



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

January 29, 2001

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. John D. Baker, President
Florida Rock Industries, Inc.
155 East 21st Street
Jacksonville, Florida 32206

RE: DEP File No. 0010087-003-AC/PSD-FL-228A
Thompson S. Baker (Newberry) Cement Plant

Dear Mr. Baker:

Due to a typographical error on page 2 of 4 of the January 26, 2001 Technical Evaluation and Preliminary Determination for the above referenced project, the permit extension date was incorrectly stated. Please replace that page with the enclosed corrected page.

Sincerely,

C. H. Fancy, P.E., Chief
Bureau of Air Regulation

CHF/pa

Enclosure

cc: Fred W. Cohrs, FRI
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TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

NO_x in the calciner and further reduces the nitrogen oxides coming from the rotary kiln. Also, corresponding staggering of the raw meal infeed favorably influences the temperature in the reducing zone of the calciner. Operating results obtained with the multi stage combustion process prove that basic NO_x emissions is reduced by up to 50%.”

An evaluation of the system described above was given in a report prepared by Schreiber, Yonley, & Associates for Alachua County.⁵ According to the report, “the Newberry plant, on the other hand, has the advantage of an inherently low-NO_x design.” “The plant does have the option of adding staged combustion as a NO_x contingency control. This method introduces fuel at the feed end of the kiln or at the precalciner vessel, creating a strongly reducing environment in which more NO_x is destroyed. The technology is used in both new construction and kiln retrofits. The Portland Cement Association Report on NO_x formation and Variability in Portland Cement Kiln Systems. Potential Control Techniques and Their Feasibility and Cost Effectiveness published in December 1998 reports that industry feedback indicated NO_x reduction potential with this control is 30 to 40 percent compared to conventional precalciner kilns.”

The Department does not necessarily agree with all aspects of the Schreiber analysis, but does agree on the discussion regarding staged combustion. The full report may be viewed at the Alachua County website.⁶

FRI proposes to use tires with propane backup as fuel burned under reducing conditions in the lower section of the MSC. Coal will be burned under subsequent oxidizing conditions in the higher section of the MSC. Additional tertiary air from the clinker cooler will insure good burnout and conversion of most CO to CO₂ without significant NO_x formation.

Compliance with the NO_x limit by December 31, 2001 will be confirmed by the continuous emission monitoring system (CEMS). The permit will be extended until March 31, 2001 to allow conversion of the precalciner, conduct additional fine-tuning, and provide the Department and FRI with time to review the results. This review may allow the Department to exercise the condition in Table II of the permit to “revise the limit to less than 2.8 lb/ton clinker (30-day rolling average) based on compliance test and continuous emissions monitoring data.”

SO₂ Control. The interim SO₂ emission limit is 0.28 lb/ton or 28.8 lb/hr. The Department is required to issue the final SO₂ limits within 120 days following receipt of all test results required by this permit. An initial stack test conducted on the kiln indicated an emission rate of 1.4 lb/hr. This is an extremely low value. For example, kilns in certain parts of the country emit SO₂ at levels from 100 to 1000 times greater than indicated by the first FRI tests. Fortunately raw materials in Florida, such as the limestone, contain little iron pyrites that contribute to SO₂ formation. Early indications are that the kiln does indeed function as described in the original BACT determination. The sulfur is being removed in the alkaline environment of the kiln, preheater, and raw mill and ultimately incorporated into the clinker.

The single stack test results are not sufficient to set a final limit for SO₂. In fact, at the emission rate achieved to-date, the plant would not have been subject to a BACT-based SO₂ emission limit. The Department will wait until the applicant has submitted three months worth of CEMS data for this pollutant prior to revising the BACT limit for SO₂. The Department has reasonable assurance that the kiln is operating well within its interim permitted SO₂ limits.

Sulfuric Acid Mist Control.

FRI submitted stack test results for sulfuric acid mist (SAM). The tests indicated an emission rate of 0.000003 lb/ton of clinker or 0.0003 lb/hr. This equates to annual emissions of 0.0012 tons per year (TPY), which is much less than the threshold of 7 TPY normally requiring a BACT determination. Nevertheless the permit requires a limit.