (PS-12A), "Specifications and Test Procedures for Total Vapor phase Mercury Continuous Monitoring Systems in Stationary Sources," or that has passed verification tests conducted under the auspices of the U.S. Environmental Protection Agency's (EPA) Environmental Technology Verification (ETV) Program. During the subsequent 90 days, the owner or operator shall certify the Hg-CEMS and begin reporting Hg mass emissions data. The owner or operator shall adhere to the calibration drift and quarterly accuracy assessment procedures in 40 CFR Part 60, Appendix F or 40 CFR Part 75, Appendix B. The 12-month rolling mass emissions and average monthly mass emissions shall be reported based on the actual data collected not later than 10 days following the end of month. Upon certification, the owner or operator may use the Hg-CEMS to demonstrate compliance with the cumulative 12-month rolling mass emission limitation (122 pounds per rolling 12-month period) in lieu of the procedures described in the preceding paragraph. Prior to use of the Hg-CEMS as the method to demonstrate compliance, the owner or operator shall submit written notice to the Department, and receive approval for a missing data substitution plan. For purposes of this requirement, the first year of operation ends 365 calendar days following the first day the kiln produces clinker. [Rules 62-4.070(3) and 62-212.400(2)(g), F.A.C.]

EXCESS EMISSIONS

{Permitting Note: The following conditions apply only to the SIP-based emissions standards specified in Condition No. 12 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.}

22. Operating Procedures: The Best Available Control Technology (BACT) determinations established by this permit rely on "good operating practices" to reduce emissions. Therefore, all operators and supervisors

shall be properly trained to operate and maintain the kiln and calciner, and pollution control systems in accordance with the guidelines and procedures established by each manufacturer. The training shall include good operating practices as well as methods for minimizing excess emissions. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

23. 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(159,230,and 245), F.A.C.]

24. 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. [Rule 62-210.700(4), F.A.C.]

25. Allowable Data Exclusions: Continuous monitoring data collected during periods of startup, shutdown, and malfunction may be excluded from the compliance demonstrations only in accordance with the following 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., the following conditions replace the provisions in Rule 62-210.700(1), F.A.C.

    a. *CO Data*: Each 30-day rolling average shall include all periods of operation (including startup, shutdown, and malfunction), but may exclude limited periods due to equipment malfunctions. No more than 30 hours in any calendar month shall be excluded from the compliance determinations due to equipment malfunctions. Malfunctions do not include process upsets that occur as a normal part of cement production.

    b. *NO_X Data*: 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.

    c. *SO_2 Data*. Each 24-hour rolling average shall include all periods of operation (including startup, shutdown, and malfunction).

    d. *Other Data*: All valid opacity and VOC data shall be included in the compliance determination. If the mercury CEMS is used as the method for demonstrating compliance, all valid data shall be included in the compliance determination.

    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, 62-212.400(BACT), and 62-210.700, F.A.C.]

CONTINUOUS MONITORING REQUIREMENTS

26. CEM Systems: The permittee shall install, calibrate, operate and maintain continuous emissions monitoring systems (CEMS) to measure and record concentrations of CO, Hg, NO_X, SO_2, and VOC/THC in the kiln system exhaust stack in a manner sufficient to demonstrate continuous compliance with the emissions standards specified in this section. All continuous monitoring systems other than the Hg CEMS shall be installed and functioning within the required performance specifications by the time of the initial performance tests. The Hg CEMS shall be installed and functioning within the required performance specifications following the first year of operation as specified in condition No. 21.

    a. *CO Monitor.* The CO monitor shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 4 or 4A. Quality assurance procedures shall conform to the requirements of 40 CFR 60, Appendix F. The required RATA tests shall be performed using EPA Method 10 in Appendix A of 40 CFR 60 and shall be based on a continuous sampling train. The CO monitor span values shall be set appropriately, considering the expected range of emissions and corresponding emission standards.

    b. *NO_X Monitor.* The NO_X monitor shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 2. Quality assurance procedures shall conform to the requirements of in 40 CFR 60, Appendix F. The required RATA tests shall be performed using EPA Method 7E in Appendix A of 40 CFR 60. The NO_X monitor span values shall be set appropriately, considering the expected range of emissions and corresponding emission standards.

    c. *SO_2 Monitor.* The SO_2 monitor shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 2. Quality assurance procedures shall conform to the requirements of 40 CFR 60, Appendix F. The required RATA tests shall be performed using EPA Method 6C in Appendix A of 40 CFR 60. The SO_2 monitor span values shall be set appropriately, considering the expected range of emissions and corresponding emission standards.

    d. *THC Monitor.* A monitor shall be installed to determine THC emissions from the stack and shall meet the requirements of NESHAP Subpart LLL in 40 CFR 63 (40 CFR 63.1349 and 63.1350). The THC monitor shall include provisions to determine the moisture content of the exhaust gas and an algorithm to enable correction of the monitoring results to a dry basis (0% moisture).

    e. *Diluent Monitor.* An oxygen monitor shall be installed at the THC monitor location to correct measured THC emissions to the required oxygen concentration.

    f. *Mercury Monitor.* A mercury monitor (Hg-CEMS) shall be installed and operated as described in Condition 21 above.

    CEMS, other than the Hg-CEMS, are also subject to the General Provisions specified in Subpart A of 40 CFR 60 (CO, NO_X, and SO_2) and Subpart A of 40 CFR 63 (THC/VOC). [Rules 62-4.070(3), 62-210.800, 62-212.400(BACT) and 62-297.520, F.A.C.]

27. COMS: A continuous opacity monitoring system (COMS) shall be installed, calibrated, operated, and maintained in the kiln system exhaust stack, after the baghouse, in a manner sufficient to demonstrate continuous compliance with the opacity standards specified in this section. Opacity shall be based on a 6-minute block average computed from at least one observation (measurement) every 15 seconds. For the

COMS, the 6-minute block averages shall begin at the top of each hour. The COMS shall meet the applicable requirements of 40 CFR 63.1350. [NESHAP Subpart LLL in 40 CFR 63]

28. CEMS/COMS Certification and Initial Startup: Each CEMS/COMS required by this permit shall be installed prior to startup. Within 60 calendar days of achieving an average daily clinker production rate of 125 tons per hour, but no later than 180 calendar days after initial startup, the owner or operator shall certify each CEMS/COMS. Upon certification of each CEMS/COMS, the owner or operator shall demonstrate compliance with all applicable standards as specified in this permit. The Hg CEMS shall be installed and functioning within the required performance specifications following the first year of operation as specified in condition No. 21. [Rules 62-4.070(3), 62-210.800, 62-212.400(BACT) and 62-297.520, F.A.C.; 40 CFR 60.7(a), 60.13(b) and Appendix B; and 40 CFR 63.7(a)(2)]

29. CEMS Data Requirements: The CEMS shall be installed, calibrated, maintained, and operated in the in-line kiln/raw mill stack to measure and record the emissions of CO, NO_X, SO_2, and THC/VOC in a manner sufficient to demonstrate compliance with the emission limits of this permit. The CEMS shall express the results in units of pounds per ton of clinker produced, and pounds per hour. Emissions of VOC shall be reported in units of the standards (lb/hr, lb/ton of clinker) and ppmvd as propane corrected to 7% oxygen.

    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. *24-hour Rolling Averages*: Compliance with the emission limit for SO_2 shall be based on a 24-hour rolling average that shall be recomputed after every valid hour as the arithmetic average of that hourly average and the preceding 23 valid hourly averages.

    c. *30-day Rolling Averages*: Compliance with the emission limits for CO and 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.

    d. *30-day Block Average:* Compliance with the emission limit for VOC shall be based on a 30-day block average. Each 30-day block average shall be the arithmetic average of all valid hourly averages occurring within each 30 operating-day block and shall be consistent with the averaging period specified in 40 CFR 63.1350(h) for THC emissions.

    e. *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 No. 25 in this section. The permittee shall minimize the duration of data excluded for such episodes to the extent practicable.

f. *Availability*. Monitor availability for each CEMS 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.

30. Continuous Flow Monitor: A continuous flow monitor shall be installed to determine the stack exhaust flow rate to be used in determining mass emission rates. The flow monitor shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 6.

31. Baghouse Temperature Monitor: A continuous temperature monitor shall be installed, calibrated, operated, and maintained at the inlet to the baghouse for the kiln system exhaust in accordance with the requirements of 40 CFR 63.1350(f). [NESHAP Subpart LLL in 40 CFR 63]

32. Aqueous Ammonia Injection: A monitoring system to continuously monitor and record the aqueous 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.
[Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

REPORTING AND RECORD KEEPING

33. Operational Records: To demonstrate compliance with the limitations specified in this section, the owner or operator shall maintain the following records on site.

a. For each 1-hour block of operation, continuously monitor and record the dry preheater feed rate, clinker production rate, fuel firing rate, heat input rate (the representative heating value of each fuel and the hourly fuel firing rate), and NH_3/NO_X molar ratio or ammonia injection rate. Records shall also document the dry preheater feed rate and clinker production rates for each 24-hour rolling period and consecutive12 months.

b. For each fuel delivery the owner or operator shall maintain records or the quantity of fuel delivered and a representative analysis of the fuel including the sulfur content, higher and lower heating value, proximate analysis, and ultimate analyses.

c. Maintain records demonstrating compliance with the mercury throughput limitation as required in Condition No. 21.a. of this permit.

All records shall be made available to the Department and Compliance Authority upon request.
[Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

34. 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. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the specified in Rule 62-297.310(8), F.A.C. [Rule 62-297.310(8), F.A.C.]

35. 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. If requested by the Compliance Authority, the owner or operator shall submit a quarterly written report describing the malfunction. [Rules 62-210.700(6) and 62-4.130, F.A.C.]

36. 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; mercury throughput rates; and the monitor availability of each CEMS. The report shall contain the information and follow the general format specified in Appendix F of this permit. [Rules 62-4.070(3), 62-4.130, and 62-212.400(BACT), F.A.C.]

37. Used Oil Records: For each shipment of used oil received, the owner or operator shall maintain records from the vendor certifying that the used oil meets the above requirements for "on-specification" used oil fuel. Records shall include the following parameters: arsenic, cadmium, chromium, lead, total halogens, flash point, PCBs, sulfur content, coal ash, and heating value. Otherwise, the owner or operator shall sample and analyze each shipment of used oil received for the above parameters. If vendor certifications are relied upon, the owner or operator shall analyze at least one sample obtained each calendar year for the above parameters. If analytical results show that the used oil does not meet the above requirements, the owner or operator shall immediately: cease burning of the used oil, and notify the Compliance Authority of the analytical results. The analysis shall be performed via EPA-approved or ASTM methods. The permittee shall obtain, make, and keep the following records:

    a) Gallons of on-specification used oil received and burned each month;
    b) Name and address of all vendors delivering used oil to the facility;
    c) Copies of the vendor certifications, if obtained, and any supporting information; and
    d) Analytical results.

    The records shall be retained in a form suitable for inspection at the facility by the Department, and shall be retained permanently. [40 CFR 279.61, 40 CFR 761.20(e), and Rule 62-4.070(3), F.A.C.]

38. O&M Plan for Baghouse: The permittee shall prepare an operation and maintenance (O&M) plan to address the schedule for inspection and preventive maintenance of the baghouse control system. The O&M plan shall be submitted to the Compliance Authority prior to expiration of this permit. The permittee shall maintain records of the condition of the control equipment for each inspection and any maintenance activities performed. [Rule 62-4.070(3), F.A.C., and 40 CFR 63.1350, Subpart LLL]

D. Clinker and Additives Storage and Handling

The specific conditions of this subsection apply to the following emissions unit after construction is complete.

EU ID	Emissions Unit Description
004	Clinker and Additives Storage and Handling. Includes clinker handling from clinker cooler to clinker silo discharge, and clinker and additive handling from storage to the finish mill.

The following emissions points in the raw materials conveying, storage, and processing system are controlled by baghouses:

Point ID	Emissions Point Description
L03	Dust collector for clinker transfer cooler discharge
L06	Dust collector for clinker transfer to clinker silo #1
L08	Dust collector for clinker transfer to clinker silo #2
M08	Dust collector for clinker transfer from clinker silos

APPLICABLE STANDARDS AND REGULATIONS

1. BACT Determinations: A determination of the Best Available Control Technology (BACT) was made for, particulate matter (PM/PM_{10}). To satisfy the BACT requirements for this unit the visible emissions limits act as surrogate standards for PM.

2. NESHAP Requirements: This unit is subject to 40 CFR 63, Subpart A (Identification of General Provisions) and 40 CFR 63, Subpart LLL (National Emissions Standard for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry). The Department determines that the BACT emissions performance requirements are as stringent as or more stringent than the limits imposed by the applicable NESHAP provisions. Some separate reporting and monitoring may be required by the individual subpart.

EQUIPMENT AND CONTROL TECHNOLOGY

3. Equipment Description: The permittee is authorized to construct, operate, and maintain equipment needed for the conveying and storage of clinker, and the additive (limestone and gypsum) storage and conveying to the finish mills. Equipment will include two clinker silos, gypsum and limestone pile covered storage, and associated conveyors, and control equipment.

4. Baghouse Controls: Each emissions point identified for clinker storage and conveying 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 gr/dscf and a PM_{10} design specification of 0.007 gr/dscf. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

PERFORMANCE REQUIREMENTS

5. Hours of Operation: This emissions unit is allowed to operate 8,760 hours per year. [Applicant Request, Rule62-210.200(PTE), F.A.C

EMISSIONS AND TESTING REQUIREMENTS

6. Emissions Limits: The following standards apply to each emissions point of this unit including all raw material storage and conveying system transfer points:

   c. Emissions are limited to 5% opacity from each of the above listed emissions points controlled by a baghouse.

d. Emissions are limited to 10% opacity from any emissions point not controlled by a baghouse.

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

{Note: The applicant advised that the baghouses are designed to control PM emissions to 0.01 grains/dry standard cubic foot (gr/dscf) and PM_{10} emissions to 0.007 gr/dscf. The 5% opacity limitation is consistent with this design and provides reasonable assurance that annual emissions of PM/PM_{10} for all emission points in this emission unit system will be no more than 4 TPY. Exceedance of the 5% opacity limit shall be deemed an exceedance of this permit condition and not necessarily an exceedance of the opacity limitations given in 40 CFR 63, Subpart LLL.}

[Rules 62-4.070(3), 62-212.400, F.A.C. and 40 CFR 63.1348]

7. Compliance Demonstrations: Each emission point shall be tested to demonstrate initial compliance with the emission standards for visible emissions. The tests shall be conducted within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after the initial startup. Compliance with the visible emission limits shall be demonstrated during each federal fiscal year (October 1st to September 30th). [Rules 62-4.070(3), 62-297.310(7)(a), F.A.C. and 40 CFR 63.1349(b)(2)]

8. Periodic Monitoring Requirements: Each affected source subject to an opacity standard shall be periodically monitored using the procedures described in 40 CFR 63.1350(a) (4) (i) through (vii) to ensure compliance with the emissions limits of condition No. 6. [Rule 62-4.070(3), and 40 CFR, 63.1350, Subpart LLL]

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 NESHAP provisions.

Method	Description of Method and Comments
9	Visual Determination of the Opacity of Emissions from Stationary Sources
22	Visual Determination of Fugitive Emissions From Material 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), and 40 CFR 63.1350, Subpart LLL]

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.]

E. Finish Mill

The specific conditions of this subsection apply to the following emissions unit after construction is complete.

ID No.	Emissions Unit Description
005	Finish Mill (Cement Grinding)

The cement grinding process includes the following emission points controlled by fabric filter baghouses.

Point ID	Emissions Point Description
N93	Finish Mill Air Separator
N94	Finish Mill

APPLICABLE STANDARDS AND REGULATIONS

1. BACT Determinations: A determination of the Best Available Control Technology (BACT) was made for particulate matter (PM/PM_{10}). To satisfy some of the BACT requirements for this unit the visible emissions limits act as surrogate standards for PM.

2. NESHAP Requirements: This unit is subject to 40 CFR 63, Subpart A (Identification of General Provisions) and 40 CFR 63, Subpart LLL (National Emissions Standard for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry). The Department determines that the BACT emissions performance requirements are as stringent as or more stringent than the limits imposed by the applicable NESHAP provisions. Some separate reporting and monitoring may be required by the individual subpart.

EQUIPMENT AND CONTROL TECHNOLOGY

3. Equipment Description: The permittee is authorized to construct, operate, and maintain one finish mill in a closed circuit with a high efficiency air separator and cyclones capable of processing approximately 159 tons per hour of cement. Other equipment will include associated enclosed conveyors, bucket elevators, belts, and control equipment.

4. Baghouse Controls: Each emissions point identified for cement grinding 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 gr/dscf and a PM_{10} design specification of 0.007 gr/dscf. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

PERFORMANCE REQUIREMENTS

5. Hours of Operation: This emissions unit is allowed to operate 8,760 hours per year. [Applicant Request, Rule62-210.200(PTE), F.A.C

EMISSIONS AND TESTING REQUIREMENTS

6. Finish Mill: Visible emissions are limited to 5% opacity from the finish mill baghouse (Point ID N94). [Rule 62-212.400(BACT), F.A.C.]

   {Note: The applicant advised that the baghouse is designed to control PM emissions to 0.01 grains/dry standard cubic foot (gr/dscf) and PM_{10} emissions to 0.007 gr/dscf. The 5% opacity limitation is consistent with this design and provides reasonable assurance that annual emissions of PM/PM_{10} for this emission point in this emission unit system will be less than 5.8 TPY. Exceedance of the 5% opacity limit shall be deemed an exceedance of this permit condition and not necessarily an exceedance of the opacity limitations given in 40 CFR 63, Subpart LLL.}

7. Finish Mill Air Separator: The following standards apply to the finish mill air separator (Point ID N93):

PM/ PM_{10}	Visible Emissions
0.007 gr/dscf	5% Opacity

All PM emitted from the baghouse exhaust is assumed to be PM_{10}. The BACT requirements do not waive or vary any applicable NESHAP monitoring or record keeping requirements.

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

{Permitting Note: This emissions point accounts for almost 25% (34.9 TPY) of the facility's total PM emissions.}

8. Testing Requirements: Each emission point shall be tested to demonstrate initial compliance with the applicable standards for PM/PM_{10}, and visible emissions. The tests shall be conducted within 60 days after achieving a daily average clinker production rate of 125 tons per hour, but not later than 180 days after the initial startup. Thereafter, compliance with the visible emission limits shall be demonstrated during each federal fiscal year (October 1st to September 30th). Compliance with the particulate matter standard shall be demonstrated during the 12 month period prior to each renewal of the operation permit. [Rule 62-297.310(7)(a), F.A.C.]

9. Periodic Monitoring Requirements: Each affected source subject to an opacity standard shall be periodically monitored using the procedures described in 40 CFR 63.1350(e) to ensure compliance with the emissions limits of condition No. 6 and 7.
[Rule 62-4.070(3), and 40 CFR, 63.1350, Subpart LLL]

10. 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 NESHAP 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 Emissions. The minimum sample volume shall be 30 dry standard cubic feet.
9	Visual Determination of the Opacity of Emissions from Stationary Sources
22	Visual Determination of Fugitive Emissions From Material Sources

REPORTING AND RECORD KEEPING

11. 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), and 40 CFR 63.1350, Subpart LLL]

12. 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.]

F. Cement Handling, Storage, Packing, and Loadout

The specific conditions of this subsection apply to the following emissions unit after construction is complete.

ID No.	Emissions Unit Description
006	Cement Handling, Storage, Packing, and Loadout. Includes cement conveyance to silos, cement silos, loadout to trucks from silos, and cement bagging operations.

The following emissions points in the cement handling, storage, packing, and loadout system are controlled by baghouses:

Point ID	Emissions Point Description
N91	Cement Transfer from Finish Mill
Q25	Cement Silo #1
Q26	Cement Silo #2
Q14	Truck Loadout #1
Q17	Truck Loadout #2
R12A	Packing Plant

APPLICABLE STANDARDS AND REGULATIONS

1. BACT Determinations: A determination of the Best Available Control Technology (BACT) was made for particulate matter (PM/PM_{10}).

2. NESHAP Requirements: This unit is subject to 40 CFR 63, Subpart A (Identification of General Provisions) and 40 CFR 63, Subpart LLL (National Emissions Standard for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry). The Department determines that the BACT emissions performance requirements are as stringent as or more stringent than the limits imposed by the applicable NESHAP provisions. Some separate reporting and monitoring may be required by the individual subpart.

EQUIPMENT AND CONTROL TECHNOLOGY

3. Equipment Description: The permittee is authorized to construct, operate, and maintain equipment needed for cement storage, loadout to trucks, and bagging operations. Equipment will include two concrete cement silos with rotary shut-off valves, flow control valve, and airslides. The cement bagging operation includes a screen, surge hopper, bucket elevator and packer. Operation is estimated to be nominally 500 tons per hour of cement to truck loadout and/or bagging operation.

4. Baghouse Controls: Each emissions point identified for finish mills cement processing 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 gr/dscf and a PM_{10} design specification of 0.007 gr/dscf. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

PERFORMANCE REQUIREMENTS

5. Hours of Operation: This emissions unit is allowed to operate 8,760 hours per year. [Applicant Request, Rule62-210.200(PTE), F.A.C

F. Cement Handling, Storage, Packing, and Loadout

EMISSIONS AND TESTING REQUIREMENTS

6. Emissions Limits: The following standards apply to each emissions point of this unit:

   e. Emissions are limited to 5% opacity from each of the above listed emissions points controlled by a baghouse.

   f. Emissions are limited to 10% opacity from any emissions point not controlled by a baghouse.

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

   {Note: The applicant advised that the baghouses are designed to control PM emissions to 0.01 grains/dry standard cubic foot (gr/dscf) and PM_{10} emissions to 0.007 gr/dscf. The 5% opacity limitation is consistent with this design and provides reasonable assurance that annual emissions of PM/PM_{10} for all emission points in this emission unit system will be less than 15.1 TPY. Exceedance of the 5% opacity limit shall be deemed an exceedance of this permit condition and not necessarily an exceedance of the opacity limitations given in 40 CFR 63, Subpart LLL.}

   [Rules 62-4.070(3), 62-212.400, F.A.C. and 40 CFR 63.1348]

7. Compliance Demonstrations: Each emission point shall be tested to demonstrate initial compliance with the emission standards for visible emissions. The tests shall be conducted within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after the initial startup. Compliance with the visible emission limits shall be demonstrated during each federal fiscal year (October 1st to September 30th). [Rules 62-4.070(3), 62-297.310(7)(a), F.A.C. and 40 CFR 63.1349(b)(2)]

8. Periodic Monitoring Requirements: Each affected source subject to an opacity standard shall be periodically monitored using the procedures described in 40 CFR 63.1350(a) (4) (i) through (vii) to ensure compliance with the emissions limits of condition No. 6. [Rule 62-4.070(3), and 40 CFR, 63.1350, Subpart LLL]

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 NESHAP provisions.

Method	Description of Method and Comments
9	Visual Determination of the Opacity of Emissions from Stationary Sources
22	Visual Determination of Fugitive Emissions From Material 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), and 40 CFR 63.1350, Subpart LLL]

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.]

G. Coal and Petroleum Coke Grinding System

The specific conditions of this subsection apply to the following emissions unit.

ID No.	Emissions Unit Description
007	Coal and Petroleum Coke Grinding System. Includes coal/petroleum coke handling from railcar unloading to the pulverized fuel bin.

The coal and petroleum coke grinding system includes the following emissions points controlled by fabric filter baghouses.

Point ID	Emissions Point Description
S22	Coal/Petroleum Coke Mill Including Thermal Dryer
S26	Coal/Petroleum Coke Bin

APPLICABLE STANDARDS AND REGULATIONS

1. BACT Determinations: A determination of the Best Available Control Technology (BACT) was made for particulate matter (PM/PM_{10}). To satisfy some of the the BACT requirements for this unit the visible emissions limits act as surrogate standards for PM.

2. 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 BACT emissions performance requirements 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 CONTROL TECHNOLOGY

3. Equipment Description: The permittee is authorized to construct, operate, and maintain equipment needed for coal and petroleum coke grinding and storage. Equipment will include a coal/petroleum coke grinding mill, storage bins, and associated conveyor systems. Clinker cooler gas will be used for drying.

4. Baghouse Controls: Each emissions point identified for the coal and petroleum coke grinding system 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 gr/dscf and a PM_{10} design specification of 0.007 gr/dscf. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

PERFORMANCE REQUIREMENTS

5. Hours of Operation: The hours of operation for this emissions unit are not limited (8760 hours per year). [Rule62-210.200(PTE), F.A.C.]

6. Process Rate Limitation: The coal/petroleum coke mill may process up to 18.5 tons per hour of coal/petroleum coke. No more than 134,904 tons of coal/petroleum coke shall be process during any consecutive 12 months. [Rule62-210.200(PTE), F.A.C.]

EMISSIONS AND TESTING REQUIREMENTS

7. Particulate Matter Standards: Particulate matter emissions from the thermal dryer (Point ID S22) shall not exceed 0.007 grains per dscf of exhaust as determined by EPA method 5. [Rules 62-212.400 (BACT), F.A.C. and 40 CFR 60.252]

8. Visible Emissions Standards: Visible emission s shall not exceed the following limits:

   - Visible emission from any emissions point described above and controlled by a baghouses shall not exceed 5% opacity.
   - Visible emissions from all coal/petcoke processing and conveying equipment, coal/petcoke storage system, or coal/petcoke transfer and loading system processing coal/petcoke, and not controlled by a baghouse, shall not exceed 10% opacity.

   [Rules 62-212.400 (BACT), F.A.C. and CFR 60.252]

9. Testing Requirements: Each emission point shall be stack tested to demonstrate initial compliance with the applicable emission standards for PM/PM_{10} and visible emissions. The tests shall be conducted within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after the initial startup. Thereafter, compliance with the particulate limits (PM/PM_{10}) shall be demonstrated within the 12 month period prior to each renewal of the operation permit and compliance with the visible emission limits shall be demonstrated during each federal fiscal year (October 1st to September 30th). [Rule 62-297.310(7)(a), F.A.C.]

10. 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

CONTINUOUS MONITORING REQUIREMENTS

11. Thermal Dryer Exit Temperature: A monitoring device for the continuous measurement of the temperature of the gas stream at the exit of the thermal dryer shall be installed, calibrated, maintained, and continuously operated to measure the temperature of the gas stream in accordance with the requirements of 40 CFR, Subpart Y. [CFR 60, Subpart Y]

REPORTING AND RECORD KEEPING

12. 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), and 40 CFR 63.1350, Subpart LLL]

13. 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.]

H. Fugitive Dust From Storage Piles, Paved Roads, and Unpaved Roads

The following specific conditions apply to the following emissions units after construction.

ID No.	Emissions Unit Description
008	Fugitive Dust From Storage Piles, Paved Roads, and Unpaved Roads

PERFORMANCE REQUIREMENTS

1. Unconfined Emissions of Particulate Matter

   a. No person shall cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any activity without taking reasonable precautions to prevent such emissions. Such activities include, but are not limited to: vehicular movement; transportation of materials; construction, alteration, demolition or wrecking; or industrially related activities such as loading, unloading, storing or handling.

   b. Reasonable precautions shall include the following:

      (1) Landscaping and planting of vegetation.

      (2) Application of water to control fugitive dust from activities such as demolition of buildings, grading roads, construction, and land clearing.

      (3) Water supply lines, hoses and sprinklers shall be located near all stockpiles of raw materials, coal, and petroleum coke.

      (4) All plant operators shall be trained in basic environmental compliance and shall perform visual inspections of raw materials, coal and petroleum coke periodically and before handling. If the visual inspections indicate a lack of surface moisture, such materials shall be wetted with sprinklers. Wetting shall continue until the potential for unconfined particulate matter emissions are minimized.

      (5) Water spray shall be used to wet the materials and fuel if inherent moisture and moisture from wetting the storage piles are not sufficient to prevent unconfined particulate matter emissions.

      (6) As necessary, applications of asphalt, water, or dust suppressants to unpaved roads, yards, open stockpiles and similar activities.

      (7) Paving of access roadways, parking areas, manufacture area, and fuel storage yard.

      (8) Removal of dust from buildings, roads, and other paved areas under the control of the owner or operator of the facility to prevent particulate matter from becoming airborne.

      (9) A vacuum sweeper shall be used to remove dust from paved roads, parking, and other work areas.

      (10) Enclosure or covering of conveyor systems where practicably feasible.

      (11) All materials at the plant shall be stored under roof. Materials, other than quarried materials, shall be stored on compacted clay or concrete, or in enclosed vessels.

      (12) Use of hoods, fans, filters, and similar equipment to contain, capture and/or vent particulate matter.

      (13) Confining abrasive blasting where possible.

   c. In determining what constitutes reasonable precautions for a particular source, the Department shall consider the cost of the control technique or work practice, the environmental impacts of the technique or practice, and the degree of reduction of emissions expected from a particular technique or practice.

   [Rules 62-212.400(BACT) and 62-296.320(4)(c), F.A.C.]

SECTION IV. APPENDICES
CONTENTS

PROJECT DESCRIPTION

The proposed facility will be a nominal 1,150,000 tons per year (TPY) dry process portland cement plant incorporating a dry process kiln with a preheater and calciner (PH/C). Major equipment associated with the main components of the plant will include the following:

- A materials storage building (MSB);
- A primary crusher at the quarry and belt conveyors to MSB;
- Raw material piles stored inside of the MSB. The piles will include limestone, alumina sources (e.g. bauxite, clay, and coal ash), iron sources (e.g. mill scale and iron ore), silica sources (e.g. sand), and additives (e.g. feldspar);
- Materials handling equipment including portal reclaimers, stackers, belt conveyors, conveyor from the MSB to the raw mill, control system/analyzer, etc.;
- An in-line raw mill that simultaneously dries raw materials using the exhaust gas from the kiln, PH/C, and clinker cooler;
- A preheater with staged combustion and selective non-catalytic reduction (SNCR) system;
- An air heater for use when additional drying capacity is required;
- A nominal 10,000 ton blending silo;
- An indirect-firing system with a low-NO_X main kiln burner capable of burning coal, petroleum coke, fuel oil, and natural gas;
- A whole tire feeder system;
- A clinker cooler with reciprocating grates, cooling air fans, and hot air ducting to the kiln and PH/C;
- Clinker storage and grinding including a finish mill with air separator, clinker silos with metering device, limestone and gypsum piles, and associated conveyors;
- A cement transfer and storage facility including truck loadout and packhouse; and
- A nominal 18 TPH coal and petroleum coke grinding system with associated mill, storage facility, conveyors, including a fabric filter baghouse.

The permit authorizes the construction of the following new emissions units:

EU ID	Emissions Unit Description
001	Raw Material Quarrying, Crushing, and Storage. Includes raw material processing from quarry up to raw material storage, and additives handling from delivery to storage.
002	Raw Materials, Conveying, Storage, and Processing. From raw material and additive storage to preheater (includes conveyance of raw materials and raw meal to and from raw mill, and homogenizing silo).
003	Pyroprocessing System. Includes kiln, preheater/calciner, raw mill, air heater, and clinker cooler.
004	Clinker and Additives Storage and Handling. Includes clinker handling from clinker cooler to clinker silo discharge, and clinker and additive handling from storage to the finish mill.
005	Finish Mill (Cement Grinding)
006	Cement Handling, Storage, Packing, and Loadout. Includes cement conveyance to silos, cement silos, loadout to trucks from silos, and cement bagging operations.
007	Coal and Petroleum Coke Grinding System. Includes coal/petroleum coke handling from railcar unloading to the pulverized fuel bin.
008	Fugitive Dust From Storage Piles, Paved Roads, and Unpaved Roads

RAW MATERIAL QUARRYING, CRUSHING, AND STORAGE

Visible Emission Standards: These opacity standards do not apply to truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher.

a. Fugitive emissions from the crusher shall not exceed 15% opacity.

b. Fugitive emissions from any transfer point on belt conveyors or from any other affected facility shall not exceed 10% opacity.

Opacity shall be determined in accordance with EPA Method 9.

RAW MATERIALS, CONVEYING, STORAGE, AND PROCESSING

Each emissions point specifically identified for raw materials conveying, storage, and processing 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 gr/dscf and a PM_{10} design specification of 0.007 gr/dscf.

The following BACT standards apply to each emissions point of this unit including all raw material storage bins and conveying system transfer points:

a. Emissions are limited to 5% opacity from each of the above listed emissions points controlled by a baghouse.

b. Emissions are limited to 10% opacity from any emissions point not controlled by a baghouse.

Opacity shall be determined in accordance with EPA Method 9.

PYROPROCESSING SYSTEM

Emissions from the pyroprocessing system are controlled by the following equipment and techniques.

NO_X Controls

Low-NO_X Burners and Indirect Firing: The main kiln and calciner will be equipped with Low NO_X burners that 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.

Staged Combustion in the Calciner (SCC): The kiln system will be designed such that the introduction of fuel, air and meal to the calciner will be staged or sequenced for the reduction of NO_X emissions.

SNCR: A selective non-catalytic reduction (SNCR) system shall be designed, constructed and operated to achieve the permitted levels for NO_X emissions from the pyroprocessing system. The SNCR system will consist of an aqueous ammonia tank, pumps, piping, compressed air delivery, injectors, control system, and other ancillary equipment. Aqueous ammonia will be injected at a location(s) in the preheater/calciner with an appropriate temperature profile to support the SNCR process.

Particulate Matter (PM/PM_{10}) Controls:

The permittee shall install a baghouse control system to remove particulate matter emissions from the pyroprocessing exhaust gas stream to achieve the PM/PM_{10} emissions standards specified in this permit.

Sulfur Dioxide Controls:

The use of low-sulfur raw materials will help to keep SO_2 emissions below permitted levels.

Carbon Monoxide/Volatile Organic Compounds Controls:

The owner or operator shall control CO and VOC emissions with a design providing sufficient time/temperature to oxidize these pollutants, good operating practices, and careful attention to the raw material mix.

Emissions from the pyroprocessing system shall not exceed the following BACT standards.

Pollutant	Emission Limit	Averaging Time	Compliance Method	Basis
CO	2.9 lb/ton of clinker	30-day rolling	CEMS	BACT
	362.5 lb/hr			
NO_X[a]	1.95 lb/ton of clinker	30-day rolling	CEMS	BACT
	243.8 lb/hr			
PM/PM_{10}[b]	0.153 lb/ton of clinker	Three 1-hr runs	3-Run Test	BACT
	19.13 lb/hr			
	10 % opacity	6-minute block	COMS	
SO_2	0.20 lb/ton of clinker	24-hr rolling	CEMS	BACT
	25.0 lb/hr			
VOC[c]	0.12 lb/ton of clinker	30-day block	CEMS	BACT
	15.0 lb/hr			

a. For an "initial startup period" NO_X emissions shall not exceed 3.0 lb/ton of clinker (375.0 lb/hour) based on a 30-day rolling average. The "initial startup" period shall begin after initial certification of the NO_X CEMS and shall end as soon as any of the following conditions are met:
   1) The Kiln system produces 77,500 tons of clinker or more in any 30-day rolling period.
   2) The Kiln system produces a total of 155,000 tons of clinker.
   3) 365 days calendar days elapse after initial certification of the NO_X CEMS.

   After the "initial startup" period ends, NO_X emissions shall not exceed 1.95 lb/ton of clinker (243.8 lb/hour) based on a 30-day rolling average. These requirements do not waive or vary any applicable NSPS or NESHAP monitoring or record keeping requirements.

b. All PM emitted from the baghouse exhaust is assumed to be PM_{10}. The BACT standard for PM is equivalent to approximately 0.09 lb ton of preheater feed material. The emissions limits for particulate matter and visible emissions imposed by Rule 62-212.400(BACT) are as stringent as or more stringent than the limits imposed by the applicable NESHAP provisions. The BACT requirements do not waive or vary any applicable NESHAP monitoring or record keeping requirements.

c. Compliance shall be demonstrated by THC CEMS. VOC emissions shall be measured as total hydrocarbons (THC) and expressed as "propane" for the mass emissions rate.

{Permitting Note: In combination with the annual clinker production limitation of 1,095,000 tons per year, the above emissions standards effectively limit annual potential emissions from this unit to: 1,588 tons/year of CO; 1,068 tons/year of NO_X (after year one); 83.8 tons/year of PM/PM_{10}; 110 tons/year of SO_2; and 66 tons/year of VOC. Note that first year annual NO_X emissions could be as high as 1,643 tons/year.}

CLINKER AND ADDITIVES STORAGE AND HANDLING

The following BACT standards apply to each emissions point of this unit including all raw material storage and conveying system transfer points:

a. Emissions are limited to 5% opacity from each of the above listed emissions points controlled by a baghouse.

b. Emissions are limited to 10% opacity from any emissions point not controlled by a baghouse.

Each emissions point identified for clinker storage and conveying 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 gr/dscf and a PM_{10} design specification of 0.007 gr/dscf. The 5% opacity limitation is consistent with this design and provides reasonable

assurance that annual emissions of PM/PM_{10} for all emission points in this emission unit system will be no more than 4 TPY.

Opacity shall be determined in accordance with EPA Method 9.

Finish Mill (Cement Grinding)

Finish Mill: Visible emissions are limited to 5% opacity from the finish mill baghouse. The baghouse is designed to control PM emissions to 0.01 grains/dry standard cubic foot (gr/dscf) and PM_{10} emissions to 0.007 gr/dscf. The 5% opacity limitation is consistent with this design and provides reasonable assurance that annual emissions of PM/PM_{10} for this emission point in this emission unit system will be less than 9 TPY.

Finish Mill Air Separator: The following BACT standards apply to the finish mill air separator:

PM/ PM_{10}	Visible Emissions
0.007 gr/dscf	5% Opacity

All PM emitted from the baghouse exhaust is assumed to be PM_{10}. PM emissions will be determined in accordance with EPA Method 5. Opacity shall be determined in accordance with EPA Method 9.

CEMENT HANDLING, STORAGE, PACKING, AND LOADOUT

Each emissions point identified for finish mills cement processing 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 gr/dscf and a PM_{10} design specification of 0.007 gr/dscf.

The following BACT standards apply to each emissions point of this unit:

a. Emissions are limited to 5% opacity from each of the above listed emissions points controlled by a baghouse.

b. Emissions are limited to 10% opacity from any emissions point not controlled by a baghouse.

Opacity shall be determined in accordance with EPA Method 9.

COAL AND PETROLEUM COKE GRINDING SYSTEM

Each emissions point identified for the coal and petroleum coke grinding system 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 gr/dscf and a PM_{10} design specification of 0.007 gr/dscf.

Particulate Matter Standards: Particulate matter emissions from the thermal dryer shall not exceed 0.007 grains per dscf of exhaust as determined by EPA method 5.

Visible Emissions Standards: Visible emission s shall not exceed the following limits as determined by EPA Method 9:

- Visible emission from any emissions point described above and controlled by a baghouses shall not exceed 5% opacity.
- Visible emissions from all coal/petcoke processing and conveying equipment, coal/petcoke storage system, or coal/petcoke transfer and loading system processing coal/petcoke, and not controlled by a baghouse, shall not exceed 10% opacity.

FUGITIVE DUST FROM STORAGE PILES, PAVED ROADS, AND UNPAVED ROADS

The following work practices were determined as BACT for the control of fugitive emissions:

a. No person shall cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any activity without taking reasonable precautions to prevent such emissions. Such activities include, but are not limited to: vehicular movement; transportation of materials; construction, alteration, demolition or wrecking; or industrially related activities such as loading, unloading, storing or handling.

b. Reasonable precautions shall include the following:

(1) Landscaping and planting of vegetation.

(2) Application of water to control fugitive dust from activities such as demolition of buildings, grading roads, construction, and land clearing.

(3) Water supply lines, hoses and sprinklers shall be located near all stockpiles of raw materials, coal, and petroleum coke.

(4) All plant operators shall be trained in basic environmental compliance and shall perform visual inspections of raw materials, coal and petroleum coke periodically and before handling. If the visual inspections indicate a lack of surface moisture, such materials shall be wetted with sprinklers. Wetting shall continue until the potential for unconfined particulate matter emissions are minimized.

(5) Water spray shall be used to wet the materials and fuel if inherent moisture and moisture from wetting the storage piles are not sufficient to prevent unconfined particulate matter emissions.

(6) As necessary, applications of asphalt, water, or dust suppressants to unpaved roads, yards, open stockpiles and similar activities.

(7) Paving of access roadways, parking areas, manufacture area, and fuel storage yard.

(8) Removal of dust from buildings, roads, and other paved areas under the control of the owner or operator of the facility to prevent particulate matter from becoming airborne.

(9) A vacuum sweeper shall be used to remove dust from paved roads, parking, and other work areas.

(10) Enclosure or covering of conveyor systems where practicably feasible.

(11) All materials at the plant shall be stored under roof. Materials, other than quarried materials, shall be stored on compacted clay or concrete, or in enclosed vessels.

(12) Use of hoods, fans, filters, and similar equipment to contain, capture and/or vent particulate matter.

(13) Confining abrasive blasting where possible.

c. In determining what constitutes reasonable precautions for a particular source, the Department shall consider the cost of the control technique or work practice, the environmental impacts of the technique or practice, and the degree of reduction of emissions expected from a particular technique or practice.

SECTION IV. APPENDIX C
COMMON STATE RULES

Unless otherwise specified in the permit, the following conditions apply to all emissions units and activities at the 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. This regulation does not impose a specific testing requirement. [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.]

GENERAL COMPLIANCE TESTING REQUIREMENTS

The focal point of a compliance test is the stack or duct which vents process and/or combustion gases and air pollutants from an emissions unit into the ambient air. [Rule 62-297.310, F.A.C.]

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. 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. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. [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. Applicable Test Procedures [Rule 62-297.310(4), F.A.C.]

    a. *Required Sampling Time.*

        (1) 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.

        (2) Opacity Compliance Tests. When either EPA Method 9 or DEP Method 9 is specified as the applicable opacity test method, the required minimum period of observation for a compliance test shall be sixty (60) minutes for emissions units which emit or have the potential to emit 100 tons per year or more of particulate matter, and thirty (30) minutes for emissions units which have potential emissions less than 100 tons per year of particulate matter and are not subject to a multiple-valued opacity standard. The opacity test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. Exceptions to these requirements are as follows:

            (a) For batch, cyclical processes, or other operations which are normally completed within less than the minimum observation period and do not recur within that time, the period of observation shall be equal to the duration of the batch cycle or operation completion time.

            (b) The observation period for special opacity tests that are conducted to provide data to establish a surrogate standard pursuant to Rule 62-297.310(5)(k), F.A.C., Waiver of Compliance Test Requirements, shall be established as necessary to properly establish the relationship between a proposed surrogate standard and an existing mass emission limiting standard.

            (c) The minimum observation period for opacity tests conducted by employees or agents of the Department to verify the day-to-day continuing compliance of a unit or activity with an applicable opacity standard shall be twelve minutes.

    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.

    d. *Calibration of Sampling Equipment.* Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1.

    e. *Allowed Modification to EPA Method 5.* When EPA Method 5 is required, the following modification is allowed: the heated filter may be separated from the impingers by a flexible tube.

14. Determination of Process Variables [Rule 62-297.310(5), F.A.C.]

    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.

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. Sampling facilities include sampling ports, work platforms, access to work platforms, electrical power, and sampling equipment support. All stack sampling facilities must also comply with all applicable Occupational Safety and Health Administration (OSHA) Safety and Health Standards described in 29 CFR Part 1910, Subparts D and E. [Rule 62-297.310(6), F.A.C.]

    a. *Permanent Test Facilities.* The owner or operator of an emissions unit for which a compliance test, other than a visible emissions test, is required on at least an annual basis, shall install and maintain permanent stack sampling facilities.

    b. *Temporary Test Facilities.* The owner or operator of an emissions unit that is not required to conduct a compliance test on at least an annual basis may use permanent or temporary stack sampling facilities. If the owner chooses to use temporary sampling facilities on an emissions unit, and the Department elects to test the unit, such temporary facilities shall be installed on the emissions unit within 5 days of a request by the Department and remain on the emissions unit until the test is completed.

    c. *Sampling Ports.*

        (1) All sampling ports shall have a minimum inside diameter of 3 inches.

        (2) The ports shall be capable of being sealed when not in use.

        (3) The sampling ports shall be located in the stack at least 2 stack diameters or equivalent diameters downstream and at least 0.5 stack diameter or equivalent diameter upstream from any fan, bend, constriction or other flow disturbance.

        (4) For emissions units for which a complete application to construct has been filed prior to December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 15 feet or less. For stacks with a larger diameter, four sampling ports, each 90 degrees apart, shall be installed. For emissions units for which a complete application to construct is filed on or after December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 10 feet or less. For stacks with larger diameters, four sampling ports, each 90 degrees apart, shall be installed. On horizontal circular ducts, the ports shall be located so that the probe can enter the stack vertically, horizontally or at a 45 degree angle.

        (5) On rectangular ducts, the cross sectional area shall be divided into the number of equal areas in accordance with EPA Method 1. Sampling ports shall be provided which allow access to each sampling point. The ports shall be located so that the probe can be inserted perpendicular to the gas flow.

    d. *Work Platforms.*

        (1) Minimum size of the working platform shall be 24 square feet in area. Platforms shall be at least 3 feet wide.

        (2) On circular stacks with 2 sampling ports, the platform shall extend at least 110 degrees around the stack.

        (3) On circular stacks with more than two sampling ports, the work platform shall extend 360 degrees around the stack.

        (4) All platforms shall be equipped with an adequate safety rail (ropes are not acceptable), toe board, and hinged floor-opening cover if ladder access is used to reach the platform. The safety rail directly in line with the sampling ports shall be removable so that no obstruction exists in an area 14 inches below each sample port and 6 inches on either side of the sampling port.

    e. *Access to Work Platform.*

        (1) Ladders to the work platform exceeding 15 feet in length shall have safety cages or fall arresters with a minimum of 3 compatible safety belts available for use by sampling personnel.

        (2) Walkways over free-fall areas shall be equipped with safety rails and toe boards.

    f. *Electrical Power.*

        (1) A minimum of two 120-volt AC, 20-amp outlets shall be provided at the sampling platform within 20 feet of each sampling port.

        (2) If extension cords are used to provide the electrical power, they shall be kept on the plant's property and be available immediately upon request by sampling personnel.

g. *Sampling Equipment Support.*

(1) A three-quarter inch eyebolt and an angle bracket shall be attached directly above each port on vertical stacks and above each row of sampling ports on the sides of horizontal ducts.

(a) The bracket shall be a standard 3 inch × 3 inch × one-quarter inch equal-legs bracket which is 1 and one-half inches wide. A hole that is one-half inch in diameter shall be drilled through the exact center of the horizontal portion of the bracket. The horizontal portion of the bracket shall be located 14 inches above the centerline of the sampling port.

(b) A three-eighth inch bolt which protrudes 2 inches from the stack may be substituted for the required bracket. The bolt shall be located 15 and one-half inches above the centerline of the sampling port.

(c) The three-quarter inch eyebolt shall be capable of supporting a 500 pound working load. For stacks that are less than 12 feet in diameter, the eyebolt shall be located 48 inches above the horizontal portion of the angle bracket. For stacks that are greater than or equal to 12 feet in diameter, the eyebolt shall be located 60 inches above the horizontal portion of the angle bracket. If the eyebolt is more than 120 inches above the platform, a length of chain shall be attached to it to bring the free end of the chain to within safe reach from the platform.

(2) A complete monorail or dualrail arrangement may be substituted for the eyebolt and bracket.

(3) When the sample ports are located in the top of a horizontal duct, a frame shall be provided above the port to allow the sample probe to be secured during the test.

16. Frequency of Compliance Tests. The following provisions apply only to those emissions units that are subject to an emissions limiting standard for which compliance testing is required. [Rule 62-297.310(7), F.A.C.]

a. *General Compliance Testing.*

1. The owner or operator of a new or modified emissions unit that is subject to an emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining an operation permit for such emissions unit.

2. For excess emission limitations for particulate matter specified in Rule 62-210.700, F.A.C., a compliance test shall be conducted annually while the emissions unit is operating under soot blowing conditions in each federal fiscal year during which soot blowing is part of normal emissions unit operation, except that such test shall not be required in any federal fiscal year in which a fossil fuel steam generator does not burn liquid and/or solid fuel for more than 400 hours other than during startup.

3. The owner or operator of an emissions unit that is subject to any emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining a renewed operation permit. Emissions units that are required to conduct an annual compliance test may submit the most recent annual compliance test to satisfy the requirements of this provision. In renewing an air operation permit pursuant to sub-subparagraph 62-210.300(2)(a)3.b., c., or d., F.A.C., the Department shall not require submission of emission compliance test results for any emissions unit that, during the year prior to renewal:

(a) Did not operate; or

(b) In the case of a fuel burning emissions unit, burned liquid and/or solid fuel for a total of no more than 400 hours,

4. During each federal fiscal year (October 1 – September 30), unless otherwise specified by rule, order, or permit, the owner or operator of each emissions unit shall have a formal compliance test conducted for:

(a) a. Visible emissions, if there is an applicable standard;

(b) b. Each of the following pollutants, if there is an applicable standard, and if the emissions unit emits or has the potential to emit: 5 tons per year or more of lead or lead compounds measured as elemental lead; 30 tons per year or more of acrylonitrile; or 100 tons per year or more of any other regulated air pollutant; and

(c) c. Each NESHAP pollutant, if there is an applicable emission standard.

5. An annual compliance test for particulate matter emissions shall not be required for any fuel burning emissions unit that, in a federal fiscal year, does not burn liquid and/or solid fuel, other than during startup, for a total of more than 400 hours.
6. For fossil fuel steam generators on a semi-annual particulate matter emission compliance testing schedule, a compliance test shall not be required for any six-month period in which liquid and/or solid fuel is not burned for more than 200 hours other than during startup.
7. For emissions units electing to conduct particulate matter emission compliance testing quarterly pursuant to paragraph 62-296.405(2)(a), F.A.C., a compliance test shall not be required for any quarter in which liquid and/or solid fuel is not burned for more than 100 hours other than during startup.
8. Any combustion turbine that does not operate for more than 400 hours per year shall conduct a visible emissions compliance test once per each five-year period, coinciding with the term of its air operation permit.
9. The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator.
10. An annual compliance test conducted for visible emissions shall not be required for units exempted from air permitting pursuant to subsection 62-210.300(3), F.A.C.; units determined to be insignificant pursuant to subparagraph 62-213.300(2)(a)1., F.A.C., or paragraph 62-213.430(6)(b), F.A.C.; or units permitted under the General Permit provisions in paragraph 62-210.300(4)(a) or Rule 62-213.300, F.A.C., unless the general permit specifically requires such testing.

b. *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.

c. *Waiver of Compliance Test Requirements.* If the owner or operator of an emissions unit that is subject to a compliance test requirement demonstrates to the Department, pursuant to the procedure established in Rule 62-297.620, F.A.C., that the compliance of the emissions unit with an applicable weight emission limiting standard can be adequately determined by means other than the designated test procedure, such as specifying a surrogate standard of no visible emissions for particulate matter sources equipped with a bag house or specifying a fuel analysis for sulfur dioxide emissions, the Department shall waive the compliance test requirements for such emissions units and order that the alternate means of determining compliance be used, provided, however, the provisions of paragraph 62-297.310(7)(b), F.A.C., shall apply.

RECORDS AND REPORTS

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

a. 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.

b. 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.

c. 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.

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.]

SECTION IV. APPENDIX GC
CONSTRUCTION PERMIT 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; and
    c. 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:

        a. The date, exact place, and time of sampling or measurements;
        b. The person responsible for performing the sampling or measurements;
        c. The dates analyses were performed;
        d. The person responsible for performing the analyses;
        e. The analytical techniques or methods used; and
        f. 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 LLL

NESHAP SUBPART LLL PROVISIONS – PORTLAND CEMENT MANUFACTURING INDUSTRY

The provisions of this subsection apply to the following emissions units.

EU ID	Emissions Unit Description
002	Raw Materials, Conveying, Storage, and Processing. From raw material and additive storage to preheater (includes conveyance of raw materials and raw meal to and from raw mill, and homogenizing silo).
003	Pyroprocessing System. Includes kiln, preheater/calciner, raw mill, air heater, and clinker cooler.
004	Clinker and Additives Storage and Handling. Includes clinker handling from clinker cooler to clinker silo discharge, and clinker and additive handling from storage to the finish mill.
005	Finish Mill (Cement Grinding)
006	Cement Handling, Storage, Packing, and Loadout. Includes cement conveyance to silos, cement silos, loadout to trucks from silos, and cement bagging operations.
008	Fugitive Dust From Storage Piles, Paved Roads, and Unpaved Roads

1. NESHAP Subpart A: The affected emissions units are subject to the applicable General Provisions in NESHAP Subpart A of 40 CFR 63, as adopted by Rule 62-204.800(11), F.A.C. At the end of Appendix LLL, Table LLL-1 summarizes the portions of the NESHAP General Provisions that are applicable to the affected NESHAP Subpart LLL units. [40 CFR 63, Subpart A]
2. NESHAP Subpart LLL: The affected emissions units are subject to the applicable requirements for the Portland Cement Manufacturing Industry specified in NESHAP Subpart LLL of 40 CFR 63, as adopted by Rule 62-204.800(11), F.A.C. [40 CFR 63, Subpart LLL]

§ 63.1340 Applicability and Designation of Affected Sources.

(a) Except as specified in paragraphs (b) and (c) of this section, the provisions of this subpart apply to each new and existing portland cement plant which is a major source as defined in §63.2.

(b) The affected sources subject to this subpart are:

(1) Each kiln and each in-line kiln/raw mill at any major source, including alkali bypasses, except for kilns and in-line kiln/raw mills that burn hazardous waste and are subject to and regulated under subpart EEE of this part;

(2) Each clinker cooler at any portland cement plant which is a major source;

(3) Each raw mill at any portland cement plant which is a major source;

(4) Each finish mill at any portland cement plant which is a major source;

(5) Each raw material dryer at any portland cement plant which is a major source and each greenfield raw material dryer at any portland cement plant which is a major source;

(6) Each raw material, clinker, or finished product storage bin at any portland cement plant which is a major source;

(7) Each conveying system transfer point including those associated with coal preparation used to convey coal from the mill to the kiln at any portland cement plant which is a major source;

(8) Each bagging system at any portland cement plant which is a major source; and

(c) For portland cement plants with on-site nonmetallic mineral processing facilities, the first affected source in the sequence of materials handling operations subject to this subpart is the raw material storage, which is just prior to the raw mill. Any equipment of the on-site nonmetallic mineral processing plant which precedes the raw material storage is not subject to this subpart. In addition, the primary and secondary crushers of the on-site nonmetallic mineral processing plant, regardless of whether they precede the raw material storage, are not subject to this subpart. Furthermore, the first conveyor transfer point subject to this subpart is the transfer point associated with the conveyor transferring material from the raw material storage to the raw mill.

(d) The owner or operator of any affected source subject to the provisions of this subpart is subject to title V permitting requirements.

§ 63.1341 Definitions.

All terms used in this subpart that are not defined below have the meaning given to them in the CAA and in subpart A of this part.

Alkali bypass means a duct between the feed end of the kiln and the preheater tower through which a portion of the kiln exit gas stream is withdrawn and quickly cooled by air or water to avoid excessive buildup of alkali, chloride and/or sulfur on the raw feed. This may also be referred to as the "kiln exhaust gas bypass".

Bagging system means the equipment which fills bags with portland cement.

Bin means a manmade enclosure for storage of raw materials, clinker, or finished product prior to further processing at a Portland cement plant.

Clinker cooler means equipment into which clinker product leaving the kiln is placed to be cooled by air supplied by a forced draft or natural draft supply system.

Continuous monitor means a device which continuously samples the regulated parameter specified in §63.1350 of this subpart without interruption, evaluates the detector response at least once every 15 seconds, and computes and records the average value at least every 60 seconds, except during allowable periods of calibration and except as defined otherwise by the continuous emission monitoring system performance specifications in appendix B to part 60 of this chapter.

Conveying system means a device for transporting materials from one piece of equipment or location to another location within a facility. Conveying systems include but are not limited to the following: feeders, belt conveyors, bucket elevators and pneumatic systems.

Conveying system transfer point means a point where any material including but not limited to feed material, fuel, clinker or product, is transferred to or from a conveying system, or between separate parts of a conveying system.

Dioxins and furans (D/F) means tetra-, penta-, hexa-, hepta-, and octa- chlorinated dibenzo dioxins and furans.

Facility means all contiguous or adjoining property that is under common ownership or control, including properties that are separated only by a road or other public right-of-way.

Feed means the prepared and mixed materials, which include but are not limited to materials such as limestone, clay, shale, sand, iron ore, mill scale, cement kiln dust and fly ash, that are fed to the kiln. Feed does not include the fuels used in the kiln to produce heat to form the clinker product.

Finish mill means a roll crusher, ball and tube mill or other size reduction equipment used to grind clinker to a fine powder. Gypsum and other materials may be added to and blended with clinker in a finish mill. The finish mill also includes the air separator associated with the finish mill.

Greenfield kiln, in-line kiln/raw mill, or *raw material dryer* means a kiln, in-line kiln/raw mill, or raw material dryer for which construction is commenced at a plant site (where no kilns and no in-line kiln/raw mills were in operation at any time prior to March 24, 1998) after March 24, 1998.

Hazardous waste is defined in §261.3 of this chapter.

In-line kiln/raw mill means a system in a portland cement production process where a dry kiln system is integrated with the raw mill so that all or a portion of the kiln exhaust gases are used to perform the drying operation of the raw mill, with no auxiliary heat source used. In this system the kiln is capable of operating without the raw mill operating, but the raw mill cannot operate without the kiln gases, and consequently, the raw mill does not generate a separate exhaust gas stream.

Kiln means a device, including any associated preheater or precalciner devices, that produces clinker by heating limestone and other materials for subsequent production of portland cement.

Kiln exhaust gas bypass means alkali bypass.

Monovent means an exhaust configuration of a building or emission control device (e. g. positive pressure fabric filter) that extends the length of the structure and has a width very small in relation to its length (i. e., length to width ratio is typically greater than 5:1). The exhaust may be an open vent with or without a roof, louvered vents, or a combination of such features.

New brownfield kiln, in-line kiln raw mill, or *raw material dryer* means a kiln, in-line kiln/raw mill or raw material dryer for which construction is commenced at a plant site (where kilns and/or in-line kiln/raw mills were in operation prior to March 24, 1998) after March 24, 1998.

One-minute average means the average of thermocouple or other sensor responses calculated at least every 60 seconds from responses obtained at least once during each consecutive 15 second period.

Portland cement plant means any facility manufacturing portland cement.

Raw material dryer means an impact dryer, drum dryer, paddle-equipped rapid dryer, air separator, or other equipment used to reduce the moisture content of feed materials.

Raw mill means a ball and tube mill, vertical roller mill or other size reduction equipment, that is not part of an in-line kiln/raw mill, used to grind feed to the appropriate size. Moisture may be added or removed from the feed during the grinding operation. If the raw mill is used to remove moisture from feed materials, it is also, by definition, a raw material dryer. The raw mill also includes the air separator associated with the raw mill.

Rolling average means the average of all one-minute averages over the averaging period.

Run average means the average of the one-minute parameter values for a run.

TEQ means the international method of expressing toxicity equivalents for dioxins and furans as defined in U.S. EPA, Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-dioxins and -dibenzofurans (CDDs and CDFs) and 1989 Update, March 1989.

§ 63.1342 Standards - General.

(a) Table 1 to this subpart provides cross references to the 40 CFR part 63, subpart A, general provisions, indicating the applicability of the general provisions requirements to subpart LLL.

(b) Table 1 of this section provides a summary of emission limits and operating limits of this subpart.

Table 1 to § 63.1342. Emission Limits and Operating Limits.

Affected Source	Pollutant / Opacity	Emission and Operating Limit
All kilns and in-line kiln/raw mills at major sources (including alkali bypass)	PM	0.15 kg/Mg of feed (dry basis)
	Opacity	20 percent
All kilns and in-line kiln/raw mills at major sources (including alkali bypass)	D/F	0.20 ng TEQ/dscm corrected to 7 percent oxygen or 0.40 ng TEQ/dscm corrected to 7 percent oxygen when the average of the performance test run average particulate matter control device (PMCD) inlet temperatures is 204° C or less. Operate such that the three-hour rolling average PMCD inlet temperature is no greater than the temperature established at performance test. If activated carbon injection is used: Operate such that the three-hour rolling average activated carbon injection rate is no less than rate established at performance test. Operate such that either the carrier gas flow rate or carrier gas pressure drop exceeds the value established at performance test.. Inject carbon of equivalent specifications to that used at performance test.
New greenfield kilns and in-line kiln/raw mills at major sources	THC	50 ppmvd, as propane, corrected to 7 percent oxygen
All clinker coolers at major sources	PM	0.050 kg/Mg of feed (dry basis)
	Opacity	10 percent
All raw mills and finish mills at major sources	Opacity	10 percent

Affected Source	Pollutant / Opacity	Emission and Operating Limit
New greenfield raw material dryers at major sources	THC	50 ppmvd, as propane, corrected to 7 percent oxygen
All raw material dryers and material handling points at major sources	Opacity	10 percent

§ 63.1343 Standards for Kilns and In-line Kiln/Raw Mills.

(a) *General.* The provisions in this section apply to each kiln, each in-line kiln/raw mill, and any alkali bypass associated with that kiln or in-line kiln/raw mill.

(b) *Existing, reconstructed, or new brownfield/major sources.* No owner or operator of an existing, reconstructed or new brownfield kiln or an existing, reconstructed or new brownfield in-line kiln/raw mill at a facility that is a major source subject to the provisions of this subpart shall cause to be discharged into the atmosphere from these affected sources, any gases which:

(1) Contain particulate matter (PM) in excess of 0.15 kg per Mg (0.30 lb per ton) of feed (dry basis) to the kiln. When there is an alkali bypass associated with a kiln or in-line kiln/raw mill, the combined particulate matter emissions from the kiln or in-line kiln/raw mill and the alkali bypass are subject to this emission limit.

(2) Exhibit opacity greater than 20 percent.

(3) Contain D/F in excess of:

(i) 0.20 ng per dscm (8.7×10^{-11} gr per dscf)(TEQ) corrected to seven percent oxygen; or

(ii) 0.40 ng per dscm (1.7×10^{-10} gr per dscf)(TEQ) corrected to seven percent oxygen, when the average of the performance test run average temperatures at the inlet to the particulate matter control device is 204° C (400° F) or less.

(c) *Greenfield/major sources.* No owner or operator that commences construction of a greenfield kiln or greenfield inline kiln/raw mill at a facility which is a major source subject to the provisions of this subpart shall cause to be discharged into the atmosphere from these affected sources any gases which:

(1) Contain particulate matter in excess of 0.15 kg per Mg (0.30 lb per ton) of feed (dry basis) to the kiln. When there is an alkali bypass associated with a kiln or in-line kiln/raw mill, the combined particulate matter emissions from the kiln or in-line kiln/raw mill and the bypass stack are subject to this emission limit.

(2) Exhibit opacity greater than 20 percent.

(3) Contain D/F in excess of:

(i) 0.20 ng per dscm (8.7×10^{-11} gr per dscf)(TEQ) corrected to seven percent oxygen; or

(ii) 0.40 ng per dscm (1.7×10^{-10} gr per dscf)(TEQ) corrected to seven percent oxygen, when the average of the performance test run average temperatures at the inlet to the particulate matter control device is 204° C (400° F) or less.

(4) Contain total hydrocarbon (THC), from the main exhaust of the kiln or in-line kiln/raw mill, in excess of 50 ppmvd as propane, corrected to seven percent oxygen.

(d) *Reserved*

(e) *Rseserved*

§ 63.1344 Operating Limits for Kilns and In-line Kiln/Raw Mills.

(a) The owner or operator of a kiln subject to a D/F emission limitation under §63.1343 must operate the kiln such that the temperature of the gas at the inlet to the kiln particulate matter control device (PMCD) and alkali bypass PMCD, if applicable, does not exceed the applicable temperature limit specified in paragraph (b) of this section. The owner or operator of an in-line kiln/raw mill subject to a D/F emission limitation under §63.1343 must operate the in-line kiln/raw mill, such that,

(1) When the raw mill of the in-line kiln/raw mill is operating, the applicable temperature limit for the main in-line

kiln/raw mill exhaust, specified in paragraph (b) of this section and established during the performance test when the raw mill was operating is not exceeded.

(2) When the raw mill of the in-line kiln/raw mill is not operating, the applicable temperature limit for the main in-line kiln/raw mill exhaust, specified in paragraph (b) of this section and established during the performance test when the raw mill was not operating, is not exceeded.

(3) If the in-line kiln/raw mill is equipped with an alkali bypass, the applicable temperature limit for the alkali bypass specified in paragraph (b) of this section and established during the performance test, with or without the raw mill operating, is not exceeded.

(b) The temperature limit for affected sources meeting the limits of paragraph (a) of this section or paragraphs (a)(1) through (a)(3) of this section is determined in accordance with §63.1349(b)(3)(iv).

(c) The owner or operator of an affected source subject to a D/F emission limitation under §63.1343 that employs carbon injection as an emission control technique must operate the carbon injection system in accordance with paragraphs (c)(1) and (c)(2) of this section.

(1) The three-hour rolling average activated carbon injection rate shall be equal to or greater than the activated carbon injection rate determined in accordance with §63.1349(b)(3)(vi).

(2) The owner or operator shall either:

(i) Maintain the minimum activated carbon injection carrier gas flow rate, as a three-hour rolling average, based on the manufacturer's specifications. These specifications must be documented in the test plan developed in accordance with §63.7(c) of this part, or

(ii) Maintain the minimum activated carbon injection carrier gas pressure drop, as a three-hour rolling average, based on the manufacturer's specifications. These specifications must be documented in the test plan developed in accordance with §63.7(c).

(d) Except as provided in paragraph (e) of this section, the owner or operator of an affected source subject to a D/F emission limitation under §63.1343 that employs carbon injection as an emission control technique must specify and use the brand and type of activated carbon used during the performance test until a subsequent performance test is conducted, unless the site-specific performance test plan contains documentation of key parameters that affect adsorption and the owner or operator establishes limits based on those parameters, and the limits on these parameters are maintained.

(e) The owner or operator of an affected source subject to a D/F emission limitation under §63.1343 that employs carbon injection as an emission control technique may substitute, at any time, a different brand or type of activated carbon provided that the replacement has equivalent or improved properties compared to the activated carbon specified in the site-specific performance test plan and used in the performance test. The owner or operator must maintain documentation that the substitute activated carbon will provide the same or better level of control as the original activated carbon.

§ 63.1345 Standards for Clinker Coolers.

(a) No owner or operator of a new or existing clinker cooler at a facility which is a major source subject to the provisions of this subpart shall cause to be discharged into the atmosphere from the clinker cooler any gases which:

(1) Contain particulate matter in excess of 0.050 kg per Mg (0.10 lb per ton) of feed (dry basis) to the kiln.

(2) Exhibit opacity greater than ten percent.

(b) [Reserved]

§ 63.1346 Standards for New and Reconstructed Raw Material Dryers.

(a) *Brownfield/major sources.* No owner or operator of a new or reconstructed brownfield raw material dryer at a facility which is a major source subject to this subpart shall cause to be discharged into the atmosphere from the new or reconstructed raw material dryer any gases which exhibit opacity greater than ten percent.

(b) *Reserved*

(c) *Greenfield/major sources.* No owner or operator of a greenfield raw material dryer at a facility which is a major source subject to this subpart shall cause to be discharged into the atmosphere from the greenfield raw material dryer any gases

which:

(1) Contain THC in excess of 50 ppmvd, reported as propane, corrected to seven percent oxygen.

(2) Exhibit opacity greater than ten percent.

§ 63.1347 Standards for Raw and Finish Mills.

The owner or operator of each new or existing raw mill or finish mill at a facility which is a major source subject to the provisions of this subpart shall not cause to be discharged from the mill sweep or air separator air pollution control devices of these affected sources any gases which exhibit opacity in excess of ten percent.

§ 63.1348 Standards for Affected Sources Other than Kilns; In-line Kiln/Raw Mills; Clinker coolers; New and Reconstructed Raw Material Dryers; and Raw and Finish Mills.

The owner or operator of each new or existing raw material, clinker, or finished product storage bin; conveying system transfer point; bagging system; and bulk loading or unloading system; and each existing raw material dryer, at a facility which is a major source subject to the provisions of this subpart shall not cause to be discharged any gases from these affected sources which exhibit opacity in excess of ten percent.

§ 63.1349 Performance Testing Requirements.

(a) The owner or operator of an affected source subject to this subpart shall demonstrate initial compliance with the emission limits of §63.1343 and §§63.1345 through 63.1348 using the test methods and procedures in paragraph (b) of this section and §63.7. Performance test results shall be documented in complete test reports that contain the information required by paragraphs (a)(1) through (a)(10) of this section, as well as all other relevant information. The plan to be followed during testing shall be made available to the Administrator prior to testing, if requested.

(1) A brief description of the process and the air pollution control system;

(2) Sampling location description(s);

(3) A description of sampling and analytical procedures and any modifications to standard procedures;

(4) Test results;

(5) Quality assurance procedures and results;

(6) Records of operating conditions during the test, preparation of standards, and calibration procedures;

(7) Raw data sheets for field sampling and field and laboratory analyses;

(8) Documentation of calculations;

(9) All data recorded and used to establish parameters for compliance monitoring; and

(10) Any other information required by the test method.

(b) Performance tests to demonstrate initial compliance with this subpart shall be conducted as specified in paragraphs (b)(1) through (b)(4) of this section.

(1) The owner or operator of a kiln subject to limitations on particulate matter emissions shall demonstrate initial compliance by conducting a performance test as specified in paragraphs (b)(1)(i) through (b)(1)(iv) of this section. The owner or operator of an in-line kiln/raw mill subject to limitations on particulate matter emissions shall demonstrate initial compliance by conducting separate performance tests as specified in paragraphs (b)(1)(i) through (b)(1)(iv) of this section while the raw mill of the in-line kiln/raw mill is under normal operating conditions and while the raw mill of the in-line kiln/raw mill is not operating. The owner or operator of a clinker cooler subject to limitations on particulate matter emissions shall demonstrate initial compliance by conducting a performance test as specified in paragraphs (b)(1)(i) through (b)(1)(iii) of this section. The opacity exhibited during the period of the Method 5 of Appendix A to part 60 of this chapter performance tests required by paragraph (b)(1)(i) of this section shall be determined as required in paragraphs (b)(1)(v) through (vi) of this section.

(i) Method 5 of appendix A to part 60 of this chapter shall be used to determine PM emissions. Each performance test shall consist of three separate runs under the conditions that exist when the affected source is operating at the representative performance conditions in accordance with Sec. 63.7(e). Each run shall be conducted for at least 1 hour, and the minimum sample volume shall be 0.85 dscm (30 dscf). The average of

the three runs shall be used to determine compliance. A determination of the PM collected in the impingers ("back half") of the Method 5 particulate sampling train is not required to demonstrate initial compliance with the PM standards of this subpart. However, this shall not preclude the permitting authority from requiring a determination of the "back half" for other purposes.

(ii) Suitable methods shall be used to determine the kiln or inline kiln/raw mill feed rate, except for fuels, for each run.

(iii) The emission rate, E, of PM shall be computed for each run using equation 1:

$$E = (c_s Q_{sd}) / P \quad \textbf{(Eq 1)}$$

Where:

E = emission rate of particulate matter, kg/Mg of kiln feed.

c_s = concentration of PM, kg/dscm.

Q_{sd} = volumetric flow rate of effluent gas, dscm/hr.

P = total kiln feed (dry basis), Mg/hr.

(iv) When there is an alkali bypass associated with a kiln or in-line kiln/raw mill, the main exhaust and alkali bypass of the kiln or in-line kiln/raw mill shall be tested simultaneously and the combined emission rate of particulate matter from the kiln or in-line kiln/raw mill and alkali bypass shall be computed for each run using equation 2,

$$E_c = (c_{sk}Q_{sdk} + c_{sb}Q_{sdb})/P \quad \textbf{(Eq 2)}$$

Where:

E_c = the combined emission rate of particulate matter from the kiln or in-line kiln/raw mill and bypass stack, kg/Mg of kiln feed.

c_{sk} = concentration of particulate matter in the kiln or in-line kiln/raw mill effluent, kg/dscm.

Q_{sdk} = volumetric flow rate of kiln or in-line kiln/raw mill effluent, dscm/hr.

c_{sb} = concentration of particulate matter in the alkali bypass gas, kg/dscm.

Q_{sdb} = volumetric flow rate of alkali bypass gas, dscm/hr.

P = total kiln feed (dry basis), Mg/hr.

(v) Except as provided in paragraph (b)(1)(vi) of this section the opacity exhibited during the period of the Method 5 performance tests required by paragraph (b)(1)(i) of this section shall be determined through the use of a continuous opacity monitor (COM). The maximum six-minute average opacity during the three Method 5 test runs shall be determined during each Method 5 test run, and used to demonstrate initial compliance with the applicable opacity limits of §63.1343(b)(2), §63.1343(c)(2), or §63.1345(a)(2).

(vi) Each owner or operator of a kiln, in-line kiln/raw mill, or clinker cooler subject to the provisions of this subpart using a fabric filter with multiple stacks or an electrostatic precipitator with multiple stacks may, in lieu of installing the continuous opacity monitoring system required by paragraph (b)(1)(v) of this section, conduct an opacity test in accordance with Method 9 of appendix A to part 60 of this chapter during each Method 5 performance test required by paragraph (b)(1)(i) of this section. If the control device exhausts through a monovent, or if the use of a COM in accordance with the installation specifications of Performance Specification 1 (PS-1) of appendix B to part 60 of this chapter is not feasible, a test shall be conducted in accordance with Method 9 of appendix A to part 60 of this chapter during each Method 5 performance test required by paragraph (b)(1)(i) of this section. The maximum six-minute average opacity shall be determined during the three Method 5 test runs, and used to demonstrate initial compliance with the applicable opacity limits of §63.1343(b)(2), §63.1343(c)(2), or §63.1345(a)(2).

(2) The owner or operator of any affected source subject to limitations on opacity under this subpart that is not subject to paragraph (b)(1) of this section shall demonstrate initial compliance with the affected source opacity limit by conducting a test in accordance with Method 9 of appendix A to part 60 of this chapter. The performance test shall be conducted under the conditions that exist when the affected source is operating at the representative

performance conditions in accordance with Sec. 63.7(e). The maximum 6-minute average opacity exhibited during the test period shall be used to determine whether the affected source is in initial compliance with the standard. The duration of the Method 9 performance test shall be 3 hours (30 6-minute averages), except that the duration of the Method 9 performance test may be reduced to 1 hour if the conditions of paragraphs (b)(2)(i) through (ii) of this section apply:

(i) There are no individual readings greater than 10 percent opacity;

(ii) There are no more than three readings of 10 percent for the first 1-hour period.

(3) The owner or operator of an affected source subject to limitations on D/F emissions under this subpart shall demonstrate initial compliance with the D/F emission limit by conducting a performance test using Method 23 of appendix A to part 60 of this chapter. The owner or operator of an in-line kiln/raw mill shall demonstrate initial compliance by conducting separate performance tests while the raw mill of the in-line kiln/raw mill is under normal operating conditions and while the raw mill of the in-line kiln/raw mill is not operating. The owner or operator of a kiln or in-line kiln/raw mill equipped with an alkali bypass shall conduct simultaneous performance tests of the kiln or in-line kiln/raw mill exhaust and the alkali bypass. However, the owner or operator of an in-line kiln/raw mill may conduct a performance test of the alkali bypass exhaust when the raw mill of the in-line kiln/raw mill is operating or not operating.

(i) Each performance test shall consist of three separate runs; each run shall be conducted under the conditions that exist when the affected source is operating at the representative performance conditions in accordance with Sec. 63.7(e). The duration of each run shall be at least 3 hours, and the sample volume for each run shall be at least 2.5 dscm (90 dscf). The concentration shall be determined for each run, and the arithmetic average of the concentrations measured for the three runs shall be calculated and used to determine compliance.

(ii) The temperature at the inlet to the kiln or in-line kiln/raw mill PMCD, and where applicable, the temperature at the inlet to the alkali bypass PMCD, must be continuously recorded during the period of the Method 23 test, and the continuous temperature record(s) must be included in the performance test report.

(iii) One-minute average temperatures must be calculated for each minute of each run of the test.

(iv) The run average temperature must be calculated for each run, and the average of the run average temperatures must be determined and included in the performance test report and will determine the applicable temperature limit in accordance with §63.1344(b).

(v) If activated carbon injection is used for D/F control, the rate of activated carbon injection to the kiln or in-line kiln/raw mill exhaust, and where applicable, the rate of activated carbon injection to the alkali bypass exhaust, must be continuously recorded during the period of the Method 23 test, and the continuous injection rate record(s) must be included in the performance test report. In addition, the performance test report must include the brand and type of activated carbon used during the performance test and a continuous record of either the carrier gas flow rate or the carrier gas pressure drop for the duration of the test. Activated carbon injection rate parameters must be determined in accordance with paragraphs (b)(3)(vi) of this section.

(vi) The run average injection rate must be calculated for each run, and the average of the run average injection rates must be determined and included in the performance test report and will determine the applicable injection rate limit in accordance with §63.1344(c)(1).

(4) The owner or operator of an affected source subject to limitations on emissions of THC shall demonstrate initial compliance with the THC limit by operating a continuous emission monitor in accordance with Performance Specification 8A of appendix B to part 60 of this chapter. The duration of the performance test shall be three hours, and the average THC concentration (as calculated from the one-minute averages) during the three hour performance test shall be calculated. The owner or operator of an in-line kiln/raw mill shall demonstrate initial compliance by conducting separate performance tests while the raw mill of the in-line kiln/raw mill is under normal operating conditions and while the raw mill of the in-line kiln/raw mill is not operating.

(c) Except as provided in paragraph (e) of this section, performance tests required under paragraphs (b)(1) and (b)(2) of this section shall be repeated every five years, except that the owner or operator of a kiln, in-line kiln/raw mill or clinker cooler is not required to repeat the initial performance test of opacity for the kiln, in-line kiln/raw mill or clinker cooler.

(d) Performance tests required under paragraph (b)(3) of this section shall be repeated every 30 months.

(e) (1) If a source plans to undertake a change in operations that may adversely affect compliance with an applicable D/F standard under this subpart, the source must conduct a performance test and establish new temperature limit(s) as specified in paragraph (b)(3) of this section.

(2) If a source plans to undertake a change in operations that may adversely affect compliance with an applicable PM standard under Sec. 63.1343, the source must conduct a performance test as specified in paragraph (b)(1) of this section.

(3) In preparation for and while conducting a performance test required in paragraph (e)(1) of this section, a source may operate under the planned operational change conditions for a period not to exceed 360 hours, provided that the conditions in paragraphs (e)(3)(i) through (iv) of this section are met. The source shall submit temperature and other monitoring data that are recorded during the pretest operations.

(i) The source must provide the Administrator written notice at least 60 days prior to undertaking an operational change that may adversely affect compliance with an applicable standard under this subpart, or as soon as practicable where 60 days advance notice is not feasible. Notice provided under this paragraph shall include a description of the planned change, the emissions standards that may be affected by the change, and a schedule for completion of the performance test required under paragraph (e)(1) of this section, including when the planned operational change period would begin.

(ii) The performance test results must be documented in a test report according to paragraph (a) of this section.

(iii) A test plan must be made available to the Administrator prior to testing, if requested.

(iv) The performance test must be conducted, and it must be completed within 360 hours after the planned operational change period begins.

(f) Table 1 of this section provides a summary of the performance test requirements of this subpart.

TABLE 1 TO § 63.1349. SUMMARY OF PERFORMANCE TEST REQUIREMENTS

Affected Source and Pollutant	Performance Test
New and existing kiln and in-line kiln/raw mill[b,c] PM	EPA Method 5[a]
New and existing kiln and in-line kiln/raw mill[b,c] Opacity	COM if feasible[d,e] or EPA Method 9 visual opacity readings.
New and existing kiln and in-line kiln/raw mill[b,c,f,g] D/F	EPA Method 23[h]
New greenfield kiln and in-line kiln/raw mill[c] THC	THC CEM (EPA PS-8A)[i]
New and existing clinker cooler PM	EPA Method 5[a]
New and existing clinker cooler opacity	COM[d,j] or EPA Method 9 visual opacity readings
New and existing raw and finish mill opacity	EPA Method 9[a,j]
New and existing raw material dryer and materials handling processes (raw material storage, clinker storage, finished product storage, conveyor transfer points, bagging, and bulk loading and unloading systems) opacity	EPA Method 9[a,j]
New greenfield raw material dryer THC	THC CEM (EPA PS-8A)[i]

[a] Required initially and every 5 years thereafter.

[b] Includes main exhaust and alkali bypass.

[c] In-line kiln/raw mill to be tested with and without raw mill in operation.

[d] Must meet COM performance specification criteria. If the fabric filter or electrostatic precipitator has multiple

stacks, daily EPA Method 9 visual opacity readings may be taken instead of using a COM.

[e] Opacity limit is 20 percent.

[f] Alkali bypass is tested with the raw mill operating or not operating.

[g] Temperature and (if applicable) activated carbon injection parameters determined separately with and without the raw mill operating.

[h] Required initially and every 30 months thereafter.

[i] EPA Performance Specification (PS)-8A of appendix B to part 60 of this chapter.

[j] Opacity limit is 10 percent.

§ 63.1350 Monitoring Requirements.

(a) The owner or operator of each portland cement plant shall prepare for each affected source subject to the provisions of this subpart, a written operations and maintenance plan. The plan shall be submitted to the Administrator for review and approval as part of the application for a part 70 permit and shall include the following information:

(1) Procedures for proper operation and maintenance of the affected source and air pollution control devices in order to meet the emission limits and operating limits of §63.1343 through §63.1348;

(2) Corrective actions to be taken when required by paragraph (e) of this section;

(3) Procedures to be used during an inspection of the components of the combustion system of each kiln and each in-line kiln raw mill located at the facility at least once per year; and

(4) Procedures to be used to periodically monitor affected sources subject to opacity standards under §63.1346 and §63.1348. Such procedures must include the provisions of paragraphs (a)(4)(i) through (a)(4)(iv) of this section.

(i) The owner or operator must conduct a monthly 1-minute visible emissions test of each affected source in accordance with Method 22 of Appendix A to part 60 of this chapter. The test must be conducted while the affected source is in operation.

(ii) If no visible emissions are observed in six consecutive monthly tests for any affected source, the owner or operator may decrease the frequency of testing from monthly to semi-annually for that affected source. If visible emissions are observed during any semi-annual test, the owner or operator must resume testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.

(iii) If no visible emissions are observed during the semi-annual test for any affected source, the owner or operator may decrease the frequency of testing from semi-annually to annually for that affected source. If visible emissions are observed during any annual test, the owner or operator must resume testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.

(iv) If visible emissions are observed during any Method 22 test, the owner or operator must conduct a 6-minute test of opacity in accordance with Method 9 of appendix A to part 60 of this chapter. The Method 9 test must begin within one hour of any observation of visible emissions.

(v) The requirement to conduct Method 22 visible emissions monitoring under this paragraph shall not apply to any totally enclosed conveying system transfer point, regardless of the location of the transfer point. "Totally enclosed conveying system transfer point" shall mean a conveying system transfer point that is enclosed on all sides, top, and bottom. The enclosures for these transfer points shall be operated and maintained as total enclosures on a continuing basis in accordance with the facility operations and maintenance plan.

(vi) If any partially enclosed or unenclosed conveying system transfer point is located in a building, the owner or operator of the portland cement plant shall have the option to conduct a Method 22 visible emissions monitoring test according to the requirements of paragraphs (a)(4)(i) through (iv) of this section for each such conveying system transfer point located within the building, or for the building itself, according to paragraph (a)(4)(vii) of this section.

(vii) If visible emissions from a building are monitored, the requirements of paragraphs (a)(4)(i) through (iv) of this section apply to the monitoring of the building, and you must also test visible emissions from each side, roof

and vent of the building for at least 1 minute. The test must be conducted under normal operating conditions.

(b) Failure to comply with any provision of the operations and maintenance plan developed in accordance with paragraph (a) of this section shall be a violation of the standard.

(c) The owner or operator of a kiln or in-line kiln/raw mill shall monitor opacity at each point where emissions are vented from these affected sources including alkali bypasses in accordance with paragraphs (c)(1) through (c)(3) of this section.

(1) Except as provided in paragraph (c)(2) of this section, the owner or operator shall install, calibrate, maintain, and continuously operate a continuous opacity monitor (COM) located at the outlet of the PM control device to continuously monitor the opacity. The COM shall be installed, maintained, calibrated, and operated as required by subpart A, general provisions of this part, and according to PS-1 of appendix B to part 60 of this chapter.

(2) The owner or operator of a kiln or in-line kiln/raw mill subject to the provisions of this subpart using a fabric filter with multiple stacks or an electrostatic precipitator with multiple stacks may, in lieu of installing the continuous opacity monitoring system required by paragraph (c)(1) of this section, monitor opacity in accordance with paragraphs (c)(2)(i) through (ii) of this section. If the control device exhausts through a monovent, or if the use of a COM in accordance with the installation specifications of PS-1 of appendix B to part 60 of this chapter is not feasible, the owner or operator must monitor opacity in accordance with paragraphs (c)(2)(i) through (ii) of this section.

(i) Perform daily visual opacity observations of each stack in accordance with the procedures of Method 9 of appendix A to part 60 of this chapter. The Method 9 test shall be conducted while the affected source is operating at the representative performance conditions. The duration of the Method 9 test shall be at least 30 minutes each day.

(ii) Use the Method 9 procedures to monitor and record the average opacity for each six-minute period during the test.

(3) To remain in compliance, the opacity must be maintained such that the 6-minute average opacity for any 6-minute block period does not exceed 20 percent. If the average opacity for any 6-minute block period exceeds 20 percent, this shall constitute a violation of the standard.

(d) The owner or operator of a clinker cooler shall monitor opacity at each point where emissions are vented from the clinker cooler in accordance with paragraphs (d)(1) through (d)(3) of this section.

(1) Except as provided in paragraph (d)(2) of this section, the owner or operator shall install, calibrate, maintain, and continuously operate a COM located at the outlet of the clinker cooler PM control device to continuously monitor the opacity. The COM shall be installed, maintained, calibrated, and operated as required by subpart A, general provisions of this part, and according to PS-1 of appendix B to part 60 of this chapter.

(2) The owner or operator of a clinker cooler subject to the provisions of this subpart using a fabric filter with multiple stacks or an electrostatic precipitator with multiple stacks may, in lieu of installing the continuous opacity monitoring system required by paragraph (d)(1) of this section, monitor opacity in accordance with paragraphs (d)(2)(i) through (ii) of this section. If the control device exhausts through a monovent, or if the use of a COM in accordance with the installation specifications of PS-1 of appendix B to part 60 of this chapter is not feasible, the owner or operator must monitor opacity in accordance with paragraphs (d)(2)(i) through (ii) of this section.

(i) Perform daily visual opacity observations of each stack in accordance with the procedures of Method 9 of appendix A to part 60 of this chapter. The Method 9 test shall be conducted while the affected source is operating at the representative performance conditions. The duration of the Method 9 test shall be at least 30 minutes each day.

(ii) Use the Method 9 procedures to monitor and record the average opacity for each six-minute period during the test.

(3) To remain in compliance, the opacity must be maintained such that the 6-minute average opacity for any 6-minute block period does not exceed 10 percent. If the average opacity for any 6-minute block period exceeds 10 percent, this shall constitute a violation of the standard.

(e) The owner or operator of a raw mill or finish mill shall monitor opacity by conducting daily visual emissions

observations of the mill sweep and air separator PMCD of these affected sources in accordance with the procedures of Method 22 of appendix A to part 60 of this chapter. The Method 22 test shall be conducted while the affected source is operating at the representative performance conditions. The duration of the Method 22 test shall be 6 minutes. If visible emissions are observed during any Method 22 visible emissions test, the owner or operator must:

(1) Initiate, within one-hour, the corrective actions specified in the site specific operating and maintenance plan developed in accordance with paragraphs (a)(1) and (a)(2) of this section; and

(2) Within 24 hours of the end of the Method 22 test in which visible emissions were observed, conduct a follow-up Method 22 test of each stack from which visible emissions were observed during the previous Method 22 test. If visible emissions are observed during the follow-up Method 22 test from any stack from which visible emissions were observed during the previous Method 22 test, conduct a visual opacity test of each stack from which emissions were observed during the follow up Method 22 test in accordance with Method 9 of appendix A to part 60 of this chapter. The duration of the Method 9 test shall be 30 minutes.

(f) The owner or operator of an affected source subject to a limitation on D/F emissions shall monitor D/F emissions in accordance with paragraphs (f)(1) through (f)(6) of this section.

(1) The owner or operator shall install, calibrate, maintain, and continuously operate a continuous monitor to record the temperature of the exhaust gases from the kiln, in-line kiln/raw mill and alkali bypass, if applicable, at the inlet to, or upstream of, the kiln, in-line kiln/raw mill and/or alkali bypass PM control devices.

(i) The recorder response range must include zero and 1.5 times either of the average temperatures established according to the requirements in §63.1349(b)(3)(iv).

(ii) The reference method must be a National Institute of Standards and Technology calibrated reference thermocouple-potentiometer system or alternate reference, subject to approval by the Administrator.

(2) The owner or operator shall monitor and continuously record the temperature of the exhaust gases from the kiln, in-line kiln/raw mill and alkali bypass, if applicable, at the inlet to the kiln, in-line kiln/raw mill and/or alkali bypass PMCD.

(3) The three-hour rolling average temperature shall be calculated as the average of 180 successive one-minute average temperatures.

(4) Periods of time when one-minute averages are not available shall be ignored when calculating three-hour rolling averages. When one-minute averages become available, the first one-minute average is added to the previous 179 values to calculate the three-hour rolling average.

(5) When the operating status of the raw mill of the in-line kiln/raw mill is changed from off to on, or from on to off the calculation of the three-hour rolling average temperature must begin anew, without considering previous recordings.

(6) The calibration of all thermocouples and other temperature sensors shall be verified at least once every three months.

(g) The owner or operator of an affected source subject to a limitation on D/F emissions that employs carbon injection as an emission control technique shall comply with the monitoring requirements of paragraphs (f)(1) through (f)(6) and (g)(1) through (g)(6) of this section to demonstrate continuous compliance with the D/F emission standard.

(1) Install, operate, calibrate and maintain a continuous monitor to record the rate of activated carbon injection. The accuracy of the rate measurement device must be $\pm$ 1 percent of the rate being measured.

(2) Verify the calibration of the device at least once every three months.

(3) The three-hour rolling average activated carbon injection rate shall be calculated as the average of 180 successive one-minute average activated carbon injection rates.

(4) Periods of time when one-minute averages are not available shall be ignored when calculating three-hour rolling averages. When one-minute averages become available, the first one-minute average is added to the previous 179 values to calculate the three-hour rolling average.

(5) When the operating status of the raw mill of the in-line kiln/raw mill is changed from off to on, or from on to off the calculation of the three-hour rolling average activated carbon injection rate must begin anew, without

considering previous recordings.

(6) The owner or operator must install, operate, calibrate and maintain a continuous monitor to record the activated carbon injection system carrier gas parameter (either the carrier gas flow rate or the carrier gas pressure drop) established during the D/F performance test in accordance with paragraphs (g)(6)(i) through (g)(6)(iii) of this section.

(i) The owner or operator shall install, calibrate, operate and maintain a device to continuously monitor and record the parameter value.

(ii) The owner or operator must calculate and record three-hour rolling averages of the parameter value.

(iii) Periods of time when one-minute averages are not available shall be ignored when calculating three-hour rolling averages. When one-minute averages become available, the first one-minute average shall be added to the previous 179 values to calculate the three-hour rolling average.

(h) The owner or operator of an affected source subject to a limitation on THC emissions under this subpart shall comply with the monitoring requirements of paragraphs (h)(1) through (h)(3) of this section to demonstrate continuous compliance with the THC emission standard:

(1) The owner or operator shall install, operate and maintain a THC continuous emission monitoring system in accordance with Performance Specification 8A, of appendix B to part 60 of this chapter and comply with all of the requirements for continuous monitoring systems found in the general provisions, subpart A of this part.

(2) The owner or operator is not required to calculate hourly rolling averages in accordance with section 4.9 of Performance Specification 8A.

(3) Any thirty-day block average THC concentration in any gas discharged from a greenfield raw material dryer, the main exhaust of a greenfield kiln, or the main exhaust of a greenfield in-line kiln/raw mill, exceeding 50 ppmvd, reported as propane, corrected to seven percent oxygen, is a violation of the standard.

(i) The owner or operator of any kiln or in-line kiln/raw mill subject to a D/F emission limit under this subpart shall conduct an inspection of the components of the combustion system of each kiln or in-line kiln raw mill at least once per year.

(j) The owner or operator of an affected source subject to a limitation on opacity under §63.1346 or §63.1348 shall monitor opacity in accordance with the operation and maintenance plan developed in accordance with paragraph (a) of this section.

(k) The owner or operator of an affected source subject to a particulate matter standard under §63.1343 shall install, calibrate, maintain and operate a particulate matter continuous emission monitoring system (PM CEMS) to measure the particulate matter discharged to the atmosphere. All requirements relating to installation, calibration, maintenance, operation or performance of the PM CEMS and implementation of the PM CEMS requirement are deferred pending further rulemaking.

(l) An owner or operator may submit an application to the Administrator for approval of alternate monitoring requirements to demonstrate compliance with the emission standards of this subpart, except for emission standards for THC, subject to the provisions of paragraphs (l)(1) through (l)(6) of this section.

(1) The Administrator will not approve averaging periods other than those specified in this section, unless the owner or operator documents, using data or information, that the longer averaging period will ensure that emissions do not exceed levels achieved during the performance test over any increment of time equivalent to the time required to conduct three runs of the performance test.

(2) If the application to use an alternate monitoring requirement is approved, the owner or operator must continue to use the original monitoring requirement until approval is received to use another monitoring requirement.

(3) The owner or operator shall submit the application for approval of alternate monitoring requirements no later than the notification of performance test. The application must contain the information specified in paragraphs (l)(3)(i) through (l)(3)(iii) of this section:

(i) Data or information justifying the request, such as the technical or economic infeasibility, or the impracticality of using the required approach:

(ii) A description of the proposed alternative monitoring requirement, including the operating parameter to be monitored, the monitoring approach and technique, the averaging period for the limit, and how the limit is to be calculated; and

(iii) Data or information documenting that the alternative monitoring requirement would provide equivalent or better assurance of compliance with the relevant emission standard.

(4) The Administrator will notify the owner or operator of the approval or denial of the application within 90 calendar days after receipt of the original request, or within 60 calendar days of the receipt of any supplementary information, whichever is later. The Administrator will not approve an alternate monitoring application unless it would provide equivalent or better assurance of compliance with the relevant emission standard. Before disapproving any alternate monitoring application, the Administrator will provide:

(i) Notice of the information and findings upon which the intended disapproval is based; and

(ii) Notice of opportunity for the owner or operator to present additional supporting information before final action is taken on the application. This notice will specify how much additional time is allowed for the owner or operator to provide additional supporting information.

(5) The owner or operator is responsible for submitting any supporting information in a timely manner to enable the Administrator to consider the application prior to the performance test. Neither submittal of an application, nor the Administrator's failure to approve or disapprove the application relieves the owner or operator of the responsibility to comply with any provision of this subpart.

(6) The Administrator may decide at any time, on a case-by-case basis that additional or alternative operating limits, or alternative approaches to establishing operating limits, are necessary to demonstrate compliance with the emission standards of this subpart.

(m) The requirements under paragraph (e) of this section to conduct daily Method 22 testing shall not apply to any specific raw mill or finish mill equipped with a continuous opacity monitor COM or bag leak detection system (BLDS). If the owner or operator chooses to install a COM in lieu of conducting the daily visual emissions testing required under paragraph (e) of this section, then the COM must be installed at the outlet of the PM control device of the raw mill or finish mill, and the COM must be installed, maintained, calibrated, and operated as required by the general provisions in subpart A of this part and according to PS-1 of appendix B to part 60 of this chapter. To remain in compliance, the opacity must be maintained such that the 6-minute average opacity for any 6-minute block period does not exceed 10 percent. If the average opacity for any 6-minute block period exceeds 10 percent, this shall constitute a violation of the standard. If the owner or operator chooses to install a BLDS in lieu of conducting the daily visual emissions testing required under paragraph (e) of this section, the requirements in paragraphs (m)(1) through (9) of this section apply to each BLDS:

(1) The BLDS must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less. ``Certify" shall mean that the instrument manufacturer has tested the instrument on gas streams having a range of particle size distributions and confirmed by means of valid filterable PM tests that the minimum detectable concentration limit is at or below 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.

(2) The sensor on the BLDS must provide output of relative PM emissions.

(3) The BLDS must have an alarm that will activate automatically when it detects a significant increase in relative PM emissions greater than a preset level.

(4) The presence of an alarm condition should be clearly apparent to facility operating personnel.

(5) For a positive-pressure fabric filter, each compartment or cell must have a bag leak detector. For a negative-pressure or induced-air fabric filter, the bag leak detector must be installed downstream of the fabric filter. If multiple bag leak detectors are required for either type of fabric filter, detectors may share the system instrumentation and alarm.

(6) All BLDS must be installed, operated, adjusted, and maintained so that they are based on the manufacturer's written specifications and recommendations. The EPA recommends that where appropriate, the standard operating procedures manual for each bag leak detection system include concepts from EPA's ``Fabric Filter Bag Leak Detection Guidance" (EPA-454/R-98-015, September 1997).

(7) The baseline output of the system must be established as follows:

(i) Adjust the range and the averaging period of the device; and

(ii) Establish the alarm set points and the alarm delay time.

(8) After initial adjustment, the range, averaging period, alarm set points, or alarm delay time may not be adjusted except as specified in the operations and maintenance plan required by paragraph (a) of this section. In no event may the range be increased by more than 100 percent or decreased by more than 50 percent over a 1 calendar year period unless a responsible official as defined in Sec. 63.2 certifies in writing to the Administrator that the fabric filter has been inspected and found to be in good operating condition.

(9) The owner or operator must maintain and operate the fabric filter such that the bag leak detector alarm is not activated and alarm condition does not exist for more than 5 percent of the total operating time in a 6-month block period. Each time the alarm activates, alarm time will be counted as the actual amount of time taken by the owner or operator to initiate corrective actions. If inspection of the fabric filter demonstrates that no corrective actions are necessary, no alarm time will be counted. The owner or operator must continuously record the output from the BLDS during periods of normal operation. Normal operation does not include periods when the BLDS is being maintained or during startup, shutdown or malfunction.

(n) A summary of the monitoring requirements of this subpart is given in Table 1 to this section.

Table 1 to §63.1350. Monitoring Requirements.

Affected Source/Pollutant or Opacity	Monitor Type/ Operation/Process	Monitoring Requirements
All affected sources	Operations and maintenance plan	Prepare written plan for all affected sources and control devices
All kilns and in-line kiln raw mills at major sources (including alkali bypass)/opacity	Continuous opacity monitor, if applicable	Install, calibrate, maintain and operate in accordance with general provisions and with PS-1
	Method 9 opacity test, if applicable	Daily test of at least 30-minutes, while kiln is at highest load or capacity level
Kilns and in-line kiln raw mills at major sources (including alkali bypass)/particulate matter	Particulate matter continuous emission monitoring system	Deferred
Kilns and in-line kiln raw mills at major sources (including alkali bypass)/ D/F	Combustion system inspection	Conduct annual inspection of components of combustion system
	Continuous temperature monitoring at PMCD inlet	Install, operate, calibrate and maintain continuous temperature monitoring and recording system; calculate three-hour rolling averages; verify temperature sensor calibration at least quarterly
Kilns and in-line kiln raw mills at major sources (including alkali bypass)/ D/F (continued)	Activated carbon injection rate monitor, if applicable	Install, operate, calibrate and maintain continuous activated carbon injection rate monitor; calculate three-hour rolling averages; verify calibration at least quarterly; install, operate, calibrate and maintain carrier gas flow rate monitor or carrier gas pressure drop monitor; calculate three-hour rolling averages; document carbon specifications
New greenfield kilns and in-line kiln raw mills at major sources/THC	Total hydrocarbon continuous emission monitor	Install, operate, and maintain THC CEM in accordance with PS-8A; calculate 30-day block average THC concentration
Clinker coolers at major sources/opacity	Continuous opacity monitor, if applicable	Install, calibrate, maintain and operate in accordance with general provisions and with PS-1

Affected Source/Pollutant or Opacity	Monitor Type/ Operation/Process	Monitoring Requirements
	Method 9 opacity test, if applicable	Daily test of at least 30-minutes, while kiln is at highest load or capacity level.
Raw mills and finish mills at major sources/opacity	Method 22 visible emissions test (This requirement does not apply to a raw mill or finish mill equipped with a continuous opacity monitor or bag leak detection system)	Conduct daily 6-minute Method 22 visible emissions test while mill is operating at highest load or capacity level; if visible emissions are observed, initiate corrective action within one hour and conduct 30-minute Method 9 test within 24 hours
	Continuous opacity monitoring, if appilicable	Install, operate, and maintain in accordance with general provisions and with PS-1. A six-minute average greater than 10% opacity is a violation
	Bag leak detection system, if applicable	Install, operate and maintain in accordance with Sec. 63.1350(m). Operate and maintain such that alarm is not activated and alarm condition does not exist for more than 4% of the total operating time in a 6-month period. If alarm sounds, initiate corrective action.
New greenfield raw material dryers at major sources/THC	Total hydrocarbon continuous emission monitor	Install, operate, and maintain THC CEM in accordance with PS-8A; calculate 30-day block average THC concentration
Raw material dryers; raw material, clinker, finished product storage bins; conveying system transfer points; bagging systems; and bulk loading and unloading systems at major sources/opacity	Method 22 visible emissions test	As specified in operation and maintenance plan

§ 63.1351 Compliance Dates.

(a) The compliance date for an owner or operator of an existing affected source subject to the provisions of this subpart is June 14, 2002.

(b) The compliance date for an owner or operator of an affected source subject to the provisions of this subpart that commences new construction or reconstruction after March 24, 1998 is June 14, 1999 or upon startup of operations, whichever is later.

§ 63.1352 Additional Test Methods.

(a) Owners or operators conducting tests to determine the rates of emission of hydrogen chloride (HCl) from kilns, in-line kiln/raw mills and associated bypass stacks at portland cement manufacturing facilities, for use in applicability determinations under §63.1340 are permitted to use Method 320 or Method 321 of appendix A of this part.

(b) Owners or operators conducting tests to determine the rates of emission of hydrogen chloride (HCl) from kilns, in-line kiln/raw mills and associated bypass stacks at portland cement manufacturing facilities, for use in applicability determinations under §63.1340 are permitted to use Methods 26 or 26A of appendix A to part 60 of this chapter.

(c) Owners or operators conducting tests to determine the rates of emission of specific organic HAP from raw material dryers, kilns and in-line kiln/raw mills at portland cement manufacturing facilities, for use in applicability determinations under §63.1340 of this subpart are permitted to use Method 320 of appendix A to this part, or Method 18 of appendix A to part 60 of this chapter.

§ 63.1353 Notification Requirements.

(a) The notification provisions of 40 CFR part 63, subpart A that apply and those that do not apply to owners and operators of affected sources subject to this subpart are listed in Table 1 of this subpart. If any State requires a notice that contains all of the information required in a notification listed in this section, the owner or operator may send the

Administrator a copy of the notice sent to the State to satisfy the requirements of this section for that notification.

(b) Each owner or operator subject to the requirements of this subpart shall comply with the notification requirements in §63.9 as follows:

(1) Initial notifications as required by §63.9(b) through (d). For the purposes of this subpart, a Title V or 40 CFR part 70 permit application may be used in lieu of the initial notification required under §63.9(b), provided the same information is contained in the permit application as required by §63.9(b), and the State to which the permit application has been submitted has an approved operating permit program under part 70 of this chapter and has received delegation of authority from the EPA. Permit applications shall be submitted by the same due dates as those specified for the initial notification.

(2) Notification of performance tests, as required by §§63.7 and 63.9(e).

(3) Notification of opacity and visible emission observations required by §63.1349 in accordance with §§63.6(h)(5) and 63.9(f).

(4) Notification, as required by §63.9(g), of the date that the continuous emission monitor performance evaluation required by §63.8(e) of this part is scheduled to begin.

(5) Notification of compliance status, as required by §63.9(h).

§ 63.1354 Reporting Requirements.

(a) The reporting provisions of subpart A of this part that apply and those that do not apply to owners or operators of affected sources subject to this subpart are listed in Table 1 of this subpart. If any State requires a report that contains all of the information required in a report listed in this section, the owner or operator may send the Administrator a copy of the report sent to the State to satisfy the requirements of this section for that report.

(b) The owner or operator of an affected source shall comply with the reporting requirements specified in §63.10 of the general provisions of this part 63, subpart A as follows:

(1) As required by §63.10(d)(2), the owner or operator shall report the results of performance tests as part of the notification of compliance status.

(2) As required by §63.10(d)(3), the owner or operator of an affected source shall report the opacity results from tests required by §63.1349.

(3) As required by §63.10(d)(4), the owner or operator of an affected source who is required to submit progress reports as a condition of receiving an extension of compliance under §63.6(i) shall submit such reports by the dates specified in the written extension of compliance.

(4) As required by §63.10(d)(5), if actions taken by an owner or operator during a startup, shutdown, or malfunction of an affected source (including actions taken to correct a malfunction) are consistent with the procedures specified in the source's startup, shutdown, and malfunction plan specified in §63.6(e)(3), the owner or operator shall state such information in a semiannual report. Reports shall only be required if a startup, shutdown, or malfunction occurred during the reporting period. The startup, shutdown, and malfunction report may be submitted simultaneously with the excess emissions and continuous monitoring system performance reports; and

(5) Any time an action taken by an owner or operator during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) is not consistent with the procedures in the startup, shutdown, and malfunction plan, the owner or operator shall make an immediate report of the actions taken for that event within 2 working days, by telephone call or facsimile (FAX) transmission. The immediate report shall be followed by a letter, certified by the owner or operator or other responsible official, explaining the circumstances of the event, the reasons for not following the startup, shutdown, and malfunction plan, and whether any excess emissions and/or parameter monitoring exceedances are believed to have occurred.

(6) As required by §63.10(e)(2), the owner or operator shall submit a written report of the results of the performance evaluation for the continuous monitoring system required by §63.8(e). The owner or operator shall submit the report simultaneously with the results of the performance test.

(7) As required by §63.10(e)(2), the owner or operator of an affected source using a continuous opacity monitoring system to determine opacity compliance during any performance test required under §63.7 and described in §63.6(d)(6) shall report the results of the continuous opacity monitoring system performance evaluation conducted

under §63.8(e).

(8) As required by §63.10(e)(3), the owner or operator of an affected source equipped with a continuous emission monitor shall submit an excess emissions and continuous monitoring system performance report for any event when the continuous monitoring system data indicate the source is not in compliance with the applicable emission limitation or operating parameter limit.

(9) The owner or operator shall submit a summary report semiannually which contains the information specified in §63.10(e)(3)(vi). In addition, the summary report shall include:

(i) All exceedences of maximum control device inlet gas temperature limits specified in §63.1344(a) and (b);

(ii) All failures to calibrate thermocouples and other temperature sensors as required under §63.1350(f)(7) of this subpart; and

(iii) All failures to maintain the activated carbon injection rate, and the activated carbon injection carrier gas flow rate or pressure drop, as applicable, as required under §63.1344(c).

(iv) The results of any combustion system component inspections conducted within the reporting period as required under §63.1350(i).

(v) All failures to comply with any provision of the operation and maintenance plan developed in accordance with §63.1350(a).

(10) If the total continuous monitoring system downtime for any CEM or any continuous monitoring system (CMS) for the reporting period is ten percent or greater of the total operating time for the reporting period, the owner or operator shall submit an excess emissions and continuous monitoring system performance report along with the summary report.

§ 63.1355 Recordkeeping Requirements.

(a) The owner or operator shall maintain files of all information (including all reports and notifications) required by this section recorded in a form suitable and readily available for inspection and review as required by §63.10(b)(1). The files shall be retained for at least five years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent two years of data shall be retained on site. The remaining three years of data may be retained off site. The files may be maintained on microfilm, on a computer, on floppy disks, on magnetic tape, or on microfiche.

(b) The owner or operator shall maintain records for each affected source as required by §63.10(b)(2) and (b)(3) of this part; and

(1) All documentation supporting initial notifications and notifications of compliance status under §63.9 of this part;

(2) All records of applicability determination, including supporting analyses; and

(3) If the owner or operator has been granted a waiver under §63.8(f)(6), any information demonstrating whether a source is meeting the requirements for a waiver of recordkeeping or reporting requirements.

(c) In addition to the recordkeeping requirements in paragraph (b) of this section, the owner or operator of an affected source equipped with a continuous monitoring system shall maintain all records required by §63.10(c).

§ 63.1356 Exemption from New Source Performance Standards.

(a) Except as provided in paragraphs (a)(1) and (a)(2) of this section, any affected source subject to the provisions of this subpart is exempted from any otherwise applicable new source performance standard contained in subpart F or subpart OOO of part 60 of this chapter.

(1) Reserved

(2) Reserved

(b) The requirements of subpart Y of part 60 of this chapter, "Standards of Performance for Coal Preparation Plants", do not apply to conveying system transfer points used to convey coal from the mill to the kiln that are associated with coal preparation at a portland cement plant that is a major source under this subpart.

§ 63.1357 Temporary, Conditioned Exemption from Particulate Matter and Opacity Standards.

(a) Subject to the limitations of paragraphs (b) through (f) of this section, an owner or operator conducting PM CEMS

correlation tests (that is, correlation with manual stack methods) is exempt from:

(1) Any particulate matter and opacity standards of part 60 or part 63 of this chapter that are applicable to cement kilns and in-line kiln/raw mills.

(2) Any permit or other emissions or operating parameter or other limitation on workplace practices that are applicable to cement kilns and in-line kiln raw mills to ensure compliance with any particulate matter and opacity standards of this part or part 60 of this chapter.

(b) The owner or operator must develop a PM CEMS correlation test plan. The plan must be submitted to the Administrator for approval at least 90 days before the correlation test is scheduled to be conducted. The plan must include:

(1) The number of test conditions and the number of runs for each test condition;

(2) The target particulate matter emission level for each test condition;

(3) How the operation of the affected source will be modified to attain the desired particulate matter emission rate; and

(4) The anticipated normal particulate matter emission level.

(c) The Administrator will review and approve or disapprove the correlation test plan in accordance with §63.7(c)(3)(i) and (iii). If the Administrator fails to approve or disapprove the correlation test plan within the time period specified in §63.7(c)(3)(iii), the plan shall be considered approved, unless the Administrator has requested additional information.

(d) The stack sampling team must be on-site and prepared to perform correlation testing no later than 24 hours after operations are modified to attain the desired particulate matter emissions concentrations, unless the correlation test plan documents that a longer period is appropriate.

(e) The PM and opacity standards and associated operating limits and conditions will not be waived for more than 96 hours, in the aggregate, for the purposes of conducting tests to correlate PM CEMS with manual method test results, including all runs and conditions, except as described in this paragraph. Where additional time is required to correlate a PM CEMS device, a source may petition the Administrator for an extension of the 96-hour aggregate waiver of compliance with the PM and opacity standards. An extension of the 96-hour aggregate waiver is renewable at the discretion of the Administrator.

(f) The owner or operator must return the affected source to operating conditions indicative of compliance with the applicable particulate matter and opacity standards as soon as possible after correlation testing is completed.

§ 63.1358 Implementation and Enforcement.

(a) This subpart can be implemented and enforced by the U.S. EPA, or a delegated authority such as the applicable State, local, or Tribal agency. If the U.S. EPA Administrator has delegated authority to a State, local, or Tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. Contact the applicable U.S. EPA Regional Office to find out if this subpart is delegated to a State, local, or Tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or Tribal agency under subpart E of this part, the authorities contained in paragraph (c) of this section are retained by the Administrator of U.S. EPA and cannot be transferred to the State, local, or Tribal agency.

(c) The authorities that cannot be delegated to State, local, or Tribal agencies are as specified in paragraphs (c)(1) through (4) of this section.

(1) Approval of alternatives to the requirements in Sec. Sec. 63.1340, 63.1342 through 63.1348, and 63.1351.

(2) Approval of major alternatives to test methods under Sec. 63.7(e)(2)(ii) and (f), as defined in Sec. 63.90, and as required in this subpart.

(3) Approval of major alternatives to monitoring under Sec. 63.8(f), as defined in Sec. 63.90, and as required in this subpart.

(4) Approval of major alternatives to recordkeeping and reporting under Sec. 63.10(f), as defined in Sec. 63.90, and as required in this subpart.

§ 63.1359 [Reserved]

Table LLL-1. Applicability of NESHAP Subpart A Provisions to Affected NESHAP Subpart LLL Units

Citation	Requirement	Applies?	Explanation
63.1(a)(1)–(4)	Applicability	Yes	
63.1(a)(5)		No	[Reserved]
63.1(a)(6)–(8)	Applicability	Yes	
63.1(a)(9)		No	[Reserved]
63.1(a)(10)–(14)	Applicability	Yes	
63.1(b)(1)	Initial Applicability Determination	No	§ 63.1340 specifies applicability.
63.1(b)(2)–(3)	Initial Applicability Determination	Yes	
63.1(c)(1)	Applicability After Standard Established	Yes	
63.1(c)(2)	Permit Requirements	Yes	Area sources must obtain Title V permits.
63.1(c)(3)		No	[Reserved]
63.1(c)(4)–(5)	Extensions, Notifications	Ye	
63.1(d)		No	[Reserved]
63.1(e)	Applicability of Permit Program	Yes	
63.2	Definitions	Yes	Additional definitions in § 63.1341.
63.3(a)–(c)	Units and Abbreviations	Yes	
63.4(a)(1)–(3)	Prohibited Activities	Yes	
63.4(a)(4)		No	[Reserved]
63.4(a)(5)	Compliance date	Yes	
63.4(b)–(c)	Circumvention, Severability	Yes	
63.5(a)(1)–(2)	Construction/Reconstruction	Yes	
63.5(b)(1)	Compliance Dates	Yes	
63.5(b)(2)		No	[Reserved]
63.5(b)(3)–(6)	Construction Approval, Applicability	Yes	
63.5(c)		No	[Reserved]
63.5(d)(1)–(4)	Approval of Construction/Reconstruction	Yes	
63.5(e)	Approval of Construction/Reconstruction	Yes	
63.5(f)(1)–(2)	Approval of Construction/Reconstruction	Yes	
63.6(a)	Compliance for Standards and Maintenance	Yes	
63.6(b)(1)–(5)	Compliance Dates	Yes	
63.6(b)(6)		No	[Reserved]
63.6(b)(7)	Compliance Dates	Yes	
63.6(c)(1)–(2)	Compliance Dates	Yes	
63.6(c)(3)–(4)		No	[Reserved]
63.6(c)(5)	Compliance Dates	Yes	
63.6(d)		No	[Reserved]
63.6(e)(1)–(2)	Operation & Maintenance	Yes	
63.6(e)(3)	Startup, Shutdown Malfunction Plan	Yes	
63.6(f)(1)–(3)	Compliance with Emission Standards	Yes	
63.6(g)(1)–(3)	Alternative Standard	Yes	
63.6(h)(1)–(2)	Opacity/VE Standards	Yes	
63.6(h)(3)	Opacity/VE Standards	No	[Reserved]
63.6(h)(4)–(h)(5)(i)	Opacity/VE Standards	Yes	
63.6(h)(5)(ii)–(iv)	Opacity/VE Standards	No	Test duration specified in subpart LLL.
63.6(h)(6)	Opacity/VE Standards	Yes	
63.6(h)(7)	Opacity/VE Standards	Yes	
63.6(i)(1)–(14)	Extension of Compliance	Yes	
63.6(i)(15)		No	[Reserved]
63.6(i)(16)	Extension of Compliance		Yes
63.6(j)	Exemption from Compliance	Yes	
63.7(a)(1)–(3)	Performance Testing Requirements	Yes	§ 63.1349 has specific requirements.
63.7(b)	Notification	Yes	

NESHAP SUBPART LLL PROVISIONS – PORTLAND CEMENT MANUFACTURING INDUSTRY

Citation	Requirement	Applies?	Explanation
63.7(c)	Quality Assurance/Test Plan	Yes	
63.7(d)	Testing Facilities	Yes	
63.7(e)(1)–(4)	Conduct of Tests	Yes	
63.7(f)	Alternative Test Method	Yes	
63.7(g)	Data Analysis	Yes	
63.7(h)	Waiver of Tests	Yes	
63.8(a)(1)	Monitoring Requirements	Yes	
63.8(a)(2)	Monitoring	No	§ 63.1350 includes CEMS requirements.
63.8(a)(3)	Monitoring	No	[Reserved]
63.8(a)(4)	Monitoring	No	Flares not applicable.
63.8(b)(1)–(3)	Conduct of Monitoring	Yes	
63.8(c)(1)–(8)	CMS Operation/Maintenance	Yes	PS supersedes requirements for THC CEMS. Temperature and activated carbon injection monitoring data reduction requirements given in Subpart LLL.
63.8(d)	Quality Control	Yes	
63.8(e)	Performance Evaluation for CMS	Yes	PS supersedes requirements for THC CEMS.
63.8(f)(1)–(5)	Alternative Monitoring Method	Yes	Additional requirements in § 63.1350(l).
63.8(f)(6)	Alternative to RATA Test	Yes	
63.8(g)	Data Reduction	Yes	
63.9(a)	Notification Requirements	Yes	
63.9(b)(1)–(5)	Initial Notifications	Yes	
63.9(c)	Request for Compliance Extension	Yes	
63.9(d)	New Source Notification for Special Compliance Req.	Yes	
63.9(e)	Notification of Performance Test	Yes	
63.9(f)	Notification of VE/Opacity Test	Yes	Notification not required under § 63.1350(e) and (j).
63.9(g)	Additional CMS Notifications	Yes	
63.9(h)(1)–(3)	Notification of Compliance Status	Yes	
63.9(h)(4)		No	[Reserved]
63.9(h)(5)–(6)	Notification of Compliance Status	Yes	
63.9(i)	Adjustment of Deadlines	Yes	
63.9(j)	Change in Previous Information	Yes	
63.10(a)	Recordkeeping/Reporting	Yes	
63.10(b)	General Requirements	Yes	
63.10(c)(1)	Additional CMS Recordkeeping	Yes	PS–8A supersedes requirements for THC CEMS.
63.10(c)(2)–(4)		No	[Reserved]
63.10(c)(5)–(8)	Additional CMS Recordkeeping	Yes	PS–8A supersedes requirements for THC CEMS.
63.10(c)(9)		No	[Reserved]
63.10(c)(10)–(15)	Additional CMS Recordkeeping	Yes	PS–8A supersedes requirements for THC CEMS.
63.10(d)(1)	General Reporting Requirements	Yes	
63.10(d)(2)	Performance Test Results	Yes	
63.10(d)(3)	Opacity or VE Observations	Yes	
63.10(d)(4)	Progress Reports	Yes	
63.10(d)(5)	Startup, Shutdown, Malfunction Reports	Yes	
63.10(e)(1)–(2)	Additional CMS Reports	Yes	
63.10(e)(3)	Excess Emissions and CMS Performance Reports	Yes	Exceedances are defined in subpart LLL.
63.10(f)	Waiver for Recordkeeping/Reporting	Yes	
63.11(a)–(b)	Control Device Requirements	No	Flares not applicable.
63.12(a)–(c)	State Authority and Delegations	Yes	
63.13(a)–(c)	State/Regional Addresses	Yes	
63.14(a)–(b)	Incorporation by Reference	Yes	
63.15(a)–(b)	Availability of Information	Yes	

SECTION IV. APPENDIX OOO

NSPS SUBPART OOO – NONMETALLIC MINERAL PROCESSING PLANTS

The provisions of this subsection apply to the following emissions unit.

ID	Emission Unit Description
001	Raw Material Quarrying, Crushing, and Storage. Includes raw material processing from quarry up to raw material storage, and additives handling from delivery to storage.

1. NSPS Subpart A: The affected emissions units are subject to the applicable General Provisions in NSPS Subpart A of 40 CFR 60, as adopted by Rule 62-204.800(8), F.A.C. [40 CFR 60, Subpart A]
2. NSPS Subpart OOO: The affected emissions units are subject to the applicable requirements for Nonmetallic Mineral Processing Plants specified in NSPS Subpart OOO of 40 CFR 60, as adopted by Rule 62-204.800(8), F.A.C. [40 CFR 60, Subpart OOO]

{Permitting Note: Numbering of the original NSPS rules in the following conditions has been preserved for ease of reference with the rules. Paragraphs that are not applicable have been omitted for clarity and brevity. When used in 40 CFR 60, the term "Administrator" shall mean the Secretary or the Secretary's designee.}

§ 60.670 Applicability and Designation of Affected Facility.

(a) (1) The provisions of 40 CFR 60 Subpart OOO are applicable to the following affected facilities in fixed or portable nonmetallic mineral processing plants: each belt conveyor or crusher.

§ 60.671 Definitions.

Belt conveyor means a conveying device that transports material from one location to another by means of an endless belt that is carried on a series of idlers and routed around a pulley at each end.

Crusher means a machine used to crush any nonmetallic materials, and includes, but is not limited to, the following types: jaw, gyratory, cone roll, rod mill, hammermill, and impactor.

§ 60.672 Standard for Particulate Matter.

(b) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under 40 CFR 60.11, no owner or operator shall cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any fugitive emissions which exhibit greater than 10 percent opacity, except as provided in paragraph (c) and (d) of this section.

(c) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under 40 CFR 60.11, no owner or operator shall cause to be discharged into the atmosphere from any crusher, at which a capture system is not used, fugitive emissions which exhibit greater than 15 percent opacity.

(d) Truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher is exempt from the requirements of this section.

§ 60.675 Test Methods and Procedures.

(a) In conducting the performance tests required in 40 CFR 60.8, the owner or operator shall use as reference methods and procedures the test methods in 40 CFR 60 Appendix A or other methods and procedures as specified in this section, except as provided in 40 CFR 60.8(b). Acceptable alternative methods and procedures are given in paragraph (e) of this section.

(c) (1) In determining compliance with the particulate matter standards in 40 CFR 60.672 (b) and (c), the owner or operator shall use Method 9 and the procedures in 40 CFR 60.11, with the following additions:

(i) The minimum distance between the observer and the emissions source shall be 4.57 meters (15 feet).

(ii) The observer shall, when possible, select a position that minimizes interference from other fugitive emissions units (e.g., road dust). The required observer position relative to the sun (Method 9, Section 2.1) must be followed.

(iii) For affected emissions units using wet dust suppression for particulate matter control, a visible mist is

sometimes generated by the spray. The water mist must not be confused with particulate matter emissions and is not to be considered a visible emission. When a water mist of this nature is present, the observation of emissions is to be made at a point in the plume where the mist is no longer visible.

(3) When determining compliance with the fugitive emissions standard for any affected facility described under Section 60.672(b) of this subpart, the duration of the Method 9 observations may be reduced from 3 hours (thirty 6-minute averages) to 1 hour (ten 6-minute averages) only if the following conditions apply:

(i) There are no individual readings greater than 10 percent opacity; and

(ii) There are no more than 3 readings of 10 percent for the 1-hour period.

(4) When determining compliance with the fugitive emissions standard for any crusher at which a capture system is not used as described under Section 60.672(c) of this subpart, the duration of the Method 9 observations may be reduced from 3 hours (thirty 6-minute averages) to 1 hour (ten 6- minute averages) only if the following conditions apply:

(i) There are no individual readings greater than 15 percent opacity; and

(ii) There are no more than 3 readings of 15 percent for the 1-hour period.

(e) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For the method and procedure of 40 CFR 60.675(c), if emissions from two or more facilities continuously interfere so that the opacity of fugitive emissions from an individual affected facility cannot be read, either of the following procedures may be used:

(i) Use for the combined emission stream the highest fugitive opacity standard applicable to any of the individual affected facilities contributing to the emissions stream.

(ii) Separate the emissions so that the opacity of emissions from each affected facility can be read.

(g) If, after 30 days notice for an initially scheduled performance test, there is a delay (due to operation problems, etc.) in conducting any rescheduled performance test required in this section, the owner or operator of an affected facility shall submit a notice to the Administrator at least 7 days prior to any rescheduled performance test.

§ 60.676 Reporting and Recordkeeping.

(f) The owner or operator of any affected facility shall submit written reports of the results of all performance tests conducted to demonstrate compliance with the standards set forth in 40 CFR 60.672, including reports of opacity observations made using Method 9 to demonstrate compliance with 40 CFR 60.672(b) and (c).

(h) The Subpart A requirement under 40 CFR 60.7(a)(2) for notification of the anticipated date of initial startup of an affected facility shall be waived for owners or operators of affected facilities regulated under this subpart.

(i) A notification of the actual date of initial startup of each affected facility shall be submitted to the Administrator.

(1) For a combination of affected facilities in a production line that begin actual initial startup on the same day, a single notification of startup may be submitted by the owner or operator to the Administrator. The notification shall be postmarked within 15 days after such date and shall include a description of each affected facility, equipment manufacturer, and serial number of the equipment, if available.

SECTION IV. APPENDIX Y
NSPS SUBPART Y – COAL PREPARATION PLANTS

The specific conditions of this subsection apply to the following emissions unit.

ID No.	Emissions Unit Description
007	Coal and Petroleum Coke Grinding System. Includes coal/petroleum coke handling from railcar unloading to the pulverized fuel bin.

1. NSPS Subpart A: The affected emissions units are also subject to the applicable General Provisions in Subpart A of 40 CFR 60, as adopted by Rule 62-204.800(8), F.A.C. [40 CFR 60, Subpart A]
2. NSPS Subpart Y: The affected emissions units are also subject to the applicable requirements for Coal Preparation Plants specified in NSPS Subpart Y of 40 CFR 60, as adopted by Rule 62-204.800(8), F.A.C. [40 CFR 60, Subpart Y]

{Permitting Note: Numbering of the original NSPS rules in the following conditions has been preserved for ease of reference with the rules. Paragraphs that are not applicable have been omitted for clarity and brevity. When used in 40 CFR 60, the term "Administrator" shall mean the Secretary or the Secretary's designee.}

§ 60.250 Applicability and Designation of Affected Facility.

(a) The provisions of this subpart are applicable to any of the following affected facilities in coal preparation plants which process more than 200 tons per day: thermal dryers, pneumatic coal cleaning equipment (air tables), coal processing and conveying equipment (including breakers and crushers), and coal storage systems.

§ 60.251 Definitions.

(a) *Coal preparation plant* means any facility (excluding underground mining operations) which prepares coal by one or more of the following processes: breaking, crushing, screening, wet or dry cleaning, and thermal drying.

(b) *Bituminous coal* means solid fossil fuel classified as bituminous coal by ASTM Designation D388-77, 90, 91, 95, or 98a (incorporated by reference; see § 60.17).

(c) *Coal* means all solid fossil fuels classified as anthracite, bituminous, sub bituminous, or lignite by ASTM Designation D388-77, 90, 91, 95, or 98a (incorporated by reference; see § 60.17).

(d) *Cyclonic flow* means a spiraling movement of exhaust gases within a duct or stack.

(e) *Thermal dryer* means any facility in which the moisture content of bituminous coal is reduced by contact with a heated gas stream which is exhausted to the atmosphere.

(f) *Pneumatic coal-cleaning equipment* means any facility which classifies bituminous coal by size or separates bituminous coal from refuse by application of air stream(s).

(g) *Coal processing and conveying equipment* means any machinery used to reduce the size of coal or to separate coal from refuse, and the equipment used to convey coal to or remove coal and refuse from the machinery. This includes, but is not limited to, breakers, crushers, screens, and conveyor belts.

(h) *Coal storage system* means any facility used to store coal except for open storage piles.

(i) *Transfer and loading system* means any facility used to transfer and load coal for shipment.

§ 60.252 Standards for Particulate Matter.

(a) On and after the date on which the performance test required to be conducted by 40 CFR 60.8 is completed, an owner or operator shall not cause to be discharged into the atmosphere from any thermal dryer gases which:

(1) Contain particulate matter in excess of 0.070 g/dscm (0.031 gr/dscf).

(2) Exhibit 20 percent opacity or greater.

(c) On and after the date on which the performance test required to be conducted by 40 CFR 60.8 is completed, an owner or operator shall not cause to be discharged into the atmosphere from any coal processing and conveying equipment or coal storage system, gases which exhibit 20 percent opacity or greater. [40 CFR 60.252(a) and (c)]

§ 60.253 Monitoring of Operations.

(a) The owner or operator of any thermal dryer shall install, calibrate, maintain, and continuously operate monitoring devices as follows:

(1) A monitoring device for the measurement of the temperature of the gas stream at the exit of the thermal dryer on a continuous basis. The monitoring device is to be certified by the manufacturer to be accurate within ±3° Fahrenheit.

(b) All monitoring devices under paragraph (a) of this section are to be recalibrated annually in accordance with procedures under 40 CFR 60.13(b). [40 CFR 60.253(a) and (b)]

§ 60.254 Test Methods and Procedures.

(a) In conducting the performance tests required in 40 CFR 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in 40 CFR 60.8(b).

(b) The owner or operator shall determine compliance with the particular matter standards in 40 CFR 60.252 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf). Sampling shall begin no less than 30 minutes after startup and shall terminate before shutdown procedures begin.

(2) Method 9 and the procedures in 40 CFR 60.11 shall be used to determine opacity.

TECHNICAL EVALUATION

PRELIMINARY DETERMINATION

DRAFT BACT DETERMINATIONS

NATURAL RESOURCES OF CENTRAL FLORIDA
DBA AMERICAN CEMENT COMPANY
SUMTERVILLE CEMENT PLANT
SUMTER COUNTY, FLORIDA

New Portland Cement Plant

DEP File No. 1190042-001-AC (PSD-FL-361)

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

December 16, 2005

I. APPLICANT NAME AND ADDRESS

Mr. Cary Cohrs, General Manager
Natural Resources of Central Florida
dba American Cement Company
Post Office Box 1209
Anthony, Florida 32617

II. FACILITY INFORMATION

A. FACILITY LOCATION

Natural Resources of Central Florida dba American Cement Company (ACC) proposes to build a greenfield portland cement plant at a location east of Sumterville and north of CR 470 in Sumter County.

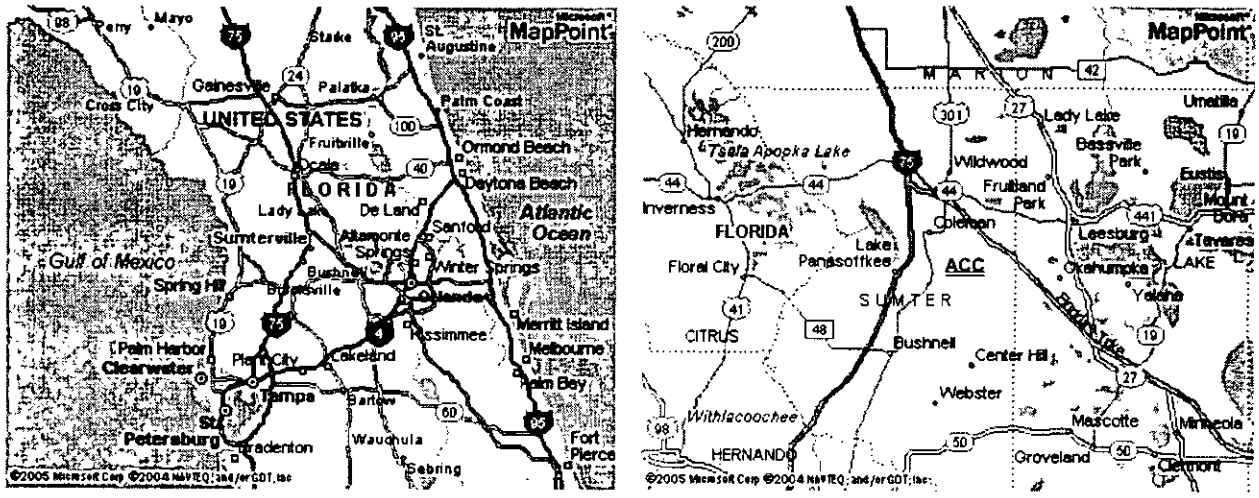


Figure 1. Proposed Location of the ACC Portland Cement Plant in Sumter County

The proposed site is approximately 30 kilometers from the Chassahowitzka National Wildlife Refuge, a Prevention of Significant Deterioration (PSD) Class I Area.

B. FACILITY CLASSIFICATION CODE (SIC)

Major Group No. 32, Clay, Glass, and Concrete Products
Industry Group No. 324 Cement, Hydraulic
Industry No. 3241 Cement, Hydraulic

C. FACILITY CATEGORY

The ACC Sumterville Cement Plant will directly emit more than 100 TPY of several regulated air pollutants and has the potential to emit at least 10 TPY of at least one hazardous air pollutant (HAP) or 25 TPY of all HAPs. Therefore it is classified as a "Major Source of Air Pollution or Title V Source," per the definitions in Rule 62-212.200, F.A.C.

This industry is listed in Table 212.400-1, "Major Facilities Categories", Rule 62-212.400, F.A.C., PSD. Stack and fugitive emissions of over 100 TPY of carbon monoxide (CO), volatile organic compounds (VOC), sulfur dioxide (SO_2), nitrogen oxides (NO_X), or particulate matter (PM/PM_{10}) characterize the existing installation as a Major Facility per the definitions in Rule 62-210.200, F.A.C.

Given that the project is a Major Facility as described above, then, Per Table 212.400-2, "Regulated Air Pollutants – Significant Emission Rates" (SER's), emissions greater than 40 TPY of NO_X or SO_2, 7 TPY of sulfuric acid mist (SAM), 25/15 TPY of PM/PM_{10}, 3 TPY of fluorides, 1200 pounds per year (lb/yr) of lead or 200 lb/yr of mercury also require review pursuant to the PSD rules. Pollutants triggering the mentioned SER's at a Major Facility require a determination of Best Available Control Technology (BACT) per Rule 62-212.400, F.A.C.

III. PROPOSED PROJECT

ACC proposes to construct a 1,150,000 tons per year (TPY) dry process portland cement plant incorporating a kiln with a preheater and calciner (PH/C). Major equipment will include:

- A materials storage building (MSB);
- A primary crusher at the quarry and belt conveyors to the MSB;
- Raw material piles stored inside of the MSB. The piles will include limestone, alumina sources (e.g. bauxite and coal ash), iron sources (e.g. mill scale and iron ore), silica sources (e.g sand), additives (e.g. feldspar);
- Materials handling equipment including portal reclaimers, stackers, belt conveyors, conveyor from the MSB to the raw mill, control system/analyzer, etc.;
- An in-line raw mill that simultaneously dries raw materials using the exhaust gas from the kiln, PH/C, and clinker cooler;
- A preheater with a staged combustion calciner and selective non-catalytic reduction system;
- An air heater for use when additional drying capacity is required;
- A nominal 10,000 ton blending silo;
- An indirect-fired kiln with a Low NO_X main kiln burner capable of burning coal, petroleum coke, fuel oil, and natural gas;
- A clinker cooler with cooling air fans, and hot air ducting to the kiln, PH/C, and raw mill;
- Clinker storage and grinding including a finish mill with air separator, clinker silos with metering device, limestone and gypsum piles and associated conveyors;
- A finish mill with air separator;
- A cement transfer and storage facility including truck loadout and packhouse; and
- A nominal 18.5 TPH coal and petroleum coke grinding system and associated mill, storage facility, conveyors, including fabric filter baghouse.

IV. CEMENT MANUFACTURING PROCESS DESCRIPTION

Some of the following description is from the Portland Cement Association and the Cement Association of Canada. The rest was developed by the Department or provided by the applicant.

A. CONCRETE AND CEMENT

Concrete is the familiar material used in construction. It is a mixture of portland cement, water and aggregates such as crushed stone, sand, and gravel. The cement and water comprise a paste that that coats the surfaces of the aggregates and then hardens by chemical reaction know as hydration to form the familiar rock-like material known as concrete. The following figure depicts the proportions of the various components of concrete. Portland cement, the key ingredient, constitutes only 11 percent (%) or so of the concrete mix.

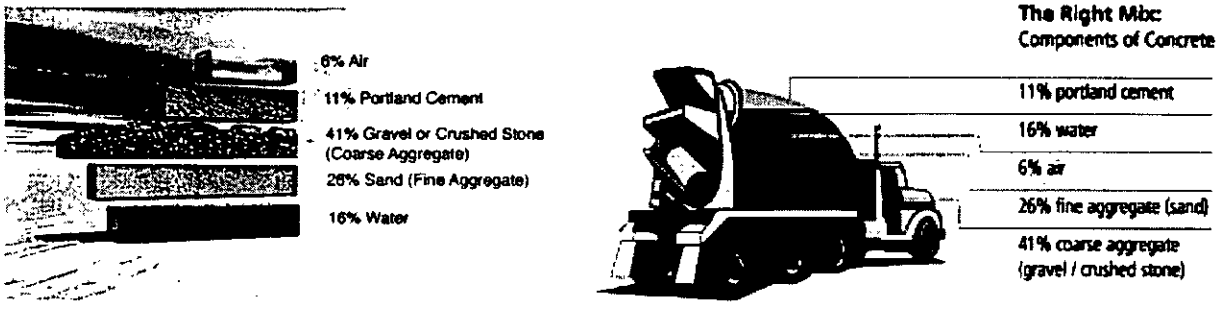


Figure 2. Components of Concrete Mix (Portland Cement Association, Cement Association of Canada)

Cement is a chemical combination of calcium, silicon, aluminum, iron and small amounts of other ingredients to which gypsum is added in the final grinding process. Lime and silica make up about 85% of the mass. Occasionally, due to fortuitous circumstances, cement can be made from a single raw material (so-called cement rock). However the most common combination of raw materials consists of limestone, clay and sand. Other possible raw materials include shells, chalk, marl, bauxite, clay, slate, blast furnace slag, iron ore, mill scale, or power plant ash.

B. HOW CEMENT IS MADE

Simply stated, the raw materials used to manufacture are cement are ground, mixed, dried, heated and then sintered in a in a rotating furnace called a kiln where temperatures reach 1500 °C (2,732 °F). The intense heat causes chemical reactions that convert the partially molten raw materials into pellets called clinker. After adding some gypsum and other key materials, the mixture is ground to the extremely fine grey powder called portland cement.

C. RAW MATERIAL QUARRYING, CRUSHING, AND RAW MATERIAL STORAGE

Limestone rock is mined at a quarry as shown below. In Florida, the top layers (overburden) are removed and the limestone is usually mined under the water line. The rock is crushed in one or two stages to the size of gravel. It is transported by conveyor to the cement plant material storage building (MSB) where it is stored with other raw materials to await further processing. Sometimes the secondary crusher, if needed, is located at the cement plant rather than at the quarry. Depending on local characteristics, the overburden is often used to provide some of the sand and clay needed in the process.

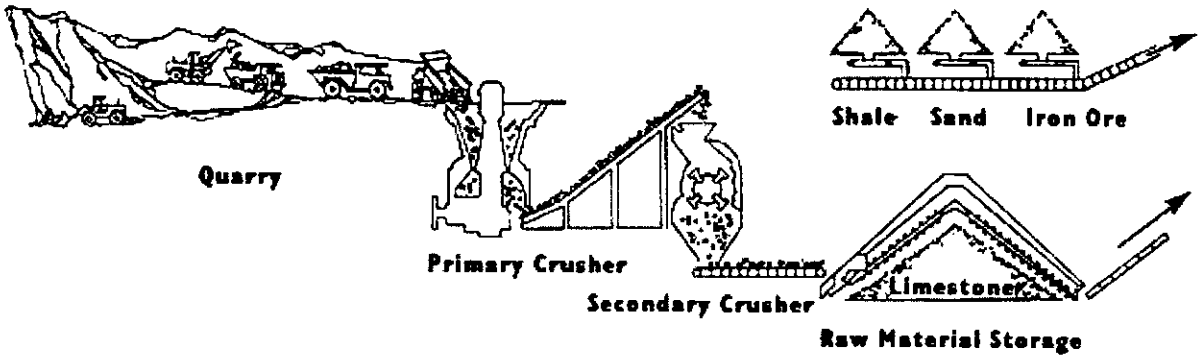


Figure 3. Diagram of Rock Quarrying, Crushing, and Storage

Raw materials will be stored in the MSB. There will be large piles each containing approximately 10,000 tons of limestone. There will be an overburden pile, an ash pile, and an iron ore/mill scale pile. The power plant ash and iron ore/mill scale will be delivered by truck.

D. Components and Key Operations of a Cement Plant

The following diagram represents the key components of a typical cement plant and steps involved in making Portland cement. Quarrying and solid fuel grinding are not shown in the figure.

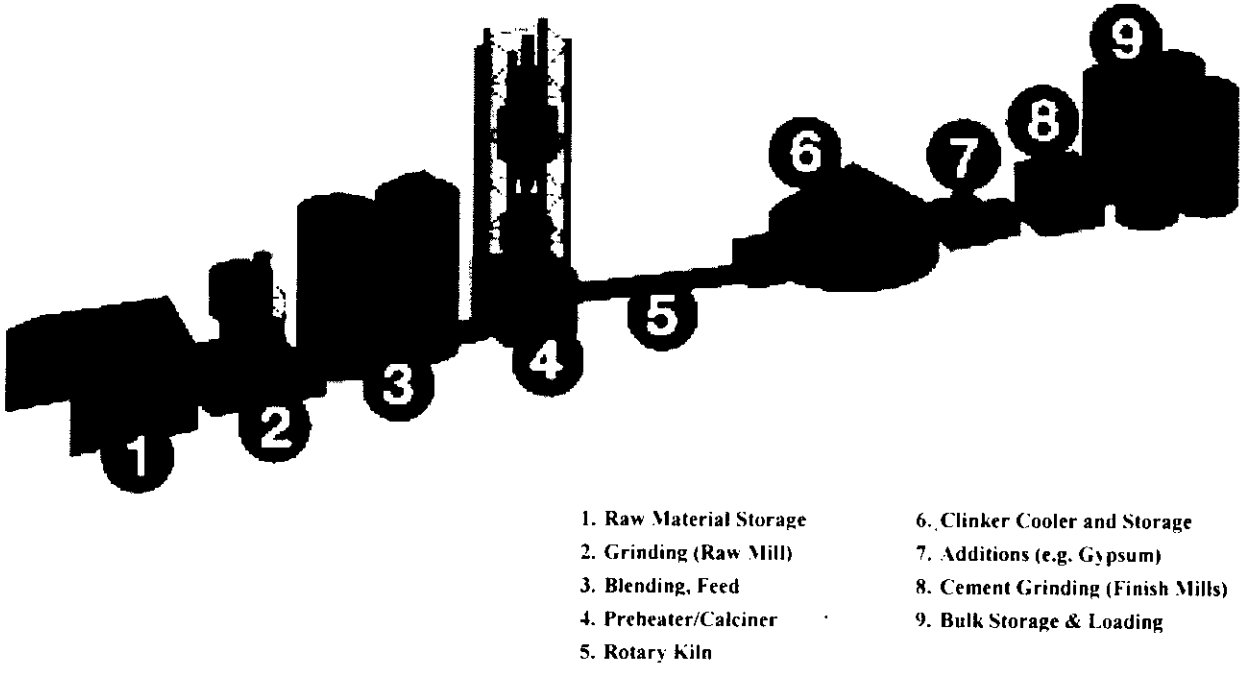


Figure 4. Components, Key Operations of a Cement Plant

An excellent virtual tour of a cement plant is available at the Portland Cement Association website: www.cement.org/basics/images/flashtour.html

The following figure includes the artist rendition (by Haskell) and a photograph of the Florida Rock Industries (FRI) Thompson S. Baker Cement Plant in Newberry Florida. The MSB is the gallery on the lower left hand side. The raw mill, preheater/calciner kiln and cooler are in the rear, left of center, of the layout. Clinker storage and finish grinding are in the middle of the layout. Bulk storage and loading are in the rear, right of center.

The photograph starts with the conveyor (left) that takes mixed raw materials to the raw mill. Referring to the previous figure, it also includes Components 3, 4, and 5 and the conveyor (right) that takes the cooled clinker to Component 6 (Clinker Storage).

Figure 5. Rendition (Haskell) and Photograph (Linero) of the FRI Cement Plant in Newberry.

E. PROPORTIONING, GRINDING, BLENDING

Stockpiled limestone, overburden, iron ore/mill scale, feldspar, and ash will be reclaimed inside the MSB by continuous pile reclaimers and loaders and then transferred to the limestone and aggregate feed bins. Based on automated chemical analyses, raw materials are proportioned and transferred together by conveyor to the grinding operation which occurs in the in-line raw mill.

Raw materials from the limestone and mineral aggregates feed bins enter the raw mill, where the material is ground to size and the moisture content is reduced. Heat for drying within the raw mill is supplied from the preheater/calciner/kiln exhaust gas and from hot air supplied from the clinker cooler. From the raw mill, the material is blown to a series of mechanical cyclones that recover most of the material. The exhaust from the cyclones passes through the main particulate matter control device (PMCD) located prior to the main stack.

The properly ground and sized raw material is pneumatically conveyed to the homogenizing silo. Baghouse dust such as from the main PMCD is added to the homogenizing silo. The material from the homogenizing silo, known as raw meal, is then conveyed to and introduced near the top of the preheater tower.

The following figure is a simplified process flow diagram of a preheater/calciner kiln that is useful for discussing the details of the proposed ACC Sumterville Cement Plant. The figure was borrowed from an excellent study (Greer 2005 for PCA) assessing how pollution control strategies for a given pollutants influence (increase or decrease) emissions of other pollutants. The mentioned study is available at: www.cement.org/pdf_files/SN2728.pdf

F. PYROPROCESSING SYSTEM

The pyroprocessing system includes the preheater, calciner, rotary kiln and clinker cooler, all of which are shown in the following diagram. An alkali bypass is shown but is not a feature of pyroprocessing at cement plants in Florida.

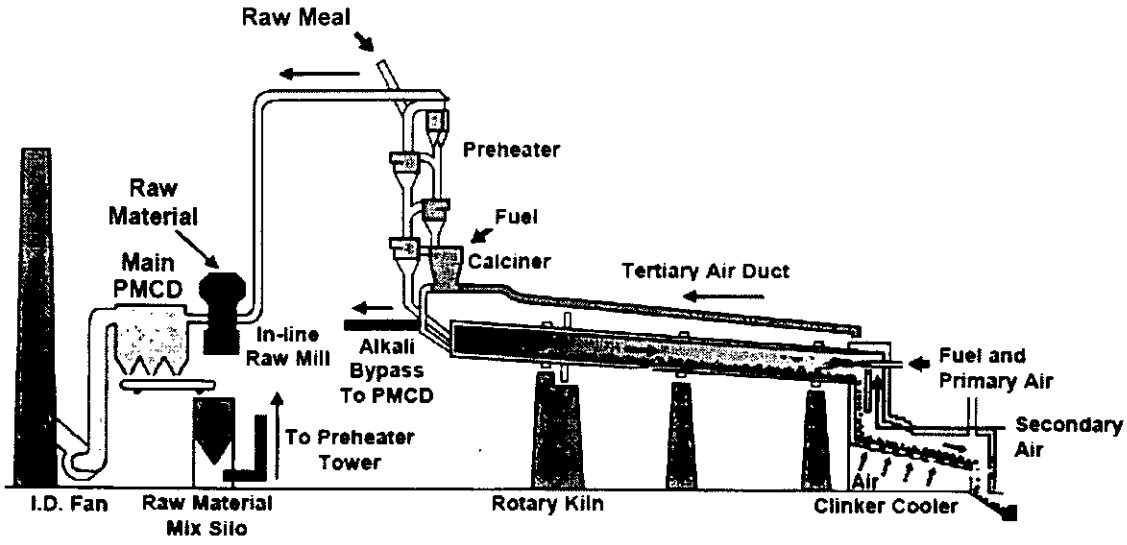


Figure 6. Process Diagram of Dry Process Preheater/Calciner Pyroprocessing System

Coal/petcoke is fed to both the medium temperature calciner burner and the high temperature kiln burner to provide heat for the process. Hot air from the kiln hood and hottest part of the clinker cooler provides secondary combustion air to the main kiln burner and tertiary air to the calciner to support calcination and to complete burnout.

The raw meal passes through the preheater/calciner/kiln system. Initially, fixed moisture is released from the raw meal by heat exchange with calciner/kiln exhaust gases. Then the raw meal is calcined (conversion of limestone fraction to lime) at approximately 870 °C (1,600 °F).

The calcined raw meal is fed at the gaseous exhaust side of the rotary kiln. The kiln is mounted on two or three piers with its axis inclined slightly downward towards the hot material discharge side. The material is heated to a temperature of approximately 1,500 °C (2,732 degrees F) in the large cylindrical steel rotary kilns. The kiln is lined with special firebrick. The gas temperature at the main kiln burner is necessarily even hotter (up to 1,870 °C or 3,400 °F) in order to impart the heat necessary to achieve the very high material temperature.

As the material moves through the kiln, certain elements are driven off in the form of gases. The remaining elements unite to form a new substance with new physical and chemical characteristics. The new substance, called clinker, is formed in pieces about the size of marbles.

Clinker is discharged red-hot from the lower end of the kiln and generally is brought down to handling temperature in a reciprocating clinker cooler. The heated air from the cooler is returned to the kiln and raw mill.

The gases from the pyroprocessing system are drawn through the induced draft fan and discharged to the main stack after passing through the main PMCD.

G. Clinker Handling, Storage, Additives Addition

The cooled clinker is transferred to one of two clinker storage silos. Each clinker silo is equipped with its own baghouse for the control of PM emissions. Additional baghouses are used for the clinker conveyance and transfer operations to and from the silos. Clinker from the silos along with some gypsum and limestone are conveyed to the finish mill.

H. Finish Mill

Clinker, with gypsum and/or limestone, enters the finish mill area where the material is interground in a large ball mill. The ground product (now cement) from the ball mills is transferred to cement separators for sizing of the product, using a high efficiency air separator and cyclones, then conveyed to storage.

Baghouses are used to control PM emissions from the finish mill and air separator.

I. Cement Storage, Loadout and Packing

The cement is directed via pneumatic conveyor to one of several cement storage silos. From the storage silos, the cement is transferred to the truck loadout or to the bagging machine. PM emissions from the cement storage silos, bagging equipment, and truck loadout areas are all controlled by baghouses.

J. Coal/Petcoke Grinding

Two solid fuels, coal and petroleum coke (petcoke) will be utilized in the new cement plant. These fuels will be delivered by truck and stored under cover in separate piles. The fuels will be reclaimed by front-end loader and sent via conveyer and bucket elevator to the coal and petcoke bins. The fuels will be conveyed and combined prior to introduction into the vertical coal/petcoke mill. The fuels are then interground and dried using hot exhaust gas from the preheater taken at the downcomer duct.

The ground coal/petcoke blend is then blown to a baghouse which acts as a product separator and exhaust. The fuel is then stored in the pulverized coal/petcoke bin from where it is fed to the main burner and the calciner burner.

V. EMISSIONS FROM CEMENT MANUFACTURING

The main pollutants emitted from cement manufacturing include nitrogen oxides (NO_X), sulfur dioxide (SO_2), carbon monoxide (CO), volatile organic compounds (VOC), and particulate matter (PM/PM_{10}). In summary (and greatly simplified), the major mechanisms for pollutant formation are summarized in Table 1.[1]

A. Control of Pollutants

At first glance, it appears that the obvious way to control pollutants is by process and combustion controls coupled with a judicious selection of fuel and raw materials. Together with this approach there are measures that minimize fuel consumption, and incorporate "smart process control systems" to optimize production, quality, and pollution control. In summary (and again greatly simplified) the most obvious control measures are listed in Table 2.

Table 1. Primary Mechanisms and Sources of Pollutant Formation.

Pollutant	Mechanism	Source
NO_X	Thermal Formation	Kiln Burner
	Fuel Nitrogen Oxidation	Kiln, Calciner
SO_2	Oxidation of Raw Material Pyrites	Upper Preheater Stages
	Fuel Sulfur Oxidation	Kiln, Calciner, Coal/Petcoke
CO & VOC	Incomplete Combustion	Calciner
	Thermal Evolution	Raw Materials
PM/PM_{10}	Crushing, Grinding, Conveyance	Crusher, Raw Mill, Coal Mill, Belts, Silos
	Pyroprocessing	Kiln, Cooler

Table 2. Primary Pollutant Control Techniques.

Pollutant	Mechanism	Control
NO_X	Thermal	Kiln Burner Design, Indirect Firing
	Thermal and Fuel	Optimum Process and Raw Mix Control
		Fuel Choice, Staged Combustion in Calciner
SO_2	Oxidation of Pyrites	Raw Materials, Moist Limestone in Raw Mill
	Fuel	Finely Divided Lime in Calciner, Alkalis in Kiln
CO, VOC	Incomplete Combustion	Hot Excess Air, Mixing, Residence Time
	Thermal Evolution	Raw Material Selection
PM/PM_{10}	Crushing/Grinding, Convey	Wet Quarrying, Process Cyclones
	Pyroprocessing	Process Cyclones

Note that the control strategies given above are greatly constrained by raw material and fuel characteristics, and availability. Such situations give rise to various add-on control equipment technologies. Again, in greatly simplified form, these are as follows:

Table 3. Add-on Pollutant Control Techniques.

Pollutant	Control
NO_X	Selective Non-Catalytic Reduction, Selective Catalytic Reduction
SO_2	Hydrated Lime, Lime Slurry, Wet or Dry Scrubbers
CO and VOC	Regenerative Thermal Oxidation (both), Carbon Absorption (for VOC)
PM/PM_{10}	Electrostatic Precipitators (ESP), Baghouse Designs

These technologies are available and each is in use in one or more cement plants in the United States or Europe. They are options to achieve further emission reductions when the constraints mentioned above cannot be resolved.

There are further constraints such as clinker specifications. This frequently results in the need to include a sulfur or alkali bypass system. The purpose is to avoid accumulation of undesired chemical species in the clinker or formation of scales and rings on internal equipment surfaces. The species thus removed cannot be returned to the process or the product and must be wasted. All of this is contradictory to the attempts at minimizing fuel and raw material use.

B. Nitrogen Oxides (NO_X) Control

Control at Main Kiln Burner. The obvious starting point to control NO_X is to avoid its' formation at the main kiln burner. The main strategy is by indirect firing. The basic principle is to minimize primary air (that carries the coal to and through the burner) and to utilize more secondary air (from the kiln hood clinker cooler) as combustion air. This practice minimizes fuel consumption and thus NO_X. All manufacturers rely largely on these principles and this is now the "baseline control".

Several burners have been described that claim additional NO_X reduction by promoting high momentum of the primary air to form an envelope "which generates localized reducing conditions and helps reduce NO_X".[2] Given the extreme temperature requirements and oxidizing condition needed to make clinker, there will always be significant NO_X formation even with indirect firing and special burners. A reasonable estimate would be 3 pounds NO_X per ton of clinker (lb/ton) formed in the kiln and another 1 lb NO_X/ton of clinker formed in the calciner for a "baseline" of 4 lb NO_X/ton prior to further control.

Staged Combustion in Calciner. Burning much of the fuel in the calciner burner instead of the main kiln burner spreads the thermal load in the pyroprocessing system. It allows a significant amount of combustion to occur at lower temperature characteristic of the calciner thus reducing the potential for thermal NO_X formation. Significant fuel NO_X formation is still possible.

Exhaust gas leaving the kiln and entering the calciner is characterized by relatively low excess air and high temperature that is less than required to sinter cement but greater than required to calcine raw meal. The presence of the calciner provides the opportunity to sequence the manner by which fuel, air and raw meal are introduced. This, in turn, provides the opportunity for destruction of thermal NO_X from the kiln and limitation of fuel NO_X formation in the calciner.

The following discussion explains the mechanism for reduction of NO_X by Staged Combustion in the Calciner (SCC).[3]

Equation 1. Calcination of limestone occurs at approximately 900 degrees Celsius (°C) and liberates carbon dioxide to produce lime according to the following endothermic reaction:

$$CaCO_3 \rightarrow CaO + CO_2$$

This reaction tends to rapidly cool the kiln exhaust gas. The additional heat supplied by the calciner burner and hot tertiary air from the kiln hood and clinker cooler sustains the reaction. Calcination tends to limit the temperature of exhaust gases in and leaving the calciner to temperatures less than 900 °C. Combustion in the calciner proceeds as follows. **Equation 2.** Fuel, such as a volatile coal, is heated and pyrolyzed releasing hydrocarbon radicals. These, in turn, catalytically react with NO to form hydrogen cyanide according to:[4]

$$CHi^* + NO \rightarrow HCN + ...$$

Where:

$i = 1, 2, 3$

Equation 3. Ammonia-like radicals are also released during pyrolysis. Under reducing conditions and in the presence of raw meal they catalytically destroy NO according to:[5]

$$NHi^* + NO \rightarrow N_2 + ...$$

This mechanism suppresses formation of NO by the pyrolyzed fuel nitrogen and employs that nitrogen to further reduce NO_X in reactions that at first glance look much like SNCR or SCR.

Other reactions involving carbon monoxide (CO) or hydrogen (H_2) are also catalytically driven and destroy NO_X in this reducing atmosphere. In the subsequent burning of soot and char, the NO_X reducing reactions proceed much more slowly and some of the remaining fuel nitrogen can still form significant amounts of additional NO_X. Following is a photograph and diagram of F.L. Smidth's SCC NO_X control strategy at a kiln in Florida.

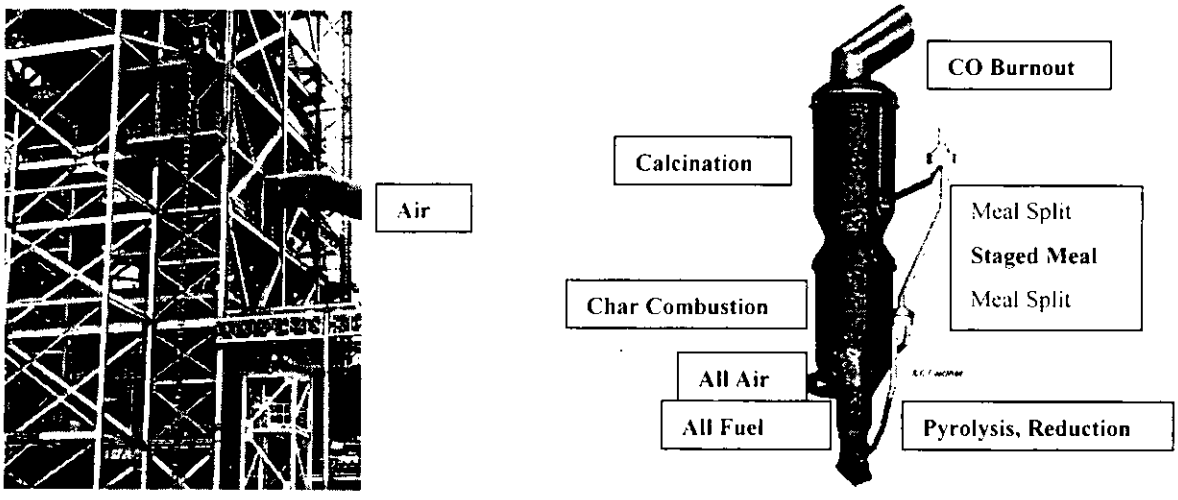


Figure 7. Titan Florida Pennsuco Cement Plant Calciner, Diagram of SCC Strategy

Combustion is supported by the oxygen in the kiln exhaust and by additional oxygen from hot "tertiary air" delivered from the clinker cooler. The degree of CO "burnout" depends upon the length and turbulence in the upper duct leaving the calciner.

The described version of SCC was demonstrated in the U.S. by 1997.[6] A value of approximately 2 pounds NO_X per ton of clinker (lb/ton) is achieved at the Titan Florida Pennsuco Cement Plant. According to one German expert, "NO_X abatement rates of up to 50 percent can generally be achieved with staged combustion. However the processes are critical with high circulating sulfur and alkali systems in conjunction with the reducing mode of operation and the operation can be seriously affected by the formation of coating".[7] There are a number of competing SCC designs with different degrees of success and outright failure.

Selective Non-Catalytic Reduction. In addition to or in lieu of SCC, Selective Non-Catalytic Reduction (SNCR) and Selective Catalytic Reduction (SCR) are available for consideration.

SNCR technology involves injection of ammonia (NH_3) at a point in the process characterized by a temperature window between 850 and 1050 °C. Residence time, turbulence, oxygen content, and a number of other factors specific to the given gas stream are also important. SNCR destroys NO_X by a two-step process as follows:

Equation 4. 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 5. Amine radicals combine with nitrogen oxides to form nitrogen and water.

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

Equation 6. 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 7. In a reducing atmosphere, CO competes with ammonia for available OH radicals

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

Per Figure 8, the necessary temperature window exists at least between the kiln inlet and the bottom cyclone of the preheater that receives the exhaust from a calciner that employs air staging. The physical extent of the window for oxidizing conditions depends on the damper positions for the tertiary air branches for the shown calciner design. In selecting a level (or levels) for ammonia injection there must be some optimization of temperature and oxygen.

Based on the foregoing, ammonia should be injected after introduction of tertiary air and preferably after completion of CO burnout. There may also be favorable injection points closer to the kiln inlet if oxidizing conditions exist in the calciner. Some of the equipment used during an SNCR demonstration at Suwannee American Cement (SAC) is shown in the Figure 9.

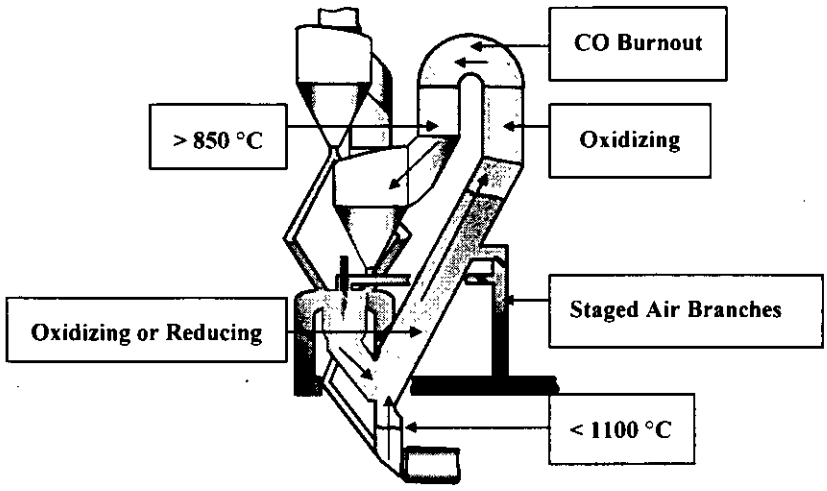


Figure 8. Temperature and Oxidizing Windows for SNCR in Staged Combustion Calciner.

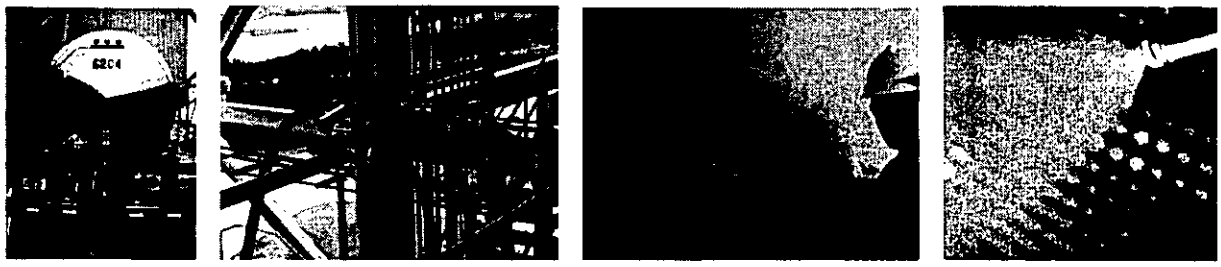


Figure 9. Aqueous Ammonia Supply Truck, Compressed Air, One of Four Ports, Injector

Not shown is the metering system or the additional continuous emission monitoring equipment. Four ports were installed after the bend in the duct work following the top air injection branch for tertiary air. This setup is relatively simple. It is noteworthy that it suffices for treatment of all of the exhaust gas from the calciner and not just a slip stream. In fact at times a single injector sufficed for adequate NO_X control.

Following experiments carried out at SAC and Florida Rock Industries (FRI), a permanent SNCR unit was installed at the existing SAC plant. The limit is 2.4 lb/ton. For reference, the tests conducted showed that it was possible to achieve emissions as low as 1 lb/ton whether or not SNCR was combined with SCC.[8]

As of 2000, there were at least 18 kilns in Europe that had installed SNCR.[9] By 2004, there were approximately 32 SNCR installations in Germany alone.[10] Most of these SNCR installations were designed and operated for NO_X reduction rates of 10 – 50 percent with NH_3 /NO_2 molar ratios of 0.5-0.9 and emissions of 500-800 mg NO_X/m^3 (~2.3 to 3.6 lb/ton). The Slite Plant in Sweden achieves 200 mg/m^3 with SNCR.[11] This equates to approximately 0.9 lb NO_X/ton and is believed to be the lowest limit in the world.

One of the arguments against SNCR is the possibility of increased opacity due to the formation of ammoniated sulfate and sulfite species in detached plumes.[12] Unreacted ammonia from the SNCR process or from raw materials reacts with SO_2 and SO_3 at temperatures prevalent in the upper preheater, pollution control equipment, and outside the stack.

Equation 8. Ammonium bisulfate is formed in accordance with the following reaction.
$NH_3 + SO_3 + H_2O \rightarrow NH_4HSO_4$

Equation 9. Ammonium sulfate is formed per the following reaction.

$2NH_3 + SO_3 + H_2O \rightarrow (NH_4)_2SO_4$

Equation 10. Finally, ammonium bisulfite is formed as follows.

$NH_3 + SO_2 + H_2O \rightarrow NH_4HSO_3$

When a PH/C kiln is operated with the raw mill on line, these compounds condense. They go back into the feed system and to the preheater, where they vaporize again. They subsequently condense again in the raw mill. When the raw mill is taken off line, the volatile salts are no longer captured in the raw mill, and go to the dust collector. Since the dust collector cannot efficiently capture these species, the plume becomes highly visible. When the raw mill is put back into operation, the plume ceases again. This cycle continues indefinitely, unless something is done to break it. [13]

If a plant has a persistent detached plume that is attributable to $(NH_4)_2SO_4$ it is necessary to get rid of one of the two reactants that ultimately form $(NH_4)_2SO_4$ - either the NH_3 or the SO_2. [14] The obvious method of avoiding the plumes when using SNCR is by minimizing ammonia use when SO_2 emissions are likely.

This phenomenon did not present itself during the Florida tests because the raw materials are low in sulfur as explained in following sections. The potential for such detached plumes was avoided at Slite in Sweden because of the presence of a large wet SO_2 scrubber capable of absorbing the ammoniated compounds.

Selective Catalytic Reduction. SCR relies on the same principle as SNCR. The reactions occur at lower temperatures and require a catalyst, typically containing vanadium, titanium, or zeolite. Based on the design of the catalyst and operating conditions, the temperature window is between 200 and 600 °C. The high portion of the SCR temperature window exists in the upper stages of the preheater, while the lower portion prevails at the preheater exit, then through the downcomer, through the gas conditioning tower and to the induced draft fan prior to the raw mill.

The only known commercial installation of SCR began operation at the Solnhofer Portland Zementwerke with financial assistance from the sponsorship of the German Federal Environmental Office. Figure 10 includes pictures from the ground up and a bird's eye view of the installation.

Early on during the commercial demonstration, the German official advised the Department, "with SCR you can meet NO_X standards of 200 mg/m^3". [15] More recently he advised the author, "the SCR in Solnhofen works in an excellent manner". [16] This conclusion is supported in a paper prepared by the German official, the equipment supplier and plant personnel. [17]

During 2003, the plant emitted less than 500 mg NO_X/m^3 on 95.6 percent of operating days. [18] More recently, however, the actual performance has been closer to 500 mg/m^3 (~ 2.3 lb/ton) which is the limit applicable to the plant. In 2004 the emissions were less than the mentioned values during 72.3% of the operating days. [19]

Despite the successful demonstration of SCR, there have been no known further installations. The most obvious reason appears to be the large footprint and capital cost in comparison with the much simpler SNCR systems. The best performance of SCR was matched by SNCR during the tests conducted in Florida and at the Slite Plant in Sweden when used in conjunction with a wet scrubber that controls SO_2.

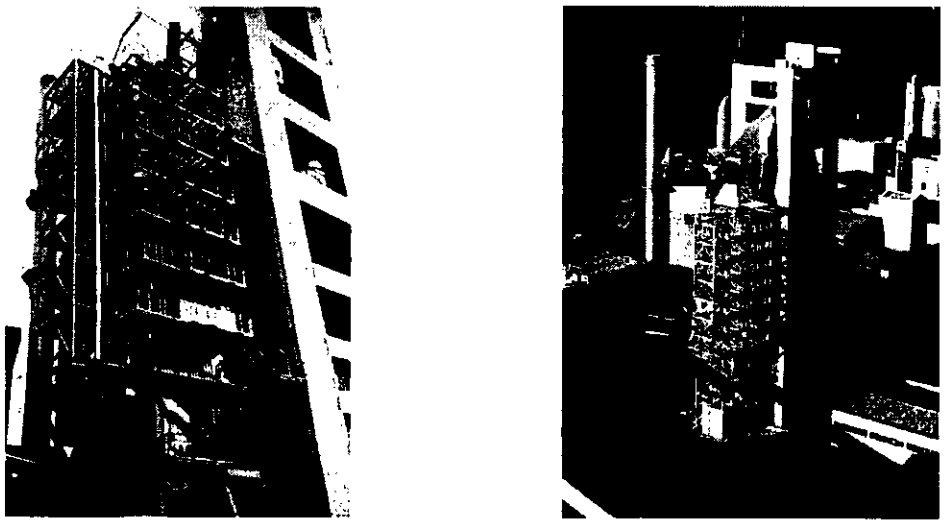


Figure 10. SCR System Adjacent to Preheater Tower, Bird's Eye View of Solnhofer Plant.

SCR is definitely favored when substantial raw material sulfur is present but no wet scrubber will be installed. In such situations, the SCR catalyst can promote the NO_X and ammonia reactions, minimize ammonia emissions (slip) and avoid a visible plume despite the presence of sulfur compounds. These conditions are not present in Florida and the Department believes either SCR or SNCR can represent Best Available Control Technology (BACT) depending on local conditions.

C. Sulfur Dioxide Control

Inherent Scrubbing of Fuel Sulfur Dioxide. Sulfur dioxide (SO_2) formed by burning fuel in the main kiln burner can be efficiently scrubbed out by reactions with alkali species (Na and K) in the kiln to form stable sulfate compounds that are incorporated into the clinker.

Equation 11. Kiln SO_2 reaching the calciner and all SO_2 from burning fuel in the calciner are completely scrubbed out at the temperatures prevailing in the calciner as follows: [20]

$$CaO + SO_2 \leftrightarrow CaSO_3 \text{ or } CaO + SO_2 + 0.5O_2 \leftrightarrow CaSO_4$$

At 1,045°C, the formation and decomposition reactions for $CaSO_4$ are at equilibrium at normal excess oxygen levels. As materials move through the high temperature regime in the kiln, the $CaSO_4$ can break down per the above reaction releasing the SO_2 or it can fuse/react with the alkali sulfates and other species to form stable compounds that depart with the clinker.

In summary, the control of fuel SO_2 is not an issue in modern kilns. Limiting fuel sulfur makes little or no difference in emissions. Generally severe operational problems such as coating formation and blockages will occur due to use of high sulfur fuels before significant SO_2 emissions occur. [21]

Control of Raw Material SO_2. Sulfide or elemental sulfur contained in raw materials may be "roasted" or oxidized to SO_2 in areas of the pyroprocessing system where sufficient oxygen is present and the material temperature is in the range of 300-600°C.[22,23] SO_2 emissions are very low at the Florida PH/C kilns because there are only minute amounts of sulfur in most of the available limestone, with the exception of random pockets in northernmost Florida.

Uncontrolled SO_2 emissions can be very significant when pyritic sulfur is present in the raw materials and much greater than the very minimal emissions caused by fuel sulfur.

Operating the raw mill promotes SO_2 removal by limestone scrubbing under humid conditions, due in part to freshly generated limestone surface produced by grinding. Some of the SO_2 generated in the top preheater stages is also scrubbed out by small amounts of free CaO that are carried back from hotter zones by combustion flue gases.

Another SO_2 removal technique is to extend the inherent self-scrubbing (by CaO) that occurs in the calciner to the upper sections of the preheater where pyrite-derived SO_2 is evolved. This involves conveyance of lime from the calciner (by differential pressure) to the upper stages of the preheater. The system consists of a cyclone and some ductwork and involves no moving parts.[24]

A very fine suspension of slaked lime can be introduced into the gas-conditioning tower to remove SO_2, particularly when the raw mill does not operate. The droplets react, dry, and are captured by the particulate control equipment where excess lime (from the dried droplets) continues to remove remaining SO_2.[25]

If the control measures mentioned above are insufficient to achieve permitted SO_2 requirements, then conventional wet or dry scrubbers can be considered. The TXI Midlothian scrubber system was estimated to cost $13,000,000. Emissions of SO_2 from the new kiln were still permitted at over 1,300 tons per year and 1.33 lb/ton of clinker.[26]

The inherently low SO_2 emissions from cement kilns in Florida do not warrant serious consideration of add-on control equipment or any of the described procedures. The exception is in the northernmost part of the state where some limestone deposits contain pyrites and SO_2 emissions are minimized by selective mining and intermittent hydrated lime injection.

D. Carbon Monoxide (CO) and Volatile Organic Compounds (VOC) Control

CO and VOC are pollutants formed by the incomplete combustion of the fuels fired during pyroprocessing or by evolution of carbonaceous or hydrocarbon fractions in raw materials (such as fly ash and mill scale) in the preheater. Emissions of CO and VOC are controlled by:

1. Relatively low carbonaceous matter and hydrocarbons in the raw materials;
2. Good combustion at the main kiln burner and calciner;
3. Addition of tertiary air from the kiln hood and clinker cooler; and
4. Varying degrees of calciner sizes and duct lengths to complete burnout.

Referring back to Figure 7, it is easy to appreciate that CO and VOC evolved by carbonaceous and oily material entering the top of the preheater will not be exposed to sufficiently high temperatures to completely oxidize these pollutants. It is also easy to appreciate that fuel in the kiln and calciner can be completely combusted given the prevailing temperature regime, turbulence, and excess air.

Both of the SCC designs in Figures 8 and 9 provide for very hot excess air from the kiln hood and clinker cooler and it is only a matter of holding the relatively high temperature over during adequate residence time to minimize CO and VOC from fuel combustion as described in Table 2.

VOC and CO from raw materials can be controlled by judicious selection of the raw materials. This is not a simple task if the origin is native limestone, clay, and sand. If the source is additives such as mill scale or coal ash (such as with high LOI), there are some options. These include accessing different mill scale sources[27] (or coal ash) or grinding and metering directly into the kiln.[28]

Extremely high levels of CO and VOC emanating from native raw materials can be controlled by a regenerative thermal oxidation system (RTO). Such a system was installed at the Holcim Dundee Michigan Plant to combat odor problems. A $17,500,000 RTO system was installed at the TXI Midlothian Plant to deal with inherently and unusually high carbonaceous matter in the limestone and to avoid PSD for both CO and VOC. The system consists of 11 RTO modules and covers an area equal to a "football field". Natural gas is used to heat the system.

One also expensive to RTO is a carbon/coke filter such as included in the Polvitec system installed at one of the Holcim Ubersiggenthal Cement Plant.[29, 30] The unit was installed in conjunction with a program to burn pelletized sewage sludge from the City of Zurich.

The native limestone in Florida does not contain high levels of carbonaceous material of oily substances such as kerogen. Therefore the control strategies consist of judicious selection of the raw materials and proper combustion in the calciner and sufficient burnout. There is no serious consideration for add-on CO and VOC control equipment.

E. PARTICULATE MATTER (PM AND PM_{10})

Particulate matter, or PM, is the term for particles found in the air, including dust, dirt, soot, smoke, and liquid droplets. PM_{10} represents particles with an aerodynamic diameter of less than 10 microns (μm) which represent the cut-off size for particles can enter into the pulmonary system. $PM_{2.5}$ represents particles less than 2.5 μm in aerodynamic diameter and considered to be "fine" particles. Because of their small size, fine particles can lodge deeply into the lungs. PM consists of all generated particulate matter and includes PM_{10} as well as $PM_{2.5}$.

PM can be directly emitted directly by fuel combustion and processes that lead to material abrasion. PM, especially the $PM_{2.5}$ fraction, can also be formed to in the cement industry can be generated by atmospheric reaction of precursors such as SO_2, NO_X, VOC and ammonia emitted from traffic, industry, fuel combustion and even agriculture. For reference, all of the precursors can be emitted from cement plants which is the reason that a complete program of PM control includes minimization of PM and its precursors.

PM is emitted from all of the operations at cement plants including quarrying, crushing, material transfer and storage, grinding and blending, pyroprocessing, finish grinding, and packaging and loading. Quarrying and crushing are not potentially large generators of dust at the proposed project site because the basic limestone is mined under the water table without the need for blasting, etc. Even after some dewatering and drying the material generally contains a large fraction of fixed moisture.

Operations between the quarry and raw material transport are less of a concern because the PM tends to be large and falls out locally. Also it is typically much like naturally occurring dust. During pyroprocessing, the character changes such that emissions include the PM2.5 precursors and the intermediate and final products such as clinker, cement, baghouse dust are alkaline and can be corrosive to human tissue.

At this facility, all dust generated in the pyroprocessing operation constitutes raw material will be returned to the process. At the most modern plants, material and emissions from the raw mill, clinker cooler, and kiln are controlled by a single very large fabric filter baghouse typically known as the main particulate matter control device (PMCD). The arrangement at the Titan Florida Pennsuco Cement Plant is shown in the first figure on the following page. The raw mill, cyclones and duct work to the Main PMCD are on the far right of the figure.

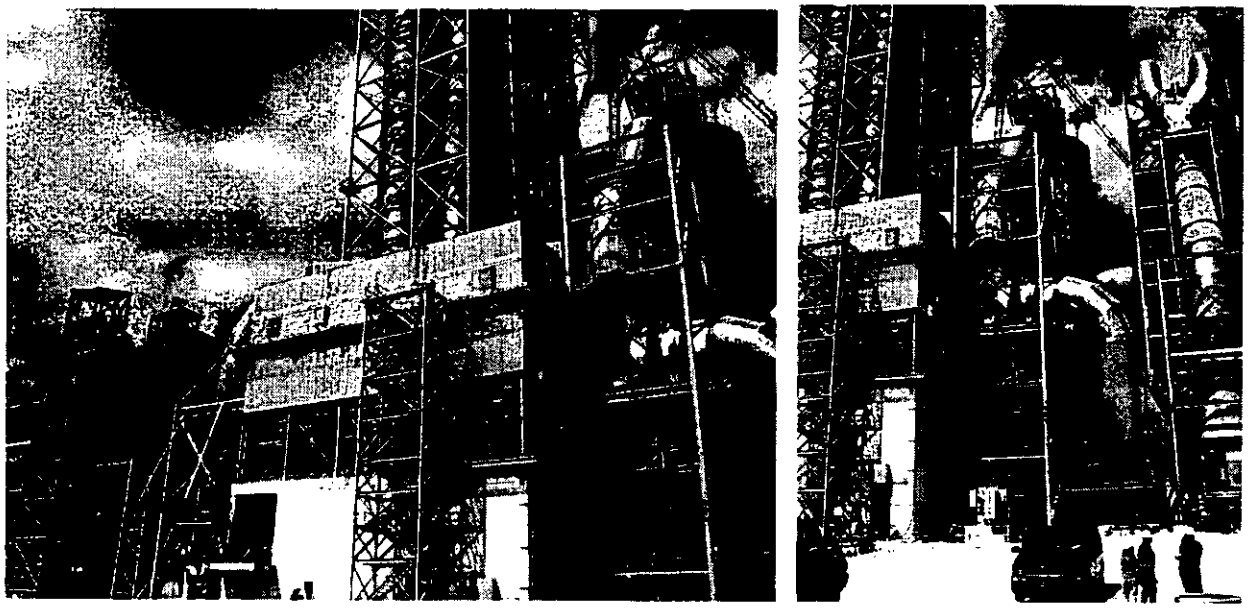


Figure 11. Titan's Main PMCD, Lower Preheater Raw Mill Cyclones to Main PMCD

Electrostatic precipitators (ESPs) are an alternative and have been used in some of the earlier projects, especially under two-stack scenarios (kiln and cooler stacks) such as in previous Figure 6. Both control strategies achieve PM control on the order of 99% or better and each has its benefits. One main benefit of a baghouse is that it is less affected by power trips. For example, ESPs are depowered whenever CO concentrations rise above a certain level and present an explosive threat.

The other key strategy towards control of PM emissions (especially $PM_{2.5}$) from pyroprocessing is the minimization of SO_2, NO_X, VOC, and ammonia (NH_3) such as from the SNCR system.

Emission control from operations after pyroprocessing is also very important because of the caustic nature of the product. However, there is every incentive to prevent these emissions as they would otherwise represent loss of valuable product. Such material transfer, grinding, storage, packing, and shipping operations are controlled by baghouses in conjunction with inertial separators, internal storage in silos, operation under negative pressure, etc.

Common controls to limit particulate emissions from fugitive sources (such as roadways, stockpiles, and material processing and conveying equipment) include application of water for dust suppression, removal of dust, application of water and other dust suppressants, paving of roads and covering of stockpiles to reduce wind erosion.

A well controlled plant usually has a "clean look" that comes from application of BACT controls from key emission units and reasonable precautions to minimize fugitive emissions. Following are some photographs from a relatively new plant.

Figure 12. Mining, Materials Delivery, Pyroprocessing Area, Product Storage/Shipping

VI. RULE APPLICABILITY

A. State Regulations

This project shall comply with all applicable provisions of the Florida Administrative Code (including applicable portions of the Code of Federal Regulations incorporated therein) and, specifically, the following Chapters and Rules:

Table 4. 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 shall comply with all applicable provisions of the following regulations:

Table 5. State Regulations Applicable to Portland Cement Plants.

40 CFR 50	National Primary and Secondary Ambient Air Quality Standards
40 CFR 51, Subpart Y	Standards of Performance for Coal Preparation Plants
40 CFR 60, Subpart A	General Provisions
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

C. PSD Applicability and Preconstruction Review

The Department regulates "major" air pollution facilities in accordance with Florida's Prevention of Significant Deterioration (PSD) program, as defined in Rule 62-212.400, F.A.C. PSD preconstruction review is required in areas that are in attainment with the state and federal Ambient Air Quality Standards (AAQS) for each regulated pollutant, or areas designated as "unclassifiable" for these pollutants. A facility is considered "major" with respect to PSD if it emits or has the potential to emit 250 or more tons per year of any regulated pollutant, or emits 100 or more tons per year of any regulated pollutant and belongs to one of 28 "PSD major facility categories", or emits 5 or more tons per year of lead.

Once a new facility is considered "major", each regulated pollutant is reviewed for PSD applicability based on the Significant Emission Rates specified in Table 62-212.400-2, F.A.C. Any pollutant emissions expected to be above the listed Significant Emission Rates are considered to be "significant" and are subject to PSD preconstruction review which includes a Best Available Control Technology (BACT) determination and ambient air quality impact analysis. A facility can be "major" for only one regulated pollutant, and still be subject to preconstruction review for several PSD-significant pollutants.

This project is located in Sumter County, which is an area presently in attainment for all criteria pollutants in accordance with Rule 62-204.360, F.A.C, therefore a PSD preconstruction review is required. Because ACC is a portland cement plant belonging to one of the 28 "PSD major facility categories" and has the potential to emit 100 tons per year of at least one of the regulated pollutants, the facility is considered "major" with respect to PSD. The following table summarizes the applicant's PSD applicability analysis based on a comparison of potential emissions of the project to the Significant Emission Rates of Table 62-212.400-2, F.A.C.

Table 6. Summary of PSD Applicability

Pollutant	PSD SER's (TPY)	Project Emissions (TPY)	Subject to PSD?
Carbon Monoxide (CO)	100	1752	Yes
Nitrogen Oxides (NO_X)	40	1068	Yes
Particulate Matter (PM/PM_{10})	25/15	190/148	Yes
Sulfur Dioxide (SO_2)	40	126	Yes
Sulfuric Acid Mist (SAM)	7	0.002	No
Volatile Organic Compounds (VOC)	40	66	Yes
Fluorides (F)	3	0.05	No
Lead (Pb)	0.6	0.4	No
Mercury (Hg)	0.1 (200 lb)	0.06 (122 lb)	No

As shown in the table, the project is subject to PSD preconstruction review for emissions of carbon monoxide (CO), nitrogen oxides (NO_X), particulate matter (PM/PM_{10}), sulfur dioxide (SO_2), and volatile organic compounds (VOC). Therefore, the applicant must provide a supporting air quality analysis and the Department must determine the (BACT) for each PSD-significant pollutant.

D. NESHAP Requirements

This facility is subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) at 40 CFR 63, Subpart LLL applicable to portland cement plants. Subpart LLL contains Maximum Achievable Control Technology (MACT) requirements for Hazardous Air Pollutants (HAPs). These include limits on PM/PM_{10}, dioxin/furan, and total hydrocarbon (THC). Recently, EPA published a Notice with a proposal to make certain changes in Subpart LLL.[31] The main change potentially applicable to kilns at greenfield plants is inclusion a hydrogen chloride (HCl) emission limit.

E. BACT Determination procedure

Best Available Control Technology is defined at Paragraph 62-210.200 (Definitions), F.A.C. as:

"Best Available Control Technology" or "BACT" - An emission limitation, including a visible emissions standard, based on the maximum degree of reduction of each pollutant emitted which the Department, on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems and techniques (including fuel cleaning or treatment or innovative fuel combustion techniques) for control of each such pollutant.

(b) If the Department determines that technological or economic limitations on the application of measurement methodology to a particular part of an emissions unit or facility would make the imposition of an emission standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirement for the application of BACT. Such standard shall, to the degree possible, set

forth the emissions reductions achievable by implementation of such design, equipment, work practice or operation.

(c) Each BACT determination shall include applicable test methods or shall provide for determining compliance with the standard(s) by means which achieve equivalent results.

Paragraph 62-212.400(6), F.A.C., describes the manner by which the Department conducts its BACT determinations as follows:

(a) BACT Determination. Following receipt of a complete application for a permit to construct an emissions unit or facility which requires a determination of Best Available Control Technology (BACT), the Department shall make a determination of Best Available Control Technology during the permitting process. In making the BACT determination, the Department shall give consideration to:

1. Any Environmental Protection Agency determination of BACT pursuant to Section 169 of the Clean Air Act, and any emission limitation contained in 40 CFR Part 60 (Standards of Performance for New Stationary Sources) or 40 CFR Part 61 (National Emission Standards for Hazardous Air Pollutants).

2. All scientific, engineering, and technical material and other information available to the Department.

3. The emission limiting standards or BACT determination of any other state.

4. The social and economic impact of the application of such technology.

For reference, the U.S. EPA requires that BACT determinations conducted by its own offices and by states delegated to conduct BACT determinations under its PSD rules at 40 CFR 52.21 must be determined using the "top-down" approach. The Department is not required to use this methodology because it has an EPA-approved State Implementation Plan (SIP) at 40 CFR 52, Subpart K that includes the BACT definition and procedure described above. However the Department's BACT definition and determination process generally achieve the same outcome and do not preclude Top/Down methodology.

Under the Top/Down approach, available control technologies are ranked in order of control effectiveness for the emissions unit under review. The most stringent alternative is evaluated first. That alternative is selected as BACT unless the alternative is found to not be achievable based on technical considerations or energy, environmental or economic impacts. If this alternative is eliminated for these reasons, the next most stringent alternative is considered. This Top/Down approach is continued until BACT is determined. In general EPA has identified five key steps in the Top/Down BACT process:

1. Identify alternative control technologies;
2. Eliminate technically infeasible options;
3. Rank remaining control technologies by control effectiveness;
4. Evaluate most effective controls; and
5. Select BACT.

A BACT determination cannot result in a selection of a control technology which would not meet any applicable emission limitation under 40 CFR Part 60 (Standards of Performance for New Stationary Sources) or 40 CFR Part 61 (National Emission Standards for Hazardous Air Pollutants). This project is subject to such standards as described above.

F. Department's BACT review

It is important to note that no NSPS or NESHAP limits were set by EPA for NO_X, SO_2, CO, or VOC. These two rules set limits on PM. The NESHAP also sets limits on total hydrocarbons (THC – similar to VOC) and on dioxin/furan.

Nitrogen Oxides. ACC proposes an emission limit of 1.95 pounds per ton of clinker (lb/ton). The "top" technology is 0.9 lb/ton and is achieved at the Heidelberger Cement Slite Plant in Sweden by use of SNCR. The plant has a large sulfur dioxide scrubber because of the high sulfur content in the raw material. The scrubber controls SO_2 and in the process absorbs excess ammonia from the SNCR system that results when such low NO_X emissions are achieved by this process.

The plant is a better reference for projects in non-attainment areas where the regulatory requirement is the Lowest Achievable Emission Rate (LAER).

Earlier in 2005, the Department issued five NO_X determinations of note. The first was a permit modification for a production increase at the existing SAC Kiln No. 1. The SAC plant relies on staged combustion in the calciner (SCC) in a reducing atmosphere and SNCR to achieve 2.4 lb NO_X/ton of clinker. This was the first project in the United States with a permanent and presently operating SNCR system designed to actually achieve low emissions.

In December 2005, the Department issued a permit to increase production from the existing Titan Florida Pennsuco Cement Plant. The limit is 2.17 lb NO_X/ton using the version of SCC with raw meal catalysis in a high temperature reducing atmosphere (see Figure 7).

The Department issued permits with BACT determinations for additional kilns at three cement plants. These include SAC, Florida Rock, and Rinker/Florida Crushed Stone. BACT was determined to be 1.95 lb NO_X/ton by a combination of Low NO_X Kiln Burner, Indirect Firing, SCC and SNCR. The different features allow each applicant to emphasize the mix that is most compatible with the details of the kiln design, raw materials, fuel, and products requirements.

The alternative of SCR was considered. However, the only example world-wide is installed at a facility where the emission limit is 2.3 lb/ton. While lower emissions are possible, it is obvious that the footprint and capital cost will be much greater than for an SNCR system. It is easier to install and derive immediate results from an SNCR system. When considering an SCR system it necessary to collect significant data through pilot plant testing after startup and prior to actual installation of the technology.

The Department has determined that 1.95 lb NO_X/ton of clinker is BACT for the ACC project and has reasonable assurance that this value can be met by a combination of SCC, SNCR, indirect firing and a Low NO_X main kiln burner. The value is the lowest issued to-date in the United States.

By comparison, a permit was issued in 2004 to Holcim for the largest cement kiln in the United States (Lee Island, Missouri). A limit of 2.4 lb NO_X/ton is required using SNCR as "Innovative Control Technology" and a number of years are provided to achieve the limit.[32]

Sulfur Dioxide. ACC proposes an emission limit of 0.23 lb SO_2/ton. This is a much lower emissions rate than achieved at most cement plants throughout the country where raw material sulfur is a large contributor to emissions. The Department considers the "top technology" to be the self scrubbing of fuel sulfur in the kiln and calciner coupled with use of raw materials that are very low in sulfur. This obviates any need to consider further add-on controls.

The commonly held perception is that wet scrubbers achieve the lowest emissions is contradicted by the fact that emission limits are usually much greater because they are only used when uncontrolled emissions are extremely high. They are typically used to achieve moderate levels of emissions. As mentioned in a previous section, even with a $13,000,000 scrubber, emissions of SO_2 from the TXI Midlothian new kiln were still permitted at over 1,300 tons per year and 1.33 lb/ton of clinker.[33]

Earlier in 2005, the Department issued three BACT SO_2 determinations. These were for the previously mentioned SAC, FRI, and Rinker projects. The determinations range from 0.20 to 0.28 lb SO_2/ton. At very low emission rates, further add-on control is not cost-effective. The Department has determined that 0.20 lb SO_2/ton is BACT for the ACC project and has reasonable assurance that this value can be met by a use of low sulfur raw materials, self scrubbing of fuel SO_2 by finely divided lime in the calciner, and incorporation into the clinker within the kiln.

Although the limit will be 0.20 lb/ton, the Department expects day-in/day-out emissions on the order of 0.01 to 0.05 lb/ton. The reader is referred to the SAC website for typical CEMS based reading at: www.suwanneecement.com Click on "Environment".

Carbon Monoxide and Volatile Organic Compounds. ACC proposes emission limits of 3.2 lb CO/ton and 0.12 lb VOC/ton. The CO proposal is relatively low, while the VOC proposal is very low and equates to about 1/3 of the applicable MACT standard for greenfield cement kilns.

The Department considers a regenerative thermal oxidizer to be the "top technology". As previously mentioned, an RTO was installed at TXI that cost $17,500,000. It was installed to avoid PSD during a plant expansion and was not a BACT determination. TXI recently applied to the Texas Environmental Quality Board to turn off the RTO system outside of the ozone season. A settlement was reached with petitioners opposed to the TXI request and requires that the RTO system be used year-round. The revised CO and THC/VOC limits at TXI are as follows:

Table 7. Agreement Regarding RTO and CO, VOC/THC Limits at TXI Midlothian Plant

ELEMENTS OF AGREEMENT			
	Existing permit	**TXI's Request**	**Agreed-upon permit**
Total Hydrocarbons	44 TPY	603 TPY	< 84 TPY
Carbon Monoxide	370 TPY	7,743 TPY	2,190 TPY
SOURCE: Mediated agreement with TXI, Blue Skies Alliance, Downwinders At Risk and 22 Midlothian residents			

According to the agreement, the effective CO limits at the TXI project will be equivalent to 1.56 lb CO/ton clinker as an annual tonnage factor (2,190 TPY) rather than a technological limit. The VOC limit (as total hydrocarbons – THC) is equivalent to 0.06 lb VOC/ton.

In contrast to the native raw materials available in parts of Michigan and Texas, the raw materials in Florida do not cause high CO or VOC formation. For example, without the RTO, emissions from the TXI plant would be over 15,000 TPY of CO and more than 1000 TPY of VOC. By contrast ACC estimates emissions of 1,752 and 66 TPY of CO and VOC respectively from the planned Sumterville project.

An RTO system at the ACC Sumterville project would be far too costly on the basis of total capital costs and cost per ton of CO removed. It is less expensive to implement controls on fuels, selection of raw material additives such as mill scale and power plant ash as well as combustion controls.

Recently, the Department issued permits for new kilns to be constructed at SAC, FRI, and Rinker/Florida Crushed Stone and for production increases at the existing kilns at SAC, FRI, and Titan Florida. The determinations have ranged from 2 to 3.6 lb CO/ton and 0.11 to 0.12 lb VOC/ton. By comparison, the recently issued permit for the largest cement kiln in the United States (Holcim Lee Island, Missouri) included BACT CO and VOC emission limits of 6.0 and 0.33 lb/ton respectively.

It has been observed that employment of SNCR for NO_X control tends to increase CO emissions. Similarly, firing petroleum coke tends to increase CO emissions in comparison to exclusive use of coal. These factors need to be considered when setting a CO emission limit. Most recently, the Department began requiring CO continuous emission monitoring systems (CEMS) whereas previously compliance was demonstrated by a single annual stack test that might be conducted during conditions least likely to cause high CO emissions. The Department has required CEMS for VOC since 2000.

One other possibility of high CO emissions is related to introduction of high carbon fly ash at the preheater feed. It will also be necessary for ACC to regularly analyze the coal ash through routine loss on ignition (LOI) testing and to minimize the oily substance content of additives such as mill scale, especially with compliance CEMS requirement for both CO and VOC.

The Department's BACT determinations for CO and VOC are 2.9 and 0.12 lb/ton, respectively and has reasonable assurance of compliance based on kiln/calciner design, characteristics of primary raw materials, and judicious selection and procurement of additives.

Particulate Matter (PM/PM_{10}). ACC proposes PM and PM_{10} emission limits of 0.18 and 0.153 lb/ton of clinker from the pyroprocessing system (kiln/in-line raw mill/cooler). ACC proposes an opacity limitation of 10% and measured by a continuous opacity monitor (COM).

Because the NSPS and NESHAP limits are expressed in terms of lb/ton of kiln feed, it is important to convert the proposed values to the kiln feed basis. It takes approximately 1.67 tons of feed to make a ton of clinker. Therefore the proposed PM/PM_{10} emissions limits are approximately 0.11 and 0.09 lb/ton of kiln (actually preheater) feed. The annual PM and PM_{10} emissions from pyroprocessing will be approximately 99 and 84 TPY respectively.

For reference the applicable NSPS and NESHAP MACT emissions limits is 0.3 lb PM/ton of feed from the kiln and 0.1 lb/ton of feed from the clinker cooler for a total of 0.4 lb PM/ton of feed. Therefore the proposed BACT values are equivalent to approximately $1/4^{th}$ of the NSPS/NESHAP limits. Similarly, there are separate NSPS/NESHAP opacity limits for the kiln and clinker cooler of 10 and 20% respectively. By complying with the more stringent 10% limit, ACC's proposal is more stringent than the NSPS/NESHAP opacity limits.

ACC proposes to meet the BACT proposal by use of a single main PMCD consisting of a large fabric filter baghouse and stack serving the kiln, in-line raw mill and clinker cooler. This configuration is similar to that shown in Figure 11 rather than the two ESP/two stack configuration shown in Figure 5. The baghouse will be designed with particulate removal efficiency on the order of 99.9%. This is sufficient to limit hourly emissions to 22.5 and 19.1 lb/hour of PM and PM_{10}.

BACT for other enclosed emission sources will be an opacity limitation of 5%. This will be achieved by baghouses designed to meet respective PM and PM_{10} emissions characteristics of 0.01 and 0.007 grains per dry standard cubic foot (gr/dscf).

Table 8. Baghouse Characteristics and PM_{10} Emissions for Enclosed Emissions Sources.

Point	Point Description	acfm	°F	Opacity	dscfm	grains/dscfm	TPY
Emissions Unit 002 - Raw Materials, Conveying, Storage, and Processing							
F03	Raw meal transfer from raw mill.	1000	200	5%	784	0.007	0.2
F10	Raw meal air lift to homogenizing silo.	1000	200	5%	784	0.007	0.2
G07	Raw meal transfer to homogenizing silo.	22000	180	5%	17796	0.007	4.7
G10	Homogenizing silo bin vent	5000	180	5%	4025	0.007	1.1
E38	Filter dust surge bin.	6000	350	5%	3834	0.007	1.0
H08	Raw meal transfer homogenizing silo.	1000	180	5%	809	0.007	0.2
Emissions Unit 004 - Clinker and Additives Storage and Handling							
L03	Clinker transfer cooler discharge.	3000	268	5%	2133	0.007	0.6
L06	Clinker transfer to clinker silo #1.	4000	268	5%	2844	0.007	0.7
L08	Clinker transfer to clinker silo #2.	4000	268	5%	2844	0.007	0.7
M08	Clinker transfer from clinker silos.	4000	250	5%	2917	0.007	0.8

Table 8 - Continued. Baghouse Characteristics, PM_{10} for Enclosed Emissions Sources.

Emissions Unit 005 – Finish Mill							
N93	Finish Mill Air Separator	153871	140	5%	132771	0.007	34.9
N94	Finish Mill	28938	215	5%	22194	0.007	5.8
Emissions Unit 006 Cement Handling, Storage, Packing, and Loadout							
N91	Cement Transfer from Finish Mill	8000	200	5%	6275	0.007	1.6
Q25	Cement Silo #1	12,000	180	5%	9707	0.007	2.6
Q26	Cement Silo #2	12,000	10	5%	9707	0.007	2.6
Q14	Truck Loadout #1	3000	180	5%	2427	0.007	0.6
Q17	Truck Loadout #2	3000	180	5%	2427	0.007	0.6
R12A	Packing Plant	12000	180	5%	9707	0.007	2.6
Emissions Unit 007 Coal and Petroleum Coke Grinding System							
S22	Coal/Petroleum Coke Mill, Thermal Dryer	9074	165	5%	7674	0.007	2.0
S26	Coal and Petroleum Coke Bin	2000	150	5%	1697	0.007	0.4

BACT for unenclosed sources is generally control of particulate matter emissions by inherent or applied moisture. Unpaved roads will be sprayed with water or dust suppressants to prevent unconfined particulate matter emissions. Material and fuel storage piles will be stored under roof or in enclosed vessels. Storage piles shall be shaped, compacted and oriented to minimize wind erosion. Storage piles shall be wetted with devices located near such piles when visual inspection determines wetting is needed. Water spray bars shall be located at each unenclosed conveyor and used for wetting of materials and fuel if inherent or previously-applied moisture is insufficient to prevent unconfined PM emissions. Paving of the manufacturing area and access roadways is required.

The primary crusher (Emission Unit 001) and associated conveyors will process wet raw materials mined below the water table. This emissions unit is subject to the following applicable requirements: NSPS Subpart A (General Provisions) and NSPS Subpart OOO (Nonmetallic Mineral Processing Plants) in 40 CFR 60.

Visible emissions from any crusher, at which a capture system is not used, shall not exceed 15% opacity. Visible emissions from any transfer point on belt conveyors or from any other affected facility shall not exceed 10% opacity.

These opacity standards do not apply to truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher. This is consistent with NSPS Subpart OOO requirements.

BACT Summary and $PM_{2.5}$ Considerations. As previously discussed, one key strategy towards control of fine PM emissions, i.e. $PM_{2.5}$ is minimization of SO_2, NO_X, VOC, and ammonia (NH_3) such as from the SNCR system. The following table is a summary of some recent permit limits for pyroprocessing from various projects in Florida and other states. In can be seen that the aggregate of $PM_{2.5}$ precursors (NO_X+SO_2+VOC+) plus PM_{10} from the ACC project is the lowest among the listed projects. The figures include combined emissions for the PH/C and the cooler.

Table 9. Emission Limits in Recent Cement Plant Permits in lb/ton of Clinker.

Plant	NO_X (lb/ton)	SO_2 (lb/ton)	CO (lb/ton)	VOC (lb/ton)	PM_{10} (lb/ton)
American Cement, Sumterville	**1.95**	**0.20**	**2.9**	**0.12**	**0.15**
Florida Rock, Newberry Kiln 2	1.95	0.28	3.6	0.12	0.28
Rinker/FCS, Brooksville Kiln 2	1.95	0.23	3.6	0.12	0.20
Suwannee American, Branford Kiln 2	1.95	0.20	2.9	0.12	0.17
Florida Rock Kiln 1 (1995)	2.8	0.28	3.6	0.12	0.47
Suwannee American Kiln 1 (1999)	2.9	0.27	3.6	0.12	0.28
Drake Cement LLC, AZ (under review)	2.3/1.1	0.06	3.6	0.12	0.21
Holcim Lee, MO (2004)	2.4	1.26	6.0	0.33	0.35
Titan Florida Medley (1999, rev. 2005)	2.17	0.50	2.0	0.14	0.10*
Holcim Holly Hill, SC (2001)	4.33	3.26	6.8	0.27	0.67*
TXI Midlothian, TX (1997, rev. 2005)	2.8	1.33	1.56	0.06	0.12*

The last three entries in the above table include some values that were pursuant to BACT and others accepted to avoid PSD and a BACT determination. The ones relating to non-BACT PM_{10} are specifically noted (*).

The proposal for Drake Cement in Arizona was included because it represents by far the most stringent emission limit for NO_X seriously proposed. The value of 2.3 lb NO_X/ton is proposed as BACT for the Drake project is not especially stringent. The additional limit of 1.14 lb NO_X/ton to be achieved by SNCR (with high NH_3 use) is proposed because of modeling constraints in the Grand Canyon National Park where visibility degradation is the overriding concern.

The Department's NO_X limit represents a compromise between low NO_X emissions and low NH_3 slip. Based on the SNCR testing conducted at SAC and FRI, it is believed that NH_3 emissions will be minimal. This will minimize the formation of ammonium nitrates in the environment. Similarly, the very low SO_2 emissions and low slip will minimize ammonium sulfate/sulfite particulate formation.

Mercury (Hg). A BACT determination was not required for Hg because emissions will be less than 200 lb/year. EPA has the authority to set Hg limits through the MACT process under Section 112 of the Clean Air Act. In its most recent rulemaking that was noticed in the Federal Register on December 2, 2005, EPA addressed the present status of Hg control at cement plants as follows:

"As directed in the court remand, we have reconsidered the issue of MACT floor standards for mercury. We still find that, for existing and new kilns, the MACT floor for mercury is no additional emissions reductions."

The applicant has proposed a limit on Hg emissions of 122 lb/yr. This is less than the de minimus value of 200 lb/yr that would otherwise require a BACT determination. The Department has required compliance demonstration with the annual limits by fuel and raw material sampling and testing. One interesting observation is that, according to operators who rely on this method of compliance, the limestone is the primary source of Hg inputs to the system and comprises about 2/3 of the total.

Following is a graphic representation of the manner by which samples of the inputs are collected by one operator in Florida who also plans to build a cement plant in Sumter County.[34]

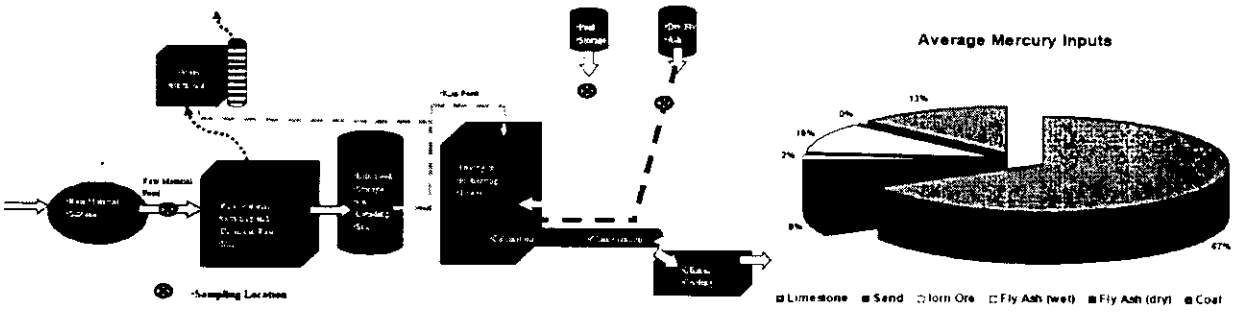


Figure 13. Hg Monitoring Sampling Locations. Sources of Hg into Cement Process.

Several samples are collected on a daily basis from all of the material inputs to the process and then made into a daily composite. The daily composites are made into monthly composites. These monthly composites are then analyzed for the mercury concentrations.

If a monthly sample is below the detection limit, the operator assumes the detection limit which overestimates the amount of Hg input. By assuming that all inputted mercury exits via the stack and no mercury exits via the clinker, conservative estimates of emissions are made that insure annual emissions will be less than the permitted Hg limit. This also insures that emissions will be less than the significant emission rate (SER) of 200 lb/yr that would otherwise require the Department to conduct a BACT determination for this pollutant.

The sum of any 12 month period of the total inputted mercury in the described manner will be less then the permitted Hg limit of 122 lb/yr. Data from existing cement plants that follow the same or similar procedures suggest that emissions will be significantly less than the limit requested. Annual compliance stack tests are the usual alternative to the testing of raw materials. However they do not reflect the full range of Hg emissions under all raw material use scenarios and all operational conditions (such as when the raw mill is on or off).

The annual Hg input proposal will be included in the permit as a limit. The fuel and raw material test method will also be included to initially demonstrate compliance in a conservative manner. Because of concerns about Hg emissions to the environment, the Department believes it is important to measure emissions accurately rather than just conservatively.

Because of concerns about Hg it is most important to obtain accurate values of Hg emissions rather than conservative ones. The Department is presently writing regulations pursuant to EPA's Clean Air Interstate Rule (CAIR) and the Clean Air Mercury Rule (CAMR). CAMR requires installation of recently developed or improved (3rd Generation) continuous emission monitoring system (CEMS) for Hg at power plants for the purpose of accurately measuring and trading Hg allowances in such a manner that total statewide Hg emissions will be reduced.

Until recently, accurate monitors were not available. In fact several systems were tested by EPA in 1996-97 at the Holcim Holly Hill Cement Plant in South Carolina.[35] According to EPA, the harshness of the cement kiln's exhaust gas stream was concluded as a major cause of the test program's lack of success. The cement kiln chosen was not equipped with acid gas controls and had relatively high PM loading, resulting in severe interferences and operational difficulties for the CEMs.[36]

The latest Hg CEMS undergoing evaluation by EPA are more accurate and precise and less susceptible to some of the interferences. Additionally, SO_2 emissions (one of the specific interfering species for certain Hg-CEMS) from cement plants in Florida are very low compared with emissions from plants in South Carolina. For example the Holly Hill Plant has a limit of 3.6 lb SO_2/ton (even greater when the tests were performed), whereas Florida plants emit less than 0.3 lb SO_2/ton and often as low as 0.01 lb SO_2/ton. The environment of cement plants in Florida is not as harsh as the Holly Hill Plant that employed a wet process and burned hazardous waste. Acid gases from the Florida cement plants are greatly limited by BACT, hazardous waste is not allowed and the PM emissions are low.

The Department concludes that the 3rd generation CEMS will be available and reasonably accurate by the time the American Cement Plant starts operation. Therefore the Department will require ACC to install a mercury CEMS during the second year of operation and about the same time that the power plants in Florida will install similar equipment. The Department notes that several citizens sent letters to the Department requesting installation of a "prototype" Hg-CEMS.[37] The Department believes that a proven model of CEMS will actually be available.

VII. AIR QUALITY ANALYSIS REVIEW

A. INTRODUCTION

The proposed project will increase emissions of five pollutants at levels in excess of PSD significant amounts: PM/PM_{10}, CO, NO_X, SO_2 and VOC. PM_{10}, SO_2 and NO_X are criteria pollutants and have national and state ambient air quality standards (AAQS), PSD increments, significant impact levels and de minimis monitoring levels defined for them. CO is a criteria pollutant and has only AAQS, significant impact levels and de minimis monitoring levels defined for it. There are no applicable PSD increments, AAQS, significant impact or de minimis monitoring levels for VOC. However, VOC is a precursor to a criteria pollutant, ozone; and any net increase of 100 tons per year of VOC requires an ambient impact analysis including the gathering of preconstruction ambient air quality data.

The air quality impact analyses required by the PSD regulations for these pollutants include:

- An analysis of existing air quality for PM_{10}, SO_2, NO_X, CO and VOC;
- A significant impact analysis for PM_{10}, SO_2, NO_X and CO;
- A PSD increment analysis for PM_{10};
- An Ambient Air Quality Standards (AAQS) analysis for PM_{10}; and
- An analysis of impacts on soils, vegetation, and visibility and growth-related air quality modeling impacts.

The analysis of existing air quality generally relies on preconstruction monitoring data collected with EPA-approved methods. The significant impact, PSD increment, and AAQS analyses depend on air quality dispersion modeling carried out in accordance with EPA guidelines. Based on the required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or significantly contribute to a violation of any AAQS or PSD increment. A discussion of the required analyses follows.

B. Analysis of Existing Air Quality in the Vicinity of the Project

Sources of Air Pollution in Sumter and Contiguous Counties

Sumter County is basically a rural county without much industry. However there is significant industry in the surrounding contiguous counties and all are characterized by significant commercial and population growth.

The following table was prepared to shed light on some of the present contributors to the pollutant loading in the general area (other than traffic). One key facility was selected from each of the contiguous counties to provide a sense of proportion to the additional emissions from the proposed project. Most of the values are taken from the permitted emission limits. However some power plant NO_X and SO_2 values (*) represent actual emissions per the "4Q2004 Reports" on the EPA Air Markets Website at: www.epa.gov/airmarkets/emissions/prelimarp/index.html

Table 10. Annual Emissions (TPY) from Some Key Sources in Contiguous Counties.

Plant	NO_X	SO_2	CO	VOC	PM
American Cement, Sumter	**1,068**	**126**	**1,752**	**66**	**148**
Crystal River Power Plant, Citrus	35,000*	94,000*			13,000
Lakeland McIntosh Power Plant, Polk	4,900*	6,900*			2,300
Rinker/Central Power & Lime, Hernando	5,277	3,420			398
Lake County RRF	870	189	141		56
Anclote Power Plant, Pasco	10,700*	33,000*			4,300
Merrilat Industries, Marion				411	

It is obvious from the above table that power plant emissions are the most important emissions in the contiguous counties. Additionally, there are very significant emissions in the more industrialized of these counties, especially Polk County. Polk County is the largest phosphate fertilizer producing area in the United States and includes numerous sources of PM and SO_2 (sulfuric acid production).

Sources in the counties surrounding the described region are also typically of the same kinds that has been described, including e.g. power plants in Orange, Osceola, Volusia, Alachua, Hillsborough, and Pinellas Counties. Similarly there are fertilizer plants, orange juice facilities, etc. Furthermore the wider swath includes the more heavily populated and fast growing cities of Tampa, Daytona St. Petersburg, Orlando. The traffic from these population centers provides the greatest contributions to VOC and CO as well as substantial emissions of NO_X.

Air Quality and Monitoring in Sumter and Adjacent Counties

The State of Florida operates a large ambient air quality monitoring network. Basically monitors are located to characterize background ambient air quality, air quality in populated areas, and air quality at areas of greatest impact from industrial activities.

The map below shows the location of the monitors nearest to the proposed project site.

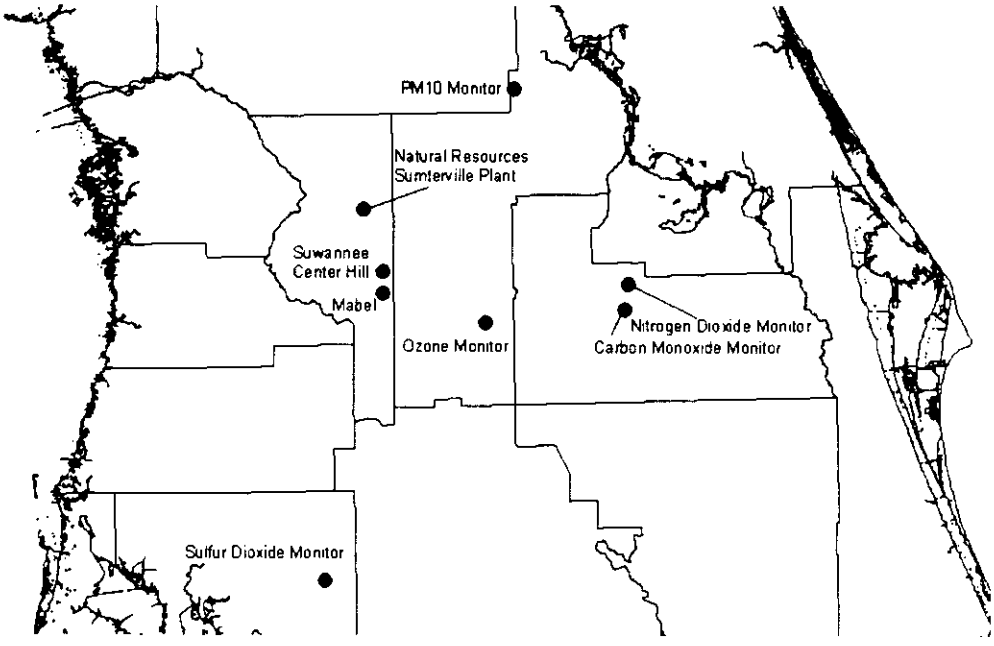


Figure 14. Monitor Locations Nearest to the Proposed ACC Sumterville Site.

The ozone monitor in Lake County is representative of the entire in-land region because ozone formation is a wide scale phenomenon. The CO and NO_X monitors reflect a combination of industrialized and populated areas. The SO_2 monitor is located at a point of maximum expected impacts from sources in the Tampa Bay area. The PM_{10} monitor is representative of rural areas.

The monitoring locations are all in attainment with the respect to the NAAQS. It is reasonable to conclude that pollutant concentrations in Sumter are also in attainment of the NAAQS. Measured ambient air quality information is summarized in the following table:

Table 11. Ambient Air Quality Nearest to Project Site (2003)

Pollutant	Location	Averaging Period	Ambient Concentration				
			High	2nd High	Mean	Standard	Units
PM_{10}	Ocala National Forest	24-hour	42	39		150 [a]	ug/m^3
		Annual			17	50 [b]	ug/m^3
SO_2	Plant City	3-hour	35	27		500 [a]	ppb
		24-hour	9	8		100[a]	ppb
		Annual			2	20 [b]	ppb
NO_2	Orlando	Annual			11	53 [b]	ppb
CO	Orlando	1-hour	3	3		35 [a]	ppm
		8-hour	2	2		9 [a]	ppm
Ozone	Clermont	1-hour	0.102	0.09		0.12 [C]	ppm
		8-hour	0.086	0.081		0.08 [C]	ppm

a - Not to be exceeded more than once per year
b - Arithmetic mean
c - Not to be exceeded on more than an average of one day per year over a three-year period

The measured values of all pollutants are all less than the respective National Ambient Air Quality Standards (NAAQS). Based on local emission trends, it is not likely that ground-level concentrations will approach the NAAQS levels. The exception is ozone because it is formed from precursors that are clearly available (NO_X and VOC). The precursors are more available during drought years. The tendency to form ozone is accentuated by hot ambient temperature, high pressure, and relatively low wind speed.

Preconstruction Ambient Monitoring Requirements

A preconstruction monitoring analysis is done for those pollutants with listed de minimis impact levels. This monitoring requirement may be satisfied by using previously existing representative monitoring data, if available. An exemption to the monitoring requirement shall be granted by rule if either of the following conditions is met:

- The maximum predicted air quality impact resulting from the projected emissions increase, as determined by air quality modeling using emissions at worst load conditions as inputs to the models, is less than a pollutant-specific de minimis ambient concentration; or
- The existing ambient concentrations are less than a pollutant-specific de minimis ambient concentration.

If preconstruction ambient monitoring is exempted, determination of background concentrations for PSD significant pollutants with established AAQS may still be necessary for use in any required AAQS analysis. These concentrations may be established from the required preconstruction ambient air quality monitoring analysis or from the existing representative monitoring data. The background ambient air quality concentrations are added to pollutant

impacts predicted by modeling and represent the air quality impacts of sources not included in the modeling.

The table below shows project air quality impacts for comparison to de minimis ambient concentrations.

Table 12. Maximum Air Quality Impacts Compared with De Minimis Impact Levels

Pollutant	Averaging Time	Max Predicted Impact (ug/m^3)	De Minimis Level (ug/m^3)	Baseline (ug/m^3)	Impact Greater Than De Minimis?
PM_{10}	24-hour	30	10	~63	YES
NO_2	Annual	0.2	14	~21	NO
SO_2	24-hour	0.4	13	~23	NO
CO	8-hour	14	575	~2300	NO

As shown in the table SO_2, NO_2 and CO impacts from the project are predicted to be less than the de minimis levels; therefore, preconstruction monitoring is not required for these pollutants. As will be shown in the significant impacts section of this evaluation, CO, SO_2 and NO_2 emissions are not predicted to have significant impacts; therefore no further modeling for these pollutants is required, and no background concentrations need to be determined.

However, the table shows that PM_{10} impacts from the project are predicted to be greater than the corresponding de minimis level. Therefore, the applicant is not exempt from preconstruction monitoring for PM_{10}. The applicant may, instead, satisfy this requirement using previously existing representative data. Previously existing representative monitoring data do exist from a PM_{10} monitor located in the adjacent county.

The data in the following table are sufficient to fulfill the monitoring requirement for this pollutant. Data from this monitor will be used as the background concentration in the PM_{10} analysis with respect to the Ambient Air Quality Standards.

Table 13. PM_{10} Monitor Data for Background Concentrations

Years	**Monitor Location**	**Concentration (ug/m^3) High, 1st high 24-hour average**	**Arithmetic Mean Concentration (ug/m^3) Annual Average**
1999 - 2003	**Lake County**	**63**	**20**

VOC emissions are predicted to be less than the de minimis emission rate that could otherwise require modeling. However, the existing ozone monitor is representative of the entire region (i.e. Sumter County and inland portions of contiguous counties). Finally, the additional loading of VOC is not enough to impact the ozone monitor reading within the two significant figures (even if it was located in Sumter County).

C. Models and Meteorological Data Used in Significant Impact, PSD Increment and AAQS Analyses

The air quality models used are those listed in the "Guideline on Air Quality Models" in Appendix W of 40 CFR Part 51.

PSD Class II Area

The EPA-approved Industrial Source Complex Short-Term (ISCST3) dispersion model was used to evaluate the pollutant emissions from the proposed project in the surrounding Class II Area. This model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area, and volume sources. It incorporates elements for plume rise, transport by the mean wind, Gaussian dispersion, and pollutant removal mechanisms such as deposition.

The ISCST3 model allows for the separation of sources, building wake downwash, and various other input/output parameters. A series of specific model features, recommended by the EPA, are referred to as the regulatory options. The applicant used the EPA recommended regulatory options. Direction-specific downwash parameters were used for all sources for which downwash was considered. The stacks associated with this project all satisfied the good engineering practice (GEP) stack height criteria.

Meteorological data used in the ISCST3 model consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from Orlando and Tampa respectively. The 5-year period of meteorological data was from 1987 through 1991. These airport stations were selected for use in the study because they are the closest primary weather stations to the study area and are most representative of the project site. The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling.

The modeling source inputs consisted of point, volume and area sources. The roadway sources, which include both paved and unpaved roads, were subdivided into volume source segments for the whole facility. The applicant supported the characterization of roads as volume sources by citing examples of guidance from various states, including Florida. The process-related fugitive sources were characterized over 20 volume sources and 8 area sources for the whole facility in the modeling inputs.

The building configuration at the plant consists of multiple building complexes and many outbuildings used for storage, maintenance, etc. The dimensions of these buildings and structures were used in the modeling to determine downwash impacts.

The applicant provided the Department with plot plans and electronic files representing the property and all sources, buildings, and fence line used in the modeling.

In reviewing this permit application, the Department has determined that the application complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in NRDC v. Thomas, 838 F. 2d 1224 (D.C. Cir. 1988). Consequently, this permit may be subject to modification should EPA revise the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators.

PSD Class I Area

The nearest distances of this site from the Chassahowitzka National Wilderness Area, Okefenokee National Wilderness Area (ONWA), St. Marks National Wilderness Area, and Bradwell Bay National Wilderness Areas are 58, 200, 239 and 270 kilometers, respectively. Since the PSD Class I areas evaluated for impacts are greater than 50 km from the proposed facility, long-range transport modeling was required for the Class I impact assessments. The California Puff (CALPUFF) dispersion model was used to evaluate the potential impact of the proposed pollutant emissions on the PSD Class I increments and the Air Quality Related Values (AQRVs), regional haze and sulfur/nitrate deposition for the Chassahowitzka.

CALPUFF is a non-steady state, Lagrangian, long-range transport model that incorporates Gaussian puff dispersion algorithms. This model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, line, area, and volume sources. The CALPUFF model has the capability to treat time-varying sources. It is also suitable for modeling domains from tens of meters to hundreds of kilometers, and has mechanisms to handle rough or complex terrain situations. Finally, the CALPUFF model is applicable for inert pollutants as well as pollutants that are subject to linear removal and chemical conversion mechanisms.

CALPUFF was run in screening mode using extended ISCST3 meteorological input data. The same five years of representative data that were used in the Class II analysis were used as input. These were hourly surface weather observations from the National Weather Service (NWS) stations at Orlando and twice-daily upper air soundings from Tampa (1987-1991).

D. SIGNIFICANT IMPACT ANALYSIS

Significant Impact Levels (SILs) are defined for PM/PM_{10}, CO, NO_X and SO_2. A significant impact analysis is performed on each of these pollutants to determine if a project can even cause an increase in ground level concentration greater than the SIL for each pollutant. In order to conduct a significant impact analysis, the applicant uses the proposed project's emissions at worst load conditions as inputs to the models. The highest predicted short-term concentrations and highest predicted annual averages predicted by this modeling are compared to the appropriate SILs for the PSD Class I (Chassahowitzka National Wildlife Refuge -CNWR) and PSD Class II Areas (everywhere except the Class I areas).

If this modeling at worst-load conditions shows ground-level increases less than the SILs, the applicant is exempted from conducting any further modeling. If the modeled concentrations from the project exceed the SILs, then additional modeling including emissions from all facilities or projects in the area (multi-source modeling) is required to determine the proposed project's impacts compared to the AAQS and PSD increment.

Modeling to determine significance in the PSD Class II area in the vicinity of the project was conducted using facility fence line receptors with 25-meter spacing and a polar receptor grid. The polar grid consisted of 15 rings centered at the Kiln and extended out to 15 km. Both the fence line and polar grid consisted of a total of 990 receptors.

The applicant's initial PM/PM_{10}, CO, NO_X, and SO_2 air quality impact analyses for this project indicated that maximum predicted impacts from all pollutants are less than the applicable SILs for the Class II area except for PM_{10}. These values are tabulated in the table below and compared with existing ambient air quality measurements from the local monitoring network.

Table 14. Maximum Projected Air Quality Impacts from Sumterville Cement Project for Comparison to the PSD Class II Significant Impact Levels

Pollutant	Averaging Time	Max Predicted Impact (ug/m^3)	Significant Impact Level (ug/m^3)	Baseline Concentrations (ug/m^3)	Ambient Air Standards (ug/m^3)	Significant Impact?
SO_2	Annual	0.02	1	~5	60	NO
	24-Hour	0.4	5	~24	260	NO
	3-Hour	2	25	~91	1300	NO
PM_{10}	Annual	5	1	~20	50	YES
	24-Hour	30	5	~63	150	YES
CO	8-Hour	14	500	~2300	10,000	NO
	1-Hour	52	2000	~3450	40,000	NO
NO_2	Annual	0.2	1	~21	100	NO

It is obvious that maximum predicted impacts from the project are much less than the respective AAQS and the baseline concentrations in the area. PM_{10} was determined to have greater than significant impacts in the Class II area.

In the Class II area, the significant impact distance is the critical distance and determines the Significant Impact Area (SIA) over which additional multi-source modeling is required. The SIA is defined as a circular area centered on the proposed source with a radius equal to the critical distance. The SIA was established for the annual and 24-hour averaging period for PM_{10} for every year of meteorological data. The SIA over which NAAQS and increment compliance modeling is performed, is the largest of these areas. The SIA based on maximum predicted ambient air concentrations of PM_{10} for all periods was 3 km with the maximum predicted impacts located along the southern facility boundary.

The nearest PSD Class I area is the CWNR located about 58 km from the project site. Maximum air quality impacts from the proposed project are summarized in the following table.

Table 15. Maximum Air Quality Impacts from the Sumterville Cement Project for Comparison to the PSD Class I SILs at CWNR

Pollutant	Averaging Time	Max. Predicted Impact at Class I Area (ug/m^3)	Class I Significant Impact Level (ug/m^3)	Significant Impact?
PM_{10}	Annual	0.01	0.2	NO
	24-hour	0.1	0.3	NO
NO_2	Annual	0.02	0.1	NO
SO_2	Annual	0.004	0.1	NO
	24-hour	0.03	0.2	NO
	3-hour	0.1	1	NO

The results of the initial PM/PM_{10}, NO_X and SO_2 air quality impact analyses for this project indicated that maximum predicted impacts from SO_2, PM_{10}, and NO_2 are less than the applicable SILs for the Class I areas. Therefore no further detailed modeling efforts are required.

It can be assumed that Class I Areas even further away (such as Everglades, Okeefenokee, and St. Marks) from the proposed project than the CWNR will experience less impacts than noted above.

E. PSD Increment Analysis

The PSD increment represents the amount that new sources in an area may increase ambient ground level concentrations of a pollutant over a baseline level set in 1977. Refined Class I and II Increment compliance modeling is performed only if the Significant Impact Analysis indicates that the project would have a significant impact on air quality. The purpose of this increment compliance modeling is to demonstrate that the new sources will not significantly cause or contribute to a violation of a PSD increment.

This modeling involved the sources under review as well as sources from within and near the SIA in the inventory prepared by the Department and the applicant using approved screening techniques for determining the sources to be included in the modeling analysis. These runs were to identify regulatory high receptors, high-first-high for each year for PM_{10} annual average, and high-second-highest over the five years for the 24-hour average.

The applicant submitted a PSD Class II increment analysis based on 25 meter receptor spacing along the fence line with receptors no further than 25 meters from either edge of road into and out of the facility. All maximum concentrations within the SIA were refined by using a 25 meter grid. The results of the PM_{10} Class II increment analysis are given below and show that the maximum predicted impacts are less than the respective allowable increments.

Table 16. PSD Class II Increment Analysis

Pollutant	Averaging Time	Maximum Predicted Impact ($\mu g/m^3$)	Impact > Allowable Increment? (Yes/No)	Allowable Increment ($\mu g/m^3$)
PM_{10}	Annual	6.1	No	17
PM_{10}	24-hr	29.5	No	30

The predicted long-term maximum annual impact is well below the allowable increment. The predicted short-term maximum 24-hour impact is just below the allowable increment, and is located on the fence line where the entrance road intersects the property line. All of the highest predicted increment impacts are along the fence line. The maximum predicted PM_{10} increment consumption values drop off rapidly with distance from the fence line.

The applicant also included point source allowable emissions from two other proposed cement facilities in Sumter County. This was voluntary and provided further conservatism in modeling this proposed project. Below is a map showing the proposed cement plants in Sumter County.

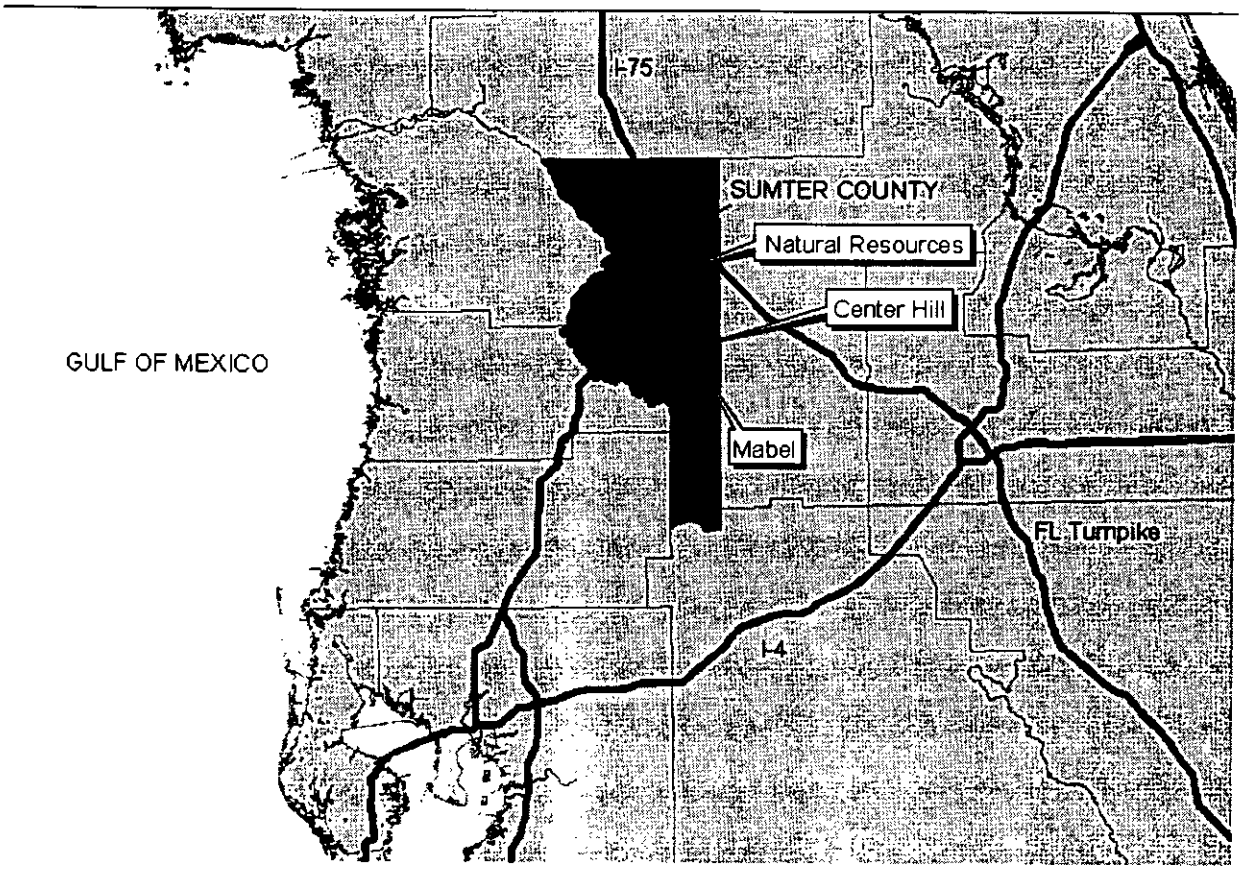


Figure 15. Locations of Proposed Cement Plants in Sumter County.

F. AMBIENT AIR QUALITY STANDARDS (AAQS) ANALYSIS

AAQS compliance modeling was performed for PM_{10} because the Significant Impact Analysis indicated that the new sources would have a significant impact on air quality. The purpose of AAQS compliance modeling is to demonstrate that the new sources will not cause or contribute to a violation of an AAQS. AAQS compliance modeling addressed all areas within the SIA. The applicant used the same methods, sources and grids that were in the Increment Analysis. The table below gives the results and shows that maximum predicted impacts are less than the AAQS.

Table 17. Ambient Air Quality Impacts

Pollutant	Averaging Time	Major Sources Impact ($\mu g/m^3$)	Background Concentration ($\mu g/m^3$)	Total Impact ($\mu g/m^3$)	Total Impact Greater than AAQS	Florida AAQS ($\mu g/m^3$)
PM_{10}	Annual	6.1	20	26	No	50
PM_{10}	24-hr	29.5	63	92.5	No	150

The AAQS Major Sources Impact is normally the High-Sixth-High over 5 years. However, in the table above, the Major Sources Impact shown is the High-Second-High.

Good Engineering Practice Stack Height Determination

A Good Engineering Practice (GEP) review was conducted for each proposed new source to determine if building downwash effects needed to be included in the modeling and to determine the appropriate stack heights to be used with the models. The new stacks will be lower than GEP height; therefore building downwash effects were included in the modeling analyses.

G. Additional Impact Analysis

Impacts on Soils, Vegetation, and Wildlife

The impacts to ambient air resulting from emissions of PM_{10} are well below the applicable National Ambient Air Quality Standards. Compliance with PSD Class II increments establishes an effective ambient air quality standard that is much more stringent than the ambient air quality standards. It is concluded that there will be no adverse effect to the soils or vegetation of the area. For the Chassahowitzka, maximum predicted impacts are less than the critical values established by the Federal Land Manager.

As part of the Additional Impact Analysis, Air Quality Related Values (AQRV) are evaluated with respect to the Class I areas. This includes the analysis of sulfur and nitrogen deposition. The CALPUFF model is also used in this analysis to produce quantitative impacts. The results of the analysis show that nitrogen and sulfur deposition rates are less than the significant impact levels (0.01 kg/ha/yr) determined by the National Park Service. According to the applicant, the maximum predicted deposition rates of sulfur and nitrogen were 0.003 and 0.009 kg/ha/yr respectively.

Impact on Visibility and Regional Haze

The applicant submitted a regional haze analysis for the CWNR. The analysis included modeling from the CALPUFF model. The CALPUFF model predicted modeled impacts well below the 5% visibility impairment based on criteria from the NPS for the proposed project.

It is equally important to put this evaluation into the context of the large scale emission reductions expected in the State of Florida as a result of the Clean Air Interstate Rule. According to EPA's projections, CAIR will help Florida sources reduce emissions of SO_2 by 308,000 tons or 65%. Substantial reductions of the $PM_{2.5}$ and ozone precursors and will occur at the power plants in the counties that are contiguous to Sumter County. EPA's assessment of benefits for the State of Florida can be reviewed at: www.epa.gov/CAIR/state/fl.html

Table 18. EPA's Projections of Power Plant SO_2 and NO_X Reductions in Florida.

Pollutant	2003	2010	2015
SO_2 Emissions	475,000	218,000	167,000
NO_X Emissions	253,000	69,000	61,000

By comparison, the emission increases expected due to new cement plants will not reverse the present and expected continuation of the trend towards less $PM_{2.5}$ and ozone precursor emissions and their impacts in the Sumter County area. In fact the reductions will ameliorate some of the past regional impacts on soils, vegetation and wildlife.

Similarly, other existing industries will be required to reduce emissions by installing "Best Available Retrofit Technology" (BART) if they have contributed to degradation of visibility. These reductions will also be very significant in comparison with the possible increases due to cement plant projects in Sumter County. Many of the affected facilities are within 100 miles of Sumter County.

For more information about CAIR and BART, consult the Department's Webpage on these topics at: www.dep.state.fl.us/air/rules.htm . The list of facilities potentially affect by BART is at: www.dep.state.fl.us/air/rules/specialprojects/cair/BART-Eligible_Source_List.pdf .

Growth-Related Impacts Due to the Proposed Project

Operation of the project will require 80-100 new permanent employees, which will cause no significant impact on the local area. Rather than causing significant growth in the area, the project is a response to very substantial growth in Sumter and the contiguous or adjacent counties. Construction of the plants will reduce the level of expected cement importation particularly from abroad.

VIII. CONCLUSION

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the Draft Permit. This determination is based on a technical review of the complete PSD application, reasonable assurances provided by the applicant, the draft determinations of Best Available Control Technology (BACT), review of the air quality impact analysis, and the conditions specified in the draft permit.

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