

Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

April 11, 1991

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. J. E. Parsons
General Manager
CF Industries, Inc.
P.O. Drawer L
Plant City, FL 33566

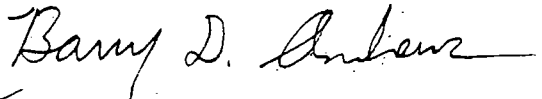
Dear Mr. Parsons:

Re: AC 29-186931, PSD-FL-155, Sulfuric Acid Plants "C" and "D"

Attached is one copy of the Technical Evaluation and Preliminary Determination and proposed construction/modification permit to CF Industries, Inc. for Sulfuric Acid Plants "C" and "D" at the Plant City Phosphate Complex in Hillsborough County, Florida.

Please publish the attached "Notice of Intent to Issue" in the legal ad section of a newspaper of general circulation in the area affected and submit the proof of publication to the Department within seven days of publication, along with any written comments you wish to have considered concerning the Department's proposed action, to Mr. Barry Andrews of the Bureau of Air Regulation.

Sincerely,


for

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

CHF/CP
Attachments

c: Jewell Harper, EPA Region IV
C. Shaver, NPS
Harry Kerns, SW District
Jerry Campbell, EPCHC
John Koogler, P.E.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of an application
for a Permit by:

DER File No. AC 29-186931
PSD-FL-155
Hillsborough County

CF Industries, Inc.
P.O. Drawer L
Plant City, FL 33566

INTENT TO ISSUE

The Department of Environmental Regulation gives notice of its intent to issue a construction permit for the proposed project as detailed in the application specified above, for the reasons stated below.

The applicant, CF Industries, Inc., applied on September 26, 1990, to the Department of Environmental Regulation for a permit to modify the permitted production rates for Sulfuric Acid Plants "C" and "D" from 2400 TPD to 2600 TPD 100% sulfuric acid for each plant. The Department has permitting jurisdiction under Chapter 403, Florida Statutes, and Florida Administrative Code Chapter 17-2 and 17-4. The project is not exempt from permitting procedures. The Department has determined that an air construction/modification permit is required for the proposed work.

Pursuant to Section 403.815, F.S., and DER Rule 17-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed NOTICE OF INTENT TO ISSUE.

The notice shall be published one time only within 30 days, in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "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. The applicant shall provide proof of publication to the Department, at 2600 Blair Stone Road, Tallahassee, FL 32399-2400, within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

The Department will issue the attached permit unless a petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S.

A person whose substantial interests are affected by this permit may petition for an administrative proceeding (hearing) in accordance with Section 120.57, 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 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of receipt of this intent. Petitions filed by other

persons must be filed within 14 days of publication of the public notice or within 14 days of their receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information;

- (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
- (b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
- (d) A statement of the material facts disputed by Petitioner, if any;
- (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
- (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and
- (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, 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 decision of the Department with regard to the permit have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this notice in the office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any such right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Barry D. Anderson

fr C. H. Fancy, P.E.
Chief

Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

CERTIFICATE OF SERVICE

This is to certify that this NOTICE OF INTENT TO ISSUE and all copies were mailed before the close of business on 4-12-91 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to
120.52(9), Florida Statutes, with
the designated Department Clerk,
receipt of which is hereby
acknowledged.

Kim Jobe 4-12-91
(Clerk) (Date)

copies furnished to:
Harry Kerns, Southwest District
Jerry Campbell, EPCHC
John Koogler, P.E.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF INTENT TO ISSUE

The Department of Environmental Regulation gives notice of its intent to issue a construction/modification permit (No. AC 29-186931) for Sulfuric Acid Plants "C" and "D" to increase their production capacity from 2400 tons/day per plant to 2600 tons/day 100% sulfuric acid per plant at the CF Industries Plant City Phosphate Complex, P.O. Drawer L, Plant City, Florida 33566. A determination of Best Available Control Technology (BACT) was required. The proposed project is subject to Prevention of Significant Deterioration (PSD) regulations. For sulfur dioxide and nitrogen oxides, the maximum concentrations due to the CF Industries complex and other sources are predicted to be below the AAQS and PSD Class I increments. Class I sulfur dioxide PSD increment consumption is 1.44 vs. 2.0 ug/m³ allowable annual average, 12.7 vs. 25 ug/m³ allowable 3-hr average, and 3.6 vs. 5 ug/m³ allowable 24-hr average. The Class I nitrogen oxides PSD increment consumption for the CF Industries complex is less than 0.04 vs. 2.5 ug/m³ allowable annual average. These emissions are not expected to cause or contribute to a violation of any ambient air quality standard (AAQS). The Department is issuing this Intent to Issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

A person whose substantial interests are affected by this proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, 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 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of their receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information;

- (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
- (b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by Petitioner, if any;

(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, 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 decision of the Department with regard to the permit have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this notice in the office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any such right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

A copy of the PSD application 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:

Bureau of Air Regulation
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Department of Environmental Regulation
Southwest District Office
4520 Oak Fair Boulevard
Tampa, Florida 33610-7347

Environmental Protection Commission of Hillsborough County
Air Program
1410 N. 21st Street
Tampa, Florida 33605

Any person may send written comments on the proposed action to Mr. Barry Andrews at the Department's Tallahassee address. All comments mailed within 30 days of the publication of this notice will be considered in the Department's final determination.

Technical Evaluation
and
Preliminary Determination

CF Industries, Inc.
Plant City, Hillsborough County
Florida

Sulfuric Acid Plants C and D Modifications

Permit No. AC 29-186931
PSD-FL-155

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

April 11, 1991

I. Application

A. Applicant

CF Industries, Inc.
P.O. Drawer L
Plant City, FL 33566

B. Project Request and Location

The Department received an application on September 26, 1990 for a permit to modify the C and D Sulfuric Acid Plants to improve efficiency and increase the production capacity of each of these sulfuric acid plants from 2400 tons per day to 2600 tons per day of 100 percent sulfuric acid. The application was deemed complete on January 16, 1991. The Plant City Phosphate Complex is located on the east side of State Road 39 at the Hillsborough/Pasco County line. The UTM coordinates of the site are Zone 17, 388.0 km East and 3116.0 km North.

C. Facility Category - SIC Code: 2874
SCC Code: 3-01-023-01.

II. Project Description/Emissions

To offset purchases of sulfuric acid, CF Industries plans to increase production rates of the C and D sulfuric acid plants from 2400 tons per day to 2600 tons per day of 100 percent sulfuric acid, each plant. The production rate increases in the C and D plants will result from repacking of absorption towers, with a resulting decreased pressure drop and increased gas flow providing for more sulfur burning and process rate capability.

The proposed project will increase the total sulfuric acid capacity at this facility from 6900 TPD to 7300 TPD of 100% sulfuric acid as shown below:

<u>Plant</u>	<u>Capacity</u>
A	1050 TPD
B	1050 TPD
C	2600 TPD
D	2600 TPD

Annual emission changes resulting from the increased production rate are summarized in the following table:

<u>Pollutant Emissions (TPY)</u>	<u>Plant C</u>	<u>Plant D</u>
SO ₂ Proposed	1898	1898
Present (actual)	<u>1752</u>	<u>1752</u>
Annual increase	<u>146</u>	<u>146</u>
Total	292	

(292 TPY > Significant Increase of 40 TPY,
so PSD review required.)

<u>Pollutant Emissions (TPY)</u>		<u>Plant C</u>	<u>Plant D</u>
Acid Mist	Proposed	71.2	71.2
	Present (actual)	<u>65.7</u>	<u>65.7</u>
	Annual increase	<u>5.5</u>	<u>5.5</u>
	Total	11.0	

(11.0 TPY > Significant Increase of 7 TPY,
so PSD review required.)

NO _x	Proposed	67.3	67.3
	Present (actual)	<u>62.2</u>	<u>62.2</u>
	Annual increase	<u>5.1</u>	<u>5.1</u>
	Total	10.2	

(10.2 TPY < Significant Increase of 40 TPY but
when combined with NO_x emission rate increases of
5.6 TPY and 29.8 TPY permitted in 1988, the
Significant Increase is exceeded so PSD review
required.)

III. Rule Applicability

The construction modification permit application is subject to review under Chapter 403, Florida Statutes, and Florida Administrative Code (F.A.C.) Chapters 17-2 and 17-4. The facility is located in an area classified as attainment for each of the regulated air pollutants. The proposed modifications are subject to the preconstruction review requirements of F.A.C. Rule 17-2.500, Prevention of Significant Deterioration (PSD). The proposed increases in SO₂, acid mist, and NO_x emissions exceed significant levels set forth in Table 500-2 of F.A.C. Rule 17-2.500. F.A.C. Rules 17-2.660, Table 660-1, Section 60.80, and 17-2.700, Table 700-1, apply to these modifications. Emissions shall be limited by the federal new source performance standards and the BACT determination.

IV. Air Quality Analysis

a. Introduction

The production rate increases of the existing C and D sulfuric acid plants will result in emissions increases which are projected to be greater than the PSD significant emission rates for the following pollutants: NO_x, SO₂, and sulfuric acid mist. Therefore, the project is subject to the PSD review requirements contained in F.A.C. Rule 17-2.500 for these pollutants. Part of these requirements is an air quality impact analysis for these pollutants, which includes:

- An analysis of existing air quality;
- A PSD increment analysis (for SO₂, PM, PM₁₀, and NO_x);
- An ambient Air Quality Standards analysis (AAQS);

- An analysis of impacts on soils, vegetation, visibility and growth-related air quality impacts; and
- A Good Engineering Practice (GEP) stack height determination.

The analysis of existing air quality generally relies on preconstruction monitoring data collected in accordance with EPA-approved methods. The PSD increment and AAQS analyses are based on air quality dispersion modeling completed in accordance with EPA guidelines.

Based on these required analyses, the Department has reasonable assurance that the projected production rate increases as described in this report and subject to the conditions of approval proposed herein, will not cause or contribute to a violation of any PSD increment or ambient air quality standard. A brief description of the modeling methods used and results of the required analyses follow. A more complete description is contained in the permit application on file.

b. Analysis of the Existing Air Quality

Preconstruction ambient air quality monitoring may be required for pollutants subject to PSD review. However, an exemption to the monitoring requirement can be obtained if the maximum air quality impact resulting from the projected emissions increase, as determined through air quality modeling, is less than a pollutant-specific de minimus concentration. The predicted maximum concentration increase for each pollutant subject to PSD review is given below:

	<u>SO₂</u>	<u>NO_x</u>
PSD de minimus concentration (ug/m ³)	13	14
Averaging Time	24-hour	Annual
Maximum Predicted Impact (ug/m ³)	2.0	0.011

There are no monitoring de minimus concentrations for H₂SO₄ mist. As shown above, the predicted impacts are all less than the corresponding de minimus concentrations; therefore, no preconstruction monitoring is necessary for any pollutant.

c. Modeling Method

The EPA-approved Industrial Source Complex Short-Term (ISCST) dispersion model was used by the applicant to predict the impact of the proposed project on the surrounding ambient air. All recommended EPA default options were used. No downwash analysis was performed since the C and D stacks are less than 65 meters in height, but are high enough (2.5 times the building heights) to be above the influence of nearby structures.

d. Modeling Results

The applicant first evaluated the potential increase in ambient ground-level concentrations associated with the project to determine if these predicted ambient concentration increases would be greater than specified PSD significant impact levels for SO₂ and NO_x. Dispersion modeling was performed with receptors placed along the 36 standard radial directions (10 degrees apart) surrounding the proposed source at the following downwind distances: ~~0.5, 0.75, 1.0, 1.5, 2.0, 3.0, 4.0, 5.0, 7.5, 10.0, 12.5, and 15.0~~ km. The results of this modeling presented below show that the increases in ambient ground-level concentrations for all averaging times are less than the PSD significant impact levels for SO₂ and NO_x.

Averaging Time	Annual	SO ₂		NO _x
		3-hr	24-hr	Annual
PSD Significance Level (ug/m ³)	1.0	25.0	5.0	1.0
Ambient Concentration Increase (ug/m ³)	0.21	8.0	2.0	0.01

Therefore, further dispersion modeling for comparison with AAQS and PSD increment consumption were not required in this case.

However, there are no PSD significant impact levels for Class I areas. Therefore, the impact of all sources on the Chassahowitzka National Wilderness Area located 70 km away was evaluated by the Department for comparison with the Class I increments for SO₂ and NO_x. The results are shown below:

Averaging Time	Annual	SO ₂ (ug/m ³)		NO _x
		3-hr	24-hr	(ug/m ³) Annual
Allowed Class I Increment	2.0	25	5	2.5
Maximum Increment Consumed, all sources	1.44	12.7	3.6	-
Maximum Concentration, CF Ind. only	0.17 0.013	0.87	0.15	<0.04

The maximum predicted concentrations are all below the allowable Class I increments.

Sulfuric acid mist is a non-criteria pollutant, which means that neither a national ambient air quality standard nor a PSD Significant Impact has been defined for this pollutant. However, the Department does have a draft Air Toxics Permitting Strategy which defines a no threat level of 2.4 ug/m³, 24-hour average for sulfuric acid mist. The applicant used the same modeling procedure described above to evaluate both the maximum increase in ground level concentration of sulfuric acid mist due to the project and the maximum mist concentration due to the facility. The results were 0.07 ug/m³ and 7.1 ug/m³, respectively. Even though the maximum predicted acid mist ground-level concentration due to the

facility is greater than the no-threat level, the C and D sulfuric acid plants are subject to federal New Source Performance Standards and stringent "top-down" BACT emission limits for controlling the emissions of sulfuric acid mist. The use of double absorption technology and high efficiency mist eliminators is representative of the best sulfuric acid mist control available.

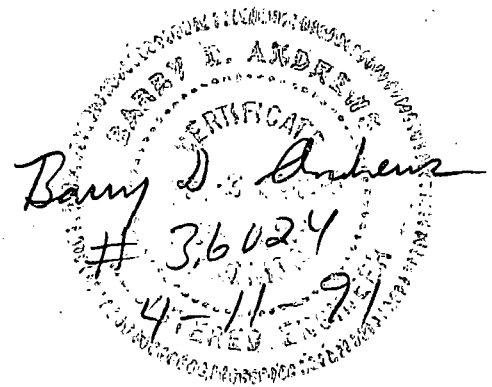
e. Additional Impacts Analysis

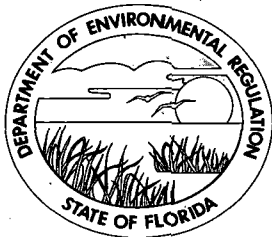
The increased emissions at the CF Industries sulfuric acid plants C and D are not expected to affect the visibility in the Chassahowitzka National Wilderness Area located 70 km from the project. Because the impacts from the proposed pollutants are predicted to be less than PSD significance levels, no harmful effects on soils and vegetation is expected. In addition, the proposed modification will not significantly change employment, population, housing or commercial/industrial development in the area to the extent that a significant air quality impact will result.

V. Conclusion

Based on the information provided by the applicant, the Department has reasonable assurance that the proposed project, as described in this evaluation and subject to the proposed attached permit conditions, will not cause or contribute to a violation of an ambient air quality standard, PSD increment, or any other technical provisions of Chapter 17-2 of the Florida Administrative Code.

Barry D. Andrews
36024
4-11-91





Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

PERMITTEE:

CF Industries, Inc.
P.O. Drawer L
Plant City, FL 33566

Permit Number: AC 29-186931
PSD-FL-155
Expiration Date: October 31, 1991
County: Hillsborough
Latitude/Longitude: 28°09'59"N
82°08'27"W
Project: Sulfuric Acid Plants
C and D

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

For the modification of production rates for the C and D sulfuric acid plants by repacking the absorption towers resulting in decreased pressure drop and increased gas flow providing for more sulfur burning and process rate capability. The production rate of each of the two plants will increase from 2400 TPD to 2600 TPD of 100% sulfuric acid.

The source shall be modified in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

This construction/modification permit will modify operating permits No. A029-167063 and No. A029-167064.

Exhibits on file are listed below:

1. CF Industries' application received September 26, 1990.
2. CF Industries' additional information received October 15, 1990.
3. DER's letter dated October 25, 1990.
4. DER's letter dated November 13, 1990.
5. CF Industries' response received December 10, 1990.
6. Koogler & Associates' response received January 16, 1991.
7. EPCHC comments received February 26, 1991.

APIS Nos.: Plant C - 40HIL29000507
Plant D - 40HIL29000508

PERMITTEE:
CF Industries, Inc.

Permit Number: AC 29-186931
PSD-FL-155
Expiration Date: October 31, 1991

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocations and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

PERMITTEE:
CF Industries, Inc.

Permit Number: AC 29-186931
PSD-FL-155
Expiration Date: October 31, 1991

GENERAL CONDITIONS (cont'd):

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

- a. Have access to and copy any records that must be kept under the conditions of the permit;
- b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

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

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

- a. a description of and cause of non-compliance; and
- b. the period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

PERMITTEE:
CF Industries, Inc.

Permit Number: AC 29-186931
PSD-FL-155
Expiration Date: October 31, 1991

GENERAL CONDITIONS (cont'd):

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and approximate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-30.300, F.A.C. as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

- (x) Determination of Best Available Control Technology (BACT)
- (x) Determination of Prevention of Significant Deterioration (PSD)
- (x) Compliance with New Source Performance Standards

14. The permittee shall comply with the following:

- a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
- b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the

PERMITTEE:
CF Industries, Inc.

Permit Number: AC 29-186931
PSD-FL-155
Expiration Date: October 31, 1991

GENERAL CONDITIONS (cont'd):

permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

- c. Records of monitoring information shall include:
- the date, exact place, and time of sampling or measurements;
 - the person responsible for performing the sampling or measurements;
 - the dates analyses were performed;
 - the person responsible for performing the analyses;
 - the analytical techniques or methods used; and
 - the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

1. The permittee, for good cause, may request that this construction/modification permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

2. The following limitations as found AC29-132155 and in Specific Conditions 2, 3 and 4 of operating permits AO29-167063 and AO29-167064 are modified as follows for each plant C and D:

Max. production rate shall not exceed 2600 TPD 100% sulfuric acid.

Max. sulfur dioxide emissions shall not exceed -
4 lbs/ton 100% H₂SO₄ produced,
433 lbs/hour and
1898 tons/year.

Max. sulfuric acid mist emissions shall not exceed -
0.15 pound per ton 100% H₂SO₄ produced,
16.25 pounds per hour and
71.2 tons/year

All other specific conditions in these two operating permits remain unchanged.

PERMITTEE:
CF Industries, Inc.

Permit Number: AC 29-186931
PSD-FL-155
Expiration Date: October 31, 1991

SPECIFIC CONDITIONS (cont'd):

3. Best operational start-up practices shall be used at sulfuric acid plants C and D. These practices are specified in the attached copy of the "Memorandum of Understanding Regarding Best Operational Start-up Practices for Sulfuric Acid Plants" jointly agreed upon by the Department and CF Industries on November 1, 1989.

4. The permittee shall take reasonable precautions to prevent public access to plant property. These precautions shall include either (1) fencing along the property boundaries or (2) clearly posting unfenced property boundaries with "No Trespassing" signs and routinely patrolling unfenced boundaries by plant security personnel.

5. Within 30 days after completion of modifications, compliance testing for the sulfuric acid plants must be performed. Testing must be performed while operating at a rate within 10% of the permitted maximum production rate of 2600 TPD. The EPCHC and the Southwest District office shall be notified in writing 15 days prior to any compliance tests.

6. An application for an operation permit must be submitted to the EPCHC office and the Southwest District office at least 90 days prior to the expiration date of the construction/modification permit or within 45 days after completion of compliance testing, whichever occurs first. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rule 17-4.220).

Issued this _____ day
of _____, 1991

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Carol M. Browner
Secretary

Best Available Control Technology (BACT) Determination
CF Industries, Inc.
Hillsborough County

The applicant proposes to increase sulfuric acid production from 2400 tons per day to 2600 tons 100% sulfuric acid per day per plant at existing plants "C" and "D" at the Plant City Phosphate Complex in Hillsborough County.

The proposed project will result in a significant increase in emissions of SO₂, acid mist, and NO_x. The project is therefore subject to Prevention of Significant Deterioration (PSD) review in accordance with F.A.C. Rule 17-2.500 (5).

The BACT review is part of the PSD review requirements in accordance with F.A.C. Rule 17-2.500(5)(c).

Date of Receipt of a BACT application:

September 26, 1990

BACT Determination Requested by the Applicant:

The BACT determination requested by the applicant is presented below:

Control Technology: Double Absorption/Fiber Mist Eliminators

<u>Pollutant</u>	<u>Emission Limits</u>
SO ₂	4 lb/ton of 100% H ₂ SO ₄ produced
Acid Mist	0.15 lb/ton of 100% H ₂ SO ₄ produced
Visible Emissions	10% opacity
NO _x	0.14 lb/ton of 100% H ₂ SO ₄ produced

Basis of Review:

This determination was based upon input from the applicant, EPA Region IV, and the Bureau of Air Regulation.

BACT Determination Procedure:

In accordance with Florida Administrative Code Chapter 17-2, Air Pollution, this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department, on a case-by-case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that in making the BACT determination the Department shall give consideration to:

- (a) Any Environmental Protection Agency determination of Best Available Control Technology pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 (Standards of Performance for New Stationary Sources) or 40 CFR Part 61 (National Emission Standards for Hazardous Air Pollutants).
- (b) All scientific, engineering, and technical material and other information available to the Department.
- (c) The emission limiting standards or BACT determinations of any other state.
- (d) The social and economic impact of the application of such technology.

In addition to the criteria discussed above, the EPA requires that BACT should be determined using the "top-down" approach. The first step in this approach is to determine the most stringent control available for a similar or identical source or source category. If it is shown that this level of control is technically or economically infeasible for the source in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

BACT Determined by DER:

Control Technology: Double Absorption/Fiber Mist Eliminators

<u>Pollutant</u>	<u>Emission Limits</u>
SO ₂	4 lb/ton of 100% H ₂ SO ₄ produced
Acid Mist	0.15 lb/ton of 100% H ₂ SO ₄ produced
Visible Emissions	10% opacity
NOx	0.14 lb/ton of 100% H ₂ SO ₄ produced

BACT Determination Rationale

DER's Bact determination is the same as that proposed by the applicant, determinations completed by other states, and Standards of Performance for Sulfuric Acid Plants, 40 CFR 60 Subpart H, (double absorption process). The process in itself is the control technology for SO₂ and acid mist. The emission limits reflect conversion efficiency of around 99.7% of SO₂ to H₂SO₄. High efficiency mist eliminators are considered BACT for acid mist. A review of BACT/LAER Clearinghouse indicates that the double absorption technology, and the use of high efficiency mist eliminators is representative of BACT using the top down approach.

BACT
CF Industries, Inc.
Page Three

A review of the BACT/LAER Clearinghouse does not indicate any control technologies or emission limits for nitrogen oxides emissions from sulfuric acid plants. The proposed emission level, equivalent to 0.03 pounds per million Btu, is well below the BACT levels that are typically established for sources emitting nitrogen oxides and is hence deemed BACT for this facility.

Environmental Impact Analysis:

The impact analysis for the BACT determination is based on 8760 hours/year operation. The ambient air quality impact analysis resulted in the following for SO₂ emissions:

<u>Averaging Time</u>	<u>Predicted Impact (ug/m³)</u>	<u>De minimus (ug/m³)</u>	<u>Fla. AAQS (ug/m³)</u>
<u>SO₂</u>			
Annual	0.15	N/A	60
24-hr	1.8	13.0	260
3-hr	7.5	N/A	1300
<u>NO_x (planned increase plus 1988 increases)</u>			
Annual	0.009	14.0	100

Conclusion:

The incremental impact from SO₂ and NO_x due to the proposed modification is insignificant. Although the ambient air quality impact analysis ordinarily should not be considered part of the BACT evaluation, the minimal impacts associated with the proposed increase in production strengthen the Department's determination that the emission limits established herein represent BACT.

Details of the Analysis may be Obtained by Contacting:

Barry Andrews, P.E.
Department of Environmental Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended By:

Approved By:

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

Carol M. Browner, Secretary
Dept. of Environmental Regulation

Date 1991

Date 1991

MEMORANDUM OF UNDERSTANDING
REGARDING BEST OPERATIONAL START-UP PRACTICES
FOR SULFURIC ACID PLANTS

The parties jointly agree: for the purposes of Rule 17-2.250, the foregoing practices constitute "best operational practices" for the start-up of sulfuric acid plants.

The Department will not seek to incorporate these practices into permits for existing facilities during the first 18 months after implementation. After the expiration of this 18-month period, which is a typical catalyst cycle, the Department may seek to modify the permits, in accordance with Rule 17-4.080 and other applicable laws, to incorporate appropriate site-specific start-up procedures as enforceable permit conditions.

These Sulfuric Acid Plant Best Operation Start-Up Practices will be made available in the control room at all times.

Since these specific procedures are undergoing evaluation, the Department will not consider these practices to be the only means of demonstrating best operating procedures. If a company chooses to use another method, it will be its responsibility to demonstrate that it constitutes best operational practices in accordance with 17-2.250, F.A.C.

BEST OPERATIONAL START-UP PRACTICES
FOR SULFURIC ACID PLANTS

1. Only one sulfuric acid plant at a facility should be started up and burning sulfur at a time. There are times when it will be acceptable for more than one sulfuric acid plant to be in the start-up mode at the same time, provided the following condition is met. It is not acceptable to initiate sulfur burning at one sulfuric acid plant when another plant at the same facility is emitting SO₂ at a rate in excess of the emission limits imposed by the permit or rule, as determined by the CEMS emission rates for the immediately preceding 20 minutes.

2. A plant start-up must be at the lowest practicable operating rate, not to exceed 70 percent of the designated operating rate, until the SO₂ monitor indicates compliance. Because production rate is difficult to measure during start-up, if a more appropriate indicator (such as blower pressure, furnace temperature, gas strength, blower speed, number of sulfur guns operating, etc.) can be documented, tested and validated, the Department will accept this in lieu of directly documenting the operating rate. Implementation requires the development of a suitable list of surrogate parameters to demonstrate and document the reduced operating rate on a plant-by-plant basis. Documentation that the plant is conducting start-up at the reduced rate is the responsibility of the owner or operator.

3. Sulfuric acid plants are authorized to emit excess emissions from start-up for a period of three consecutive hours provided best operational practices, in accordance with this agreement, to minimize emissions are followed. No plant shall be operated (with sulfur as fuel) out of compliance for more than three consecutive hours. Thereafter, the plant shall be shut down. The plant shall be shut down (cease burning sulfur) if, as indicated by the continuous emission monitoring system, the plant is not in compliance within three hours of start-up. Restart may occur as soon as practicable following any needed repairs or adjustments, provided the corrective action is taken and properly documented.

4. Cold Start-Up Procedures.

a. Converter.

(1) The inlet and outlet temperature at the first two masses of catalyst shall be sufficiently high to provide immediate ignition when SO₂ enters the masses. In no event shall the inlet temperature to the first mass be less than 800°F or the outlet temperature to the first two masses be less than 700°F.

These temperatures are the desired temperatures at the time the use of auxiliary fuel is terminated.

(2) The gas stream entering the converter shall contain SO_2 at a level less than normal, and sufficiently low to promote catalytic conversion to SO_3 .

b. Absorbing Towers.

The concentration, temperature and flow of circulating acid shall be as near to normal conditions as reasonably can be achieved. In no event shall the concentration be less than 96 percent H_2SO_4 .

5. Warm Restart.

a. Converter.

The inlet and outlet temperatures of the first two catalyst masses should be sufficiently high to ensure conversion. One of the following three conditions must be met:

(1) The first two catalyst masses inlet and outlet temperatures must be at a minimum of 700°F ; or

(2) Two of the four inlet and outlet temperatures must be greater than or equal to 800°F ; or

(3) The inlet temperature of the first catalyst must be greater than or equal to 600°F and the outlet temperature greater than or equal to 800°F . Also, the inlet and outlet temperatures of the second catalyst must be greater than or equal to 700°F .

Failure to meet one of the above conditions, requires use of cold start-up procedures.

To allow for technological improvements or individual plant conditions, alternative conditions will be considered by the Department in appropriate cases.

b. Absorbing Towers.

The concentration, temperature and flow of circulating acid shall be as near to normal conditions as reasonably can be achieved. In no event shall the concentration be less than 96 percent H_2SO_4 .

Steve Smallwood 10-10-89

A4 Holmes

Nov. 1, 1989

Steve Smallwood, P.E. Date
Director, Division of Air
Resources Management.

CF Industries, Inc. Date

Department of Environmental
Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

P 407 852 651

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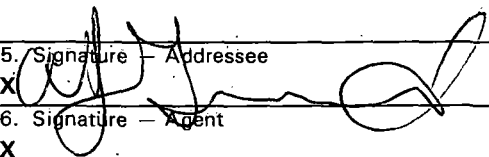
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