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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30308

JAN 22 1980

1050055-NA-AC

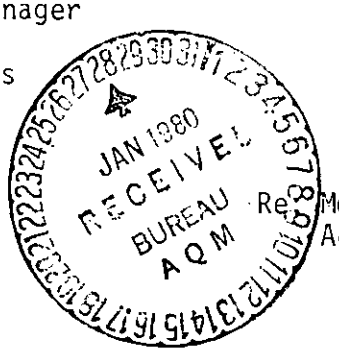
RECEIVED

JAN 25 1980

DEPT. OF
ENVIRONMENTAL REGULATION

REF: 4AH-AF

Mr. L. C. Lahman, Plant Manager
Agrico Chemical Company
South Pierce Chemical Works
P. O. Box 1969
Bartow, Florida 33830



Re: Modification to Phosphoric Acid Plant (PSD-FL-035)

Dear Mr. Lahman:

EPA Region IV has reviewed your application to modify your South Pierce phosphoric acid plant under the provisions of Prevention of Significant Deterioration Regulations (40 CFR 52.21) and has made a Preliminary Determination of approval with conditions. Please find enclosed two copies of the Preliminary Determination.

A public notice will be run in the near future in a local newspaper, The Ledger. A copy of the summary and your application will be open to public review and comment for a period of 30 days. The public can also request a public hearing to review and discuss specific issues. At the end of this period, EPA will evaluate the comments received and make a Final Determination regarding the proposed construction.

Should you have questions regarding this information, please contact Mr. Kent Williams of my staff at 404/881-4552 or Mr. Jeffrey L. Shumaker of TRW Inc. at 919/541-9100. TRW is under contract to EPA and its personnel are acting as authorized representatives of the Agency in providing aid to the Region IV PSD program.

Sincerely yours,

S

Tommie A. Gibbs
Chief
Air Facilities Branch

Enclosure

cc: FL DER

PUBLIC NOTICE

PSD-FL-035

A modification to an air pollution source is proposed for construction by the Agrico Chemical Company near the town of Ft. Meade in Polk County, Florida. The modification is to a wet process phosphoric acid plant and the production capacity will be increased by 878 tons per day to a total of 1429 tons per day.

The proposed construction has been reviewed by the U. S. Environmental Protection Agency (EPA) under Federal Prevention of Significant Deterioration (PSD) Regulations (40 CFR 52.21), and EPA has made a Preliminary Determination that the construction can be approved provided certain conditions are met. A summary of the basis for this determination and the application for a permit submitted by Agrico are available for public review in the office of the Clerk of Circuit Courts in the Polk County Courthouse located in Bartow, Florida.

The allowable emissions of fluorides emitted from this modification are less than 50 tons per year, 1000 pounds per day and 100 pounds per hour (26 tons per year), and potential emissions of no other pollutants exceed 100 tons per year. Therefore, air impact analyses are not required, and the increment consumed by the source was not determined.

Any person may submit written comments to EPA regarding the proposed modification. All comments, postmarked not later than 30 days from the date of this notice, will be considered by EPA in making a Final Determination regarding approval for construction of this source. These comments will be made available for public review at the above location. Furthermore, a public hearing can be requested by any person. Such requests should be submitted within 15 days of the date of this notice. Letters should be addressed to:

Mr. Tommie A. Gibbs, Chief
Air Facilities Branch
U.S. Environmental Protection Agency
345 Courtland Street, NE
Atlanta, Georgia 30308

APPLICATION PSD FL 035

PRELIMINARY DETERMINATION SUMMARY

I. Applicant

Agrico Chemical Company, South Pierce Chemical Works
P.O. Box 1969
Bartow, Florida 33830

II. Location

The proposed modification is to an existing source located southwest of the city of Bartow, Florida (Polk County). The UTM coordinates are 740 7900 East and 30 7100 North.

III. Project Description

The applicant proposes to modify an existing wet process phosphoric acid production facility at South Pierce, Florida, to increase production from 878 tons per day of P_2O_5 to 1429 tons per day of P_2O_5. The existing facility consists of two production lines referred to as the "A" and "B" trains (see Figure 1 for a simplified flow diagram of the facility). The modification will include the construction of a new filter and evaporator to handle the increased production from both trains. The existing scrubber on the "B" train will be replaced with a new scrubber unit. The air pollutant released is fluoride which emanates primarily from the production trains and the filter units (refer to Figure 1).

IV. Source Impact Analysis

The proposed modification has the potential to emit greater than 250 tons per year of fluorides as shown in Table I. Therefore, in accordance with the provisions of Federal Regulation 40 CFR 52.21 promulgated 19 June 1978, Prevention of Significant Deterioration (PSD) review is required for this pollutant.

Full PSD review includes analyses of Best Available Control Technology (BACT), Class I area impact, National Ambient Air Quality Standards (NAAQS) impact, increment impact, growth impact and additional impacts on soils, vegetation and visibility. However, because allowable emissions of fluorides are less than 50 tons per year as shown in Table I, and no Class I area is impacted, the modification is exempt from these impact analyses consistent with paragraphs (j) and (k) of the PSD regulation. On this same basis, the source is exempt from the monitoring requirements of paragraph (n) of the PSD regulation. PSD review for this modification is limited to a Class I area impact analysis and ensuring that the applicable facilities meet emission limitations under the Florida State Implementation Plan and standards of performance under 40 CFR Part 60 and Part 61.

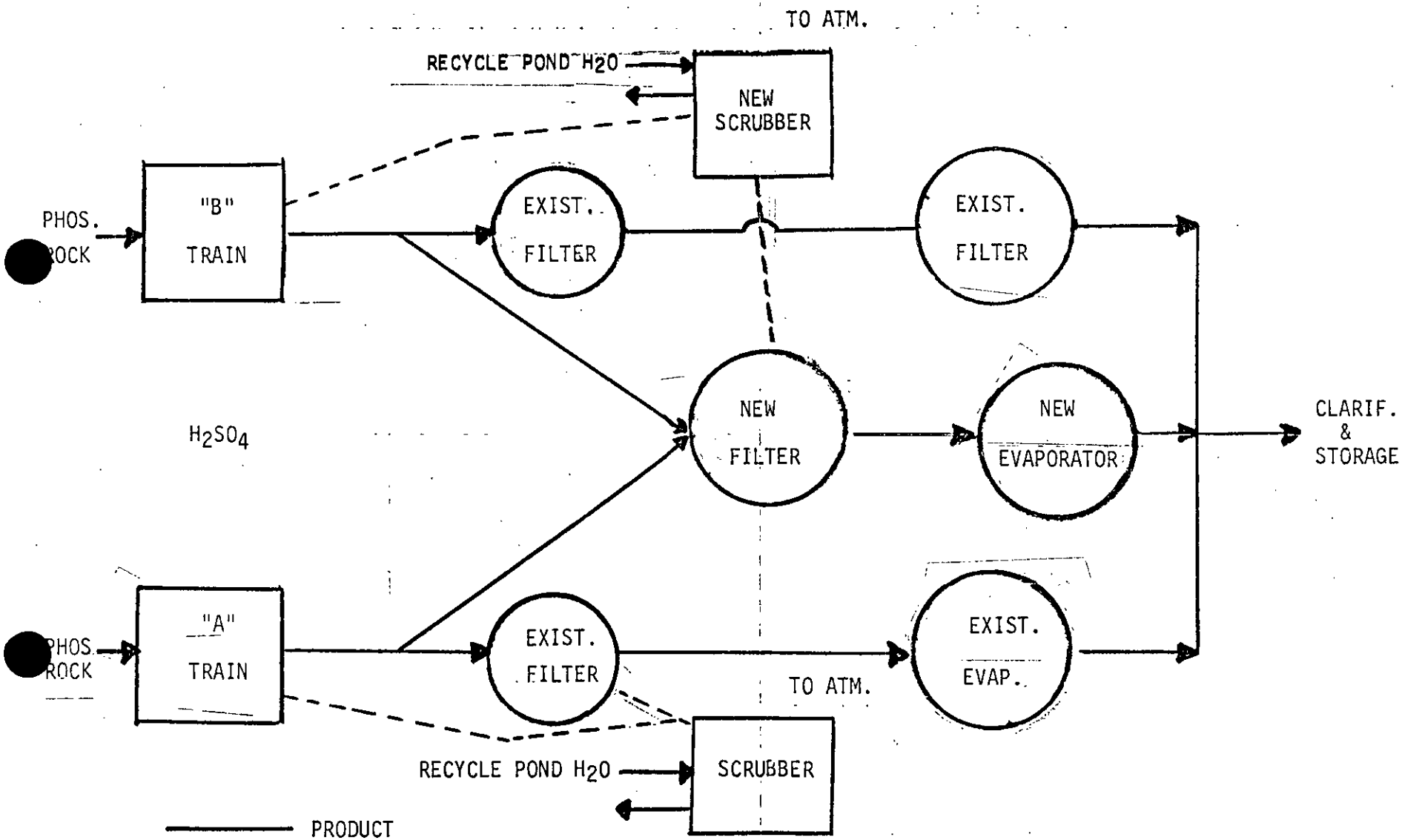


FIGURE I-PROPOSED MODIFICATION OF AGRICO FACILITY

TABLE I

POTENTIAL AND ALLOWABLE FLUORIDE EMISSIONS (TONS PER YEAR) [a]

	POTENTIAL	ALLOWABLE
EXISTING FACILITY	759.35	26.42
NEW MODIFIED FACILITY	1,256.65	5.55

[a] As calculated by the Applicant for reactor train A and reactor train B, collectively.

V. State and Federal Regulations

The proposed modification will not impact any area with known increment violations as the only pollutant released in fluoride, for which there is presently no PSD increment.

Florida Department of Environmental Regulation Rule 17-2.05(6)c(1)(a) limits the release of fluorides from any new plant or plant sections (for plants utilizing the wet process) to 0.02 lbs fluoride per ton of P_2O_5 input. This emission limitation is identical to the federal New Source Performance Standard (NSPS) for wet process phosphoric acid plants. Attainment of the NSPS by the proposed modification will ensure that the State of Florida's emission limit is met by the applicant.

The federal NSPS for wet process phosphoric acid plants is detailed in Title 40, Part 60, Subpart T of the Code of Federal Regulations (also referred to as 40 CFR 60, Subpart T). Modifications of any existing phosphoric acid plant which increase the amount of fluorides emitted into the atmosphere cause the plant to be subject to the NSPS. Since the applicant's proposed modification will increase potential fluoride emissions (see Table 1), the applicant is subject to the NSPS. The NSPS for wet process phosphoric acid plants is 0.02 pounds fluoride per ton of equivalent P_2O_5 feed (Equivalent P_2O_5 feed means the quantity of phosphorus expressed as phosphorus pentoxide, fed to the process). In addition to attaining this limitation, the applicant must also monitor the feed rate as well as following certain test measures and procedures to ensure the emission limitation is met. Both of these requirements are presented in Attachment I "Monitoring and Testing Requirements for Wet Phosphoric Acid Plants".

Class I Area Impact

There are no mandatory Class I PSD areas within a 100 kilometer radius of the proposed modification. Modeling techniques cannot accurately predict concentrations for distances greater than 100 kilometers. Further, significant dispersion of fluoride emissions (1.49 lbs/hour) will occur at this distance. Consequently the proposed modification will not impact any mandatory Class I area.

Conclusions

EPA Region IV proposes a preliminary determination of approval for construction of the modification to the Agrico Chemical Company, South Pierce Chemical Works, phosphoric acid plant proposed in their application submitted 09 April 1979 (PSD FL 035). This approval is based on the information provided in their application and additional information submitted in correspondence dated 20 August 1979. The conditions set forth in the permit are as follows:

1. The modification and facilities constructed will be in accordance with the capacities and specifications stated in the application. This requirement specifically includes the increased production capacity of 551 tons per day of P_2O_5 (878 to 1429).

(878 to 1429).

2. The facilities will comply with all applicable provisions of 40 CFR Part 60, Subpart T, the NSPS for Wet Process Phosphoric Acid Plants, which is incorporated into this permit by reference. These requirements include but are not limited to a total fluoride emission rate of 10 grams per metric ton (0.02 lb/ton) of equivalent P_2O_5 feed to the reactor and the monitoring and test requirements in Attachment I. "Monitoring and Testing Requirements for Wet Phosphoric Acid Plants".

3. Performance tests to show compliance with allowable emission rates will be conducted simultaneously for both A and B reactor trains. Similarly, Both A and B reactor trains are subject to monitoring requirements. Compliance with the allowable emission limit will be determined by a ratio of total emissions from A and B scrubbers to total process feed rate with the process being considered reactor train A and reactor train B collectively.

4. The applicant will meet the requirements and provisions outlined in Attachment II.General Provisions.

ATTACHMENT I

"MONITORING AND TESTING REQUIREMENTS FOR WET PHOSPHORIC ACID PLANTS"

Monitoring of Operations

a. The owner or operator of any wet process phosphoric acid plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate a monitoring device which can be used to determine the mass flow of phosphorus-bearing feed material to the process. The monitoring device shall have an accuracy of ± 5 percent over its operating range.

b. The owner or operator of any wet process phosphoric acid plant shall maintain a daily record of equivalent P_2O_5 feed by first determining the total mass flow rate in metric tons/hour of phosphorus bearing feed using a monitoring device for measuring mass flowrate which meets the requirements of paragraph (a) of this section and then by proceeding according to §60.204(d)(2).

c. The owner or operator of any wet process phosphoric acid subject to the provisions of this part shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. The monitoring device shall have an accuracy of ± 5 percent over its operating range.

Test Methods and Procedures

a. Reference methods in Appendix A of this part, except as provided in § 60.8(b), shall be used to determine compliance with the standard prescribed in § 60.202 as follows:

1. Method 13A or 13B for the concentration of total fluorides and the associated moisture content.

2. Method 1 for sample and velocity traverses.

3. Method 2 for velocity and volumetric flowrate, and

4. Method 3 for gas analysis.

b. For Method 13A or 13B, the sampling time for each run shall be at least 60 minutes and the minimum sample volume shall be 0.85 dscm (30 dscf) except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Administrator.

c. The air pollution control system for the affected facility shall be constructed so that volumetric flow rates and total fluoride emissions can be accurately determined by applicable test methods and procedures.

d. Equivalent P_2O_5 feed shall be determined as follows:

1. Determine the total mass rate in metric ton/hr of phosphorus-bearing feed during each run using a flow monitoring device meeting the requirements of § 60.203(a).

2. Calculate the equivalent P_2O_5 feed by multiplying the percentage P_2O_5 content, as measured by the spectrophotometric molybdovanadophosphate method (AOAC Method 9), times the total mass rate of phosphorus-bearing feed. AOAC Method 9 is published in the Official Methods of Analysis of the Association of Official Analytical Chemists, 11th edition, 1970, pp. 11-12. Other methods may be approved by the Administrator.

e. For each run, emissions expressed in g/metric ton of equivalent P_2O_5 feed shall be determined using the following equation:

$$E = \frac{(C_S Q_S)\ 10^{-3}}{M_{P_2O_5}}$$

where:

E = Emissions of total fluorides in g/metric ton of equivalent P_2O_5 feed.

C_S = Concentration of total fluorides in mg/dscm as determined by Method 13A or 13B.

Q_S = Volumetric flow rate of the effluent gas stream in dscm/hr as determined by Method 2.

10^{-3} = Conversion factor for mg to g.

$M_{P_2O_5}$ = Equivalent P_2O_5 feed in metric ton/hr as determined by § 60.204(d).