



Jeb Bush
Governor

Department of Environmental Protection

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

David B. Struhs
Secretary

December 14, 2001

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Ed Allsopp
Vice President of Cement Operations
CSR Rinker Materials Corporation
1200 Northwest 137th Avenue
Miami, Florida 33182

Re: DEP File No. 0250014-007 & 008-AC (PSD-FL-324)
Miami Cement Plant


Dear Mr. Allsopp:

Enclosed is one copy of the Draft Air Construction Permit Modification for the Miami Cement Plant. The Department's Technical Evaluation, Intent to Issue Air Construction Permit Modification, and the "Public Notice of Intent to Issue Air Construction Permit Modification" are also included.

The "Public Notice" must be published one time only as soon as possible in a newspaper of general circulation in the area affected, pursuant to the requirements Chapter 50, Florida Statutes. Proof of Publication, such as a newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in denial of the permit modification. The Department reserves the right to publish the Public Notice at anytime. If the Department publishes the Public Notice, the applicant is relieved of this responsibility.

Please submit any written comments you wish to have considered concerning the Department's proposed action to A.A. Linero, P.E. Administrator, New Source Review Section at the letterhead address. If you have any questions please call Mr. Greg DeAngelo at 850/921-9506 or Mr. Linero at 850/921-9523.

Sincerely,


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

CHF/al

Enclosures

"More Protection, Less Process"

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SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> 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. Received by (Please Print Clearly)	B. Date of Delivery
	SHARON FEOLIERE 12/17/01	
1. Article Addressed to: Mr. Ed Allsopp V. P. of Cement Operations CSR Rinker Materials Corporation 1200 Northwest 137th Avenue Miami, FL 33182	C. Signature	
	<input checked="" type="checkbox"/> Addressee <input type="checkbox"/> Agent	
2. Article Number (Copy from service label) 7000 2870 0000 7028 2997	D. Is delivery address different from item 1? <input type="checkbox"/> Yes	
	If YES, enter delivery address below: <input type="checkbox"/> No	
PS Form 3811, July 1999	3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.	
	4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes	
Domestic Return Receipt 102595-99-M-1789		

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Sent To
 Ed Allsopp
 Street, Apt. No., or PO Box No.
 1200 NW 137th Ave.
 City, State, ZIP+4
 Miami, FL 33182

PS Form 3800, May 2000 See Reverse for Instructions

7000 2870 0000 7028 2997

DRAFT

Month Date, 2001

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Ed Allsopp
Vice President of Cement Operations
CSR Rinker Materials Corporation
1200 Northwest 137th Avenue
Miami, Florida 33182

Re: DEP File No. 0250014-007 & 008-AC (PSD-FL-324)
Modernization Project/Permit Extension

Dear Mr. Allsopp:

This is pursuant to: your air construction permit extension request dated September 7, 2000; additional requests consolidated in the letter from Koogler and Associates dated June 14, 2001; letters received from Oertel, Hoffman, Fernandez, and Cole, P.A. dated October 5 and 22, 2001, seeking time extensions for taking action on the mentioned requests; and your air construction permit application for modification received by the Department on November 19, 2001.

The Department hereby modifies the original air construction permit issued for the modernization project (September, 1997) as described below. Details of the rationale for the following changes are given in the Department's Technical Evaluation and Preliminary Determination dated December 14, 2001, as well as the enclosed final determination accompanying this letter.

EXPIRATION DATE

The expiration date is hereby extended until March 31, 2002. All physical construction required to make cement and to conduct initial testing is complete. This permit modification authorizes work addressed in the Compliance Plan of Rinker's Title V Operating Permit and further work only for the purpose of installing the bypass, a continuous emission monitoring system (CEMS) for volatile organic compounds (VOC), and additional equipment to burn the specified non-hazardous waste fuels (other than sewage sludge).

Additional work beyond March 31, 2002, on the described projects (other than installation of the VOC monitor) described above shall require submittal of an air construction permit application to the Miami-Dade County Department of Environmental Resources Management.

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SUBSECTION A. COMMON CONDITIONS

EMISSION UNITS

... This cement plant is subject to the applicable requirements of the New Source Performance Standards (NSPS) and the National Emissions Standards for Hazardous Air Pollutants (NESHAP), adopted by reference in Rules 62-204.800(7) and (10), F.A.C., including:

- 40 CFR 60 Subpart F, Standards of Performance for Portland Cement Plants.
- 40 CFR 60, Subpart Y, Standards of Performance for Coal Preparation Plants
- 40 CFR 60, Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants
- 40 CFR 60, Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984

- ~~40 CFR 60, Subpart Eb, Standards of Performance for Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994. (Co-fired combustor reporting requirements only)~~
- 40 CFR 63, Subpart B, Requirements for Control Technology Determinations for Major Sources in Accordance with Clean Air Act Sections 112 (g) and 112 (j).

{Permitting note: This cement plant is not subject to 40 CFR 60, Subpart Eb, Standards of Performance for Municipal Waste Combustors (MWC) for Which Construction is Commenced After September 20, 1994. Cement kilns were explicitly excluded from the NSPS as amended at 62 FR 45115, August 25, 1997 pursuant to court order [*Davis County Solid Waste Management and Recovery District v. EPA*, 101 F.3d 1395 (D.C. Cir. 1996), *as amended*, 108 F.3d 1454 (D.C. Cir. 1997)] and in response to industry submitted information showing that cement kilns burn less than 30 percent by weight MWC and less than 11 tons per day MWC.}

SUBSECTION B. SPECIFIC CONDITIONS

EMISSION LIMITATIONS

- B.1 The maximum allowable emission rates for the kiln, clinker cooler, raw mill, and preheater/precalciner shall not exceed the limits listed in Revised Table 1-2, Air Pollutant Standards and Terms (attached).
[Rule 62-210.200, F.A.C. (Definitions - Potential Emissions)]

OPERATIONAL LIMITATIONS

B.5 Fuel Combustion

- (1) Fuels fired in the pyroprocessing system (kiln and precalciner) shall not exceed a total heat input rate of 437 MMBtu/hr and shall consist only of:
- a. Bituminous coal, natural gas, petroleum coke, propane, No. 2 fuel oil, residual fuel oil, on-specification and off-specification used oil.
 - b. Whole tires and tire derived fuel (up to 40% total heat input) may be used as a supplemental fuel, but not as a start-up fuel.
 - c. Combustion of non-hazardous solid waste, oil filters, booms and rags from spill clean up, generated on site. This non-hazardous solid waste material shall be used as supplemental fuel not as a start-up fuel.
 - d. Combustion of non-hazardous solid waste (up to ~~30%~~10% of total heat input) may be used as supplemental fuel: unused diapers, papers products, non-chlorinated plastic waste, ~~sewage sludge from publicly owned treatment works (POTW)~~. This non-hazardous solid waste material shall ~~be~~ not be used as a start-up fuel.
 - e. The combined percent heat input from tires, tire-derived fuel and solid waste shall not exceed 40 percent of the total heat input from all fuels on a 24-hour basis.

CONTINUOUS EMISSIONS MONITORING SYSTEM (CEMS)

- B.10 A continuous emissions monitoring system (CEMS) shall be installed, calibrated, maintained, operated, and used to determine compliance with the emissions limits for NO_x and SO₂ in Revised Table 1-2. CEMS shall be installed and certified, before the initial performance test, and operated in compliance with 40 CFR 60, Appendix F, Quality Assurance Procedures (1996 version) or other Department-approved QA plan; 40 CFR 60, Appendix B, Performance Specification 1, 2, and 3 (1996 version).
[Rules 62-4.070 (3) and 62-204.800, F.A.C.]

By June 30, 2002, permittee shall install, calibrate, maintain and operate a CEMS in the kiln/raw mill stack to measure and record the emissions of non-methane total hydrocarbons (THC) as the surrogate for VOC emissions from the kiln/raw mill. After June 30, 2002, the CEMS shall be used to determine compliance with the emissions limit for VOC in Revised Table 1-2. The CEM system shall be of the extractive type using flame ionization for monitoring THC. Fuel used for the flame ionization process shall consist of a hydrogen/helium mix specified by the CEMS manufacturer. A compatible stack gas flow monitor designed to measure flow based on the gas density shall also be installed. The system shall be installed, certified, operated and maintained in accordance with Performance Specification 8A of Appendix B of 40 CFR 60. The CEMS data shall be quality assured using the procedures of Appendix F of 40 CFR 60. The owner or

operator shall report no later than the 10th day following each calendar quarter a summary of the 30-day rolling average THC emissions for the days of that calendar quarter to the Miami-Dade County Department of Environmental Resources Management. These results should be reported as pounds per hour (propane equivalence) and pounds per ton of clinker (propane equivalence). [Rule 62-4.070, F.A.C.]

- B.13 For emissions other than NO_x and SO₂, and for VOC emissions prior to June 30, 2002, compliance with the allowable emission limiting standards listed in Revised Table 1-2 shall be determined by using the following reference methods as described in 40 CFR 60, Appendix A (1996, version) and 40 CFR 61 Appendix B (1996, version) adopted by reference in Chapter 62-204, F.A.C.

Method 5	Determination of Particulate Matter Emissions from Stationary Sources (I) and (A).
Method 8	Determination of Sulfuric Acid Mist from Stationary Sources (I).
Method 9	Visual Determination of the Opacity of Emissions from Stationary Sources (I) and (A).
Method 10	Determination of Carbon Monoxide Emissions from Stationary Sources (I) and (A).
Method 25 or 25A	Determination of Volatile Organic Compound Emissions from Stationary Sources (I) and (A) <u>(Quarterly, from fourth quarter 2001 through second quarter 2002).</u>
Method 29	Determination of Lead, Beryllium , and Mercury from Stationary Sources (I).

Prior to June 30, 2002, permittee shall determine the total hydrocarbon (THC) content for each incoming shipment of raw materials through the Department's Method FL-PRO or through some other method approved by the Miami-Dade County Department of Environmental Resources Management.

Emission testing shall be performed at the kiln/cooler main stack during a period when the kiln precalciner, cooler, raw mill and preheater are operating simultaneously and under normal operating conditions. EPA-reference methods for sampling pollutants shall be as specified in 40 CFR 60, Appendix A. Prior to any emission testing to demonstrate compliance with any emission limit, the permittee shall determine the clinker production rate for the test according to a factor based on the preheater/precalciner feed rate and notify the appropriate local compliance agency in advance of the commencement of any test(s). That rate of clinker production shall be used to determine compliance with all clinker-based emission limits in the permit for that test.

These emission units shall comply with all applicable requirements of Rule 62-297.310, F.A.C. General Test Requirements and 40 CFR 60.8. Performance Tests. Revised Table 2-1, Compliance Requirements (attached) also lists the EPA methods.

Testing of emissions shall be conducted with the emission unit operating at capacity and under the different permitted fuels scenarios (petroleum coke, coal, on or off specification used oil, TDF, solid waste, etc.) as specified in Specific Condition No. B.5. Fuel Combustion. The permittee shall provide DERM with a protocol that will outline the different fuel scenarios (% of total heat input) that this unit will be burning. Rinker shall obtain the test data necessary to determine whether this kiln is capable of accommodating the burning of coal or petroleum coke and all of the other supplemental fuels specified on Specific Condition B.5. Fuel Combustion. The fuel scenarios tested shall represent the actual combustion percentage (% of total heat input) that is going to be maintained while burning supplemental fuels during normal operation. The frequency of testing shall be determined by DERM.

Permitted capacity is defined as 90-100% of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then the unit may be tested at less than 90% of the maximum operating rate allowed by the permit; in this case, subsequent source operation is limited to 110% of the test load until a new test is conducted. Once the unit is so limited, then operation at higher capacities is allowed for no more than fifteen consecutive days for the purpose of additional compliance testing to regain the permitted capacity in the permit. [Rules 62-204.800, 62-297.310, 62-297.400, 62-297.401, F.A.C., and 40 CFR 60 Appendix A and 40 CFR 60.8, Subpart A].

A copy of this letter shall be filed with the referenced permit and shall become part of the permit. The Miami-Dade County Department of Environmental Resources Management will revise the present Title V Operation Permit as advised in the Notice of Final (Title V) Permit dated October 31, 2000.

Any party to this permitting decision (order) has the right to seek judicial review of it under section 120.68 of the Florida Statutes, by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel, Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000, 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 must be filed within thirty days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.

Howard L. Rhodes, Director
Division of Air Resources
Management

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Permit Amendment was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on _____ to the person(s) listed:

Ed Allsopp, VP, Rinker*
Scott Benyon, Rinker
Mike Vardeman, Rinker
Gregg Worley, EPA
John Bunyak, NPS
Isidore Goldman, DEP SED
H. Patrick Wong, Miami-Dade DERM
John Koogler, PhD., P.E., K&A
Martha Nebelsiek, Esq., DEP OGC
Segundo J. Fernandez, Esq., OHF&C

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.

(Clerk)

(Date)

Revised Table 1-2. Air Pollutant Standards and Terms.

FACILITY ID NUMBER: 0250014

DEP File Nos. 0250014-007 & 008-AC (PSD-FL-324)

Original DEP File No. 0250014-002-AC

Permittee:
Rinker Materials Corporation

Portland Cement Plant and Associated Equipment

16.5

Dry Process Technology

Emission Unit - Kiln System
Cement Plant Modernization

E.U. ID#	Description	Pollutant ID	Fuel(s) [2]	Allowable Emissions [3]		Equivalent Emissions [4]	Basis
				Permit limits	lb/hr	TPY	
ARMS #	Kiln/Cooler/Raw Mill	PM	coal/gas/WTDF/oil	0.20 lb/ton kiln _{ph} feed *	44	193	RMC - Data
ARMS #	Kiln/Cooler/Raw Mill	PM ₁₀	coal/gas/WTDF/oil	0.17 lb/ton kiln feed *	37.40	164	RMC - Data
ARMS #	Kiln/Cooler/Raw Mill	SO ₂	coal/gas/WTDF/oil	0.7 lb/MMBTU 2.23 lb/ton of clinker	306	1340	RMC - Data
ARMS #	Kiln/Cooler/Raw Mill	NO _x	coal/gas/WTDF/oil	1.53 lb/MMBTU 4.9 lb/ton of clinker	671	2940	RMC - Data
ARMS #	Kiln/Cooler/Raw Mill	CO	coal/gas/WTDF/oil	3.01 lb/ton clinker	412	1807	RMC - Data
ARMS #	Kiln/Cooler/Raw Mill	VOC	coal/gas/WTDF/oil	0.1 lb/ton clinker 0.12 lb/ton clinker	13.7	60	RMC - Data
ARMS #	Kiln/Cooler/Raw Mill	H ₂ SO ₄ mist	coal/gas/WTDF/oil	0.014 lb/ton clinker	16.4	72	BACT
ARMS #	Kiln/Cooler/Raw Mill	Beryllium	coal/gas/WTDF/oil	6.6x10 ⁻⁷ lb/ton clinker	1.92	8.4	AP - 42
ARMS #	Kiln/Cooler/Raw Mill	Mercury	coal/gas/WTDF/oil	2.4x10 ⁻⁵ lb/ton clinker	9.04E-06	0.000396	AP - 42
ARMS #	Kiln/Cooler/Raw Mill	Lead	coal/gas/WTDF/oil	7.5x10 ⁻⁵ lb/ton clinker	3.30E-03	0.014	AP - 42
ARMS #	Kiln/Cooler/Raw Mill	VE	coal/gas/WTDF/oil	10% opacity	0.01	0.045	AP - 42

ALLOWABLE OPERATING RATES

Kiln/Cooler/Raw Mill

Hours of operation per year	Hours	8760
Kiln preheater feed rate (kiln _{ph}) *	TPH	220
Kiln Heat Input	MMBtu/hr	437
Clinker Production [1]	TPH	137
Cooler throughput rate	TPH	137

NOTES

- [1] At a maximum design clinker production rate of 137 TPH and preheater feed rate of 220 TPH, utilizing a conversion factor of 0.60: (220 x 0.60 = 137).
- [2] Fuel combustion as specified in Specific Condition No. B.5, and the protocols established by DERM. See also Specific Condition B.13.
- [3] Compliance Units. This facility shall demonstrate compliance based on these standards.
- [4] "Equivalent Emissions" are based on annual emissions at 8760 hrs/yr. The "Equivalent Emissions" are also listed for informational purpose and for PSD and recordkeeping tracking purposes.

Revised Table 2-1. Compliance Requirements.

FACILITY ID NUMBER: 0250014

Original DEP File No. 0250014-002-AC
Permit Modification No. 0250014-007 & 008-AC

Permittee:
Rinker Materials Corporation
Portland Cement Plant No. 2 and Associated Equipment

E.U. ID#	Description	Pollutant Name or parameter	Fuel(s) [1]	EPA/Reference Method/CMS *	Testing Time Frequency	Min. Compliance Test Duration	CMS * Compliance
ARMS #	Kiln/Cooler/Raw Mill	PM/PM ₁₀	Oil/Coal /Gas/WTDF	5 or 201/201A	initial/annual [8]	3 one-hr run	
ARMS #	Kiln/Cooler/Raw Mill	VE	Oil/Coal/Gas/WTDF	9/COMS	initial/annual/COMS	3 one-hr run	No [4]
ARMS #	Kiln/Cooler/Raw Mill	SO ₂	Oil/Coal/Gas/WTDF	CEMS	daily average	continuous	Yes [6]
ARMS #	Kiln/Cooler/Raw Mill	NO _x	Oil/Coal/Gas/WTDF	CEMS	daily average	continuous	Yes [3]
ARMS #	Kiln/Cooler/Raw Mill	CO	Oil/Coal/Gas/WTDF	10 [5]	initial/annual	3 one-hr run	
ARMS #	Kiln/Cooler/Raw Mill	VOC	Oil/Coal/Gas/WTDF	25 or 25A [2]	initial	3 one-hr run	Yes[2]
ARMS #	Kiln/Cooler/Raw Mill	H ₂ SO ₄ mist	Oil/Coal/Gas/WTDF	8	initial	3 one-hr run	
ARMS #	Kiln/Cooler/Raw Mill	Hg, Pb, Be	Oil/Coal/Gas/WTDF	29	initial	3 one-hr run	
ARMS #	Fugitive sources	VE		9	Protocol [7]		
ARMS #	Minor Sources	VE		9	initial/annual	3 one-hr run	

- [1] Initial compliance testing shall be conducted under all the scenarios this facility is planning to operate under. Specific condition B.13. Annual testing of emissions shall be conducted during the worst case scenario that this facility would normally operate under. Frequency of testing after initial compliance shall be determined by DERM. Fuels to be burned are specified in Specific Condition B.5.
- [2] VOC emission shall be tested initially and then quarterly beginning the fourth quarter of 2001 (by December 31, 2001) to comply with the condition of this permit. Thereafter, compliance will be assumed provided the CO allowable emission rate is reached . The RATA test conducted for a new VOC CEMS monitor shall meet the requirement for the test conducted in the second quarter of 2002. Thereafter the VOC CEMS shall provide the continuous compliance method and quarterly testing will no longer be required.
- [3] NO_x - The continuous emission monitoring system (CEMS) data shall be used for the Kiln for compliance requirement. The CEMS calibration and maintenance shall meet the applicable requirements of 40 CFR 60, Appendix B and Appendix F.
- [4] Pursuant to 40 CFR 60, Subpart F, the kiln/cooler exhaust system shall be equipped with continuous opacity monitoring system (COMS) to record the opacity at the stack to indicate proper maintenance and operation. Monitoring of the opacity of emissions shall be demonstrated by COMS pursuant to 40 CFR 60.63. Notification and recordkeeping shall be in accordance with 40 CFR 60.7 and 40 CFR 60.65.
- [5] Continuous process monitors for CO and/or O₂ to optimize combustion conditions for pollution control shall be part of the process.
- [6] SO₂ - The continuous emission monitoring (CEMS) data shall be used for the Kiln compliance requirement. The CEMS calibration and maintenance shall meet the applicable requirements of 40 CFR 60, Appendix B and Appendix F.
- [7] Protocol as approved by the Permitting Authority (DERM).
- [8] Rinker has the option of using Method 5 if they stipulate that all of the PM is PM₁₀.
- * CMS [=] compliance demonstrated by a continuous monitoring system: CEMS or COMS.

In the Matter of an
Application for Permit by:

CSR Rinker Materials Corporation
1200 Northwest 137th Avenue
Miami, Florida 33182

DEP File Nos. 0250014-007 & 008-AC (PSD-FL-324)
Extension and Modification of Construction Permit
Miami Cement Plant
Miami-Dade County

INTENT TO ISSUE AIR CONSTRUCTION PERMIT MODIFICATION

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit modification (copy of DRAFT Permit Modification attached) for the proposed action, detailed in the application specified above and the attached Technical Evaluation and Preliminary Determination, for the reasons stated below.

The applicant, CSR Rinker Materials Corporation, applied by letter dated September 7, 2000 to the Department to extend the expiration date of its current permit to construct (modernize) the Miami Cement Plant in Miami-Dade County. The primary purposes were to allow additional time to complete testing, to design and install a tire handling and burning system, and to add equipment to reduce operational problems (scale formation) within the kiln. Rinker subsequently modified its request (June 28 and November 19, 2001) to remove the beryllium limit, express certain emission limitations using industry conventions, and to modify the volatile organic compounds (VOC) emissions standards.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (F.A.C.). The above actions are not exempt from permitting procedures. The Department has determined that an air construction permit modification and a determination of Best Available Control Technology pursuant to Rule 62-212.400, F.A.C. for VOC is required.

The Department intends to issue this air construction permit based on the belief that the applicant has provided reasonable assurances to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297, F.A.C. In addition, the Miami-Dade Department of Environmental Resources Management (DERM) intends to incorporate the proposed modifications into the applicant's Title V Air Operation Permit; and, the Public Notice is a combined notice and addresses the Intent to Issue this proposed permitting action and the Miami-Dade DERM modification to the applicant's Title V Air Operation Permit simultaneously.

Pursuant to Section 403.815, F.S., and Rule 62-110.106(7)(a)1., F.A.C., you (the applicant) are required to publish at your own expense the enclosed Public Notice of Intent to Issue Air Construction Permit Modification. The notice shall be published as soon as possible one time only in the legal advertisement section of a newspaper of general circulation in the area affected. Rule 62-110.106(7)(b), F.A.C., requires that the applicant cause the notice to be published as soon as possible after notification by the Department of its intended action. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 850/488-0114; Fax 850/922-6979). You must provide proof of publication within seven days of publication, pursuant to Rule 62-110.106(5), F.A.C. No permitting action for which published notice is required shall be granted until proof of publication of notice is made by furnishing a uniform affidavit in substantially the form prescribed in Section 50.051, F.S. to the office of the Department issuing the permit. Failure to publish the notice and provide proof of publication may result in denial of the permit pursuant to Rules 62-110.106(9) & (11), F.A.C.

The Department will issue the final permit modification with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of 14 (fourteen) days from the date of publication of Public Notice of Intent to Issue Air Permit Modification. Written

comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit modification and require, if applicable, another Public Notice.

The Department will issue the permit modification with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice, of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.


In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Mediation is not available in this proceeding. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tallahassee, Florida.


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

CERTIFICATE OF SERVICE

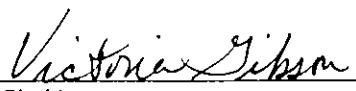
The undersigned duly designated deputy agency clerk hereby certifies that this INTENT TO ISSUE AIR CONSTRUCTION PERMIT MODIFICATION (including the PUBLIC NOTICE, Technical Evaluation and Preliminary Determination, and the DRAFT permit modification) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 12/14/01 to the person(s) listed:

Ed Allsopp, VP, Rinker*
Mike Vardeman, Rinker
Gregg Worley, EPA
John Bunyak, NPS
Isidore Goldman, DEP SED

H. Patrick Wong, Miami-Dade DERM
John Koogler, PhD., P.E., K&A
Martha Nebelsiek, Esq., DEP OGC
Segundo J. Fernandez, Esq., OHF&C

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.


(Clerk)

12/14/01
(Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT MODIFICATION

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP File Nos. 0250014-007 & 008-AC (PSD-FL-324)

CSR Rinker Materials Corporation
Miami Cement Plant

Miami-Dade County

The Department of Environmental Protection (Department) gives notice of intent to issue an Air Construction Permit Modification to CSR Rinker Materials Corporation (Rinker). A Best Available Control Technology (BACT) determination and a review for the Prevention of Significant Deterioration (PSD) was required for emissions of volatile organic compounds (VOC) pursuant to Rule 62-212.400, F.A.C. The applicant's name and address are CSR Rinker Materials Corporation, 1200 Northwest 137th Avenue, Miami, Florida 33182.

The main changes proposed in this action are removal of the beryllium limit and modification of the VOC emission limit included in the original permit to modernize the plant issued in September 1997. The federal PSD program no longer requires regulation of beryllium. Beryllium is now regulated under the recently promulgated federal cement industry maximum achievable control technology (MACT) standards and only at cement kilns that (unlike Rinker) burn hazardous waste.

The original VOC limit was 0.1 pounds per ton of clinker (lb/ton) and at this value avoided the need for a BACT determination when the modernization was authorized. Rinker requests an increase to 0.12 lb/ton of clinker. The proposed limit is relatively low compared with recent BACT determination for new kilns throughout the country. It is also much lower than the mentioned cement industry VOC MACT standard of approximately 0.3 lb/ton applicable to new kilns at greenfield plants.

Additional changes in the modified permit include: a condition to reflect addition of equipment to reduce operational problems (scale formation) within the kiln; expression of certain emission limitations using industry conventions; and adoption of additional conditions related to monitoring hydrocarbon in raw materials and VOC emissions from the stack. Sewage sludge will be removed from the previously approved slate of waste fuels at the facility.

A notice by the Miami-Dade County Department of Environmental Resources Management incorporating the above changes into the facility Title V Operation Permit is being provided simultaneously will be published separately.

The Department will issue the FINAL permit modification with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of fourteen (14) days from the date of publication of "Public Notice of Intent to Issue Air Construction Permit Modification." Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station # 35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Dept. of Environmental Protection Bureau of Air Regulation 111 S. Magnolia Drive, Suite 4 Tallahassee, Florida, 32301 Telephone: (850) 488-0114 Fax: (850) 922-6979	Dept. of Environmental Protection Southeast District Office 400 North Congress Avenue West Palm Beach, Florida 33401 Telephone: 407/681-6600 Fax: 407/681-6755	Miami-Dade County Department of Environmental Resources Management 33 Southwest 2 nd Avenue, Suite 900 Miami, Florida 33150-1540 Telephone: 305/372-6925 Fax: 305/372-6954
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The complete project file includes the application, technical evaluations, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-0114, for additional information. Key documents can be viewed at www.dep.state.fl.us/air/permitting/construction.htm by clicking on the Southeast Region of the Florida map.

TECHNICAL EVALUATION
AND
PRELIMINARY DETERMINATION

CSR RINKER MATERIALS CORPORATION
MIAMI, DADE COUNTY, FLORIDA

Portland Cement Manufacturing Facility
Modernization and Expansion Project
Finalization of Emissions and Monitoring Conditions
VOC BACT Determination

DEP File Nos. 0250014-007 & 008-AC
PSD-FL-324

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation

December 14, 2001

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

I. APPLICANT NAME AND ADDRESS

CSR Rinker Materials Corporation
1200 NW 137th Avenue
Miami, Florida 33182

II. FACILITY INFORMATION

A. FACILITY LOCATION

CSR Rinker Materials Corporation (Rinker) recently modernized the existing Miami Cement Plant by replacing the wet process cement plant with a 1.2 million tons per year (TPY) clinker dry-process cement production line [137 ton of clinker per hour (TPH)].

This site is approximately 8.2 kilometers to the Everglades National Park, a Class I Prevention of Significant Deterioration (PSD) Area, and in an ozone (O₃) maintenance area in Dade County.

B. FACILITY CLASSIFICATION CODE (SIC)

Major Group No. 32, Clay, Glass, and Concrete Products
Industry Group No. 324 Cement, Hydraulic
Industry No. 3241 Cement, Hydraulic

C. FACILITY CATEGORY

The Rinker Materials Corporation (Rinker) Miami Cement Plant directly emits more than 100 TPY of several regulated air pollutants and emits over 10 TPY of at least one hazardous air pollutant (HAP). Therefore it is classified as a "Major Source of Air Pollution or Title V Source," per the definitions in Rule 62-212.200, F.A.C.

This industry is listed in Table 212.400-1, "Major Facilities Categories", Section 62-212.400, F.A.C. Therefore, stack and fugitive emissions of over 100 TPY of carbon monoxide (CO), volatile organic compounds (VOC), sulfur dioxide (SO₂), nitrogen oxides (NO_x), or particulate matter (PM/PM₁₀) characterize the existing installation as a Major Facility per the definitions in Rule 62-210.200, F.A.C. and subject to applicability review for the requirements of PSD per Rule 62-212.400, F.A.C.

Per Table 212.400-2, "Regulated Air Pollutants – Significant Emission Rates", modifications at the facility resulting in emissions increases greater than 40 TPY of NO_x or SO₂, 7 TPY of sulfuric acid mist (SAM), 25/15 TPY of PM/PM₁₀, 3 TPY of fluorides, 1200 pounds per year (lb/yr) of lead or 200 lb/yr of mercury require review per the PSD rules and a determination for Best Available Control Technology (BACT) per Rule 62-212.400, F.A.C.

The approved Rinker modernization project was not subject to New Source Review including the PSD provisions because the modernized plant was expected to result in less overall air pollution than the existing plant. This is primarily due to the lower fuel requirements per unit of product characteristic of the dry processes.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

III. MODERNIZATION PROJECT

The Department issued a permit to Rinker on September 11, 1997 to modify the existing wet process plant by incorporating the modern dry process technology including a preheater and precalciner along with indirect firing. The dry process preheater/precalciner (PH/PC) kiln is the most fuel-efficient cement pyroprocessing technology currently available. Thermal efficiencies will be improved with the PH/PC kiln and the amount of fuel combusted per ton of clinker produced is expected to be reduced

The modernized cement plant will produce up to 137 TPH of clinker (highest maintained rate over a day). The annual potential production rate will not exceed 1.2 million TPY of clinker. The major equipment will include a PH/PC kiln, a clinker cooler, raw mill, finish mill, silos, conveyers, and particulate control/dust collection and recycling equipment. The cement product will be stored in silos and shipped in bags or in bulk by rail or truck.

A more complete project and process description was provided in the Technical Evaluation and Preliminary Determination issued for the modernization project on June 23, 1997. Rinker completed basic construction of the dry process kiln line in Spring of 2000. Compliance tests were conducted during the second half of the year. Following is a photograph of the constructed dry process plant taken in late June 2001.



CSR Rinker Modernized Dry Process Cement Plant in Miami, Florida

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

IV. PERMIT EXTENSION REQUEST

The original construction permit provided for an expiration date of May 30, 1999. The permit was revised in 1999 to show an expiration date of September 30, 2000. The Department received a request to further extend the permit (until March 31, 2002) on September 8, 2000. The stated purpose of the extension was for consistency with a Proposed Title V Operation Permit and to conduct additional work to:

- Try out various raw materials to resolve production-limiting issues.
- Design and possibly install a chloride reduction system.
- Design and construct a tire/waste handling system.

The extension of time was addressed through a Compliance Plan incorporated into the Final Title V Operation Permit issued by the Miami-Dade County Department of Environmental Resources Management (DERM).

V. ADDITIONAL PERMIT REQUESTS

Over a period of time, Rinker asked for some additional permit modifications and consolidated them in a single letter plus attachments dated June 14, 2001.

The additional requests are to:

- Adopt emission limit units and reporting requirements for sulfur dioxide and nitrogen oxides that are more consistent with the units for other pollutants from the same plant and the practice at other cement plants throughout the state.
- Propose compliance assurance requirements for VOC beyond initial testing associated with the plant modernization project.
- Remove the beryllium limit in accordance with a Rule revision that removed beryllium as a pollutant regulated under the Department and EPA PSD regulations.
- Propose a variable factor to convert kiln preheater feed rates to clinker production rates for the purposes of calculating emissions based on process rates. Concur with a Department initiative to require empirical raw materials to clinker conversion factors prior to conducting future tests.

VI. VOC BACT DETERMINATION REQUEST

On November 19, 2001, Rinker submitted a request that the Department perform a determination of BACT pursuant to the PSD rules (62-212.400, F.A.C.). The main reason for Rinker's request is that the limit accepted by the company to avoid PSD during the modernization project is very difficult to meet for reasons that are discussed below.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

VII. PRESENT SITUATION

As of this time, all physical construction required to make cement at or near the permitted production limit is complete. No facilities have been installed to burn permitted supplementary fuels such as tires, sewage sludge, and non-hazardous solid wastes. A Title V Operation Permit with a Compliance Plan was issued in October 2000. Compliance testing has been conducted. Following are the results of tests for certain pollutants of interest to the Department.

Pollutant	Permit Limit	Result
SO ₂	0.70 lb/mmBtu	0.01 lb/mmBtu (~0.03 lb/ton)
NO _x	1.53 lb/mmBtu	1.0 lb/mmBtu (~3 lb/ton clinker)
Beryllium	0.66 x 10 ⁻⁶ lb/ton clinker	1.16 x 10 ⁻⁶ lb/ton clinker
VOC	0.1 lb/ton clinker	0.1 lb/ton clinker

Based on the results, it is clear that emissions of SO₂ are much less than permitted. In fact emissions of SO₂ are now measured in the "tens of tons per year" instead of "thousands" of tons per year. The low emissions are confirmed by the continuous emissions monitoring system (CEMS) installed as a requirement of the modernization permit

Emissions of NO_x are lower than permitted. Prior to the modernization project, emissions were in excess of the 2 lb/mmBtu limit required by the Department's Reasonable Available Control Technology (RACT) regulation for the cement industry in Southeast Florida. The value achieved of 1 lb/mmBtu reflects a substantial reduction in total emissions based on a past-actual-to-future potential emissions basis. The test results are further confirmed by the NO_x CEMS installed as a requirement of the modernization permit.

The emissions of VOC are at the allowable limit based on lb/ton of clinker produced. However annual emissions are still less than the value that would have triggered PSD. The permit required only an initial test for VOC and relied upon carbon monoxide testing as a surrogate for VOC.

The beryllium test result exceeded the permitted limit that was accepted to avoid triggering PSD. Details are discussed below.

VIII. EVALUATION OF UNITS FOR REPORTING SO₂ AND NO_x EMISSIONS

The Department adopted emission limits in terms of lb/mmBtu for SO₂ and NO_x because the applicable requirements were given in these terms. These include the limits in Chapter 24 of the Miami-Dade County Code of 1.1 and 1.2 lb SO₂/mmBtu for liquid and solid fuels respectively. The permit limit was set at 0.70 lb SO₂/mmBtu to avoid PSD applicability as part of a netting calculation.

The SO₂ emissions are significantly lower than permitted. The reason is that the dry preheater/calciner process provides an opportunity for self-scrubbing of the exhaust gases by finely-divided lime. Therefore virtually all fuel sulfur is removed in this manner. The raw

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

materials fed into the preheater apparently contain minimal sulfur (such as pyrites). Therefore SO₂ emissions from "roasting" in the upper stages of the preheater are minimal.

The Department has reasonable assurance that the project easily complies with the Miami-Dade ordinance and proposes to reset the permit limit to the "lb/ton of clinker" equivalent of 0.70 lb SO₂/mmBtu. The equivalent value is 2.23 lb SO₂/ton of clinker based on the emission limit of 306 lb/hour divided by the permitted clinker production limit of 137 tons per hour.

The NO_x emissions are roughly 60 percent of the permitted value and are roughly equal to levels expected by the Department for the type of kiln installed by Rinker (preheater/precalciner without staged combustion). The actual emissions are about half of the emission limit per the Department's RACT rule applicable to the cement industry of 2.0 lb NO_x/mmBtu.

The permit limit is 1.53 lb NO_x/mmBtu. This was the limit needed to "net out" of PSD during the permitting of the modernization project and meet the RACT rule. The equivalent value is 4.9 lb NO_x/ton of clinker based on the emission limit of 671 lb/hour divided by the permitted clinker production limit of 137 tons per hour.

The Department concludes that that the kiln will comply with the applicable NO_x emission limits by complying with a limitation of 4.9 lb NO_x/ton of clinker. Furthermore on the basis of tests conducted, the Department has reasonable assurance that the unit complies with the NO_x emissions limits.

IX. BERYLLIUM LIMITATION

The beryllium emissions are greater than permitted by about 50 percent. The Department believes that for this type of kiln, raw materials and fuels, baghouses represent the proper technology to control beryllium emissions. The company installed a baghouse but accepted a low value to avoid PSD.

The Department recognizes that the EPA and the Department no longer regulate beryllium as a "PSD pollutant". The pollutant is now regulated under industry-specific rules pursuant to Title III of the Clean Air Act. The Maximum Achievable Control Technology (MACT) rules applicable to cement kilns regulate beryllium at kilns that (unlike Rinker) burn hazardous waste.

For reference, according to an EPA review for setting the cement industry MACT standard emissions of beryllium from 24 kilns ranged from 0.05 to 2.2 µg/m³ at 7 percent oxygen. The average is approximately 0.56 µg/m³. Rinker reported that its emissions of beryllium were 0.37 µg/m³ at 7% O₂. The Department will modify the permit accordingly.

X. BACKGROUND ON VOC ISSUE

The following table is from the Technical Evaluation and Preliminary Determination in support of the modernization permit issued in 1997. The permit allowed an increase of only 32.9 TPY, of which 20.5 TPY were consumed by a contemporaneous soil remediation thermal unit project.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

CONTEMPORANEOUS CREDITABLE CHANGES (TPY) ⁽¹⁾

Pollutants	Modernization Project	(+) Increases (Contemporaneous)	(-) Decreases (Shutdowns)	= Total	PSD Significance
PM	353	23.5	539.8	-163.3	25
PM ₁₀	285	8.3	283.5	9.8	15
SO ₂	1340	36.8	1884.8	-108.0	40
NO _x	2940	60.4	2988.6	11.8	40
CO	1807	15.4	1764.8	57.6	100
VOC	60	20.5	47.6	32.9	40
SO ₃	8.4	0	21.8	-13.4	7

1. Sum of Contemporaneous Creditable Changes (TPY) detailed in Rinker's letter dated April 16, 1997.

As a result, an increase in kiln emissions from 47.6 actual TPY to 60 potential TPY was allowed despite a near doubling in cement output. Emissions of VOC from raw materials in the old wet process were masked by the fact that raw materials are slurried and then dried, calcined, and converted to clinker within the kiln. It was apparently believed that VOC would be evolved in the kiln and would be destroyed in the calciner that would act somewhat as an afterburner.

A similar assumption was made for the new preheater calciner kiln constructed by Florida Rock in Newberry, Florida. In that case, a BACT limit for VOC was set at 0.12 lb/ton of clinker. The company initially failed to achieve the permitted limit and was able to do so after an extensive program to diagnose the causes and potential remedies. Testing at Rinker was scheduled after the testing at Florida Rock and Rinker (with difficulty) met its more stringent limit of 0.1 lb/ton of clinker.

It is quite likely that the Department would have issued a higher BACT limit than the limit necessary to avoid PSD if the request had been made at that time. It is noted that the modernization permit required only the initial test for VOC and that no further testing is specified by the Title V Operation permit. Nevertheless, Rinker has requested both a new limit and permanent testing and monitoring requirements to be incorporated into the Title V Operation Permit.

Rinker's request to increase the emission rate to 0.12 (matching the Florida Rock limitation) will result in annual VOC emissions of approximately 72 TPY. This would trigger PSD per the above table because emissions increases including contemporaneous increases and decreases would be approximately 45 TPY versus the PSD threshold of 40 TPY

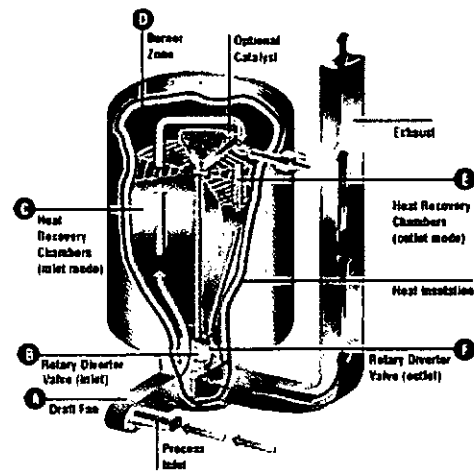
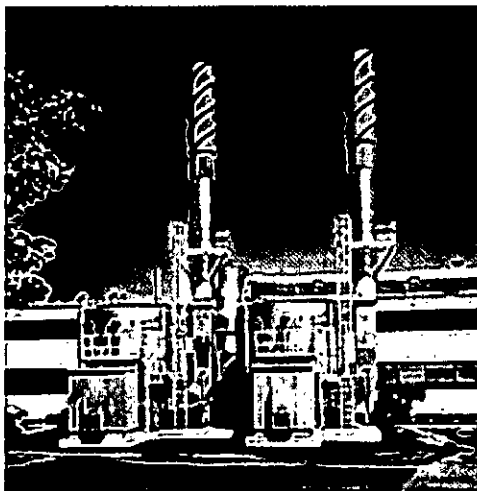
XI. VOC LIMITATIONS AT OTHER FACILITIES

Following is a tabulation of some recent VOC emission limitations for new cement kiln projects. The approximate value determined by the U.S. Environmental Protection Agency (EPA) as MACT for kilns at greenfield sites is included for comparison. There is no MACT requirement for new kilns or existing kilns at brownfield sites.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

PLANT	YEAR	PSD?	VOC (lb/ton)	TECHNOLOGY
Rinker (Revision)	2001	Y	0.12	Process/Raw Materials
Rinker Modernization	1997	N	0.10	Process/Combustion
Fla. Rock Newberry	1996	Y	0.12	Process/Combustion
FCS Brooksville	1995/97	Y	0.085	Process/Combustion
Holnam Midlothian	1997	N	0.70	Process/Combustion
TXI Midlothian	1998	N	0.026	Regen Thermal Oxidation
Tarmac Miami	2000	N	0.19	Process/Combustion
Holnam Holly Hill	2000	Y	0.27	Process/Raw Materials
Suwannee American	2000	Y	0.12	Process/Combustion
St. Lawrence Cement	2001 (draft)	LAER	0.11	Process/Raw Materials
Rio Grande	2000	Y	0.05	Process/Combustion
All Greenfield Plants	Future	MACT	~0.3	Process/Raw Materials

TXI proposed a sophisticated regenerative thermal oxidation (RTO) system that cost about \$17,500,000 (installed) and was able to net out of PSD for VOC and CO. In addition to the cost, additional NO_x results from burning natural gas in the RTO.¹ Eleven RTO modules of the type shown below were installed and cover an area approximately the “size of a football field.”



TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

A Top/Down BACT determination might not have required such a system at the TXI Midlothian site. However the company wanted to avoid protracted delays in their expansion that were likely if they tried to obtain a PSD permit with a BACT determination in Texas for their modernization/expansion project. No subsequent projects have required RTO systems as BACT or LAER.

Colorado specified an annual limit, based on a rolling 12-month total, for the Rio Grande Portland Cement Operation outside Pueblo, Colorado. This annual limit is equivalent to about 0.05 lb VOC per ton of clinker. After the initial source compliance testing, however, the Rio Grande permit does not provide for additional VOC measurements, other than general language reserving the right to require testing of any emission source as requested by the State.

A special situation (not listed in the above table) caused Holnam to install an RTO for the purpose of VOC/odor control to abate problems associated with high levels of naturally-occurring kerogens in the raw materials available for its plant in Michigan. VOC emissions from that plant were estimated in the "thousands of TPY" versus the 72 TPY foreseen for the Rinker plant.

An alternative to RTO is a carbon filter such as included in the Polysius Environmental Technology (POLVITEC).² Such a system was installed at the HCB Siggenthal Plant in Switzerland for multi-pollutant control from dried sewage sludge combustion.³ The project was feasible because the City of Zurich put up a portion of the capital cost of \$15 million for the installation and the plant recovers costs by burning a variety of other wastes.

VOC from raw materials can be controlled by judicious selection of the raw materials. Limestone, clay, and sand are the predominant components of the raw material feed stock. Controlling VOC only through careful selection of raw materials is therefore not a viable option if local, in-state sources of these components are high in VOC content.

There are some control options, however, if the primary materials are relatively free of VOC but the additives, such as mill scale, are high in VOC content. One option is to use mill scale that is free of or cleaned of lubricants.⁴ Another is grinding and metering additives directly into the kiln.⁵ The organic content of the mill scale is driven off in the preheater. By adding the VOC laden material directly into the hot zone of the kiln instead of the preheater system, the VOC are combusted before they can be emitted.⁶

XII. VOC DRAFT BACT DETERMINATION

The Department has determined that the top control for VOC is 0.026 lb/ton of clinker to be achieved by RTO or carbon adsorption. Reduction of emissions from 0.12 to 0.026 lb/ton would represent annual emission reductions of about 60 TPY. There is no way it can be cost-effective to accomplish such a small reduction through an RTO system or a carbon adsorption filter on a cement kiln. In any event, the plant is only requesting an increase of some 12 TPY.

In Florida, locally available limestone, sand, and clay typically have a low organic content. Mill scale and other additives can be high in VOC content. Adding the mill scale directly to the kiln is not cost-effective in relation to the increased heat consumption of the kiln, possible build ups at

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

the injection point, and the difficulties in producing the homogeneous kiln feed needed for high quality clinker.⁶

Without judicious selection of raw materials, emissions from kilns such as Rinker and Florida Rock can easily be on the order of 0.2 lb/ton. Both Rinker and Florida Rock have implemented programs to insure VOC content is minimized in the incoming raw materials in addition to having very effective pyroprocessing systems to burn out VOC emanating from the kilns.

By comparison with recent BACT determinations (including a draft LAER determination) with other kilns around the country, the Rinker and Florida Rock kilns have low VOC emissions. The Department believes that 0.12 lb/ton of clinker is the proper limit for the Rinker kiln and that this limit can be met through proper combustion controls and raw materials selection, without the need for additional control devices or direct firing of the additives.

To insure continuous compliance with the VOC emissions limit, the Department will require a continuous emissions monitoring system (CEMS) such as was installed at Florida Rock. Until the CEMS is installed, the Department will require quarterly stack testing and testing of hydrocarbon content in the incoming raw materials.

XIII. OTHER ISSUES

At this time, Rinker is embarking on a project to construct the bypass to solve a problem caused by the buildup of certain chemical species in recirculating streams within the pyroprocessing system. These constituents tend to deposit on certain surfaces in the pyroprocessing equipment causing lower production and periodic shutdowns. Therefore Rinker is still engaged in solving technical production problems and has not yet constructed the equipment to burn the additional solid waste fuels.

No equipment was installed to burn sewage sludge as permitted by the modernization permit. Rinker advised that it does not actually wish to burn this material. Therefore the condition allowing burning of sewage sludge will be deleted from the permit.

The Title V permit recognizes that Rinker may install the mechanisms to introduce and burn tires and tire derived fuel. The project will need to be completed by March 31, 2002 as indicated in the previously issued Title V Operation permit, otherwise, a new air construction permit will be required. Similarly equipment to burn the following non-hazardous wastes has not yet been installed:

- Oil filters, booms and rags from spill clean up, generated on site to be used as supplemental fuel not as a start-up fuel.
- Unused diapers, papers products, and non-chlorinated plastic waste to be used as supplemental fuel not as startup fuel.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

XIV. PERMIT MODIFICATION

The Department intends to modify the permit as shown in the enclosed draft letter. The permit will be extended to March 31, 2002 for the purpose of installing the bypass, the VOC CEMS, and any additional equipment to burn the specified non-hazardous waste fuels.

References

- ¹ Memorandum from Greer, W.L., Trinity Consultants, Inc., Olathe, KS, to Linero, A.A., Florida DEP. *Re: Draft AWMA Paper*. February 9, 2001.
- ² Kupper, D. "Trends on Desulfurization and Denitrification Techniques in the Cement Industry," in *Proceedings of the 3rd IEEE Cement Industry Technical Conference*. 1992. Dallas, TX.
- ³ de Quervain, B., Ph.D., "Umweltfreundliche Klarschlammverbrunnung am Beispiel des PCW Portland-Cement-Werks," *GWA des Schweizerischen Vereins des Gas und Wasserfaches*, 1992, Sonderdruck No. 1258.
- ⁴ Letter from Fred Cohrs, Florida Rock Industries, to Kirby Green, Florida DEP, re: VOC Emissions Testing, dated September 25, 2000.
- ⁵ Terry, Mark S. "BACT: What is available with Today's Technology," *Krupp Polysius Technical Seminar*. 1999.
- ⁶ Reference Document, "Best Available Techniques" for the Cement Industry," CEMBUREAU (The European Cement Association). December, 1999.