



**TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION**

APPLICANT

CF Industries, Inc.
P.O. Drawer L
Plant City, Florida 33564

Plant City Phosphate Complex

Facility ID No. 0570005

PROJECT

Project No. 0570005-056-AC
Application for Minor Air Construction Permit
Project Name: Converter Maintenance at "C" and "D" Sulfuric Acid Plants (SAPs)

COUNTY

Hillsborough County, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Air Resource Management
Southwest District Office
Temple Terrace, Florida 33637-7600

July 17, 2013

Prepared by Danny Stubbs

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GENERAL PROJECT INFORMATION

Air Pollution Regulations

Projects at stationary sources with the potential to emit air pollution are subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The statutes authorize the Department of Environmental Protection (Department) to establish regulations regarding air quality as part of the Florida Administrative Code (F.A.C.), which includes the following applicable chapters: 62-4 (Permits); 62-204 (Air Pollution Control – General Provisions); 62-210 (Stationary Sources – General Requirements); 62-212 (Stationary Sources – Preconstruction Review); 62-213 (Operation Permits for Major Sources of Air Pollution); 62-296 (Stationary Sources - Emission Standards); and 62-297 (Stationary Sources – Emissions Monitoring). Specifically, air construction permits are required pursuant to Rules 62-4, 62-210 and 62-212, F.A.C.

In addition, the U. S. Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 specifies New Source Performance Standards (NSPS) for numerous industrial categories. Part 61 specifies National Emission Standards for Hazardous Air Pollutants (NESHAP) based on specific pollutants. Part 63 specifies NESHAP based on the Maximum Achievable Control Technology (MACT) for numerous industrial categories. The Department adopts these federal regulations on a quarterly basis in Rule 62-204.800, F.A.C.

Glossary of Common Terms

Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of this permit.

I. Facility Description:

This facility is a phosphate fertilizer production facility. The facility includes four sulfuric acid production plants, two phosphoric acid production plants, four ammonium phosphate production plants with associated storage and shipping units, a molten sulfur storage and handling system, a phosphogypsum stack, and four emergency diesel engines. Final products produced at the facility include sulfuric acid, phosphoric acid, ammonium sulfate, diammonium phosphate (DAP), and monoammonium phosphate (MAP).

II. Project Description:

A. Applicant:

Mr. Herschel E. Morris, Vice President Phosphate Operations & General Manager
CF Industries, Inc.
P.O. Drawer L
Plant City, FL 33564

B. Professional Engineer:

Mr. John B. Koogler, Ph.D., P.E.
Koogler and Associates, Inc.
4014 NW 13th Street
Gainesville, Florida 32609

C. Project Location:

The facility is located at 660 East County Line Road, Hillsborough County

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D. Project Summary:

This project authorizes CF Industries, Inc. to perform maintenance related modifications and repairs to the C and D Sulfuric Acid Plant (SAP) converters. Maintenance will include the replacement of damaged and deteriorated internal components of the existing “C” and “D” SAP Converters including the posts, grids, division plates and support rings. The grid supports will be upgraded and the diameter of the new replacement posts will be increased from 3 to 4 inches providing extra support to address buckling problems currently encountered and any future change in the weight of the catalyst. Portions of the converter shells will be repaired or replaced as necessary.

E. Application Information:

Application Received on: May 21, 2013
 Additional Information Received on: June 21, 2013
 Application Complete on: May 21, 2013

III. Applicable State and Federal Regulations

This project is subject to the preconstruction review requirements of Chapter 403, Florida Statutes and Chapters 62-204 through 62-297, Florida Administrative Code (F.A.C.), as indicated below.

Subject to:	Y/N	Comments
Rule 62-210.300, F.A.C. – Permits Required	Y	Subject to general permitting requirements
Rule 62-212.400, F.A.C. - Prevention of Significant Deterioration	N	Facility is a PSD major source but this project does not trigger PSD review
Rule 62-296.320(4), F.A.C. - General Particulate Emission Limiting Standards	N	This project is not a source of particulate matter emissions
Rules 62-296.320(1) and (2), F.A.C. - General Pollutant Emission Limiting Standards (VOCs and Odor)	Y	This emissions unit may be a source of odors.
Rule 62-296.401-418, F.A.C. - Stationary Source Emission Standards	Y	EU Nos. 007 & 008 are subject to 62-296.402, F.A.C. – Sulfuric Acid Plants.
Rule 62-296.500, F.A.C. - Reasonably Available Control Technology (VOC)	N	Hillsborough County is an air quality maintenance area for ozone but this process is not a VOC source and there is no applicable source category.
Rule 62-296.700, F.A.C. - Reasonably Available Control Technology (PM)	N	This facility is located within the area of influence of an air quality maintenance area located in Hillsborough County. Per Rule 62-296.700(2)(b), the facility is exempt from provisions of the PM RACT rule.
Rule 62-204.800, F.A.C. - Standards of Performance for New Stationary Sources (NSPS)	Y	EU Nos. 007 & 008 are subject to NSPS - 40 CFR 60, Subpart H, Standards of Performance for Sulfuric Acid Plants

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For non-PSD projects at a PSD major facility, include the following:

Pollutant	Baseline Actual Emissions (TPY)	Projected Actual Emissions (TPY)	Projected Actual Minus Baseline Actual Emissions (TPY)	Significant Emissions Rate (TPY)	PSD Required? Y/N
EU No. 007					
NOx	47.4	47.4	0	40	No
SAM	40.1	40.1	0	7	No
SO ₂	606.5	606.5	0	40	No
EU No. 008					
NOx	49.4	49.4	0	40	No
SAM	41.8	41.8	0	7	No
SO ₂	527.6	527.6	0	40	No

Note:

- (1) *Five year annual reporting of the pollutants NOx and SAM will not be required for this project. By complying with the Allowable Emissions for NOx and SAM, the Significant Emissions Rate cannot be exceeded for these projects. Therefore, five year annual reporting for the pollutants NOx and SAM is not required for this project.*
- (2) *Baseline emissions in the table above are based on operation data for 2011 and 2012 for both the C & D Sulfuric Acid Plants because Construction Permit No. 0570005-034-AC (Bart Exemption Permit) lowered the production limits of both plants from 2,962 to 2,600 TPD and lowered the allowable SO2 emissions rates to 303.3 lb/hr {Equivalent to 2.8 lb/ton of 100% sulfuric acid}. These limits became effective on 9/1/2010.*
- (3) *Based on information provided in the permit application, the project is not expected to result in an increase in emissions. This project is limited to structural repairs and modifications (described in Attachment 1 of the application) that should not affect the process (i.e., converter efficiency and production).*
- (4) *Increases in SO2 emissions (unrelated to the project) may occur due to catalyst degradation over time and as a result of gradual pressure drop increases that result in reduced air flow.*

V. Conclusions

The emission limits proposed by the applicant will meet all of the requirements of Chapters 62-204 through 297, F.A.C.

The General and Specific Conditions listed in the proposed permit (attached) will assure compliance with all the applicable requirements of Chapters 62-204 through 297, F.A.C.

VI. Preliminary Determination

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. Additional details of this analysis may

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be obtained by contacting the project engineer at the Florida Department of Environmental Protection Air Resource Management, Southwest District 13051 North Telecom Parkway, Temple Terrace, Florida 33637-7600.

Pursuant to Section 403.087, Florida Statutes and Section 62-4.070, Florida Administrative Code, the Department hereby gives notice of its intent to issue a permit to construct the aforementioned air pollution source in accordance with the draft permit and its conditions as stipulated (see attached).