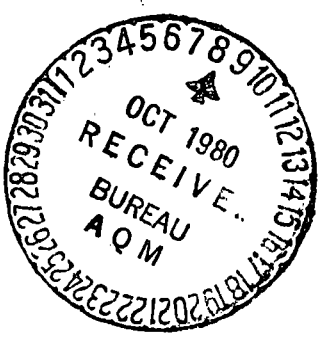
OCCIDENTAL CHEMICAL COMPANY, FLORIDA OPERATIONS, Post Office Box 300, White Springs, Florida 32096, Telephone 904 397-8101

October 3, 1980



Mr. Willard Hanks
State of Florida
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

Dear Mr. Hanks:

Thank you for your assistance on October 1, 1980, in reviewing Occidental's Phosphoric Acid Feed Preparation ("Acid Defluorination") construction permit application.

This letter will address the several questions or requests for additional information.

1. Verbal description of process flow sheet.

   The enclosed description should be included in the application as Attachment 1(a).

2. Allowable Fluoride Emission to Total P_2O_5 Input is about 0.2 depending on exact product mix for Occidental's White Springs facility.

3. Page 7 has been revised as discussed and should replace existing page.

4. Federal PSD review is not necessary for pollutants other than fluoride since net increase in emission rates accumulating since the last PSD approval (March, 1978) are all below the deminimus levels. A PSD application for fluoride has been submitted to EPA.

Thank you for your cooperation. We will stay in contact with your department concerning this application.

Sincerely,

Wes Atwood

W. W. Atwood
Environmental Coordinator

WWA:bh
Enclosure

cc: Mr. Johnny Cole
Mr. R. E. McNeill

DESCRIPTION OF PROCESS

Attachment 1, Flow diagram describes three process areas.

- Phosphoric Acid Feed Preparation or Acid Defluorination -- a new facility covered under this application.

- Granulation -- an existing facility ("X"-Train) revised from production of granular phosphate fertilizer to production of granular phosphate feed ingredient ("Dical")

  Also shown are new product silos, product screens controlled by two dust collectors. These are currently permitted.

- Shipping -- a new facility to receive limerock; a raw material for mixing with the defluorinated phosphoric acid to make a granular dicalcium phosphate.

  The phosphoric acid feed preparation area shows receipt of diatomaceous earth (DE) which is an additive to assist in defluorination.

  The diatomaceous earth will be transferred by a totally enclosed airveyor to storage. The excess air exhausted thorugh a bag collector.

  The diatomaceous earth will be fed to a mix tank through a totally enclosed screw conveyor. After premixing of diatomaceous earth and acid the slurry will be added to the batch tanks along with more acid to be defluorinated.

  The addition of heat and air will strip off fluroides mainly in the batch tanks, but all three tanks shown (Mix tank, batch tank and acid storage) will be vented to the scrubber. The scrubber is further described in Attachment 3.

Revised page

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Diatomaceous Earth	Part.	1-2	703	1
Phosphoric Acid	F.	1.65	65,141	2
				(Attachment 1)

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 65,844

2. Product Weight (lbs/hr): 64,815

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Fluoride	0.88	3.85	BACT 0.05#/ton P_2O_5 Input	0.88	977.5	4281	3
** Particulate	1.05	4.60	Best Technology	1.05	1.05	4.60	3
** Particulate	0.21	0.92	17-2.05(1)	0.21	7.0	31	4

**V.E. observations instead of stack test on points 3 and 4.

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5])
Spray, Cross-Flow	Fluoride	99.9%	N/A	Design
Packed Scrubber	Part.	N/A	N/A	(See Att.3)
Baghouse	Part.	97.0%	< 1 to 40	Mfr. Guar.

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

[3] Calculated from operating rate and applicable standard

[4] Emission, if source operated without control (See Section V, Item 3)

[5] If Applicable

Revised page

Section V, 2 & 3

Calculation of Potential and Actual Emissions

Fluorides

Acid feed 782 STPD 54% phosphate acid at 1.65% F or 422 STPD P_2O_5

Potential

= 782 ton/day(1.65 - 0.15)/100 lbs F/lb acid
x 2000 x 1/24

= 977.5 lb/hour.

= 4281.5 ton/year

Actual

= 422 ton/day x 0.05 lbF/ton x 1/24

= 0.88 lb/hour

= 3.85 ton/year

Particulate Matter

Diatomaceous Earth Receiving

DE feed rate is 703 lb/hour

Potential

= 703 lb/hour x 10 lb/1000* lb DE

= 7.0 lb/hour

= 30.8 ton/year

Actual

= 2500 $ft.^3$/min x 0.01 gr/ft^3 x 60 x 1/7000

= 0.21 lb/hr

= 0.92 tons/year

Acid Scrubber

Potential and Actual

= 8177 ft^3/min x 0.015 gr/ft^3 x 60 x 1/7000

= 1.05 lb/hr

= 4.60 tons/year

* Technical guidance for Control of industrial process fugitive particulate emissions.

Section V, 5

Control Efficiency

Fluoride

E_f = (977.5-0.88) x 100/977.5

= 99.91%

Particulate Matter

E_p = (7.0 - 0.21) x 100/7.0

= 97.0%

10. Stack Parameters

a. Height: ft. b. Diameter: ft.

c. Flow Rate: ACFM d. Temperature: °F

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. Control Device: Cross-flow packed scrubber

b. Operating Principles: Impingment - absorption

c. Efficiency*: 99.91% d. Capital Cost: $250,000

e. Useful Life: 20 years f. Operating Cost: $6600/yr.

g. Energy*: 131 x 10^3 kwh/year h. Maintenance Cost: $25,000/yr.

i. Availability of construction materials and process chemicals: Available and proven.

j. Applicability to manufacturing processes: Proven applicability throughout industry.

k. Ability to construct with control device, install in available space, and operate within proposed levels: Proven throughout industry.

2.

a. Control Device: Vertical - flow packed scrubber

b. Operating Principles: Same as above.

c. Efficiency*: Same d. Capital Cost: Higher

e. Useful Life: Same f. Operating Cost: Slightly higher

g. Energy**: Same h. Maintenance Costs: Slightly higher

i. Availability of construction materials and process chemicals: Same

j. Applicability to manufacturing processes: Same

k. Ability to construct with control device, install in available space, and operate within proposed levels: Same

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power – KWH design rate.

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Life: f. Operating Cost:

g. Energy: h. Maintenance Cost:

*Explain method of determining efficiency above.