CF Industries, Inc.
Plant City Phosphate Complex
PSD-FL-355/0570005-021-AC
Plant City, Hillsborough County

CF Industries, Inc. is proposing to modify the B Sulfuric Acid Plant (SAP) and the A and B Phosphoric Acid Plants (PAPs) at its Plant City Phosphate Complex in Plant City, Florida. The proposed project includes an increase in the production rate of the existing B SAP from 1,300 to 1,600 tons per day (TPD) of 100-percent H_2SO_4. The proposed changes will also include modifications to increase the A and B PAP maximum permitted production rate of phosphoric acid by 20 percent. This will allow the A PAP permitted process rate to increase from 1,416 to 1,699 TPD of 100-percent rock phosphorus pentoxide (P_2O_5). This will also allow the B PAP permitted process rate to increase from 2,107 to 2,530 TPD of 100-percent rock P_2O_5.

CF Industries, Inc. is classified as a Major or Title V Source of air pollution based on Rule 62-210.200(184), F.A.C. because emissions of at least one regulated air pollutant exceed 100 tons per year (TPY). The facility is also a major facility for hazardous air pollutants because emissions of hydrogen fluoride (HF) exceed 10 TPY.

As a result of this project, increases in emissions of fluoride (F), sulfur dioxide (SO_2), nitrogen oxides (NOx), sulfuric acid mist (SAM), carbon monoxide (CO), volatile organic compounds (VOC), particulate matter (PM) and particulate matter less than or equal to 10 micrometers (PM_{10}) from the proposed modifications may occur.

Additionally, based on this modification, potential emissions of F, SO_2, NO_X, SAM, PM, and PM_{10} will exceed the significant emission rates listed in Rule 62-210.200(277), Florida Administrative Code (F.A.C.). The project is therefore subject to Prevention of Significant Deterioration (PSD) review for F, SO_2, NO_x, SAM, PM, and PM_{10} in accordance with Rule 62-212.400, F.A.C.

A Best Available Control Technology (BACT) determination is part of the review required by Rules 62-210.200(40) and Rule 62-212.400(10), F.A.C. Rule 62-212.400(10)(c), F.A.C. requires BACT only for those emission units where a physical change or a change in the method of operation is proposed. Since the X, Y and Z DAP/MAP plants are not undergoing a physical change or change in the method of operation, BACT is not required for these units. Therefore, only the B SAP and the A and B PAPs require a BACT analysis. The B SAP emits SO_2, SAM, and NOx and the PAPs only emit F. Therefore, only F emissions from the PAPs and SO_2, SAM and NOx emissions from the B SAP require a BACT analysis.

Descriptions of the process, project, BACT determination, air quality effects, and rule applicability are given in the Technical Evaluation and Preliminary Determination, accompanying the Department's Intent to Issue.

The Department specifies the following as BACT:

B Sulfuric Acid Plant

POLLUTANT	EMISSION LIMIT	LIMIT BASIS	CONTROL TECHNOLOGY
SO_2	233.3 lb/hr and 1,022 TPY	3.5 lb/ton of 100% H_2SO_4 for 3-hour rolling average	Single-absorption system with two-stage ammonia scrubber
SAM	5.0 lb/hr and 21.9 TPY	0.075 lb/ton of 100% H_2SO_4	Mist eliminator
NO_x	8.0 lb/hr and 35.0 TPY	0.12 lb/ton of 100% H_2SO_4	Good combustion practices

A Phosphoric Acid Plant

POLLUTANT	EMISSION LIMIT	LIMIT BASIS	CONTROL TECHNOLOGY
F	0.85 lb/hr and 3.7 TPY	0.012 lb F/ton P_2O_5 input	Packed bed scrubber and wet cyclonic scrubber

B Phosphoric Acid Plant

POLLUTANT	EMISSION LIMIT	LIMIT BASIS	CONTROL TECHNOLOGY
F	1.26 lb/hr and 5.5 TPY	0.012 lb F/ton P_2O_5 input	Packed bed scrubber

Compliance with the emission limits shall be demonstrated annually in accordance with the following EPA Reference Methods as contained in 40 CFR 60, Appendix A or as otherwise approved in writing by the Department:

EMISSION UNIT	POLLUTANT	EPA REFERENCE METHOD
B SAP	SO_2	6 or 6C
	SAM	8
	NOx	7 or 7E
	VE	9

EMISSION UNIT	POLLUTANT	EPA REFERENCE METHOD
A and B PAP	F	13A or 13B