



**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. 0570005-054-AC  
Application for Minor Air Construction Permit  
Project Name: A, X, Y & Z DAP/MAP Plant Modifications

**COUNTY**

Hillsborough County, Florida

**PERMITTING AUTHORITY**

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

January 3, 2013  
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. 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. Ronald L. Brunk, Superintendent Environmental Affairs  
CF Industries, Inc.  
P.O. Drawer L  
Plant City, Florida 33564

##### B. Professional Engineer:

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

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C. Project Location:

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

D. Project Summary:

This project includes the following proposed modifications to the facility's A, X, Y, and Z DAP/MAP Plants:

- (1) Urea Ammonium Nitrate / Ammonium Nitrate (UAN/AN) and carbon black (in liquid form) will be added to the pre-neutralizers in addition to adding it to the granulators. Prior to this modification, UAN/AN was only added to the granulators.
- (2) Adjustments will be made to the cyclone vortex finder of each product cooler dust cyclone with the goal of improving dust recovery. Each cyclone's vortex finder (air outlet) diameter will be reduced resulting in an increase in the pressure drop across it.

The project will also include additions and/or changes to pumps, piping, ducts, valves, dampers, controllers, etc. to implement changes specified above.

E. Application Information:

Application Received on: November 14, 2012

Application Complete: November 14, 2012

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	Y	DAP/MAP product is a source of particulate matter (PM) emissions.
Rules 62-296.320(1) and (2), F.A.C. - General Pollutant Emission Limiting Standards (VOCs and Odor)	N	Phosphate granulation plants are not a source of VOC and odors.
Rule 62-296.401-418, F.A.C. - Stationary Source Emission Standards	Y	EU Nos. 010, 011, 012, 013 are subject to 62-296.403, F.A.C. - Phosphate Processing.

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<b>Subject to:</b>	<b>Y/N</b>	<b>Comments</b>
<b>Rule 62-296.500, F.A.C. - Reasonably Available Control Technology (VOC)</b>	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.
<b>Rule 62-296.700, F.A.C. - Reasonably Available Control Technology (PM)</b>	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.
<b>Rule 62-204.800, F.A.C. - Standards of Performance for New Stationary Sources (NSPS)</b>	N	E.U. Nos. 010, 011, 012, & 013 are exempt from NSPS, Subpart V requirements when operating in compliance with 40 CFR 63, Subpart BB.
<b>Rule 62-204.800, F.A.C. National Emission Standard for Hazardous Air Pollutants (NESHAPS - 40 CFR 61)</b>	N	There is no applicable source category.
<b>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)</b>	Y	E.U. Nos. 010, 011, 012, & 013 are subject to 40 CFR 63, Subpart BB, National Emissions Standards for Hazardous Air Pollutants from Phosphate Fertilizers Production Plants.
<b>Chapter 62-213, F.A.C. - Operation Permits for Major Sources of Air Pollution</b>	Y	Facility is a Title V source.
<b>Rule 62-297.310, F.A.C. - General Compliance Test Requirements, F.A.C.</b>	Y	PM and F testing are required for EU Nos. 010, 011, 012 & 013.

IV. Summary of Emissions

Pollutant	EU No. and brief description	Potential Emissions	Allowable Emissions
PM	010	13.0 lbs/hr, 56.9 tpy	13.0 lbs/hr, 56.9 tpy
	011	15.0 lbs/hr, 65.7 tpy	15.0 lbs/hr, 65.7 tpy
	012	<u>DAP Mode:</u> 10.62 lbs/hr, 41.88 tpy	<u>DAP Mode:</u> 10.62 lbs/hr, 41.88 tpy
		<u>MAP Mode:</u> 13.75 lbs/hr, 41.88 tpy	<u>MAP Mode:</u> 13.75 lbs/hr, 41.88 tpy
	013	15.3 lbs/hr, 67.0 tpy	15.3 lbs/hr, 67.0 tpy
Fluoride	EU No. 010 DAP Mode @ maximum permitted capacity of 29.53 tons/hr. of P <sub>2</sub> O <sub>5</sub> input	0.06 lbs/ton (1.77 lbs./hr., 7.76 tpy)	0.06 lbs/ton (1.77 lbs./hr., 7.76 tpy)

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Pollutant	EU No. and brief description	Potential Emissions	Allowable Emissions
	EU No. 010 MAP Mode @ maximum permitted capacity of 33.30 tons/hr. of P <sub>2</sub> O <sub>5</sub> input	0.06 lbs/ton (2.00 lbs./hr., 8.75 tpy)	0.06 lbs/ton (2.00 lbs./hr., 8.75 tpy)
	EU No. 011 DAP Mode @ maximum permitted capacity of 48.7 tons/hr. of P <sub>2</sub> O <sub>5</sub> input	0.06 lbs/ton (1.44 lbs./hr., 6.31 tpy)	0.06 lbs/ton (1.44 lbs./hr., 6.31 tpy)
	EU No. 011 MAP Mode @ maximum permitted capacity of 55.0 tons/hr. of P <sub>2</sub> O <sub>5</sub> input	0.06 lbs/ton (1.44 lbs./hr., 6.31 tpy)	0.06 lbs/ton (1.44 lbs./hr., 6.31 tpy)
	EU No. 012 DAP Mode @ maximum permitted capacity of 48.7 tons/hr. of P <sub>2</sub> O <sub>5</sub> input	0.0035 lbs/ton (1.70 lbs./hr., 6.70 tpy)	0.0035 lbs/ton (1.70 lbs./hr., 6.70 tpy)
	EU No. 012 MAP Mode @ maximum permitted capacity of 55.0 tons/hr. of P <sub>2</sub> O <sub>5</sub> input	0.04 lbs/ton (2.20 lbs./hr., 6.70 tpy)	0.04 lbs/ton (2.20 lbs./hr., 6.70 tpy)
	EU No. 013 DAP Mode @ maximum permitted capacity of 48.7 tons/hr. of P <sub>2</sub> O <sub>5</sub> input	0.06 lbs/ton (2.2 lbs./hr., 9.6 tpy)	0.06 lbs/ton (2.2 lbs./hr., 9.6 tpy)
	EU No. 013 MAP Mode @ maximum permitted capacity of 55.0 tons/hr. of P <sub>2</sub> O <sub>5</sub> input	0.06 lbs/ton (2.2 lbs./hr., 9.6 tpy)	0.06 lbs/ton (2.2 lbs./hr., 9.6 tpy)

Pollutant	Baseline Actual Emissions (TPY)	Projected Actual Emissions (TPY)	Projected Actual Minus Baseline Actual Emissions (TPY)	Significant Emissions Rate (TPY)	PSD Required? Y/N
PM	52.26	52.26	0	25	N
PM <sub>10</sub>	52.26	52.26	0	15	N
Fluoride	10.14	10.14	0	3	N

Notes:

- (i) *Baseline actual calculations are based on the 2010 and 2011 operation years.*

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### 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 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).