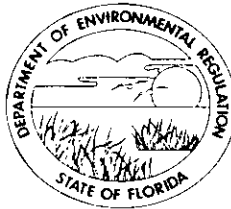


STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING  
2600 BLAIR STONE ROAD  
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM  
GOVERNOR  
VICTORIA J. TSCHINKEL  
SECRETARY

November 9, 1984

Mr. James T. Wilburn, Chief  
Air Management Branch  
Environmental Protection Agency-Region IV  
345 Courtland Street  
Atlanta, Georgia 30365

RE: Request for Revision of PSD-FL-050

Dear Mr. Wilburn:

Enclosed is the department's recommendations on revision of the sulfur dioxide emission standards in federal permit PSD-FL-050 for Lonestar Florida Pennsuco, Inc.'s three Portland cement kilns.

Public notice of the proposed revisions was published in the Miami Herald on August 28, 1984. Comments on the proposal were received from the department's Southeast District office and the National Park Service. These comments and the department's response, which resulted in several changes to the proposed permit specific conditons, are discussed in the final determination.

The department recommends that federal permit PSD-FL-050 be revised as shown in the final determination. If the Environmental Protection Agency approves the department's recommendations, then the state construction permits issued for the three kilns will be revised by the department's Southeast District office to be consistent with the federal permit.

Sincerely,

*Samuel George*  
for Clair Fancy, P.E.  
Deputy Chief  
Bureau of Air Quality  
Management

CHF/WH/agh  
cc: Roy Duke, Southeast District

Final Determination

Revision of Best Available Control Technology Determination  
and  
Permit to Construct

Lonestar Pennsoco, Inc.  
Dade County

Federal Permit Number  
PSD-FL-050

Florida Department of Environmental Regulation  
Bureau of Air Quality Management  
Central Air Permitting

November 9, 1984

## Final Determination

The Florida Department of Environmental Regulation has completed its review of the Lonestar Florida Pennsuco, Inc.'s February 23, 1983, request for revisions to the sulfur dioxide emission standards listed in federal permit number PSD-FL-050 for the three Portland cement kilns at its plant in Hialeah, Dade County, Florida. Public notice of the department's intent to revise the Best Available Control Technology (BACT) determination and the permit to construct was published in the Miami Herald on August 28, 1984.

Comments on the department's intent were received from the Southeast District office and the National Park Service. The district requested the sulfur dioxide emission limits for kiln No. 3 be reduced from 4.6 to 4.57 lb SO<sub>2</sub>/ton clinker produced, that the stack test program to be used to determine the maximum sulfur content that can be in the coal be described, and that the Company be required to maintain an operating log on the three kilns. The National Park Service asked for an explanation of the discrepancy in the test data that showed sulfur dioxide removals of 75 and 98.7 percent, commented on the background sulfur dioxide levels in the park, and asked that the impact analysis be included in the application.

In response to the district's comments, the difference between emission factors for kiln No. 3 of 4.6 and 4.57 lb. SO<sub>2</sub> per ton clinker is less than one percent. The actual factor (400 lb. SO<sub>2</sub> per hour emission/87.5 tons per hour clinker production) rounded off to one decimal place is adequate for this permit. The procedures used to measure the sulfur dioxide emissions are not accurate enough to justify a more precise emission factor. Proposed specific condition No. 5 was not changed in the final determination.

The test program to establish the highest sulfur content of the coal that can be burned in the kilns is as follows. The program will consist of at least three separate EPA Method 6 compliance tests on each kiln. Each test will be no less than 168 hours apart to account for unknown variations in the feed and operation of the kilns. Should any test fail, the subsequent tests will be run with the kilns fired on coal containing a sulfur content 0.25 percent less than the preceding test. This program is for the initial compliance test only. Any operating permits issued for the kilns will require only one test, as described in 40 CFR 60, Appendix A, per year. Specific condition No. 6 is revised to include this requirement.

The National Park Service requested an explanation for the discrepancy in the sulfur dioxide removal reported by the Company. The initial applications for permits to burn coal in the kilns were based on a sulfur dioxide absorption rate

measured while burning No. 6 fuel oil in the kilns. The Company assumed a similar sulfur dioxide removal efficiency when the kilns were fired with coal. Tests on the one kiln converted to coal showed much lower sulfur dioxide absorption rates. The conclusion is that coal-fired cement kilns do not retain as much of the potential sulfur dioxide emissions as oil-fired ones.

In answer to the National Park Service's comments on the background SO<sub>2</sub> level in the Everglades National Park, we acknowledge that the SO<sub>2</sub> level in the park is greater than zero ug/m<sup>3</sup>. According to 1983 SO<sub>2</sub> monitoring data from the park, an annual average concentration of 7 ug/m<sup>3</sup> was measured. If Lonestar's predicted impact of 0.4 ug/m<sup>3</sup>, which is much less than the Class I increment, is added to this concentration, the resulting impact is predicted to be 7.4 ug/m<sup>3</sup>. As stated in the preliminary determination, this impact is not expected to have an adverse impact on park resources.

In response to the Park Service's comment on the impact analysis, there were no additional increment consuming sources besides Dade County Resource Recovery which would have an impact on the receptors used in the modeling to evaluate the impact of Lonestar's modification on the Class I area. All other increment consuming sources were located at least 50 kilometers away from those receptors. Therefore, no impact area was defined.

The revised specific conditions, with the changes discussed above, are as follows:

Revised Specific Conditions:

4. Emissions of sulfur dioxide from Nos. 1 and 2 kilns shall not exceed 125.0 pounds per hour from each kiln at the maximum operating rate of 25 tons per hour of clinker produced per kiln. At lesser operating rates the emissions of sulfur dioxide shall not exceed 5.0 pounds per ton of clinker produced.
5. Emissions of sulfur dioxide from No. 3 kiln shall not exceed 400 pounds per hour at the maximum operating rate of 87.5 tons per hour of clinker produced. At lesser operating rates the emissions of sulfur dioxide shall not exceed 4.6 pounds per ton of clinker produced.
6. The coal used to fuel kilns Nos. 1, 2, and 3 shall have a sulfur content of less than 1.75 percent (monthly average) and 2.0 percent maximum; or the sulfur content, determined once by the stack test program described below, that consistently meets the revised sulfur dioxide emission standards, whichever sulfur content is most restrictive.

## TEST PROGRAM

In establishing the maximum sulfur content of the coal that can be used in each kiln, the Company shall conduct a test series on the kilns while they are operating near maximum production.

The test series shall consist of a minimum of three separate compliance tests, each test at least 168 hours after the preceding test, and using fuel with a constant ( $\pm$  0.25 percent) sulfur content. All test results for coal of this sulfur content must be below the BACT standards.

If test results show the SO<sub>2</sub> emissions from a kiln do not meet the BACT standard, then the Company shall reduce the sulfur content of the coal burned in this kiln by at least 0.25 percent (average) and repeat the test series until the emissions consistently comply with the revised BACT standards. For each test the Company shall provide a test report giving, as a minimum, the data listed in Chapter 17-2.700(7), FAC.

In addition, for each test sample the Company shall measure or estimate and report:

- feed rate (TPH)
- sulfur content of feed
- coal rate (TPH)
- sulfur content of coal
- oxygen content of flue gas

### New Condition:

13. Only two kilns will be operated with coal as fuel at the same time. The Company shall maintain a log or logs that shows, as a minimum: the operational status of all three kilns at any time; when each kiln is placed in service; the clinker, feed, and fuel feed rates to each kiln; and when the kiln is taken out of service.



# **LONESTAR FLORIDA PENNSUCO, INC.**

Cement & Aggregate Plant  
11000 N. W. 121 Way  
Medley, Florida 33178  
P. O. Box 122035 - PVS  
Hialeah, Florida 33012  
(305) 823-8800

October 24, 1984

Mr. C. H. Fancy  
Deputy Bureau Chief  
Bureau of Air Quality Management  
2600 Blair Stone Rd.  
Tallahassee, Florida 32301

Re: PSD-FL-050, Request for Revision.

Dear Mr. Fancy:

This letter is in response to telephone conversations with Mr. Willard Hanks of your office regarding public comment received concerning the above referenced permit. Four (4) items needing further clarification were raised from the comments received.

1. STACK TEST PROGRAM - The preliminary determination references a stack test program without further clarification. It is my understanding that this program is detailed in DER internal files and it amounts to a series of three (3) SO<sub>2</sub> emission tests. Each consecutive test would be no less than 168 hours apart. Additionally, should any test fail, the subsequent test would be run with the kiln fired on coal with a sulfur content 0.25% less than the preceeding test. This stack test program is acceptable provided that it is for initial compliance purposes only. All subsequent annual compliance tests will consist of one (1) stack test in accordance with 40 CFR 60, Appendix A.
2. VERIFICATION OF BACT OPERATING RATES - Operating logs are kept for each kiln of the day, time, type and amount of fuel fired.
3. CHANGES IN PROJECTED SO<sub>2</sub> ABSORPTION - This has been the basis of the entire SO<sub>2</sub> emission limitation revision request and was documented in many previous correspondence. To briefly summarize, the initial 1979 coal conversion permit SO<sub>2</sub> emission limits were based on sulfur absorption rates derived from stack tests performed on the kilns while burning No. 6 fuel oil.

Mr. C. H. Fancy  
PSD-FL-050, Request for Revision  
Page Two

Those tests showed sulfur absorption at  $\pm$  98%. Little information was available at that time of similar kiln systems converting to coal so the assumption that absorption rates would be similar was accepted. When the coal conversion was completed on the Kiln No. 3 system a compliance test was conducted which demonstrated that much lower absorption rates could be expected utilizing coal. A series of stack test after that initial test were utilized to arrive at the absorption rate of 77.7% in our permit revision request.

4. STACK TESTS ON COAL REPRESENTATIVE OF OPERATION - All stack tests were conducted during normal kiln operations while burning coal averaging 1.7% S.

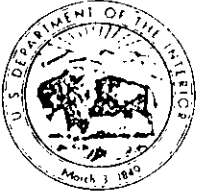
I hope this answers the questions raised, but should you need anything further please call.

Sincerely,



Scott Quaas  
Environmental Specialist

cc: C. D. Coppinger  
A. Townsend



# United States Department of the Interior

NATIONAL PARK SERVICE  
SCIENCE PUBLICATIONS OFFICE

75 Spring Street, S.W.  
Atlanta, Georgia 30303

IN REPLY REFER TO:

N3615(475)

SEP 25 1984

Mr. C. H. Fancy, P.E.  
Deputy Bureau Chief  
Bureau of Air Quality Management  
2600 Blair Stone Road  
Tallahassee, Florida 32301

Dear Mr. Fancy:

Thank you for sending us information regarding your preliminary approval of Lonestar Florida Pennsuco's (Lonestar) permit modification request. As we understand it, Lonestar was granted a permit in 1980 for the fuel conversion of three existing kilns from gas/oil firing to coal firing, but is now requesting an increase in the allowable sulfur dioxide (SO<sub>2</sub>) limit. The Lonestar facilities, which are located in Hialeah, Florida, are 30 kilometers northeast of Everglades National Park, a mandatory class I area.

You indicate that original stack tests performed, while the kilns were firing oil, show that 91.3 percent of the potential SO<sub>2</sub> was absorbed by the aggregate processed in kilns 1 and 2, and 98.7 percent in kiln 3. The emission limitations for the fuel conversion permit were based on these data. Actual stack test data for coal firing indicate that the observed SO<sub>2</sub> removal is only approximately 75 percent. Consequently, Lonestar is requesting the SO<sub>2</sub> allowable limit in their permit be increased by 1,688 tons per year.

In the information you provided, there was little discussion regarding the large discrepancy in the test data (75 percent versus 98.7 percent). We would like to know if the difference is attributable entirely to the fuel change, if the coal-fired tests were properly conducted and were representative of normal operation, and if the kilns were being operated in the same manner as when the oil-fired tests were performed.

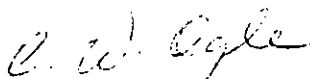
We note that the predicted SO<sub>2</sub> concentrations in Everglades National Park were made assuming a zero micrograms per cubic meter (ug/m<sup>3</sup>) background concentration. Using this assumption, Lonestar predicts an annual SO<sub>2</sub> concentration of 0.4 ug/m<sup>3</sup> in the park. Although we do not expect this concentration to have an adverse impact on park resources, please note for future permits that SO<sub>2</sub> monitoring has been done in the park, and these data indicate that background levels, although low, are not zero ug/m<sup>3</sup>. Future permits should include the background concentrations in any impact discussion.



The applicant asserts that "Lonestar and Dade County Resource Recovery were determined to be the only significant increment consuming sources in the area." This implies that an analysis was performed to define some impact area. This analysis should be included in the application.

If you have any questions regarding this matter, please contact Mark Scruggs of our Air and Water Quality Division at (303) 234-6620.

Sincerely,



Acting Regional Director  
Southeast Region

Best Available Control Technology (BACT) Determination

Lonestar Florida Pennsuco, Inc.

Dade County

The applicant has requested a revision of a previous BACT determination for sulfur dioxide emission limits for the three cement kilns located at their facility in Hialeah, Florida. Federal permit PSD-FL-050, issued in 1980, specified that SO<sub>2</sub> emissions from kiln No.1 and No.2 shall not exceed 56.7 pounds per hour per kiln and 26.3 pounds per hour from kiln No.3. The SO<sub>2</sub> emission limits were based on tests using 2.38% sulfur content fuel oil.

Kiln No. 3 was converted from oil/gas fired to coal fired and the emissions measured. The No. 3 kiln test results indicate a lower absorption of SO<sub>2</sub> by the products in the kiln, and consequently more SO<sub>2</sub> is being emitted to the atmosphere than originally proposed based on the tests using oil as fuel. Based upon the new data, the applicant has requested a revision of the SO<sub>2</sub> emission limits for the No. 3 kiln and No. 1 and No. 2 kiln both of which will also be converted to coal-fired units as originally proposed.

The requested change would result in an increase of 68 lb/hr from kilns 1 and 2 and 374 lb/hr from kiln 3 above the original limits determined as BACT.

BACT Determination Requested by the applicant:

The following fuel operating mix for the three kilns would be:

- |                      |                  |                  |
|----------------------|------------------|------------------|
| A. Kiln 1-coal(125)# | Kiln 2-gas(9)    | Kiln 3-coal(400) |
| B. Kiln 1-gas(9)     | Kiln 2-coal(125) | Kiln 3-coal(400) |
| C. Kiln 1-coal(125)  | Kiln 2-coal(125) | Kiln 3-DOWN      |

\* figure in parenthesis is pounds SO<sub>2</sub> emissions per hour.

Kiln operations per any of the three scenarios will not cause violation of the Federal, State or Dade County ambient air quality standards.

Date of receipt of a BACT application:

June 4, 1984

Date of Publication in the Florida Administrative Weekly:

June 22, 1984

Review Group Members:

The determination was based upon comments received from the New Source Review Section, Air Modeling Section, the Dade County

Department of Environmental Resources Management and the  
Southeast District Office.

BACT Determined by DER:

Pollutant	Emission Limit
Kiln No.1	125 lb SO <sub>2</sub> /hr
Kiln No.2	125 lb SO <sub>2</sub> /hr
Kiln No.3	400 lb SO <sub>2</sub> /hr

The SO<sub>2</sub> emission limits determined as BACT do not result in a violation of Federal or State ambient air quality standards, but, do violate the Dade County standards. The department, therefore, has incorporated the proposed three operating scenarios as BACT to prevent violation of the Dade County standards.

Matrix

Matrix

Matrix

Kiln 1 fire coal	Kiln 1 fire gas	Kiln 1 fire coal
Kiln 2 fire gas	Kiln 2 fire coal	Kiln 2 fire coal
Kiln 3 fire coal	Kiln 3 fire coal	Kiln 3 down

Compliance with the SO<sub>2</sub> emission limit will be in accordance with 40 CFR 60, Appendix A; Methods 1, 2, 3, 4 and 6.

Compliance with the operating matrix provision will be the kiln operating log. The day, time and type of fuel fired will be recorded for each kiln. The time period Number 3 kiln is down

will also be recorded in the operating log. Each log will be kept a minimum of two years.

BACT Determination Rationale:

The cement kilns were originally fired with natural gas and residual oil. The fuel was switched to coal in 1980 as per the conditions of permit number PSD-FL-050. The applicant submitted test data while firing residual oil containing 2.38 percent sulfur to determine kiln product absorption of SO<sub>2</sub>. The data indicated that 91.3% of the potential SO<sub>2</sub> was absorbed by the aggregate processed in kilns 1 and 2 and 98.7% in kiln 3. A BACT determination was made based upon the applicants data.

After one of the the kilns had been converted to fire coal, the exhaust gases were tested for SO<sub>2</sub> content. The data indicated the absorption of SO<sub>2</sub> in the kiln product was 75 to 80 percent, not the reduction originally anticipated. The coal fired in the kiln during the test contained two percent sulfur.

AP-42, Section 8.6-1 indicates the overall control inherent in the process is approximately 75 percent or greater of the available sulfur in ore and fuel if a baghouse that allows SO<sub>2</sub> to come in contact with the cement dust is used. These existing sources use electrostatic precipitators for the control of particulate emissions, therefore, the department believes the maximum absorption would be 75 percent.

~~The amount of SO<sub>2</sub> emissions, of course, will vary according to~~  
the alkali and sulfur content of the raw materials and fuel.

The SO<sub>2</sub> emission limits determined as BACT are obtainable by firing low sulfur coal. The economics of firing two percent sulfur coal is evident. The applicant has the option of burning a lower sulfur coal or installing additional SO<sub>2</sub> controls to meet the SO<sub>2</sub> limits determined as BACT.

The three operating scenarios proposed by the applicant, to protect the Dade County AAQS, are acceptable. The application of production process techniques are a recognized method to achieve the required level of emission control.

Details of the Analysis May be Obtained by Contacting:

Edward Palagyi, BACT Coordinator  
Department of Environmental Regulation  
Bureau of Air Quality Management  
2600 Blair Stone Road  
Tallahassee, Florida 32301

Recommended by:

---

C.H. Fancy Deputy Bureau Chief

Date:

Approved:

---

Victoria J. Tschinkel, Secretary

Date:

ED/agh



# LONESTAR FLORIDA PENNSUCO, INC.

Cement & Aggregate Plant  
11000 N. W. 121 Way  
Medley, Florida 33178  
P. O. Box 122035 - PVS  
Hialeah, Florida 33012  
(305) 823-8800

October 24, 1984

Mr. C. H. Fancy  
Deputy Bureau Chief  
Bureau of Air Quality Management  
2600 Blair Stone Rd.  
Tallahassee, Florida 32301

Re: PSD-FL-050, Request for Revision.

Dear Mr. Fancy:

This letter is in response to telephone conversations with Mr. Willard Hanks of your office regarding public comment received concerning the above referenced permit. Four (4) items needing further clarification were raised from the comments received.

1. STACK TEST PROGRAM - The preliminary determination references a stack test program without further clarification. It is my understanding that this program is detailed in DER internal files and it amounts to a series of three (3) SO<sub>2</sub> emission tests. Each consecutive test would be no less than 168 hours apart. Additionally, should any test fail, the subsequent test would be run with the kiln fired on coal with a sulfur content 0.25% less than the preceding test. This stack test program is acceptable provided that it is for initial compliance purposes only. All subsequent annual compliance tests will consist of one (1) stack test in accordance with 40 CFR 60, Appendix A.
2. VERIFICATION OF BACT OPERATING RATES - Operating logs are kept for each kiln of the day, time, type and amount of fuel fired.
3. CHANGES IN PROJECTED SO<sub>2</sub> ABSORPTION - This has been the basis of the entire SO<sub>2</sub> emission limitation revision request and was documented in many previous correspondence. To briefly summarize, the initial 1979 coal conversion permit SO<sub>2</sub> emission limits were based on sulfur absorption rates derived from stack tests performed on the kilns while burning No. 6 fuel oil.



Mr. C. H. Fancy  
PSD-FL-050, Request for Revision  
Page Two

Those tests showed sulfur absorption at  $\pm 98\%$ . Little information was available at that time of similar kiln systems converting to coal so the assumption that absorption rates would be similar was accepted. When the coal conversion was completed on the Kiln No. 3 system a compliance test was conducted which demonstrated that much lower absorption rates could be expected utilizing coal. A series of stack test after that initial test were utilized to arrive at the absorption rate of 77.7% in our permit revision request.

4. STACK TESTS ON COAL REPRESENTATIVE OF OPERATION - All stack tests were conducted during normal kiln operations while burning coal averaging 1.7% S.

I hope this answers the questions raised, but should you need anything further please call.

Sincerely,



Scott Quaas  
Environmental Specialist

cc: C. D. Coppinger  
A. Townsend

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING  
2600 BLAIR STONE ROAD  
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM  
GOVERNOR

VICTORIA J. TSCHINKEL  
SECRETARY

August 29, 1984

Mr. Barry Peterson  
South Florida Regional Planning Council  
1515 N.W. 167th Street  
Suite 429  
Miami, Florida 33169

Dear Mr. Peterson:

RE: Preliminary Determination - Lonestar Florida Pennsuco, Inc.  
Request for Revision, PSD-FL-050

I wish to bring to your attention that Lonestar Florida Pennsuco, Inc. proposes to modify its existing facilities in Dade County, Florida, and that emissions of air pollutants will thereby be increased. The Florida Department of Environmental Regulation, under the authority delegated by the U.S. Environmental Protection Agency, has reviewed the proposed construction under Federal Prevention of Significant Deterioration Regulations (40 CFR 52.21) and reached a preliminary determination of approval, with conditions, for this construction.

Please also be aware that the attached Public Notice announcing the preliminary determination, the availability of pertinent information for public scrutiny and the opportunity for public comment will be published in a local newspaper in the near future. This notice has been mailed to you for your information and in accordance with regulatory requirements. You need take no action unless you wish to comment on the proposed construction. If you have any questions, please feel free to call Mr. Bill Thomas or myself at (904)488-1344.

Sincerely,

C. H. Fancy, P.E.  
Deputy Chief  
Bureau of Air Quality  
Management

CHF/pa  
Enclosure

Public Notice

PSD-FL-050 (Revised)

Federal construction permit No. PSD-FL-050 authorized Lonestar Pennsuco, Inc. of Hialeah, Dade County, Florida to convert three Portland cement kilns to coal fuel. Operational data from the first kiln converted to coal showed the permitted sulfur dioxide limits for the kilns cannot be met. The Company has requested that the allowable sulfur dioxide emissions from the three kilns associated with the conversion to coal be increased to 2,300 tons per year. Emissions of other criteria pollutants will not change significantly.

By authority of the United States Environmental Protection Agency, the Florida Department of Environmental Regulation (FDER) has reviewed the proposed modification to the sulfur dioxide emission standard under federal prevention of significant deterioration (PSD) regulations (40 CFR 52.21). The FDER has made a preliminary determination that the modification can be approved provided certain conditions are met. A summary of the basis for this determination and the data submitted by Lonestar Florida Pennsuco, Inc. to support its request is available for public review at the following regulatory agency offices:

Department of Environmental Regulation  
Bureau of Air Quality Management  
Koger Properties, Inc.  
Montgomery Building  
Suite 101  
Apalachee Parkway  
Tallahassee, Fl. 32301

Department of Environmental Regulation  
Southeast Florida District  
3301 Gun Club Road  
West Palm Beach, Florida 33402

Metropolitan Dade County  
Environmental Resources Management  
909 Southeast First Avenue  
Brickell Plaza Building-Room 402  
Miami, Florida 33131

The maximum percentage of allowable PSD sulfur dioxide increment consumed by the proposed modification is as follows:

Percent Class I Increment Consumed

	<u>Annual</u>	<u>24-hour</u>	<u>3-hour</u>
Sulfur Dioxide	20	60	56

Percent Class II Increment Consumed

	<u>Annual</u>	<u>24-hour</u>	<u>3-hour</u>
Sulfur Dioxide	13	15	10

Any person may submit written comments to FDER regarding the proposed modification. All comments postmarked not later than 30 days from the date of this notice will be considered by FDER in making a final determination regarding approval of this modification. These comments will be made available for public review at the above locations. Furthermore, a public hearing can be requested by any person. Such requests should be submitted within 15 days of the date this notice is published. Letters should be addressed to:

Mr. C. H. Fancy P.E.  
Deputy Bureau Chief  
Bureau of Air Quality Management  
2600 Blair Stone Road  
Tallahassee, Florida 32301