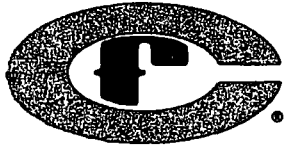


P.O. Drawer L.  
Plant City, Florida 33564-9007  
Telephone: 813/782-1591



**CF Industries, Inc.**

Plant City Phosphate Complex

August 5, 1999

RECEIVED  
AUG 11 1999

BUREAU OF AIR REGULATION

Eric Peterson, P.E.  
Air Permitting Engineer  
Florida Department of Environmental Protection  
Division of Air Resource Management  
3804 Coconut Palm Drive  
Tampa, Florida 33619

Subject: CF Industries, Inc. (I)  
Plant City Phosphate Complex  
Air Construction Permit Application (June 11, 1999)  
A & B Phosphoric Acid Units (Increased Acid Production)  
DEP File No.: 0570005-011-AC

Dear Mr. Peterson:

In accordance with the Florida Department of Environmental Protection (FDEP) letter dated July 9, 1999, enclosed is the additional information requested by both the FDEP and Hillsborough County Environmental Protection Commission (HCEPC) pursuant to Rule 62-4.070(1), F.A.C.

If you have any questions pertaining to this submittal please contact Michael Messina at (813) 782-1591 ext. 290.

Sincerely,

Thomas A. Edwards  
Superintendent,  
Environmental Affairs

U:\ABPAPRate3.doc  
HEM/JMM/gem

CC: Noel Morera/HCEPC  
Al Linero, P.E., DARM  
George Thomas Cucchi, P.E.  
T. A. Edwards  
J. M. Messina/Environmental Files

4. Professional Engineer Statement :

*I, the undersigned, hereby certify, except as particularly noted herein\*, that :*

*(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollutant control equipment described in this Application for Air Permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and*

*(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.*

*If the purpose of this application is to obtain a Title V source air operation permit (check here [ ] if so), I further certify that each emissions unit described in this Application for Air Permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance schedule is submitted with this application.*

*If the purpose of this application is to obtain an air construction permit for one or more proposed new or modified emissions units (check here [X] if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.*

*If the purpose of this application is to obtain an initial air operation permit or operation permit revision for one or more newly constructed or modified emissions units (check here [ ] if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.*

Signature  
(seal)

Date

\* Attach any exception to certification statement.

I. Part 6 - 1

DEP Form No. 62-210.900(1) - Form

Effective : 3-21-96

RESPONSE TO FDEP/HCEPC INFORMATION REQUESTS OF JULY 9, 1999

The information requests in the July 9, 1999, FDEP letter are repeated below and followed by the CFI response in bold type.

1. If appropriate, please provide a letter of authorization from the facility owner or an officer of the facility that states that you qualify as a Responsible Official, which is defined as "...For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C." If not, please have someone qualified to as a Responsible Official sign the attached Responsible Official Statement for the above referenced application.

**Enclosed is a copy of the requested letter of authorization that states Herschel E. Morris is the local agent for CF Industries, Inc., and is authorized to sign all documents and papers submitted to the Florida Department of Environmental Protection and other government agencies having authority to regulate the Plant city Phosphate Complex with regard to environmental, safety, or health matters (see, "Attachment 1").**

2. The proposed increases in A & B Phosphoric Acid Units can be processed as a minor source permit, with respect to Prevention of Significant Deterioration (PSD), under one of the following scenarios:

**Scenario 1:** The project is not considered a modification, therefore PSD review is not triggered. From Rule 62-210.200, F.A.C., the definition of modification is (underlines added): "Any physical change in, change in the method of operation of, or addition to a facility which would result in an increase in the actual emissions of any air pollutant

subject to regulation under the Act, including any not previously emitted, from any emissions unit or facility..." The key is that there cannot be an increase in actual emissions due to this project, both in the short term and long term. A preliminary look at the June 1999 stack tests summary indicates that lb/hr and lb/ton P2O5 fluoride emissions do not increase compared to previous test results. However, an increase in annual emissions could still occur if the annual hours of operation or P2O5 input increases as a result of the project. To remedy this, you could propose caps on the annual hours of operation and P2O5 input, based on the average of the past two years of operation.

Scenario 2: The project is considered a modification. PSD review can be avoided as outlined in the attached letter from Jerry Kissel, the Southwest District's Air Permitting Supervisor, to Tom Edwards.

Please indicate which permitting scenario CFI would like to pursue. If neither, the project could still be permitted as a major modification subject to PSD. In that case, the project would be processed out of our Tallahassee Office.

CFI will pursue permitting the requested 10% operating rate increases for the A & B Phosphoric Acid Units under "Scenario 2." The requested permit modification does not trigger Prevention of Significant Deterioration (PSD) review because the fluoride emissions from all the production units operating at the proposed operating rates will not exceed the prior actual emissions for the seven units, plus the 3 tpy significant increment. The production units included in the analysis are the A & B Phosphoric Acid Units, A DAP/MAP, Y DAP/MAP/GTSP, X DAP/MAP/GTSP, Z DAP/MAP and Phosphoric Acid Clean Up. The above conclusion is based on the two production scenarios listed below, in which the four permitted granulation units are utilized to granulate the additional P2O5 produced in accordance with their permitted production capacities:

- In both scenarios the predicted increase in actual fluoride emissions from the two phosphoric acid units is 0.511 tons/yr. Assuming that both units operate at the maximum requested production rate for one year (i.e., 8760 hours) and using the same mathematical

model enclosed in the permit application F/yr. (see, "Attachment 2"). However, the compliance test reports submitted to the FDEP and HCEPC on July 8, 1999, indicate that there may actually be no increase in the actual fluoride emissions from the phosphoric acid units at the higher rates. The predicted emissions are therefore shown to be conservative, and the overall emissions will likely be lower than predicted.

- In both scenarios the predicted increase in actual fluoride emissions from the Phosphoric Acid Clean Up Unit is 0.021 tons/yr. Assuming an additional 200,000 tons of P2O5/yr. is produced and using the average emissions factor (i.e., lbs. F/ton P2O5) from the last four compliance tests (i.e., [0.0002 lbs. F/ton P2O5 x 200,000 tons P2O5/yr x 1 ton/2,000 lbs.] = 0.021 F/yr.)
- Scenario 1: The additional 200,000 tons of P2O5/yr. produced is granulated at the A DAP/MAP Granulation Unit, the predicted increase in actual fluoride from granulation will be 0.88 tons F/yr. based on the average emissions factor (i.e., lbs. F/ton P2O5) from the last four compliance tests (i.e., [0.0088 lbs. F/ton P2O5 x 200,000 tons P2O5/yr x 1 ton/2,000 lbs.] = 0.880 tons/yr.).

The predicted increase in actual fluoride emissions from the four affected units (i.e., A & B Phosphoric Acid Units, A DAP/MAP, and Phosphoric Acid Clean Up) used to develop this scenario is [.511 tons F/yr. + 0.021 tons F/yr. + 0.880 tons F/yr. = 1.412 tons F/yr.

- Scenario 2: The additional 200,000 tons of P2O5/yr. produced is granulated among the four Granulation Units, the predicted increase in actual fluoride emissions from granulation will be 1.696 tons F/yr. based on the average emission factors from the last four compliance tests, the 1998 production factors, and permitted annual hours of production (i.e., A DAP = [0.0088 lbs. F/ton P2O5 x 49,274 tons P2O5 x 1 ton/2,000 lbs.] = 0.21 tons F/yr.; Z DAP = [0.0147 lbs. F/ton P2O5 x 65,404 tons P2O5/yr. x 1 ton/2,000 lbs.] = 0.481 tons F/yr.; Y DAP = [.0265 lbs. F/ton P2O5 x 65,209 tons P2O5/yr. x 1 ton/2,000 lbs.] = 0.864 tons F/yr.; and X DAP = [0.014

lbs. F/ton P2O5 x 20,113 tons P2O5/yr. x 1 ton/2,000 lbs.] = 0.141 tons F/yr.)

The predicted increase in actual fluoride emissions from the seven affected units (i.e., A & B Phosphoric Acid Units, A DAP/MAP, Y DAP/MAP/GTSP, X DAP/MAP/GTSP, Z DAP/MAP and Phosphoric Acid Clean Up) used to develop this scenario is [.511 tons F/Yr. + 0.021 tons F/yr. + 1.696 tons F/yr. = 2.223 tons F/yr.

From the two scenarios listed above it is predicted that worst case actual fluoride emissions from the seven affected units could increase 2.223 tons/yr. which is less than the 3.0 tpy significant increase which would trigger PSD review. Therefore the requested permit modification is exempt from PSD review in accordance with Rule 62-212.400 F.A.C.

3. Please explain why the predicted fluoride emissions do not increase, as shown in the emission analysis spreadsheet. With the increase in process rate, the fluoride input would increase. The fluoride removal efficiency would have to increase in order for there to be no increase in fluoride emissions.

The calculations provided in the "Construction Permit Application" predict that actual fluoride emissions from the phosphoric acid units will increase by 0.217 tons F/yr. based on the 1998 annual operating factors (i.e., 91.5% for A Phosphoric Acid Unit and 93.8% for B Phosphoric Acid Unit). Please refer to the columns labeled (F Out ton/yr.) and (New F Out ton/yr.) on the two calculations spread sheets included in the application.

4. What steps, if any have been taken since the 1998 compliance tests to improve the scrubbers fluoride removal efficiency?

CF Industries, Inc. has made no structural modifications to either scrubber system since the completion of the modifications and belt filter installations approved under FDEP Air Construction Permits Nos. 0570005-008-AC and 0570005-009-AC. The modifications at that time improved the efficiency of both scrubber units, and the

results of the 1998 compliance tests conducted at the A & B Phosphoric Acid Units indicated there was no increase in actual fluoride emissions from either unit as a result of belt filter installations. This determination was based on a comparison of the 1998 compliance test data with the emissions data submitted to the FDEP and HCEPC on April 23, 1997, in the corresponding construction permit applications.

In addition there has been no change in the operation of either scrubber system since the 1998 compliance tests. Both systems are operated in accordance with the applicable sections of the facility Title V Air Permit No. 0570005-007-AV (i.e., Section II. Facility-wide Conditions; Section III. Emissions Unit(s) Conditions "Subsection B;" and Appendix TV-1, Title V Conditions).

5. Please address the items raised in the attached memo from the Hillsborough County Environmental Protection Commission.
  1. Specific Condition No. 6 of permits 0570005-008-AC and 0570005-009-AC state that Phosphoric Acid plants A & B may operate continuously 8760 hours a year. In CF Industries permit application, Figure 5 section B of the sample calculations indicates that 8017 and 8217 hours a year of operation were used to calculate the emissions for Acid Plants A & B respectively. Does CF Industries wish to reduce their hours of operation?

No, CF Industries, Inc. does not wish to reduce permitted annual hours of operation for either of the subject phosphoric acid plants. The annual hours of operation shown in the subject calculations were obtained from the 1998 Annual Operating Report and were used for comparative purposes only. Historically, each phosphoric acid plant has an on-line efficiency of between 97% to 90% depending on scheduled annual maintenance activities and monthly turnarounds. The possibility of operating the plants 8760 hours in any year is extremely remote; however, CFI doesn't want to rule it out by eliminating it from the permit.

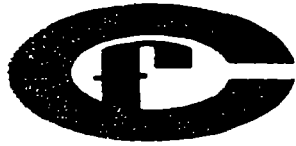
2. CF Industries, Inc. should look at the emissions changes up stream and down stream of the Phosphoric Acid Plants A & B and take these changes into account when determining how their emissions will be effected relating to PSD issues.

**Please refer the information provided in the response to "Request 2, above."**



CF Industries, Inc. (I)  
Plant City Phosphate Complex  
Air Construction Permit Application (June 11, 1999)  
A & B Phosphoric Acid Units (Increased Acid Production)  
DEP File No.: 0570005-011-AC  
Attachment 1

P.O. Drawer L.  
Plant City, Florida 33564-9007  
Telephone: 813/782-1591



**CF Industries, Inc.**  
Plant City Phosphate Complex

July 1, 1998

State of Florida  
Department of Environmental Protection  
Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619-8318

To Whom It May Concern:

Mr. H. E. Morris, General Manager, CF Industries, Inc., Plant City Phosphate Complex, is the local agent for CF Industries, Inc., and is authorized to sign all documents and papers submitted to the Florida Department of Environmental Protection and other government agencies having authority to regulate the Plant City Phosphate Complex with regard to environmental, safety, or health matters.

Very truly yours,

A. L. Holmes  
Vice President  
Phosphate Operations

ALH/tjj

cc:

- Environmental Protection Commission of Hillsborough County
- Hillsborough County Planning & Growth Management Department
- Pasco County Government
- State of Florida Department of Community Affairs
- State of Florida Department of Health
- State of Florida Department of Labor & Employment Security
- Tampa Bay Regional Planning Council
- United States Army Corps of Engineers
- United States Environmental Protection Agency
- United States Occupational Safety and Health Administration

CF Industries, Inc. (I)  
Plant City Phosphate Complex  
Air Construction Permit Application (June 11, 1999)  
A & B Phosphoric Acid Units (Increased Acid Production)  
DEP File No.: 0570005-011-AC  
Attachment 2

**CF Industries**  
**10% Increase in Hourly Wet Rock Processing**  
**A-PAP Fume Scrubber**

DATE	P2O5 Feed TPD	F Out lb/hr	F lb/ton Feed	F Out ton/yr*	Gas Flow DSCFM	Stack Temp F	F Inlet lb/hr	Current VP mg/scf	F Equilib lb/hr	Current NTU	New P2O5 Feed TPD	New F Equilib lb/hr	New F Out lb/hr	New F lb/ton Feed	New F ton/yr**
2/18/98	1303.2	0.63	0.01160	2.525	46194	104.5	87.55	0.045	0.2764	5.51	1557.6	0.3146	0.6681	0.0103	2.926
2/18/98	1300.8	0.59	0.01089	2.365	45906	103.6	87.07	0.043	0.2622	5.58	1557.6	0.2987	0.6263	0.0097	2.743
2/19/98	1312.8	0.36	0.00658	1.443	48408	105.9	91.24	0.048	0.3101	7.51	1557.6	0.3510	0.4009	0.0062	1.756
2/19/98	1312.8	0.60	0.01097	2.405	48084	106.2	90.70	0.049	0.3124	5.75	1557.6	0.3539	0.6414	0.0099	2.809
2/19/98	1312.8	0.66	0.01207	2.646	47504	107.4	89.73	0.052	0.3258	5.59	1557.6	0.3696	0.7036	0.0108	3.082
2/20/98	1324.8	0.69	0.01250	2.766	46718	106.4	88.42	0.050	0.3063	5.44	1557.6	0.3482	0.7317	0.0113	3.205

<b>Average</b>	1311.2	0.588333	0.010767	2.358	47135.67	105.6667	89.12	0.047898	0.298876	5.90	1557.6	0.3393	0.628661	0.0097	2.754
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New F ton/yr\*\* average - F Out ton/yr\* average = calculated F emission increase = 2.754 - 2.358 = 0.396 ton/yr

**CF Industries**  
**10% Increase in Hourly Wet Rock Processing**  
**B-PAP Fume Scrubber**

DATE	P2O5 Feed TPD	F Out lb/hr	F lb/ton Feed	F Out ton/yr*	Gas Flow DSCFM	Stack Temp F	F Inlet lb/hr	Current VP mg/scf	F Equilib lb/hr	Current NTU	New P2O5 Feed TPD	New F Equilib lb/hr	New F Out lb/hr	New F lb/ton Feed	New F ton/yr**
1/28/98	1982.4	0.25	0.00303	1.027	29292	89.3	63.06	0.011	0.0410	5.71	2317.7	0.0513	0.2602	0.0027	1.140
1/28/98	1970.4	0.25	0.003045	1.027	29363	88.5	63.18	0.009	0.0341	5.68	2317.7	0.0425	0.2584	0.0027	1.132
1/28/98	2018.4	0.21	0.002497	0.863	28824	88.7	62.26	0.009	0.0352	5.87	2317.7	0.0441	0.2189	0.0023	0.959
1/29/98	1987.2	0.24	0.002899	0.986	29393	89.7	63.24	0.012	0.0447	5.78	2317.7	0.0558	0.2511	0.0026	1.100
1/29/98	2008.8	0.26	0.003106	1.068	28845	90.3	62.29	0.013	0.0491	5.69	2317.7	0.0615	0.2724	0.0028	1.193
1/29/98	2006.4	0.28	0.003349	1.150	28678	90.7	62.00	0.014	0.0523	5.61	2317.7	0.0656	0.2933	0.0030	1.284

<b>Average</b>	1995.6	0.25	0.002987	1.020	29066	89.5	62.67	0.011	0.0427	5.72	2317.7	0.0535	0.2590	0.0027	1.135
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New F ton/yr\*\* average - F Out ton/yr\* average = calculated F emission increase = 1.135 - 1.020 = 0.115 ton/yr

Total calculated increase in actual F emissions from A&B-PAP = 0.396 + 0.115 = 0.511 ton/yr

\* Utilizes actual operating factor for 1998

\*\* Assumes 100% operating factor