

**COMMONWEALTH OF PENNSYLVANIA**

Department of Environmental Protection

May 20, 2008

814/332-6940

Fax: 814/332-6117

**SUBJECT:** Review of Application for Minor Operating Permit Modification  
AUTH ID #718103; PF ID#246188  
CEMEX Inc.  
Wampum Borough, Lawrence County

**TO:** AQ/Facilities/FACOP/ TV-37-00013

**FROM:** Matthew Williams *MW*  
Facilities Permitting Chief  
Air Quality Program - Northwest Region

**THROUGH:** John F. Guth *JFG*  
Air Quality Program Manager  
Northwest Region

The subject application is for a minor modification to the Title V Operating Permit to incorporate the use of a non-hazardous engineered fuel (NHEF) made by Vexor in limited quantities in the 3 cement kilns (Sources 226, 227, and 228).

**Background**

The facility submitted a Request for Determination (RFD) for the use of Vexor non-hazardous engineered fuel to the Department on February 13, 2007. The Department conditionally approved the RFD on March 5, 2007. The conditions included submitting a protocol for performing a trial burn of the NHEF, notification two weeks prior to testing, performing testing, submitting the results, and maintaining records of the fuel analysis. The testing was to be conducted on kiln #2 for no more than two weeks in duration. On March 19, 2007, the Department received a letter from the facility requesting testing on kiln #3 rather than #2 because the pipe to feed the material was already existing for kiln #3. In addition the facility requested the condition for two week duration be changed to a maximum run time of 336 hours to cover any unforeseen problems that might delay the trial. The Department agreed to the request in the letter dated April 12, 2007.

The Department received the protocol for the trial burn on April 4, 2007. On June 21, 2007, the Department received an email that provided notification of the testing proposed for July 11-12, 2007 at the facility. The facility performed testing of the NHEF in kiln #3 on July 11-12, 2007. Records of the coal and NHEF as well as the control monitoring parameters were also provided during the testing (primary / secondary current and voltage and spark rate). The information was also provided prior to the test burn so that a comparison could be made with the baseline and the addition of NHEF. The maximum rate of NHEF was 3.6 tons per hour during the testing. Testing was done in accordance with

the requirements of the trial burn letter. The results were received by the Department on August 16, 2007. The testing was approved by the Department on February 21, 2008.

The purpose of the trial burn was to determine if any emission increases would occur when using NHEF. Testing was conducted for VOC, and particulate matter (Method 5 for PM, Methods 201A and 202 for PM-10 and condensable PM, respectively). CEM data was used for the same time frame for NOx and SO2 emissions. The emissions of these pollutants were compared to the baseline level (average of the previous two years [2006-2007]). The analysis indicated decreases in NOx, PM and SO2 emissions. There was a slight increase in VOC emissions.

During the test, an emission rate of 0.19 lbs VOC per ton of kiln feed emission rate was established. Previous stack testing from November 2005 was used to establish the baseline emission rate (0.184 lbs VOC per ton of kiln feed). Based on the average annual feed rate for 2006-2007 of 1,130,765 tons, the VOC emission rate for the baseline averaged 104 tons. The annual feed rate will not be affected by the addition of the NHEF, and therefore, the same feed rate was used to calculate the yearly VOC emission rate with the use of NHEF. The resulting increase in VOC emissions was approximately 3.4 tons per year for the total feed rate from the facility, or 1.1 tons per year from each kiln.

The facility submitted a subsequent RFD for the permanent use of NHEF based on the emissions from testing and the analysis comparing the baseline for the emissions to the emissions firing the NHEF. A plan approval was not required based on exemption #31 of 25 Pa. Code Section 127.14(a)(8) because the increase in VOC emissions was less than 2.7 TPY for each source. The facility was however required to submit a minor operating permit modification for the use of the NHEF.

### **Minor Operating Permit Modification**

The facility is currently permitted to burn biomass, clinker, coal, #2 fuel oil, and spent activated carbon. An alternative fuel is being added to be used in the cement kilns. The NHEF is introduced into the system through the existing slag system. A storage unit will be added for the fuel on the kiln burner floor. A short conveyor or pipe transfers the material from the storage unit to the front of the kilns. The new equipment is located inside the process building.

The application for the minor operating permit modification indicated the facility proposed throughput restrictions, testing requirements, monitoring requirements, and recordkeeping requirements. The monitoring and recordkeeping from the original trial burn approval have been included with the modification. The following conditions have been added to the operating permit in the Group Level to address the necessary restrictions and requirements:

#### **Throughput Restriction**

- a. The facility is authorized to use non-hazardous engineered fuels (manufactured by Vexor) as a fuel for Sources 226, 227, and 228. All engineered fuel is to be certified as non-hazardous material prior to use in the kilns and shall meet the characteristics approved in the Request for Determination of March 5, 2007.

- b. The use of engineered fuel as a fuel for these sources shall be limited to 3.6 tons per hour per kiln based on a daily average (24 hours).

#### Testing Requirements

- a. All engineered fuel used as a fuel for the cement kilns (Sources 226, 227, and 228) shall be certified as non-hazardous prior to use.
- b. Samples of each shipment of non-hazardous engineered fuels shall be analyzed for the following criteria prior to receipt by the facility.
  - i. Arsenic
  - ii. Barium
  - iii. Beryllium
  - iv. Cadmium
  - v. Chromium
  - vi. Copper
  - vii. Lead
  - viii. Mercury
  - ix. Nickel
  - x. Reactive Cyanide
  - xi. Reactive Sulfide
  - xii. Selenium
  - xiii. Silver
  - xiv. BTU content
  - xv. pH
  - xvi. Sulfur, Total
  - xvii. Total halogens

#### Monitoring Requirements

- a. The permittee shall monitor the amount of non-hazardous engineered fuels burned in each kiln as fuel on an hourly basis (tons per hour).

#### Recordkeeping Requirements

- a. The permittee shall maintain records of the amount of non-hazardous engineered fuels used in each kiln.
- b. The permittee shall keep records of the fuel sampling analysis for each shipment of non-hazardous engineered fuel.

#### **Additional Comments**

The permit contained some minor typographical errors in Group 2 that were corrected in this modification. The corrections were as follows: Condition #008 (dried instead of died), Condition #015 (amount instead of amont), and #023 (dried instead of dired).

#### **Public Notification and Recommendation**

The facility published the Notice of the Minor Title V Operating Permit Modification in The New Castle News on April 29, 2008. Also in accordance with 25 Pa Code §127.462 the facility submitted copies of

37-00  
Date:

the application and Notice to the municipal officials, the USEPA, and the State of New York. The Notice indicated that a person may comment to the Department or the facility concerning the proposed change within 21 days from the date of submission of the proposed minor permit modification to the Department and the EPA. No comments were received. A draft of the revised Operating Permit was electronically submitted to Ms. Melanie Lloyd from the facility on May 14, 2008 requesting comments by May 21, 2008. The facility emailed one comment regarding the fuel analysis requesting flexibility to have the analysis done on site or by Vexor. In either case, the facility must keep the records of the analysis. The following condition was added to the permit:

“The fuel analysis shall be conducted on site by the permittee or shall be conducted by the supplier (Vexor). The records of the analysis shall be kept at the facility by the permittee.”

The facility had no additional comments.

Issuance of the Minor Operating Permit Modification is recommended with the appropriate conditions in the permit.

cc: Lori McNabb, New Castle District Office – Air Quality