CEMEX Construction Materials Florida (CEMEX), LLC
Central Power & Lime (CP&L), LLC
South Brooksville Facility
Title V Air Operation Permit Revision
FINAL Permit No. 0530021-021-AV

APPLICANT

The applicants for this project are CEMEX Construction Materials Florida, LLC (CEMEX) and Central Power & Lime, LLC. The applicant's responsible officials are: James S. Daniel, Plant Manager of the CEMEX Portland Cement Manufacturing Lines, and Terry Woodard, Plant Manager of the CP &L Power Plant. The mailing address is 10311 Cement Plant Road, Brooksville, Florida 34601.

FACILITY DESCRIPTION

The facility is an integrated facility that includes two Portland cement manufacturing lines ~~plants~~, a 150 MW power plant, a coal yard and all required auxiliary equipment. The applicants operate this existing integrated site as a single Title V facility. The facility is located in Hernando County at 10311 Cement Plant Road in Brooksville, Florida.

The CEMEX plant ownership comprises both manufacturing Portland cement lines; associated raw and product material handling activities; some coal handling activities and auxiliary equipment; as well as, all of the land designated as the South Brooksville facility.

Portland Cement Line 1 includes an in-line kiln/raw mill, clinker cooler and associated process equipment. This line shares a common baghouse and stack with the power plant. Waste heat from the kiln is used to provide heat to the raw mill and the kiln preheater, which is used to drive off moisture from the materials used for making clinker. All of the materials handling activities are controlled by fabric filter baghouse control systems, except for the Clinker Receiving/Handling System and the coal yard activities. For the Clinker Receiving/Handling System, the fugitive particulate matter emissions generated from the transfer of clinker from the receiving hopper to the belt conveyor are controlled using a Johnston-Marsh or equivalent dust suppression system. Water sprays or chemical wetting agents and stabilizers will be used at the coal receiving area, the coal storage area, and the coal transfer system to control fugitive particulate matter emissions and minimize visible emissions. All fly ash handling systems (including transfer and silo storage) will be totally enclosed and vented (including pneumatic system exhaust) through fabric filters.

The new Portland Cement Line 2 includes a raw mill system, a dry process preheater/precalciner kiln system, clinker handling system, finish grinding operations, two cement loadout silos, and coal handling and grinding operations. Nitrogen oxide (NO_X) emissions are controlled by the use of Selective Non-catalytic Reduction (SNCR) technology. SO_2 emissions are controlled by use of low sulfur raw materials and inherent scrubbing by finely divided lime in the calciner and limestone in the raw mill. Carbon monoxide (CO) and volatile organic carbon (VOC) emissions are controlled by promoting complete combustion in the kiln and calciner and minimizing carbon and oily content of raw materials. Particulate matter and particulate matter less than 10 microns (PM/PM_{10}) from the pyroprocessing system and the clinker cooler are controlled by large fabric filter baghouses. Mercury emissions are controlled by material balance with a minimum of quarterly analysis of raw material samples and making and maintaining records of monthly and rolling 12-month mercury throughput. All of the materials handling activities particulate matter emissions are controlled by fabric filters. Water sprays or chemical wetting agents and stabilizers are used at the coal receiving area, the coal storage area, and the coal transfer system to control fugitive particulate matter emissions and minimize visible emissions. Continuous monitors are operated for opacity, NO_X, SO_2 and O_2.

Line 2 has a capacity of 206.3 tons per hour of material fed (dry basis) to the preheater, 125 tons per hour of clinker production, and 138 tons per hour of Portland cement production. Daily and annual rates are 1,686,300 tons per year (4,620 tons/day, 24-hour average) of material fed to the preheater (dry basis), 1,022,000 tons per year (2,800 tons/day, 24-hour average) of clinker production, and 1,301,138 tons per year (5,760 tons/day) of cement production. Fuels allowed to be used in the pyroprocessing system are natural gas, distillate fuel oil, on

specification used oil, coal, petroleum coke, propane, flyash, and tire derived fuels. Line 2 also includes a coal processing operation that crushes coal and petroleum coke and has an annual processing capacity of 165,000 tons of coal and petroleum coke. The raw material and handling storage shall not process more than 225 tons per hour of raw material (1,971,000 tons per year) in any consecutive 12-month period.

The CP& L power plant ownership comprises the power boiler, all limestone handling activities as well as some coal handling activities and auxiliary equipment. CP&L operates the power plant at the South Brooksville site under a lease agreement with CEMEX, which grants them access to the property and use of a shared baghouse and stack with CEMEX's Portland Cement Line 1.

The CP&L power boiler is rated at 1,850 MMBtu/hr (3-hour average) and is allowed to generate a net delivered 150 megawatts (MW). The primary fuel burned is coal, with new distillate No. 2 fuel oil used for startup. A dry limestone injection scrubbing system is used to control sulfur dioxide (SO_2) emissions from the power boiler; and, particulate matter is collected in the common baghouse fabric filter system that also serves Cement Line 1.

Also included in this permit are miscellaneous unregulated/insignificant emissions units and/or activities.

PROJECT DESCRIPTION

The purpose of this permitting project is to revise the existing Title V air operation permit for the incorporation of the terms and conditions established in air construction (AC) permit No. 0530021-009-AC (PSD-FL-351 issued July 6, 2005) and subsequent minor modifications issued in 2008 and 2009 (0530021-015-AC, 0530021-018-AC and 0530021-020-AC) for the new Portland Cement Line 2. This revision also incorporates modifications to Portland Cement Line 1 established in air construction permit Nos. 0530021-022-AC and 0530021-026-AC, which allowed the installation and operation of the water spray/injection system on the downcomer of the Kiln 1 preheater tower.

On August 6, 2010, EPA issued an amendment to 40 CFR 63, Subpart LLL - National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry. This amendment will reduce air emissions of mercury, total hydrocarbons, hydrochloric acid and particulate matter from both new and existing cement kilns. The standards for new kilns apply to facilities that commence construction, modification, or reconstruction after May 6, 2009. Under this rule, Lines 1 and 2 are considered existing sources. Existing kilns must comply with the new limits for existing sources three years after the final rule becomes effective, which is scheduled for November 6, 2010.

This permit revision will not change any limits or impose future new conditions related to this rule for these existing kilns; this will be done in the next permit renewal that will take place in 2011-2012.

PROCESSING SCHEDULE AND RELATED DOCUMENTS

Renewed Title V Air Operation Permit No. 0530021-011-AV effective June 27, 2006.
Revised Title V Air Operation Permit No. 0530021-013-AV effective April 13, 2009.
Application for a Title V Air Operation Permit Revision received April 30, 2009.
Additional Information Request dated June 2, 2009.
Additional Information Response received July 14, 2009.
Additional Information Request dated July 15, 2009.
Additional Information Response received November 23, 2009.
Additional Information Request dated November 23, 2009.
Additional Information Response received August 19, 2010.
Draft permit package sent on November, 3, 2011.
Draft Permit published on February 26, 2011.
Comments to the Draft permit received on March 29, 2011.
Proposed permit issued for EPA review on April 21, 2011.
Final Title V Permit Revision No. 0530021-021-AV effective day: June 14, 2011.

PRIMARY REGULATORY REQUIREMENTS

Title III: The facility is identified as a major source of hazardous air pollutants (HAP).

Title IV: The facility operates units subject to the acid rain provisions of the Clean Air Act.

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 62-213, Florida Administrative Code (F.A.C.).

PSD: The facility is a Prevention of Significant Deterioration (PSD)-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

NSPS: The facility operates units subject to the New Source Performance Standards (NSPS) of 40 Code of Federal Regulations (CFR) 60.

NESHAP: The facility operates units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) of 40 CFR 63.

CAIR: The facility is subject to the Clean Air Interstate Rule (CAIR) set forth in Rule 62-296.470, F.A.C.

Siting: Emissions unit -018 was originally certified pursuant to the power plant siting provisions of Chapter 62-17, F.A.C. (PA 82-17 and PA 82-17 A through K).

CAM: Compliance Assurance Monitoring (CAM) applies to Portland Cement Lines 1 (E.U. 020) and 2 (E.U. 044), and some of the miscellaneous process systems (E.U. Nos. 046, 047, 048, 050, 054, 057, 058 and 059) for the controlled emissions of particulate matter. The controlled emissions of sulfur dioxide and nitrogen oxides are not subject to CAM due to the use of continuous emissions monitors as the compliance determination method. E.U. Nos. 045, 051, 061 and 062 are not subject to CAM because their pre-controlled potential emissions are less than major source levels. E.U. Nos. 052 and 060 are not subject to CAM because they meet the requirements for the Part 64 exemptions as inherent process equipment.

PROJECT REVIEW

The changes shown below are made to reflect the requirements of the construction permits listed above. Changes to the permit are shown in ~~strike through~~ format for deletions and in double underline format for additions.

1. The Table of Contents is updated to reflect the addition of Subsections K., L. and M. for equipment related to the addition of Portland Cement Line 2.

2. The Referenced Attachments and Appendices were moved from the Placard page to the Table of Contents.

3. The facility description on page two of the permit is revised to reflect the addition of Portland Cement Line 2.

4. Facility-wide Condition **1.** is changed to reflect that the appendices listed in the Table of Content are enforceable parts of the permit.

> **1.** Appendices. The permittee shall comply with all documents identified in Section VI, Appendices, listed in the Table of Contents. Each document is an enforceable part of this permit unless otherwise indicated. [Rule 62-213.440, F.A.C.]. ~~APPENDIX TV-5, TITLE V CONDITIONS, is a part of this permit.~~
> ~~{Permitting Note: APPENDIX TV-5, TITLE V CONDITIONS, is distributed to the permittee only. Other persons requesting copies of these conditions shall be provided a copy when requested or otherwise appropriate.}~~

5. Facility-wide Condition **4.** is changed to reflect the new address for the Risk Management Plan Reporting Center.

RMP Reporting Center
Post Office Box 1~~515~~0162
~~Lanham-Seabrook, MD 20703-1515~~Fairfax, VA 22038
Telephone: ~~301/429-5018~~(703) 227-7650

6. To help clarify that Portland Cement Line 1 is exempted from 40 CFR Part 60, Subpart F because the facility is a major source of HAP emissions subject to 40 CFR 63, Subpart LLL, Specific Conditions **B.1.** and **F.1.** are changed as follows:

B.1. Exemption From New Source Performance Standards. ~~Except as provided in paragraphs 40 CFR 63.1356(a)(1) and (a)(2), any~~ Because Portland Cement Line 1 is an affected source subject to the provisions of 40 CFR 63, Subpart LLL, it is exempted from any otherwise applicable new source performance standard contained in 40 CFR Part 60, Subpart F.
[Rule 62-204.800, F.A.C. and 40 CFR 63.1356]

F.1 Exemption From New Source Performance Standards. ~~Except as provided in paragraphs 40 CFR 63.1356(a)(1) and (a)(2), any~~ Because Portland Cement Line 1 is an affected source subject to the provisions of 40 CFR 63, Subpart LLL, it is exempted from any otherwise applicable new source performance standard contained in 40 CFR Part 60, Subpart F.
[Rule 62-204.800, F.A.C. and 40 CFR 63.1356]

7. To reflect that Specific Condition **F.6.b.** is replaced by the requirements from permit Nos. 0530021-022-AC and 0530021-026-AC, Specific Condition **F.6.b.** is changed as follows:

F.6. Methods of Operation.

a. Fuels.

1. The only fuels allowed to be fired are coal, No. 2 distillate fuel oil, residual fuel oil, "on-specification" used oil, and tire derived fuel (TDF).
2. The maximum coal consumption in the cement kiln 1 is 10.3 tons/hour.

~~c~~3. The new No. 2 fuel oil shall be used for the cement kiln 1's startup/preheating operation.

~~3~~4. "On-specification" used oil is allowed to be fired as a blend with purchased fuel oil as a startup fuel only. The maximum on-specification used oil in the final storage tank blend of on-specification used oil and purchased oil shall not exceed 15%, by volume.

~~4~~5. The cement kiln 1's maximum utilization/firing rate of TDF shall not exceed 15.0 percent of the total Btu heat input, or 1.33 tons/hour. The TDF may be introduced at the base of the preheater (i.e., kiln I's inlet). The firing of the TDF shall not commence or be conducted unless the kiln I has reached an operating temperature, which shall be measured at the cement kiln 1's inlet, of at least 1,400^{o} F for one hour and the oxygen level in the kiln, as measured at the cement plant's induced draft fan, is at least 3 percent (1-hour average).

[Rule 62-213.410, F.A.C.; AC27-61016/PSD-FL-091; AC27-118674/PSD-FL-091A & B; and, AC27-222095/PSD-FL-091C & D]

~~b. Limitations on Operation to Minimize Dioxin/Furan Formation.~~

~~1. For kiln 1 to operate during times the power plant is not operating, the raw mill down time shall not exceed 10 consecutive hours (i.e. If the raw mill is down for 10 consecutive hours or more, the facility will cease operating kiln 1.).~~

~~2. The 10-hour limitation on the raw mill down set forth in Specific Condition **F.6.b.1.**, above, does not apply during startup of the cement plant.~~

~~3. The requirements of Specific Condition **F.6.b.1.**, above, may be amended if the permittee provides the Department with other reasonable assurances, acceptable to the Department, that dioxin/furan emission limits will be met during power plant down with the raw mill down.~~
~~[0530021-010-AC]~~

b. Reserved. This condition is replaced by condition **F.48.b**. further below listed under the title "Kiln 1 Water Injection/Spray Tower Operation Requirements". [Air Permit No. 0530021-022-AC and 0530021-026-AC]

8. To reflect the changes to Portland Cement Line 1 established in air construction Permit Nos. 0530021-022-AC and 0530021-026-AC, which authorized the installation and operation of the water spray/injection system on the downcomer of the Kiln 1 preheater tower, and to preserve the numbering of the existing conditions, a

description of the water spray/injection system and Specific Conditions **F.47. – F.60.** have been added to the end of Section III., Subsection F.

9. To incorporate all of the terms and conditions established in air construction (AC) permit No. 0530021-009-AC (PSD-FL-351 issued July 6, 2005) and subsequent minor modifications issued in 2008 and 2009 (0530021-015-AC, 0530021-018-AC (PSD-FL-351C) and 0530021-020-AC) for the new Portland Cement Line 2, Section III., Subsections K, L and M have been added to the permit.

10. To reflect the facility's choice to opt-in to the Acid Rain program on April 30, 2008 and to incorporate the requirements for the Clean Air Interstate Rule (CAIR) that were implemented with permit No. 0530021-013-AV (effective April 13, 2009), Section IV. Acid Rain Part and Section V. CAIR Part, have been added to the permit.

11. Appendix CAM is updated to include Compliance Assurance Monitoring requirements for Emissions Unit Nos. 044, 046, 047, 048, 050, 054, 057, 058 and 059. Specific Conditions **F.61.**, **K.29.** and **L.15.** were added to the permit to clarify that the units are subject to the requirements in the attached Appendix CAM.

CONCLUSION

This project revises Title V air operation permit No. 0530021-011-AV, which was effective on June 27, 2006. This Title V air operation permit revision is issued under the provisions of Chapter 403, Florida Statues (F.S.), and Chapters 62-4, 62-210, 62-213 and 62-214, F.A.C.