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. 0570005-047-AC
Application for Minor Air Construction Permit
Project Name: SAP Acid Coolers Maintenance and Replacement

COUNTY

Hillsborough County, Florida

PERMITTING AUTHORITY

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

March 21, 2012

Prepared by Danny Stubbs

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. 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, P.E.
Koogler and Associates, Inc.
4014 NW 13th Street
Gainesville, Florida 32609

C. Project Location:

The facility is located at 10608 Paul Buchman Highway, Hillsborough County.

Figure 1. Aerial View and Map Location of the CF Industries Inc., Plant City Complex.

D. Project Summary:

This project authorizes the permittee to replace acid coolers in the facility's four sulfuric acid plants with spare acid coolers, as needed. While all acid coolers in the sulfuric acid plants are included in this project, only the coolers that could reasonably affect sulfur dioxide (SO_2) and sulfuric acid mist (SAM) emissions are subject to the five year monitoring, reporting and recordkeeping requirements for PSD pollutants required by Rule 62-212.300(1)(e), F.A.C. Additionally, because the cooler replacements will occur as needed over time (and not all at the same time) the five year monitoring, reporting and recordkeeping window will shift with time.

This project also authorizes the following construction modifications of the "B" Sulfuric Acid Plant's SO_2 Stripper:

(1) The installation of a larger carryover return from the SO_2 Stripper to reduce the operating pressure.
(2) An increase in the SO_2 Stripper blower capacity to maintain adequate gas flow.
(3) The replacement of the SO_2 Stripper mist eliminator, other than like-kind, to maintain proper mist control.
(4) The installation of a larger diameter SO_2 stripper tower, if needed, to reduce operating pressure.

This project is not expected to affect the performance of the sulfuric acid plants or result in increased emissions from these plants.

E. Application Information:

Application Received on: 10/17/2011
Additional Information Requested on: 11/3/2011
Additional Information Received on: 1/25/2012 & 1/31/2012
Application Complete: 1/31/2012

II. Rule Applicability

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	Not exempt from 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 (VOC and Odor)	Y	This emissions unit may be a source of odors.
Rule 62-296.401-470, F.A.C. - Stationary Source Emission Standards	Y	EU Nos. 002, 003, 007 and 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	Emissions units 003, 007 and 008 are subject to NSPS - 40 CFR 60, Subpart H, Standards of Performance for Sulfuric Acid Plants
Rule 62-204.800, F.A.C. National Emission Standard for Hazardous Air Pollutants (NESHAPS – 40 CFR 61)	N	There is no applicable source category

Subject to:	Y/N	Comments
Rule 62-204.800, F.A.C. National Emission Standard for Hazardous Air Pollutants for Source Categories a.k.a. MACT (NESHAPS – 40 CFR 63)	N	There is no applicable source category
Chapter 62-213, F.A.C. - Operation Permits for Major Sources of Air Pollution	Y	This facility is subject to Rule 62-213 F.A.C.
Rule 62-297.310, F.A.C. - General Compliance Test Requirements, F.A.C.	Y	SAM and VE testing is required for E.U. Nos. 002, 003, 007 and 008 after acid cooler(s) are replaced. NOx, SAM and VE testing is required for E.U. No. 003 after SO_2 stripper modifications are complete.

III. Summary of Emissions

E.U. No. 002 - "A" Sulfuric Acid Plants
E.U. No. 003 - "B" Sulfuric Acid Plants
E.U. No. 007 - "C" Sulfuric Acid Plants
E.U. No. 008 - "D" Sulfuric Acid Plants

Pollutant	EU No. and brief description	Potential Emissions (tpy)	Allowable Emissions (tpy)
NOx	002	28.5	28.5
	003	35	35
	007	52.1	52.1
	008	52.1	52.1
SO_2	002	332	332
	003	409	409
	007	1,329	1,329
	008	1,329	1,329
SAM	002	6.3	6.3
	003	7.9	7.9
	007	44.2	44.2
	008	44.2	44.2
VE	002, 003, 007 & 008		10% (except during start-up, shutdown, or malfunction, pursuant to Rule 62-210.700, F.A.C.).

Pollutant	Baseline Actual Emissions (TPY)	Projected Actual Emissions (TPY)	Projected Actual Minus Baseline Actual Emissions (TPY)	Significant Emissions Rate (TPY)	PSD Required? Y/N
NOx	93.7	93.7	0.0	40	No
SAM	46.4	46.4	0.0	7	No
SO_2	1,672.9	1,672.9	0.0	40	No

IV. 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.

V. 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 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).