AMAX Chemic orporation
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December 18, 1984

Mr. C. H. Fancy, P.E.
Bureau of Air Quality Management
Florida Department of
Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32301-8241

Dear Mr. Fancy:

In response to a letter of incompleteness concerning File No. AC29-091316, the Phosphoric Acid Defluorination Facility Scrubber, and File No. AC29-091317, the Conveyor Belt Transfer Point Dust Collector, we are submitting a revised permit application for the phosphoric acid defluorination facility modification and the following responses as the questions were presented.

RE: File No. AC29-091316

1. An addition has been made to drawing D-1 to indicate the proposed air pollution control equipment as it relates to the process, and a new drawing (D-2) has been added (see the revised permit application.

2. See Section II: A of the revised permit application.

3. All raw material for the phosphoric acid defluorination facility are manufactured off-site. The phosphoric acid is received in railcars and is pumped, closed pipe, to storage or defluorinating tanks as needed. Caustic solution used in the process is brought in by tank truck and pump, closed pipe, to the storage tank. Diatomaceous earth (D.E.) is received in 50 pound bags and is initially put into the process by hand. The D.E. is then pumped as a slurry to the acid defluorinating tank as needed.

4. See the BACT determination attached to the revised permit for a similar process at the Occidental Chemical Company. However, the Occidental process is designed to strip the fluoride from the acid in the form of SiF_6; whereas the AMAX process is designed to precipitate the majority of the fluoride in the form of Na_2SiF_6.

5. The operating conditions for the proposed scrubber are as follows:

   Scrubber Water Pressure, 45-75 psig
   Scrubber Water Flow, 30-40 gpm
   Gas Pressure Drop, 5.0-6.0" H_2O

6. Please see Section III: A and B of the revised permit application. Typical laboratory analyses of the phosphoric acid used in the process is 50-54% with an overall average of 52%.

7. In the revised permit application the allowable fluoride emission is shown as 0.86 lbs/hr. This figure was calculated using the 0.04 lbs/ton of P_2O_5 input reflected in the attached BACT determination for a like process.

8. There should be no significant increase in fluoride emission from the process water ponds. The process water from the proposed scrubber, as with all process water, will be treated to precipitate fluorides from the process water. Furthermore, the approximately 32 tons maximum per year pond input from this scrubber would have a minor impact on the total pond volumes.

9. The inlet loadings shown in the revised permit application are 3.6 lbs/hr for particulate matter and 31.28 lbs/hr for fluorides. These were determined from test data collected at the process. When the phosphoric acid is purchased laboratory analysis is routinely performed. The fluoride content for acid used in the process is typically 0.60-1.1% with an overall average of 0.85%.

10. Please see Attachment A for the calculations used to determine the fluoride removal efficiency of 99+% for the proposed scrubber. At this time there is no actual data available to establish a particulate removal efficiency for the proposed scrubber. However, AMAX is reasonably assured the proposed scrubber will be more than adequate for this application. Furthermore, AMAX will guarantee the scrubber will meet the 0.015 grain/ACF established as BACT for a similar process (see Attachment G of the revised permit application). The particle size distribution and the mean diameter of the diatomaceous earth are shown in Attachment A of this letter.

11. In the revised permit application the linear velocity of the stack is approximately 63.66 FPS and the stack diameter is 1.0 feet.

The revised permit application for the phosphoric acid defluorination facility is to replace, in its entirety, the previous application--File No. AC29-091316. This is necessary due to the changes in and correction to the previous application.

RE: File No. AC29-091317

1. See Attachment B.

2. The conveyor belt begins at the CDP product storage bins. As product is removed from the bins it enters an enclosed screw conveyor where a dedusting agent is added. The product exits the screw conveyor via a chute and onto a covered belt conveyor. This belt, after a 90° transfer point, continues on to the bulk storage bins to be loaded onto railcar as customer requirements dictate.

3. The belt discharges into an enclosure/chute. At this point, with possible exception of some belt carry-over, the dedusting agent has agglomerated the fine particles to virtually eliminate any further dusting at the discharge point.

4. See 1, 2, and 3.

5. HCEPC did not agree in writing to accept 0.02 grains/DSCF as the emission standard.

6. See Attachment C.

7. Moisture content of the gas is approximately 3-4 percent.

We are also requesting the start of construction and the completion of construction dates of the transfer point dust collector project be changed. The start of construction should be changed from September 1, 1984 to March 1, 1984; and the construction completion date should be changed from December 1, 1984 to August 1, 1984.

Should additional information be required, please let me know.

Sincerely,

George Townsend

George Townsend
Environmental Supervisor

GT/cw

attachments

cc: Bill Thomas (DER)
Steve Gerrog (HCEPC)
J. J. Lewis
F. G. Mullins