



# Florida Department of Environmental Protection

Bob Martinez Center  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Charlie Crist  
Governor

Jeff Kottkamp  
Lt. Governor

Michael W. Sole  
Secretary

March 23, 2007

ELECTRONIC MAIL - RECEIVED RECEIPT REQUESTED

B. G. Sammons, General Manager  
Smurfit-Stone Container Enterprises, Inc  
One Everitt Avenue  
Panama City, Florida 32402

Re: **Request for Additional Information**  
Project No. 0590005-028-AC (PSD-FL-388)  
Petcoke Firing in Lime Kiln

Dear Mr. Sammons:

On February 23, 2007, the Department received your application and sufficient fee for an air construction permit to allow petcoke firing in the lime kiln at the Smurfit-Stone Panama City Mill. The application is incomplete. In order to continue processing your application, the Department will need the additional information requested below. Should your response to any of the items below require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

#### **Alternate Fuel Blends – Petroleum Coke and Natural Gas or Fuel Oil**

1. The application requests authorization to fire up to 90% petroleum coke with a maximum sulfur content of 7% as a substitute for fuel oil and natural gas. Please provide the “as-fired” specifications for petcoke including the ultimate and proximate analyses as well as metal concentrations.

#### **NO<sub>x</sub> Controls**

The application indicates that firing petcoke will result in an annual NO<sub>x</sub> emissions increase of 185 tons per year.

2. The vendor estimated NO<sub>x</sub> emissions for a blend of 80% petroleum coke / 20% natural gas at 105 – 125 ppm. Please provide data to support the vendor estimate, such as actual stack test data for the burners firing petcoke blends.
3. The vendor estimated NO<sub>x</sub> emissions for a blend of 80% petroleum coke / 20% oil at 165 – 185 ppm. Please provide data to support the vendor estimate, such as actual stack test data for the burners firing petcoke blends. The Department is aware of a report by Arcadis<sup>1</sup> stating, “For example, in the kiln, natural gas combustion with a high flame temperature and low fuel nitrogen generates a larger quantity of NO<sub>x</sub> than does oil or coal, which have higher fuel nitrogen but which burn with lower flame temperatures.” If this is true, then it would appear that NO<sub>x</sub> emissions would decrease with the use of oil. Please comment.
4. The PSD report indicates that the exhaust from the lime kiln is between 1600° F and 2700° F, which may provide a reasonable temperature window for SNCR (1600° F to 2000° F). However, the application states that load fluctuations and difficulties in maintaining the proper temperature window would preclude using a SNCR system for control of NO<sub>x</sub> emissions.
  - a. Please explain why there is such a wide variation in loads for the lime kiln as suggested in the application. Describe the lime kiln operation and document the magnitude and frequency of the load fluctuations by providing hourly production rates for 2006.

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<sup>1</sup> “Environmental Considerations and Permitting, Use of Petroleum Coke as Supplemental Fuel in Lime Kilns”, Arcadis report prepared for DTE Energy Services, December 2003

## Request for Additional Information

- b. The Department has discussed load variations with Fuel-Tech, an SNCR vendor. From these discussions, it appears that load fluctuations are simply another design consideration. In addition, new cement kilns are being permitted with SNCR systems that do not involve a complicated injection grid for ammonia or urea. Please provide data on the lime kiln exhaust temperature downstream of the lime kiln and upstream of the venturi scrubber. Provide dimensions and/or drawings of the exhaust duct from the lime kiln through the venturi scrubber. Indicate if any obstructions exist that would prohibit modifications to the existing duct to accommodate ammonia injection. Please provide a vendor quotation for an SNCR system.
5. Please submit the 2006 NO<sub>x</sub> emissions stack test report, including emissions data, operating conditions, etc.

### SO<sub>2</sub> Controls

6. The application estimates 80% SO<sub>2</sub> reduction in the lime kiln and 90% reduction in the wet scrubber for an overall reduction of approximately 98%. The Arcadia report<sup>1</sup> suggests an SO<sub>2</sub> reduction for the lime kiln alone may be as high as 99.5%. From historical permit records, this lime kiln is more than 300 feet in length, which would provide intimate contact with the exhaust gas and lime. Please provide data to support the low expected SO<sub>2</sub> reductions.
7. The application indicates that the venturi scrubber uses fresh water as the scrubber media and combined with the highly alkaline lime dust that exits the lime kiln acts as a virtual flue gas desulfurization system. Please discuss the option of adding lime to the scrubber media to increase SO<sub>2</sub> removal efficiency.
8. Please submit the SO<sub>2</sub> stack test reports from the 2002 and 2006 including, emissions data, operating conditions, etc.

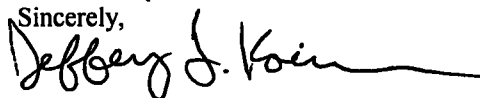
### Air Quality Modeling Analysis

9. Please revise Table 6-5 to show that the short-term SO<sub>2</sub> emission rates for Combination Boilers 3 and 4 represent an *actual* decrease in emissions and not an increase that should be included in the SO<sub>2</sub> PSD Class I and II significant impact analyses. From the table, it appears that you are requesting a new combined SO<sub>2</sub> emissions limit for these units. Please specify the new enforceable permit limit that formed the basis for the SO<sub>2</sub> air quality analysis.
10. Rule 212.400(4)(e), F.A.C. requires an analysis of the air quality impacts as well as the nature and extent of any or all commercial, residential, industrial, and other growth which has occurred since August 7, 1977 in the area that the modification would affect. Please provide this information.
11. NO<sub>x</sub> is an ozone precursor and, for any net increase of 100 tons per year, the federal rules require an ambient impact analysis for ozone. The predicted NO<sub>x</sub> increase for this project is greater than 100 tons per year. Please provide this analysis.

The Department will resume processing your application after receipt of the requested information. Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. For any material changes to the application, please include a new certification statement by the authorized representative or responsible official. You are reminded that Rule 62-4.055(1), F.A.C. requires applicants to respond to requests for information within 90 days or provide a written request for an additional period of time to submit the information.

If you have any questions regarding this matter, please call Bruce Thomas at 850/921-7744 or me at 850/921-9536.

Sincerely,



Jeffery F. Koerner, P.E.

BAR - Air Permitting North

cc: Mr. B. G. Sammons, Smurfit-Stone ([bgsammons@smurfit.com](mailto:bgsammons@smurfit.com))  
Mr. Tom Clements, Smurfit-Stone ([tclemen@smurfit.com](mailto:tclemen@smurfit.com))  
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Smurfit-Stone  
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RECEIVED

August 30, 2007

SEP 04 2007

BUREAU OF AIR REGULATION

Mr. Bruce Thomas  
Project Engineer  
2600 Blair Stone Rd  
MS #5505  
Tallahassee, FL, 32399-2400

Re: Smurfit-Stone Panama City Mill – Petcoke Fuel in Lime Kiln  
Draft Air Permit No. PSD-FL-388  
Project No. 0050009-028-AC

Dear Mr. Thomas:

We have the following comments on the above-referenced draft permit to allow us to burn petcoke in our lime kiln.

Section 3.A., Condition 1.

On page 5, Condition 3.A.1 states that as a result of this project, the lime kiln becomes subject to the applicable requirements for particulate matter in NSPS Subpart BB of 40 CFR 60. As you are aware, NSPS for particulate does not apply unless there is an increase in the hourly particulate emission rate as a result of this project. The NSPS particulate limits themselves are not a concern and in fact are higher than our current limit. However, as discussed below, we believe that NSPS will not apply.

When we were planning this project, we were concerned about the possible increase in particulate and requested funds as part of this project to improve the scrubber efficiency. At the time the permit application was written, we were still reviewing our options, and could not specify what action we planned to take. This is why the permit application indicates that there “may” be an increase in particulate emissions (ref. page 3-12 of PSD report). Recently, we decided to upgrade the kiln ID fan in order to be able to increase the d/p across the scrubber. Based on our discussions with the various vendors, we believe that this upgrade will result in lower particulate emissions.

We request the same provisions as included in Condition A.21 for TRS, i.e., that the lime kiln will only become subject to NSPS for PM if the analysis according to Appendix C demonstrates an increase in emissions. It is requested that Condition 1 be reworded as follows:

“If as a result of this project, as determined by the report required in paragraph XX, a particulate emissions increase occurs, the lime kiln will become subject to the applicable requirements for particulate matter in NSPS Subpart BB of 40 CFR 60.”



Section 3.A., Condition 6

Condition A.6 requires that a CEMS be installed for NOx. We will still install a NOx CEMS per PS2 of 40 CFR 60 Appendix B. However, we request that the requirements of Appendix F not be imposed due to significant additional requirements and associated cost. The Mill currently does not have any CEMS which must meet the QA requirements of Appendix F.

It is requested that the NOx monitoring requirements mirror those for TRS emissions from the Lime Kiln. Condition E.9 of the current Title V permit specifies the test method for TRS as EPA Method 16, 16A or 16B. Condition L.4 of the Title V permit specifies the requirements for the continuous TRS monitor. It requires, among other things, that the TRS monitor be located, installed, and certified pursuant to the provisions of PS-2, PS-3 and PS-5, and that for the purposes of compliance testing and certification, that Method 16 or 16 A be used. Daily zero and span checks must be performed.

In making this decision, the Department is asked to consider that there is no NOx control device on the Lime Kiln. Reburned lime quality has to remain the primary goal of the kiln. This severely limits the ability to control NOx.

Section 3.A., Condition 10.

Consistent with the above comment, it is requested that this condition be revised to add a 3-hour limit for NOx based on stack testing per EPA Method 7E. The 3-hour limit could be the same numerical limit as the 30-day rolling average limits. Then the "compliance method" for the 30-day rolling average could be changed to the "compliance indicator".

Also on this condition, we believe that the correct SO2 limit for "natural gas or oil" is the one listed in Appendix E "BACT Determination". This lists 7.3 lb/hr and 0.40 lb/ton CaO as BACT.

Section 3.A, Condition 11

We request that the allowable stack test methods for SO2 include Method 6 as well as Method 6C. Most of our current stack tests for SO2 utilize Method 6.

Please call me at (850) 785-4311 x470 if you have additional questions.

Sincerely

A handwritten signature in black ink, appearing to read 'Tom Clements'.

Tom Clements  
Environmental Mgr.