KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

KA 124-95-02

August 21, 1995

RECEIVED
AUG 23 1995
Bureau of
Air Regulation

Mr. Clair H. Fancy
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: Additional Information for
Permit Amendment Request
IMC-Agrico Company

Dear Mr. Fancy:

This is in response to your letter dated June 7, 1995, and discussions last week between Martin Costello and Pradeep Raval regarding the permit amendments for several IMC-Agrico sources. The information provided below is in the order of the amendments evaluated by FDEP.

NEW WALES PLANT

Sulfuric Acid Plants 1-5, PSD-FL-170

1. Please provide the EPA Suggested Emissions Netting Procedure (page A. 44 of NSR Workshop Manual), to demonstrate that net emissions of NOx were below the significant levels at the time of the proposed modifications from PSD-FL-170.

RESPONSE:

Using an abbreviated version of the netting procedure outlined in the NSR Workshop Manual, utilized by FDEP in PSD-FL-170, the revised net NOx emissions increase based on 1991-1994 emission data available from source sampling (average for the period) is as follows:

Actual Emissions

SAP 1: NOx = 985,500 tpy acid x 0.079 lb NOx/ton acid x ton/2000lbs
= 38.9 tpy

SAP 2: NOx = 985,500 tpy acid x 0.083 lb NOx/ton acid x ton/2000lbs
= 40.9 tpy

SAP 3: NOx = 985,500 tpy acid x 0.072 lb NOx/ton acid x ton/2000lbs
= 35.5 tpy

SAP 4: NOx = 1,003,750 tpy acid x 0.073 lb NOx/ton acid x ton/2000lbs
= 36.6 tpy

SAP 5: NOx = 1,003,750 tpy acid x 0.079 lb NOx/ton acid x ton/2000lbs
= 39.6 tpy

Proposed Emissions

Assume that the emissions from all five plants reflect the highest NOx emission rate from above (1991-1994 test data reference period).

SAP 1-5: NOx = 5,292,500 tpy acid x 0.083 lb NOx/ton acid x ton/2000lbs
= 219.6 tpy

Net Emissions

As there were no other contemporaneous NOx emissions, the net emissions increase is simply the difference in the actual and proposed emissions:

SAP 1-5: NOx = 219.6 - (38.9 + 40.9 + 35.5 + 36.6 + 39.6) tpy
= 28.1 tpy

This net emissions increase is less than the PSD significant emission level of 40 tpy.

DAP 2 East & West Trains

The request for amendment of AC53-118671, for DAP 2 (East & West Trains), is hereby withdrawn.

SOUTH PIERCE PLANT

Sulfuric Acid Plants 10 & 11, PSD-FL-179

Using FDEP's abbreviated netting procedure (conducted above), the revised net NOx emissions increase based on 1991-1994 emission data available from source sampling (average for the period) is as follows:

Actual Emissions

SAP 10: NOx = 730,000 tpy acid x 0.092 lb NOx/ton acid x ton/2000lbs
= 33.6 tpy

SAP 11: NOx = 730,000 tpy acid x 0.086 lb NOx/ton acid x ton/2000lbs
= 31.4 tpy

Proposed Emissions

Assume that the emissions from both plants reflect the highest NOx emission rate from above (1991-1994 test data reference period).

SAP 10-11: NOx = 1,971,000 tpy acid x 0.092 lb NOx/ton acid x ton/2000lbs
= 90.7 tpy

Net Emissions

As there were no other contemporaneous NOx emissions, the net emissions increase is simply the difference in the actual and proposed emissions:

SAP 10-11: NOx = 90.7 - (33.6 + 31.4) tpy
= 25.7 tpy

This net emissions increase is less than the PSD significant emission level of 40 tpy.

NICHOLS PLANT

DAP Dryer, AC53-232681, PSD-FL-204

The request for amendment of AC53-232681, for the DAP Plant, is hereby withdrawn, except for clarification of Specific Condition No. 5.

As worded currently, SC No. 5 requires performance testing for ammonia and subsequent air dispersion modeling of the emissions to demonstrate compliance with the FDEP Air Reference Concentration (FARC). IMC-Agrico, FDEP and EPA staff are all aware of the shortcomings of the draft ammonia sampling method and it's positive bias for a source such as the DAP plant. In response to FDEP's suggestion, IMC-Agrico is willing to conduct the required (one-time) ammonia sampling. However, it is requested that the requirement to conduct air dispersion modeling be deleted from SC No. 5 as that effort is not justified given the bias in the ammonia emission rate measurement.

Furthermore, FDEP's air toxics guidance indicates that a FARC can be exceeded so long as the pollutant emissions are controlled using BACT. In the case of the DAP Plant, the pollution controls presently in place constitute BACT pursuant to FDEP's BACT determination for PSD-FL-204.

Given the reasons stated above, it is requested that no sampling be required for ammonia. If a one-time test is required, then no subsequent air dispersion modeling should be required.

If you have any questions, please call Pradeep Raval or me.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:par

c: Dave Turley, IMC-Agrico
Jerry Girardin, IMC-Agrico
Gerald Kissel, FDEP Tampa

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4014 NW THIRTEENTH STREET
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KA 124-94-05

March 14, 1995

Mr. A. A. Linero
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: Polk County-AP
IMC-Agrico Company
South Pierce Plant
Permit Amendment Requests

Dear Mr. Linero:

During recent discussions with FDEP staff, the subject of air permit conditions had come up. Based on those discussions, it is our understanding that all emission limitations in current permits must either be based on a standard, or reflect emission limits requested by a permittee to avoid a specific rule applicability (e.g. PSD, etc.). Any emission limit which is not supported by this criteria can be removed from the permit.

It is anticipated that the removal of such emission limitations from current operation permits and source construction permits will facilitate Title V permit application compilation by IMC-Agrico as well as the compilation of Title V permit conditions by FDEP. Thus, only valid applicable requirements will remain in the source permits.

IMC-Agrico has several air operation (and the preceding construction) permits which contain emission limitations outside of the above FDEP criteria. Often, emission estimates/fuel specifications stated in the application for information purposes were then imposed as permit limitations. As a result, we are requesting FDEP to amend the permits tabulated below. A discussion on these permits is provided in the attachments. The attachment number corresponds to the item number in the table below.

In accordance with FDEP protocol, the request for permit amendment is being submitted to the office where the permit was issued. For permits issued by FDEP's Tampa office, a request for amendment is simultaneously being submitted to that office. The amendment request for construction permits issued by the Bureau of Air Regulation (BAR) is being sent to your attention. The permit listing below, however, includes all the permits to be amended so that both the FDEP District and the BAR offices are aware of the scope of the permit amendments.

It is requested that the following permits be amended:

Item	Unit/Operation	Operation Permit No.	Construction Permit No.	Other Permit No.
	Auxiliary Boiler	A053-186772 (D)	AC53-27465 (D)	A053-108906(D)
	GTSP Plant	A053-235041 (D)	AC53-2184 (D)	
1.	SAP 10	A053-221846 (DT)	**AC53-199112 (T)**	
1.	SAP 11	A053-220555 (DT)	**AC53-199112 (T)**	

NOTES:

(D) Operation permit amendment expected from FDEP District office.
(DT) Permit amendment expected from FDEP District office after the construction permit amendment is issued by BAR in Tallahassee.
(T) Construction permit amendment expected from BAR in Tallahassee.

A check in the amount of $250 (permit amendment processing fee) is enclosed.

Thank you for your kind assistance. If you have any questions, please call Pradeep Raval or me.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:par

c: C.D. Turley, IMC-Agrico
G. Kissel, FDEP Tampa
M. Hanks
L. Novak, Polk Co.
C. Holladay
J. Harper, EPA
J. Bunyak, NPS

ATTACHMENT 1

Unit/Operation : Sulfuric Acid Plants 10 & 11

Permit No. : AC53-199112, PSD-FL-179

Amendment Request

The above referenced permit contains an emission limitation for nitrogen oxides. To our knowledge, the NOx limit in the permit is not based on a regulatory standard, nor does it reflect a limitation requested by IMC-Agrico to avoid a specific rule applicability (e.g. PSD, etc.).

Therefore, it is requested that the construction permit be amended as follows:

Page 5, Specific Condition No. 4:

Delete this specific condition which contains emission limits for NOx.

Page 6, Specific Condition No. 6:

Delete the NOx testing requirement from this specific condition and the corresponding reference to EPA Method 7E.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF PERMITS

In the matter of an
Application for Permit by:

Mr. Selwyn Presnell
Agrico Chemical Company
P. O. Box 1110
Mulberry, Florida 33860

DER File No. AC 53-201152
AC 53-199112
Polk County

Enclosed are Permit Numbers AC 53-201152 and 53-199112 (PSD-FL-179) for modifications to the molten sulfur storage and handling facility and Nos. 10 and 11 sulfuric acid plants at Agrico's South Pierce facility located on SR 630 near Fort Meade, Polk County, Florida, issued pursuant to Section(s) 403, Florida Statutes.

Any party to this Order (permit) has the right to seek judicial review of the permits pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMITS and all copies were mailed before the close of business on 4-17-92 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED,
on this date, pursuant to
§120.52(11), Florida Statutes,
with the designated Department
Clerk, receipt of which is hereby
acknowledged.

(Clerk) 4-17-92 (Date)

Copies furnished to:
Bill Thomas, SWD
Jewell Harper, EPA
John Koogler, P.E.
Chris Shaver, NPS

Florida Department of Environmental Regulation
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400
Lawton Chiles, Governor
Carol M. Browner, Secretary

PERMITTEE:

Agrico Chemical Company
Post Office Box 1110
Mulberry, Florida 33860

Permit Number: AC 53-199112
PSD-FL-179
Expiration Date: Jan. 1, 1994*
County: Polk
Latitude/Longitude: 27°45'52"N
81°56'19"W
Project: Sulfuric Acid Plants Nos. 10 & 11 - Production Increases to 2700 TPD Per Plant (5400 TPD total)

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawings, plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

For the modifications to the existing Nos. 10 and 11 sulfuric acid plants that will increase each plant's production to 2700 TPD 100% sulfuric acid (5400 TPD total for both plants). The plant modifications include installing a new turbogenerator, using more efficient economizer units, replacing the tower and acid coolers with heat recovery systems, and adding more catalyst to the converters. These sources are located at the permittee's South Pierce phosphate fertilizer manufacturing facility on SR 630 near Fort Meade, Polk County, Florida 33841. The UTM coordinates of this facility are Zone 17, 407.5 km E and 3071.3 km N.

*This permit is void if construction does not commence within 18 months of its issuance, if construction is discontinued for more than 18 months, or if construction is not completed and the modified plant placed in operation within a reasonable time.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:
1. Agrico's application received June 28, 1991.
2. DER's letter dated June 26, 1991.
3. Koogler & Associates' letter dated October 22, 1991.
4. Koogler & Associates' letter dated February 27, 1992.
5. Koogler & Associates' letter dated April 10, 1992.
6. U.S. Department of Interior's letter dated April 10, 1992

GENERAL CONDITIONS:

records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the dates analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

1. The maximum production rate of each of the sulfuric acid plants (Nos. 10 & 11) shall not exceed 2700 tons per day based on 100% H_2SO_4 (5400 TPD for both plants).

2. Sulfur dioxide emissions from each plant shall not exceed 4 lbs/ton of 100% sulfuric acid produced, 450.0 lbs/hr, and 1971.0 tons/yr.

3. Sulfuric acid mist emissions from each plant shall not exceed 0.15 lb/ton of 100% sulfuric acid produced, 16.9 lbs/hr, and 73.9 tons/yr.

4. Nitrogen oxides emissions from each plant shall not exceed 0.12 lb/ton of 100% sulfuric acid produced, 13.5 lbs/hr, and 59.1 tons/yr.

The nitrogen oxides limits are subject to revision if sufficient test data indicate that the emission factor is improper.

PERMITTEE:
Agrico Chemical Company

Permit Number: AC 53-199112
Expiration Date: January 1, 1994

SPECIFIC CONDITIONS:

5. Visible emissions from each plant shall not exceed 10% opacity.

6. A continuous emission monitor shall be used to monitor sulfur dioxide emissions from each plant in accordance with 40 CFR 60, Subpart H (July 1, 1991), Standards of Performance for Sulfuric Acid Plants. Initial and annual compliance tests shall be conducted using: EPA Method 7E for nitrogen oxides, EPA Method 8 for sulfur dioxide and acid mist, and EPA Method 9 for visible emissions as described in 40 CFR 60, Appendix A (July 1, 1991).

7. The compliance tests shall be conducted at 90 to 100% of the permitted capacity (2430 - 2700 TPH sulfuric acid production) and within 30 days after operating the plant at a rate above 2000 TPH. The Department's Southwest District office shall be notified in writing 15 days prior to source testing. Written reports of the tests shall be submitted to that office within 45 days of test completion.

8. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

9. An application for an operation permit must be submitted to the Southwest District office at least 90 days prior to the expiration date of this construction permit or within 45 days after completion of compliance testing, whichever occurs first. The operation permit application shall include a set of conditions acceptable to the Department for sequential startup/shutdown of the permittee's sulfuric acid plants. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rules 17-4.055 and 17-4.220).

Issued this 17 day
of April, 1992

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Howard L. Rhodes
for Carol M. Browner, Secretary

Performance for New Stationary Sources) or 40 CFR Part 61 (National Emission Standards for Hazardous Air Pollutants).

(b) All scientific, engineering, and technical material and other information available to the Department.

(c) The emission limiting standards or BACT determinations of any other state.

(d) The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine for the emission source in question the most stringent control available for a similar or identical source or source category. If it is shown that this level of control is technically or economically infeasible for the source in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

BACT Determined by DER:

Control Technology	Double Absorption/Fiber Mist Eliminators
Pollutant	Emission Limits
SO_2	4.0 lb/ton of 100% H_2SO_4 produced
Sulfuric Acid Mist	0.15 lb/ton of 100% H_2SO_4 produced
Visible Emissions	10% opacity

BACT Determination Rationale

DER's BACT determination is the same as that proposed by the applicant, determinations completed by other states, and Standards of Performance for Sulfuric Acid Plants, 40 CFR 60 Subpart H, (double absorption process). The process in itself is the control technology for SO_2. The emission limits reflect conversion efficiency of around 99.7% of SO_2 to H_2SO_4. High efficiency mist eliminators are considered BACT for sulfuric acid mist. A review of BACT/LAER Clearinghouse indicates that the double absorption technology and the use of high efficiency mist eliminators is representative of BACT using the top-down approach.