TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

CEMEX Construction Materials Florida, LLC
10311 Cement Plant Road
Brooksville, Florida 32669

Brooksville South Cement Plant
Facility ID No. 0530021

PROJECT

Project No. 0530021-038-AC
Application for Air Construction Permit Revision
Cement Line 2, Emissions Units 044
Revision of Alternative Fuels Trial

COUNTY

Hernando County, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resource Management
Office of Permitting and Compliance
2600 Blair Stone Road, MS#5505
Tallahassee, Florida 32399-2400

January 12, 2012

1. GENERAL PROJECT INFORMATION

Air Pollution Regulations

Projects at stationary sources with the potential to emit air pollution are subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The statutes authorize the Department of Environmental Protection (Department) to establish regulations regarding air quality as part of the Florida Administrative Code (F.A.C.), which includes the following applicable chapters: 62-4 (Permits); 62-204 (Air Pollution Control – General Provisions); 62-210 (Stationary Sources – General Requirements); 62-212 (Stationary Sources – Preconstruction Review); 62-213 (Operation Permits for Major Sources of Air Pollution); 62-296 (Stationary Sources - Emission Standards); and 62-297 (Stationary Sources – Emissions Monitoring). Specifically, air construction permits are required pursuant to Rules 62-4, 62-210 and 62-212, F.A.C.

In addition, the U. S. Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 specifies New Source Performance Standards (NSPS) for numerous industrial categories. Part 61 specifies National Emission Standards for Hazardous Air Pollutants (NESHAP) based on specific pollutants. Part 63 specifies NESHAP based on the Maximum Achievable Control Technology (MACT) for numerous industrial categories. The Department adopts these federal regulations on a quarterly basis in Rule 62-204.800, F.A.C.

Facility Description and Location

The existing facility is an integrated facility that includes two Portland cement manufacturing lines, a 150 MW power plant, a coal yard and all required auxiliary equipment. The CEMEX plant ownership comprises both Portland cement manufacturing 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 Brooksville South facility. The CP& L power plant ownership comprises the 150 MW coal power boiler; all limestone handling activities; as well as, some coal handling activities and auxiliary equipment. CP&L operates the power plant at the Brooksville South 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 draft permit for the CP&L power plant to separate from CEMEX, with a plan to construct a separate stack, was issued on December 16, 2011. This site is in an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to state and federal Ambient Air Quality Standards (AAQS).

Facility Regulatory Categories

- The facility is a major source of hazardous air pollutants (HAP).
- The facility does not operate units subject to the acid rain provisions of the Clean Air Act.
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Project Description

Permit No. 0530021-035-AC authorized temporary short-term trials to co-fire coal with each of the following alternative fuel materials in the existing cement kiln to gather operational and emissions data: non-chlorinated plastics, tire-derived fuel including tire fluff, reject roofing shingles, clean woody biomass, agricultural fibrous organic byproducts, pre-consumer reject paper, carpet-derived fuel, on-specification (on-spec) used fuel oil generated off-site and engineered fuel to determine the operational viability of each fuel, the impacts on emissions and the effect on cement quality. This project is to revise the description of the Schenk Feeder System with the option of a baghouse and increase the trial amount of tire-derived fuel by an additional 3,000 tons for a total of 7,500 tons.

2. PSD APPLICABILITY

General PSD Applicability

For areas currently in attainment with the state and federal AAQS or areas otherwise designated as unclassifiable, the Department regulates major stationary sources of air pollution in accordance with Florida's PSD preconstruction review program as defined in Rule 62-212.400, F.A.C. Under preconstruction review, the Department first must determine if a project is subject to the PSD requirements ("PSD applicability review") and, if so, must conduct a PSD preconstruction review. A PSD applicability review is required for projects at new and existing major stationary sources. In addition, proposed projects at existing minor sources are subject to a PSD applicability review to determine whether potential emissions *from the proposed project itself* will exceed the PSD major stationary source thresholds. A facility is considered a major stationary source with respect to PSD if it emits or has the potential to emit:

- 5 tons per year or more of lead;
- 250 tons per year or more of any regulated air pollutant; or
- 100 tons per year or more of any regulated air pollutant and the facility belongs to one of the following 28 PSD-major facility categories: fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), Kraft pulp mills, portland cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants, primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production plants, chemical process plants, fossil fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input, petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels, taconite ore processing plants, glass fiber processing plants and charcoal production plants.

Once it is determined that a project is subject to PSD preconstruction review, the project emissions are compared to the "significant emission rates" defined in Rule 62-210.200, F.A.C. for the following pollutants: carbon monoxide (CO); nitrogen oxides (NO_X); sulfur dioxide (SO_2); particulate matter (PM); particulate matter with a mean particle diameter of 10 microns or less (PM_{10}); volatile organic compounds (VOC); lead (Pb); fluorides (F); sulfuric acid mist (SAM); hydrogen sulfide (H_2S); total reduced sulfur (TRS), including H_2S; reduced sulfur compounds, including H_2S; municipal waste combustor organics measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans; municipal waste combustor metals measured as particulate matter; municipal waste combustor acid gases measured as SO_2 and hydrogen chloride (HCl); municipal solid waste landfills emissions measured as non-methane organic compounds (NMOC); and mercury (Hg). In addition, significant emissions rate also means any emissions rate or any net emissions increase associated with a major stationary source or major modification which would construct within 10 kilometers of a Class I area and have an impact on such area equal to or greater than 1 $\mu g/m^3$, 24-hour average.

If the potential emission exceeds the defined significant emissions rate of a PSD pollutant, the project is considered "significant" for the pollutant and the applicant must employ the Best Available Control Technology (BACT) to minimize the emissions and evaluate the air quality impacts. Although a facility or project may be *major* with respect to PSD for only one regulated pollutant, it may be required to install BACT controls for several "significant" regulated pollutants.

The purpose of the project is to revise the Schenk feeder system description and increase the tonnage of tire-derived fuel fired during the trial burn. The project will result in a minimal increase in emissions and does not trigger PSD preconstruction review.

3. DEPARTMENT REVIEW

The calculated particulate emissions from the feeder with the baghouse are less than 1 ton per year, this is a conservative estimate based upon the control guarantee from the manufacturer for dry material. The particulate matter emissions, without the baghouse, from all fugitive emissions are calculated as 1.7 tons per year. The addition of a baghouse decreases those particulate matter emissions. The fugitive emissions from the handling and injection system are negligible as the materials all have moistures above 1.5 percent, this is considered "wet" in AP-42 11.19.2-5 (Air Pollutant Emission Factors). The material is enclosed at all points except for the point of transfer from the truck to the hopper of the Schenk feeder system. The pre emissions are estimated at a transfer point with wet material at a nominal rate of 15 ton/hr. Using AP-42, at the transfer point (controlled) it is 0.00014 lb/ton x 15 ton/hr x 8760 hr/yr = 18 lb/yr.

The additional 3,000 tons of tire-derived fuel to the permitted 4,500 tons of tire-derived fuel increase the emissions as follows.

Table A. Tire-Derived Fuel Trial Emissions

	SO_2 Inc./Dec.	NO_x Inc./Dec.	CO Inc./Dec.	VOC Inc./Dec.	PM/PM10 Inc./Dec.	PM2.5* Inc./Dec.	Pb Inc./Dec.	Hg Inc./Dec.
	(tons)	(tons)	(tons)	(tons)	(tons)	(tons)	(lbs)	(lbs)
4,500 tons Tire Derived Fuel	-0.08	-3.9	22.8	-0.08	-0.24	-0.12	-0.74	-5.8
3,000 tons Tire Derived Fuel	-0.05	-2.6	15.3	-0.05	-0.16	-0.08	-0.50	-3.9
Total 7,500 tons Tire Derived Fuel	**-0.13**	**-6.5**	**38.1**	**-0.13**	**-0.40**	**-0.20**	**-1.2**	**-9.7**
PSD Threshold	40	40	100	40	25/15	10	1200	permit: 122 lb/yr

* PM2.5 from alternative fuel firing conservatively estimated at 50% of fraction of PM.

4. PRELIMINARY DETERMINATION

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 final permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the final permit. No air quality modeling analysis is required because the project does not result in a significant increase in emissions. Christy DeVore is the project engineer responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the project engineer at the Department's Division of Air Resource Management, Office of Permitting and Compliance at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.