



Jeb Bush  
Governor

# Department of Environmental Protection

Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

David B. Struhs  
Secretary

February 16, 2000  
(sent by E-Mail on February 16)

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Mr. Herschel E. Morris,  
General Manager  
C. F. Industries, Inc.  
Post Office Drawer L  
Plant City, Florida 33564-9007

Re: Phosphoric Acid Units A & B Expansion  
Plant City Phosphate Complex  
Department File No. 0570005-012-AC (PSD-FL-283)

Dear Mr. Morris:

This is in response to your recent application for a construction permit to increase the production rates of Phosphoric Acid Units A & B at the Plant City Phosphate Complex. The Department requires certain additional information in order to process the application:

The application included a sufficient fee for processing as a permit for the Prevention of Significant Deterioration of Air Quality (PSD). However the calculations performed by CFI indicate that CFI believes the project is not subject to PSD. It is necessary to recalculate the emissions increases by comparing the past actual annual emissions with the future permitted emissions.

The Department's believes that the proposed 20% increase in  $P_2O_5$  processing capacity will affect the entire complex. This will stimulate mining, sulfuric acid and fertilizer production, etc. Therefore the calculation of past actual to future potential emissions should be made for all emission units affected by the increase in  $P_2O_5$  production.

The PSD rules at 62-212.400(2)(f)1., F.A.C. state that the PSD requirements "shall apply to all pollutants regulated under the Act for which the sum of the potential emissions and quantifiable fugitive emissions of the facility or modification would be equal to or greater than the significant emission rates....." According to Rule 62-212.400(5)(c), F.A.C., the proposed facility or modification "shall apply Best Available Control Technology (BACT) for each pollutant subject to preconstruction review requirements....."

The significant emission rate for fluorides is 3 tons per year (TPY). To avoid PSD and the requirement for a determination of BACT for fluoride, CFI would need to reduce the current (plant-wide) allowable fluoride emission limits to the current actual emissions plus a 2.9 tons per year. Note that the project could cause increases of other pollutants at other units that could also be subject to PSD by the same calculation method.

The CFI engineering report's presumption that the actual fluoride emission increase will be just under 3.0 TPY is based on assumptions that are too tenuous to provide reasonable assurance for avoiding PSD applicability. The Department believes that other reasonable assumptions

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could be made regarding things such as equilibrium vapor pressures and seasonal average temperatures that would show fluoride emissions in excess of 3.0 TPY.

For example, increased fluoride emissions from the surface of the gypsum/process cooling ponds (an integral part of the phosphoric acid process) would be more than enough to make the CFI estimate exceed 3.0 TPY. According to Becker (1989), p. 229, as much as 38% or more of the total fluorine entering in the rock ends up in the gypsum pond system. With the requested increase of 704 TPD  $P_2O_5$ , possibly as much as 30 TPD or more of additional fluorine will be entering the process pond water system, raising the concentration and increasing the potential for evaporation. Of this amount (equivalent to over 10,000 tons of fluorine per year), perhaps as much as an additional 0.5 to 1.0 lb F/acre-day (based on Becker's equilibrium concentration chart, p. 403) could be emitted amounting to as much as 55 TPY or more for a 300 acre pond system.

Therefore, it appears that the phosphoric acid units must undergo BACT review and the associated emissions increases for all of the other process units that will undergo production increases must be quantified and included in the BACT analysis. The PSD application should include a top-down BACT proposal for the phosphoric acid units and all other process units that undergo an emissions increase as indicated above as well as a description of those processes and corresponding emission calculations.

It would very helpful to have a material (and product) flow diagram for the facility that shows the main plants and typical production and emission rates for 1994, 1999, and the future. Even partial versions of such diagrams can only help everyone understand (and explain) the situation. Please include any meaningful projects implemented throughout the facility. Note if any of these projects included a BACT determination.

Enclosed are the preliminary comments from the U.S. Fish and Wildlife Service. They are much like ours but in less detail. We look forward to meeting with your representatives next week in Plant City. If there are any questions or if additional clarification is required, please call John Reynolds of our staff at 850-921-9536.

Sincerely,

A handwritten signature in black ink, appearing to read 'A. A. Linero', with a date '2/16' written to the right of the signature.

A. A. Linero, P.E. Administrator  
New Source Review Section

Enclosure

AAL/al

cc: Gerry Kissel, SWD  
Rick Kirby, EPCHC  
Greg Worley, EPA Region IV  
John Bunyak, NPS  
Julio Enriquez, P.E.

**Preliminary Review of Prevention of Significant Deterioration  
Permit Application for CF Industries, Inc.  
Plant City, Hillsborough County, Florida  
PSD-FL-283**

by

**Air Quality Branch, U. S. Fish and Wildlife Service – Denver  
February 11, 2000**

**Background**

CF Industries (CF) is proposing to increase production at two of its phosphoric acid plants in Plant City, Florida, by twenty percent. The facility is located 90 km southeast of Chassahowitzka Wilderness, a Class I air quality area administered by the U.S. Fish and Wildlife Service.

**Prevention of Significant Deterioration (PSD) Applicability**

CF Industries has quantified the increases in fluoride emissions as 2.801 tons per year (tpy). This increase is very close to the significance level for Prevention of Significant Deterioration (PSD) applicability for fluoride of 3 tpy. CF's proposed emissions should be verified to ensure that PSD is not triggered. We understand that the Florida Department of Environmental Protection believes that the proposed increase, when compared to actual existing emissions, does exceed the significance level and that the project is significant for PSD and best available control technology (BACT) review. This issue should be clarified. Also, the relationship of the proposed project to other emission units at this source should be clarified. If increases occur at other emission units as a result of the proposed action, PSD and BACT review may apply to those units.

**Best Available Control Technology (BACT) Review**

CF Industries proposes to meet the maximum achievable control technology (MACT) limit for new phosphoric acid plants of 0.0135 lb F/ton P<sub>2</sub>O<sub>5</sub>. We agree that this limit would constitute BACT for fluoride. Because particulate matter was not addressed in the application, we would also propose a limit of 0.18 lb PM/ton P<sub>2</sub>O<sub>5</sub>. This particulate limit was implemented for Cargill Fertilizer in Florida.

**Conclusions & Recommendations**

CF Industries has proposed an appropriate BACT level emission limit for fluoride. We would propose the addition of a particulate matter emission limit of 0.18 lb/ton P<sub>2</sub>O<sub>5</sub>. We also suggest that CF Industries verify the increase in fluoride emissions to ensure that PSD is not triggered by this increase.

In addition, if the increase in phosphoric acid production has the potential to cause increases in emissions in other parts of the facility, PSD applicability for these increases should be investigated.

**Air Quality Related Values Analysis**

If CF's proposed project requires PSD review, CF should evaluate potential impacts to the AQRVs of Chassahowitzka Wilderness.

Our comments are preliminary and will be followed by a more detailed review of the proposed project.

Contact: Ellen Porter, Air Quality Branch (303) 969-2617.

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Division of Air Resources Management  
Bureau of Air Regulation, NSRS  
2600 Blair Stone Road, MS 5505  
Tallahassee, Florida 32399-2400

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CF Industries  
PO Drawer L  
Plant City, FL  
33564

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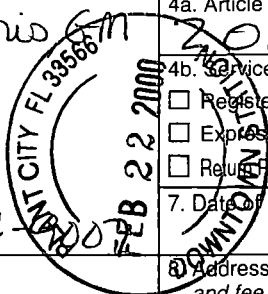
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