Memorandum

Florida Department of Environmental Protection

TO:

Joseph Kahn, Director DARM

Through:

Trina L. Vielhauer, Chief BAR

From:

A.A. Linero/Cindy Mulkey (

DATE:

October 9, 2006

SUBJECT:

Florida Rock Industries, Inc. – Newberry

Selective Non-Catalytic Reduction (SNCR) – Kiln 1

DEP File No. 0010087-021-AC

Attached is the Final Permit for Florida Rock Industries authorizing the installation of a selective non-catalytic reduction (SNCR) system for the control of NO_X on Kiln No. 1 at the existing Florida Rock Industries Cement Plant in Newberry.

The project will allow them to run the calciner in an oxidizing environment and without burning tires if they wish while meeting the same relatively recent (2002) BACT determination. It will allow them to operate more smoothly and with less startups and shutdowns from flushing of blockages presently caused by the maintenance of a reducing environment in the calciner.

The NO_X reduction systems (SNCR or Staged Combustion or Tire Burning or combinations) will be used at all times to comply with the 2002 BACT of 2.45 lb NO_X /ton of clinker.

We recommend your approval of the attached Final Notice and Permit.

AAL/cem

Attachments

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION NOTICE OF PERMIT

In the Matter of an Application for Permit by:

Mr. Chris Horner, Plant Manager Florida Rock Industries, Inc. 4000 NW CR 235 Post Office Box 459 Newberry, Florida 32669 DEP File No. 0010087-021-AC Thompson S. Baker Cement Plant Alachua County

Enclosed is the Final Permit Number 0010087-021-AC authorizing the installation of a selective non-catalytic reduction system (SNCR) at the existing Thompson S. Baker Cement Plant near Newberry in Alachua County. This permit is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, F.S., by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Legal Office; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 (thirty) days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

Trina L. Vielhauer, Chief Bureau of Air Regulation

CERTIFICATE OF SERVICE

Chris Horner, FRI*
Henry Gotsch, FRI
John Koogler, P.E. Koogler & Associates
Chair, Alachua County Commission
Chris Bird, Alachua County EMD
Jim Little, EPA
Chris Kirts, DEP NED

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

(Date)

FINAL DETERMINATION

Florida Rock Industries, Inc.

Brooksville Cement Plant

DEP File No. 0010087-021-AC

On September 18, 2006 the Florida Department of Environmental Protection (Department) distributed an "Intent to Issue Air Construction Permit" authorizing the installation of a selective non-catalytic reduction (SNCR) system on Kiln No. 1 at the existing Thompson S. Baker Cement Plant located on County Road 235 approximately 2.5 miles northeast of Newberry, in Alachua County.

The package included the Department's Draft Air Construction Permit, the "Intent to Issue Air Construction Permit," the "Technical Evaluation and Preliminary Determination," and the "Public Notice of Intent to Issue Air Construction Permit." The Department sent copies of the package to various individuals and agencies. Florida Rock Industries, Inc. (FRI) published the Public Notice in *The Gainesville Sun* on September 24, 2006 and provided to the Department the required proof of publication.

The Department received no comments from agencies or the public regarding the Draft Air Construction Permit. A single comment was received from FRI, which is listed below (*italics*) followed by the Department's response.

Any additions to permit conditions are double underlined and deletions are indicated by double strike-through notation.

Comment

Specific Condition 5 of this permit states that the concentration by weight of stored ammonia solutions shall be between 9 and 19%. Among the vendors we are considering is one who offers a solution of 19.5%, which would be outside of the range requested by our application. To accommodate this and future vendor's offers, we request that a minor change in the language of the draft permit be made that allows either solutions of "9 to 19.8%" or solutions of "not more than 19.8%".

Response

It is not the Department's intention to limit FRI's scope of possible vendors, by limiting the concentration of the stored ammonia solution. The permit limits the amount of ammonia injected into the calciner in terms of pure ammonia. This can be controlled by the injection rate of the ammonia solution into the calciner regardless of the concentration of the stored solution.

However, ammonia concentrations (20 % or greater) appears on the List of Regulated Toxic Substances (40 CFR 68.130) requiring a Risk Management Plan (RMP) pursuant to Section 112r of the Clean Air Act. The solution offered by the vendor of 19.5% is clearly designed to avoid applicability of 112r, whereas the request by the applicant to use solutions up to 19.8% can be interpreted by some to mean 20%.

The following change will be made to Section III. Emission Unit Specific Conditions, EU 003, specific condition 5:

5. The concentration of stored ammonia solutions shall be <u>less than between 9 and 19 20</u> percent (%) by weight. [Applicant Request]

{Note: The This limitation to 19% avoids the requirement to prepare a Risk Management Plan pursuant to Section 112r of the Clean Air Act for this activity.}

The final decision by the Department is to issue the permit with the changes noted.



Department of Environmental Protection

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

Colleen M. Castille Secretary

PERMITTEE

Florida Rock Industries 4000 NW CR 235 Post Office Box 459 Newberry, Florida 32669

DEP File No. 0010087-021-AC Expires: June 30, 2007 Thompson S. Baker Cement Plant Selective Non-Catalytic Reduction System

PROJECT AND LOCATION

This permit authorizes Florida Rock Industries, Inc. to install a Selective Non-Catalytic Reduction (SNCR) system on Kiln No. 1 at the existing Thompson S. Baker Cement Plant in Alachua County. The facility is on County Road 235 approximately 2.5 miles northeast of Newberry, Florida. The map coordinates are: UTM Zone 17, 346.8 km East and 3287.0 km North.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the work specified in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department. This permit supplements all other air construction and operation permits for the subject emissions unit and does not alter any requirements from such previously issued air permits.

APPENDICES

The following appendices are attached as part of this permit.

Appendix GC - Construction Permit General Conditions

Joseph Kahn, Director

Division of Air Resource Management

"More Protection, Less Process"

Printed on recycled paper.

FACILITY DESCRIPTION

Florida Rock Industries, Inc. (FRI) owns and operates the Thompson S. Baker Cement Plant in Newberry, Alachua County. The facility consists of raw material handling and storage, a raw mill system, kiln system, clinker handling, finish grinding operations, cement handling, loading, and bagging operations, and coal handling and grinding operations.

Kiln No. 1 is presently permitted to produce 2,650 tons per day of clinker, 800,000 tons per year, with a peak hourly clinker production limit of 115.2 tons per hour (0010087-006-AC). A second line (Kiln No. 2) is presently under construction.

PROJECT

The project is to install a Selective Non-Catalytic Reduction (SNCR) system on Kiln No. 1. SNCR is a nitrogen oxides control technology. The purpose of the project is to provide an alternate/backup/additional control technology at the facility to achieve compliance with the best available control technology (BACT). This can be used in conjunction with or in lieu of the strategy of staged combustion in the calciner and tire introduction at the kiln inlet.

The process utilizes injection of ammonia solutions near the lowest preheater cyclone. The equipment consists of a storage tank, piping, pumps, compressed air and one or more injectors. No increases in previously-permitted production rates or emissions limitations are requested with this application.

REGULATORY CLASSIFICATION

Title I, Section 111, Clean Air Act (CAA): This facility is subject to certain Standards of Performance for New Stationary Sources. They are adopted and incorporated by reference in Rule 62-204.800, F.A.C. These inleude:

- 40 CFR 60, Subpart A Standards of Performance for New Stationary Sources General Provisions.
- 40 CFR 60, Subpart F Standards of Performance for Portland Cement Plants. Certain requirements from Subpart F are replaced by requirements from 40 CFR 63, Subpart LLL listed below.
- 40 CFR 60, Subpart Y Standards of Performance for Coal Preparation Plants.
- 40 CFR 60, Subpart OOO New Source Performance Standards For Nonmetallic Mineral Processing Plants.

Title I, Section 112 CAA: The facility has the potential to emit 10 tons per year or more of any one hazardous air pollutant (HAP) or 25 tons per year or more of any combination of HAPs. This facility is subject to the Major Source provisions of:

- 40 CFR 63, Subpart A National Emission Standards for Hazardous Air Pollutants General Provisions.
- 40 CFR 63, Subpart LLL National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry.

Title I, Part C (PSD): The facility is located in an area designated as "attainment", "maintenance", or "unclassifiable" for each pollutant subject to a National Ambient Air Quality Standard. The facility is considered a "portland cement plant", which is one of the 28 Prevention of Significant Deterioration (PSD) source categories with the lower PSD applicability threshold of 100 tons per year. Potential emissions of at least one regulated pollutant exceed 100 tons per year. Therefore, the facility is classified as a PSD-major source of air pollution with respect to Rule 62-212.400 F.A.C., Prevention of Significant Deterioration.

Title IV, CAA: The facility does not operate any units subject to the Acid Rain provisions of the Clean Air Act.

SECTION I. FACILITY INFORMATION

Title V, CAA: The facility is a Title V or "Major Source" of air pollution because the potential emissions of at least one regulated pollutant exceed 100 tons per year or because it is a major source of HAPS. Regulated pollutants include pollutants such as carbon monoxide (CO), nitrogen oxides (NO_X), particulate matter (PM/PM₁₀), sulfur dioxide (SO₂), and volatile organic compounds (VOC).

RELEVANT DOCUMENTS

- Original Air Construction Permit AC01-267311 (renumbered 0010087-001-AC) issued in December 1996 (as amended in August 2001). Also known as PSD-FL-228.
- Construction permit modification (PSD-FL-228B and 0010087-004-AC) issued on August 20, 2001, to extend the permit expiration date to December 31, 2001, install VOC monitor, and install multi-stage combustion (MSC) calciner.
- Current Title V Operation Permit 0010087-002-AV issued January 11, 2002.
- Construction Permit modification (PSD –FL-228C and 0010087-006-AC) issued on December 11, 2002.
- Selective Non-Catalytic Reduction Test Report dated February 2, 2005.
- Application submitted by Florida Rock and received by the Department on May 24, 2006.
- Technical Evaluation and Preliminary Determination issued on September 14, 2006.

SECTION II. ADMINISTRATIVE REQUIREMENTS

GENERAL AND ADMINISTRATIVE REQUIREMENTS

- Permitting Authority: All documents related to applications for permits to construct, modify or operate this
 emissions unit shall be submitted to the Bureau of Air Regulation (BAR), Florida Department of
 Environmental Protection ("Department"), at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400 and
 phone number 850/488-0114. Copies of these documents shall be submitted to the Compliance Authority.
- 2. <u>Compliance Authority</u>: All documents related to compliance activities such as reports, tests, and notifications should be submitted to the Northeast District Office at 7825 Baymeadows Way, Suite 200B, Jacksonville, Florida 32256-7590. The phone number is 904/807-3300 and the fax number is 904/448-4363.
- 3. General Conditions: The owner and operator are subject to, and shall operate under, the attached General Conditions listed in *Appendix GC* of this permit. General Conditions are binding and enforceable pursuant to Chapter 403, F.S. [Rule 62-4.160, F.A.C.]
- 4. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of this project shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297, F.A.C. The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]
- 5. <u>Permit Expiration</u>: For good cause, the permittee may request that this air construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation at least sixty (60) days prior to the expiration of this permit. [Rules 62-4.070(4), 62-4.080, and 62-210.300(1), F.A.C.]
- 6. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]
- 7. <u>Modifications</u>: No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
- 8. <u>Title V Permit</u>: This permit authorizes construction of the proposed project and initial operation to determine compliance with Department rules. Upon completion of construction of this project, a Title V operation permit revision is required for regular operation of the new equipment. The permittee shall apply for a revised Title V operation permit prior to expiration of this permit. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require.

 [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

EU 003. KILN SYSTEM

This section of the permit addresses the following emissions unit:

ID No.	Emission Unit Description
003	Kiln system. The kiln system (or pyroprocessing system) includes the 156.5 foot kiln (Kiln No. 1), a four-stage preheater tower, a 25,300 cubic foot multi-stage combustion (MSC) calciner, a tire feed system, a selective non-catalytic reduction (SNCR) system, two coal burners and ancillary equipment. Particulate emissions are controlled by an electrostatic precipitator.

ADMINISTRATIVE REQUIREMENTS

<u>Previous Permit Conditions</u>: The following conditions are in addition to those of the previous air construction permits and the facility Title V Operation Permit. Unless otherwise specified, the emissions unit remains subject to all applicable conditions from previous air construction permits. [Rule 62-4.070(3), F.A.C.]

SPECIFIC CONDITIONS

- 1. The owner or operator may install and operate a selective non-catalytic reduction (SNCR) system, including an aqueous ammonia tank, pumps, piping, compressed air delivery, injectors, control system, and other ancillary equipment. Aqueous ammonia solution will be injected at a location(s) in the preheater/calciner with an appropriate temperature profile to support the SNCR process. [Applicant Design]
- 2. The SNCR system shall be designed, constructed and capable of achieving the previously permitted limit of for NO_X emissions from the pyroprocessing system. [62-4.070, F.A.C.]
- The SNCR system may be operated in conjunction with or in lieu of operation of the existing MSC calciner
 in a reducing atmosphere or tire injection system for the purposes of meeting the applicable NO_X limit.
 [Applicant Request, Rule 62-210.650, F.A.C.]
- 4. Upon malfunction or unavailability of the SNCR system, the operator shall, as soon as practicable, effect a reducing atmosphere in the calciner or inject tires as needed to maintain NO_X control. [Rule 62-210.650, F.A.C.]
- 5. The concentration of stored ammonia solutions shall be less than 20 percent (%) by weight. [Applicant Request]
 - {Permitting Note: This limitation avoids the requirement to prepare a Risk Management Plan pursuant to Section 112r of the Clean Air Act for this activity.}
- 6. The ammonia injection rate shall not exceed 150 pounds per hour (1-hour block as 100% ammonia) in order to minimize ammonia emissions (slip). To demonstrate compliance, the owner or operator shall continuously monitor and record the ammonia injection rate. The injection rate of ammonia solution measured in terms of volumetric flow rate shall be converted to pounds per hour as 100% ammonia.
 - {Note: the maximum ammonia injection rate is equivalent to an NH_3/NO_X molar ratio of 1.0 presuming baseline uncontrolled NO_X emissions of 4 lb/ton of clinker.}

- G.1 The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
- G.2 This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
- G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
- G.4 This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
- G.5 This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
- G.6 The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
- G.7 The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
 - (a) Have access to and copy and records that must be kept under the conditions of the permit;
 - (b) Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
 - (c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

- G.8 If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
 - (a) A description of and cause of non-compliance; and
 - (b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

- The permittee shall be responsible for any and all damages, which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.
- G.9 In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
- G.10 The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
- G.11 This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
- G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.
- G.13 This permit also constitutes:
 - (a) Determination of Best Available Control Technology (not applicable to project);
 - (b) Determination of Prevention of Significant Deterioration (not applicable to project)
 - (c) Compliance with National Emission Standards for Hazardous Air Pollutants (not applicable to this project); and
 - (d) Compliance with New Source Performance Standards (not applicable to project).
- G.14 The permittee shall comply with the following:
 - (a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
 - (b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
 - (c) Records of monitoring information shall include:
 - 1. The date, exact place, and time of sampling or measurements:
 - 2. The person responsible for performing the sampling or measurements;
 - 3. The dates analyses were performed;
 - 4. The person responsible for performing the analyses;
 - 5. The analytical techniques or methods used; and
 - 6. The results of such analyses.
- G.15 When requested by the Department, the permittee shall within a reasonable time furnish any information required by law, which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
 Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	A. Signature X
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