

Department of Environmental Protection

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Colleen M. Castille
Secretary

October 7, 2005

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Dan Fritz, CEO/President
Sumter Cement Company, LLC
P.O. Box 410
Branford, Florida 32008

Re: Request for Additional Information
DEP File No. 1190041-001-AC (PSD-FL-358)
Proposed Portland Cement Plant in Sumter County, Florida

Dear Mr. Fritz:

On September 8, 2005 we received your application for an air construction permit for a portland cement plant in the vicinity of Center Hill, Sumter County.

Pursuant to Rules 62-4.055, and 62-4.070 F.A.C., Permit Processing, the Department requests submittal of the additional information prior to processing the application. Should your response to any of the below items require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

1. SCC relies on "good combustion" (GC) to control carbon monoxide (CO). SCC proposes a best available control technology (limit) by GC of 3.6 pounds of CO per ton of clinker (lb/ton) on a 30-day basis. The cost of further control by other technologies was calculated presuming that emissions without further control by GC will be 3.6 lb/ton. Please estimate the costs and cost-effectiveness of further control by GC by evaluating the following possibilities. Applicant's own possibilities are also encouraged.
 - a. Given the present calciner design, estimate the CO emissions when using bauxite instead of fly ash as a raw material and only coal as fuel (except during startup).
 - b. Evaluate costs of using bauxite instead of fly ash or other material high in carbon.
 - c. Evaluate costs of minimizing petroleum coke and other difficult to burn fuels to maximize burnout in the calciner and ducting to the lower cyclone.
 - d. Evaluate costs and benefits of increasing retention time (in increments of 0.5 seconds) in the calciner and duct work to the lower cyclone to maintain the requested fuel and raw materials options while achieving the CO emissions estimated in paragraph a. above.
 - e. The Department notes that the above procedure would certainly be considered by any operator prior to assuming that a regenerative thermal oxidizer (RTO), estimated by the applicant at \$47,000,000 (capital) and \$17,900,000 per year, would be necessary to achieve lower CO emissions.

- f. With respect to the comment on page 35 about the decommissioning of the RTO at TXI, an agreement was reached between TXI and petitioners to operate the RTO all year round.
- g. Provide estimate of impacts on CO due to operation rates between the guaranteed manufacturer production rates and the expected (greater) production rates foreseen by SCC. This may be just a part of the exercise described in d. above.

[Rule 62-212.400(h)3., F.A.C. Requirement for: "A detailed description of the system of continuous emissions reduction proposed by the facility or modification as BACT, emissions estimates and any other information as necessary to determine that BACT would be applied to the facility or modification"]

- 2. Tarmac America, LLC, dba Titan Florida Cement, recently proposed a BACT limit for CO of 2.0 lb/ton (30-day basis) at the Pennsuco cement plant in Miami-Dade County. Please replace the "ND" value in Table 5-1 with the revised proposal. Also replace the value of 1.77 lb/ton given in the table for the Suwannee American Cement (SAC) Plant with the present BACT limit. It is possible that as many as half of the lb/ton values in the table are erroneous or possibly shifted by one row.
- 3. VOC control to achieve 0.12 lb/ton of clinker is also given as GC. Regardless of combustion practices, VOC emissions can be high unless raw materials (especially additives) are selected that will not evolve VOC in the preheater. Please describe the raw material procurement practices for mill scale, fly ash, etc. that can influence both VOC and CO emissions. The proposed value appears to be adequate.

[Rule 62-4.070(1), F.A.C. (1) "A permit shall be issued to the applicant upon such conditions as the Department may direct, only if the applicant affirmatively provides the Department with reasonable assurance based on plans, test results, installation of pollution control equipment, or other information, that the construction, expansion, modification, operation, or activity of the installation will not discharge, emit, or cause pollution in contravention of Department standards or rules."]

- 4. Please provide a disk that includes a summary of 2005 data for 24-hr-averaged SO₂ emissions in terms of lb/ton from operation of the SAC plant. Indicate instances when injection of hydrated lime was practiced and the total amount of hydrated lime actually used for this purpose in 2005.
[Rule 62-212.400(h)3., F.A.C.]
- 5. Please clarify whether fly ash injected into the calciner will be introduced within the area of the calciner burner as described on Section 1, page 1 or in the upper section of the calciner as apparent in the drawing referenced as Sheet 5 in Appendix F. The different locations have different implications regarding carbon monoxide burnout and emissions. [Rules 62-4.070(1) and 62-212.400(h)3., F.A.C.]
- 6. With reference to Table 3-1, please note that a 24-hour limit of 0.16 lb SO₂/ton applies to Florida Rock Industries pursuant to a permit issued in 2002 for a production increase at the existing FRI kiln.
- 7. Provide a qualitative if not quantitative discussion of the differences in sulfur and SO₂ generation potential due to raw materials differences between the quarries at SAC and SCC.
[Rule 62-212.400(h)3., F.A.C.]
- 8. SCC relies on selective non-catalytic reduction (SNCR) to control nitrogen oxides (NO_x) carbon monoxide (CO). SCC proposes a BACT limit by SNCR of 1.95 lb NO_x/ton on a 30-day basis. The cost of further control by other technologies was calculated presuming that emissions without further control by SNCR would be 1.95 lb/ton. Please estimate the costs and cost-effectiveness of further control by SNCR by evaluating the following possibilities. Applicant's own possibilities are also encouraged.

- a. Evaluate costs and NO_x reductions of further increasing ammonia injection up to a molar ratio of 1.0 (NH₃/NO_x) in increments of 0.1 moles NH₃ per mole NO_x. There would be separate cases depending upon the extent to which the calciner is operated in a reducing atmosphere for NO_x reduction prior to further control. [Rule 62-212.400(h)3., F.A.C.]
- b. The Department notes that the above procedure would certainly be considered by any operator prior to assuming that a selective catalytic reduction (SCR) system, estimated by the applicant at \$5,520,000 (capital) and \$9,580,000 per year, would be necessary to achieve lower NO_x emissions.
- c. With respect to the "experimental" nature (Section 4.4, page 23) at an SCR unit in Europe, it is noted that articles by the supplier, plant representative, and German government expert describe the system as a success. This is noteworthy because fewer of the factors claimed in the application to reduce the effectiveness of SCR are actually present in Florida compared with Germany. These include amount of sulfur and alkali in the exhaust gases.

[Rule 62-212.400(h)3., F.A.C.]

9. Please advise the meaning of the statement in Section 4, Page 22, "For the reaction to occur the ammonia must be present in excess molar ratio". If this means that the NH₃/NO_x ratio must be greater than 1.0, then the applicant is referred to the papers by the mentioned authors (Haug, Samant, and Sauter) showing that substantial reduction is possible at molar ratios much less than 1.0 (by SCR) at the Solnhofen Portland Cement Plant.
10. Please submit the information required on Page 3-61 related to the Process Fuel Segment for all fuels to be used at the facility.
11. Typical fuel specifications were provided for the proposed fuels with the exception of tires, the non-hazardous liquids including on-spec used oil, non-hazardous solids including plastics, filter fluff and wood waste. From the application, non-hazardous solids and non-hazardous liquids may account for up to 50 % of the total heat input in the kiln and calciner respectively. Provide a description and expected analysis of these additional fuels to be combusted.
12. What additives will be used to insure the correct alkali to sulfur ratio is maintained when using petroleum coke? Florida limestone is low in alkali. Use of high sulfur petroleum coke can upset the balance between alkali and sulfur that is needed to insure fuel sulfur is incorporated into the clinker rather than deposited within the internal cycle (calciner/bottom cyclone/kiln inlet). Submit a projected chemical analysis of the additives likely to be used at this plant.
13. What measures have been considered to minimize emissions of mercury entering the process or emitted from the kiln stack? Has SCC considered the possibility of inter-grinding a small portion of the dust collected in the (kiln/calciner/raw mill) air pollution control device with the clinker?
14. Has Sumter Cement Company or its affiliates had any violations (or received warning letters) in the past two years related to any Department regulations at any of their facilities? Please provide the status of any matters that have not yet been resolved.

[Rule 62-4.070(5), F.A.C., "The Department shall take into consideration a permit applicant's violation of any Department rules at any installation when determining whether the applicant has provided reasonable assurances that Department standards will be met".


15. Has Sumter Cement Company or its cement operations affiliates (such as Votorantim and St. Mary's Cement) had any violations (or received warning letters) in the past two years related to the regulations of other states or EPA? Please provide the status of any matters that have not yet been resolved. Provide additional information in case the matters relate to actions by previous owners of the assets. [Rule 62-4.070(5), F.A.C.]
16. If the positions of plant manager and plant production manager are still to be determined, please describe the minimum requirements for this position established by your company including, but not limited to, total years experience in the cement industry, total years experience as plant operator, educational background, etc. [Rule 62-4.070(1), F.A.C.]
17. According to the application, the project has the potential to emit 103 tons per year of VOC. If a project has the potential to emit VOC over 100 tons per year, the applicant is required to perform an air quality analysis for this PSD pollutant. This includes a Pre-Construction Monitoring Analysis. Please provide a Pre-Construction Analysis for VOC and further, please explain how projected VOC emissions will not contribute to a violation of the National Ambient Air Quality Standard for ozone.
18. Although associated growth is addressed in the application, please provide an additional analysis to comply with Rule 62-212.400(5)(h)5, F.A.C.
19. The modeling submitted with the application has fugitive road emissions evaluated as "Area" sources. Please provide justification for using this type of source for the roads.
20. Please provide a table summarizing all pollutant emission rates from all sources that were included in the Class II PSD increment and NAAQS modeling. Include a list of major nearby sources that were omitted as well.
21. Since the modeling protocol was deemed sufficient, the standard for the Receptor Grid has become more refined within the Department. In order to have continuity with other cement projects in the State, it is requested that a 25 meter plant boundary receptor grid interval be used for this project. This includes 2 receptors, one on either side of each road where it intersects the plant boundary, at a minimum distance of 25 meters from the road edge. Please update modeling to reflect the new standard to ensure that this continuity is satisfied.
22. Please provide a more detailed plot plan. The Department is requesting both an electronic version (preferably a .dwg file) and an updated paper plan (preferably 2 x 3 feet). Please grid the plot plan in UTM coordinates and highlight the buildings and structures.
23. Please provide a diagram showing each road segment, its location and its emission parameters.
24. Please provide any Excel files for Tables in Appendix A to show how emission calculations were completed.
25. On page 5-18 of the application, Table 5-7 details the results of the PSD Class II Increment PM10 analysis. According to the text above the table, the modeling results for the 24-hour averaging period are based on the High, Fourth-High concentrations. The Increment should be based on the High, Second-High concentrations for the 24-hour averaging period. Please correct the table/Increment analysis.
26. Please update Tables in Appendix A to reflect the "Source ID" or "Source Description" for all sources in the modeling or vice versa.
27. Please explain how the Initial Lateral Dimension and Initial Vertical Dimension were determined for the Volume Sources.

28. Please explain how the Initial Vertical Dimension of the Plume of 1.86m was determined for the Road Sources in the modeling.
29. Although Building Downwash is included in the modeling, please provide the actual BPIP input and output files.
30. Please ask your professional engineer to review the seal used for compliance with the latest requirements of the Florida Board of Professional Engineers. It may be necessary to resubmit the P.E. certification. These are given at: <http://www.engineerseals.com/order/floridape.php>

We will forward any comments received from other agencies as soon as we receive them. 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. Please advise the professional engineer to make sure he/she uses the correct seal in compliance with the applicable requirements of the Florida Board of Professional Engineers.

Permit applicants are advised that Rule 62-4.055(1), F.A.C. requires applicants to respond to requests for information within 90 days. If there are any questions, please call Cindy Mulkey at 850/921-8968. Matters regarding modeling issues should be directed to Debbie Nelson at 850/921-9537.

Sincerely,



A.A. Linero, Program Administrator
Bureau of Air Regulation
New Source Review Section

AAL/cm

cc: Dan Fritz, SCC*
Joe Horton, SCC
Jim Little, EPA
John Bunyak, NPS
Jim Cleary, DEP SWD
Porter Rivers III, P.E., B.P. Barber & Associates
Chair, Sumter County Board of County Commissioners
Mayor, Center Hill
Cary Cohrs, NRCF dba AMC