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KA 344-09-01

April 20, 2010

Mr. Syed Arif, P.E.  
Florida Department of  
Environmental Protection  
Division of Air Resource Management  
2600 Blair Stone Road MS 5500  
Tallahassee, Florida 32399-2400

Subject: Additional Information for Acid Clarifiers in "A" and "B" PAP  
CF Industries, Inc. - Plant City Phosphate Complex  
DEP File No. 0570005-035-AC/PSD-FL-355A

Dear Mr. Arif:

This is in response to your letter dated January 27, 2010 requesting additional information on the above referenced project at CF Industries, Inc.'s Plant City facility.

Comment 1: According to the Application, Attachment 1, CF Industries is proposing to install two new 80ft diameter acid clarifier tanks one each, at "A" Phosphoric Acid Plant (PAP) and one in "B" PAP in order to facilitate maintenance activity from various tanks and to maintain adequate acid clarification capacity. Also, auxiliary equipment/piping will be installed for acid feed, product acid, cleaning and acid sludge transfer. The auxiliary equipment will include flocculent storage, flocculent/acid mixing, clarifier product pump tanks, clarifier product tanks and sludge tanks. As indicated in Pages 18 and 32 of the Application, the scrubber systems flow rates for "A" and "B" PAPs are 49,900 acfm and 34,300 acfm respectively. Pursuant to Rule 62-4.070(1), F.A.C., please provide detailed information and diagram on the operation of the damper control system and how will the dampers control the air flow from all the other clarifier tanks in order not to affect the air flow in to the existing scrubber system. In addition, please clarify whether the emissions from the auxiliary equipment will also be controlled by the existing scrubber system.

Response: As shown in the process flow diagram, there are currently numerous pieces of equipment ducted to the scrubbing system. A detailed drawing of the various dampers locations and related air flow rates is not meaningful as CFI installs and adjusts dampers in all lines, as needed, to balance duct flows. FDEP has reasonable assurance of source compliance with the emissions limitations given recent plant emissions data, the facility's success with operating scrubber systems that serve multiple emission points and the emissions information presented in Tables 1 and 2 (attached).

The process flow diagrams identify all the equipment ducted to the scrubbing system.

Comment 2: Pursuant to Rule 62-212.400(2)(a)1., F.A.C. a significant emissions increase of a PSD pollutant will occur if the difference between the projected actual emissions and the baseline actual emissions equals or exceeds the significant emissions rate for that pollutant. CF Industries did not submit baseline actual emissions and claimed that there will be no net changes in the F emissions since the actual emissions can be assumed to be equal to the allowable emissions. In order to determine if the installation of the additional tanks results in a PSD significant emissions increase in F emissions, a baseline actual emissions to projected actual emissions analysis should be submitted. Based on the 2007 and 2008 AOR reports, the average fluoride emissions were 1.7 TPY for EU 004 ("A" PAP) and 1.8 TPY for EU 009 ("B" PAP). Therefore a net increase or difference between the actual emissions for "A" PAP is 2 TPY and for "B" PAP is 3.7 TPY. As a result, it appears that "B" PAP exceeded the 3.0 TPY of PSD significant increase rate pursuant to Rule 62-210.200(280)(a)1.g, F.A.C., and therefore, a PSD Construction Permit application shall to be submitted with a BACT analysis as required by Rule 62-212.400, F.A.C.

Response: A PSD applicability analysis is presented in Tables 1 and 2 (attached) which indicates that the proposed project is not subject to PSD review.

The PE and Authorized Representative certifications are attached.

If you have any questions, please do not hesitate to call me.

Sincerely,



Pradeep Raval

Encl.

C: R. Brunk, CF Industries, Inc.  
C. Zhang-Torres, FDEP SW District  
D. Lee, EPCHC

TABLE 1 - BASELINE ACTUAL EMISSIONS  
 "A" and "B" PHOSPHORIC ACID PLANTS - CF INDUSTRIES, PLANT CITY

YEAR	A PAP Annual Process Rate	A PAP Tested Operation Rate	A PAP Tested Emission Rate (1) F	A PAP Tested Emission Rate F	B PAP Annual Process Rate	B PAP Tested Operation Rate	B PAP Tested Emission Rate (1) F	B PAP Tested Emission Rate F
	TPY P2O5	TPH P2O5	lb/hr	lb/ton	TPY P2O5	TPH P2O5	lb/hr	lb/ton
2007	382961	64.7	0.48	0.0074	588062	102.2	0.56	0.0055
2008	367767	64.5	0.39	0.0060	653047	100.5	0.41	0.0041
2009	337277	68.0	0.41	0.0060	607629	98.2	0.44	0.0045
Baseline								
2-yr period	2007-8			2007-8	2007-8			2007-8
2-yr avg.	375364			0.0067	620555			0.0048

Notes:

1. Representative stack test results, previously submitted to FDEP for the modified plants.
2. Calculated based on annual process rate and tested emissions.
3. F emissions are not proportionate to processing rates as evident from past tests submitted to FDEP.  
 However, values in lb/ton P2O5 are used for the calculations to correspond to permit limits.
4. A PAP baseline is 1.26 tpy
5. B PAP baseline is 1.48 tpy

TABLE 2 - PROJECTED ACTUAL EMISSIONS  
 PHOSPHORIC ACID CLEANUP - CF INDUSTRIES, PLANT CITY

EMISSIONS DESCRIPTION	A PAP F tpy	B PAP F tpy
Permitted Emissions	3.70	5.50
Five Year Period Future Actual Emissions (1)(5)	1.39	1.63
Exclusion for Demand Growth (2), and Unit Capable of Accomodating (3)	0.13 ND	0.15 ND
Projected Actual Emissions	1.26	1.48
Baseline Actual Emissions (4)	1.26	1.48
Net Combined Emissions Increase (A+B) (1)		0
PSD Significant Level		3
PSD Review Required?		NO

NOTES:

- (1) The proposed project is not expected to result in an emissions increase.
- (2) Demand growth, economy dependent, estimated at 10%.
- (3) To be determined at a later date, if necessary.
- (4) Baseline emissions based on operations for 2007-8 (2-yr average).
- (5) Includes projected actual plus emissions excluded under demand growth (estimated at 10%) and, unit capable of accomodating (to be determined).

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name : <b>Ronald L. Brunk, Superintendent Environmental Affairs</b>
2. Owner/Authorized Representative Mailing Address... Organization/Firm: <b>CF Industries, Inc.</b> Street Address: <b>10608 Paul Buchman Highway</b> City: <b>Plant City</b> State: <b>FL</b> Zip Code: <b>33565</b>
3. Owner/Authorized Representative Telephone Numbers... Telephone: <b>(813) 364-5753</b> ext. Fax: <b>(813) 788-9126</b>
4. Owner/Authorized Representative E-mail Address: <b>rbrunk@cfifl.com</b>
5. Owner/Authorized Representative Statement:  <i>I, the undersigned, am the owner or authorized representative of the corporation, partnership, or other legal entity submitting this air permit application. To the best of my knowledge, the statements made in this application are true, accurate and complete, and any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department.</i>   Signature  <u>20 APR 10</u> Date

# APPLICATION INFORMATION

## Professional Engineer Certification

1. Professional Engineer Name: <b>John B. Koogler, Ph.D., P.E.</b> Registration Number: <b>12925</b>
2. Professional Engineer Mailing Address... Organization/Firm: <b>Koogler and Associates, Inc.</b> Street Address: <b>4014 NW 13<sup>th</sup> Street</b> City: <b>Gainesville</b> State: <b>FL</b> Zip Code: <b>32609</b>
3. Professional Engineer Telephone Numbers... Telephone: <b>(352) 377-5822</b> ext. Fax: <b>(352) 377-7158</b>
4. Professional Engineer E-mail Address: <b>jkoogler@kooglerassociates.com</b>
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> <i>(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution 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</i> <i>(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.</i> <i>(3) If the purpose of this application is to obtain a Title V air operation permit (check here <input type="checkbox"/>, 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 plan and schedule is submitted with this application.</i> <i>(4) If the purpose of this application is to obtain an air construction permit (check here <input checked="" type="checkbox"/>, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here <input type="checkbox"/>, 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.</i> <i>(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here <input type="checkbox"/>, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit 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.</i>  Signature _____ Date <u>4/19/2010</u> (seal)

\* Attach any exception to certification statement.