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KA 124-00-05

November 9, 2001

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BUREAU OF AIR REGULATION

Mr. Syed Arif, P.E.
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: IMC Phosphates MP, Inc. (New Wales)
Multifos Plant - Kiln C Permit Revision
No. 1050059-~~024~~033-AC, PSD-FL-244~~A~~

Dear Mr. Arif:

This is in response to your request for information, on installation of a venturi scrubber as part of the Kiln C scrubbing system, with regards to the above referenced project.

The installation of a venturi scrubber upstream of the packed scrubber would likely result in lower particulate matter emissions. However, this scrubbing system arrangement would not be able to eliminate any pond water over-spray from the packed scrubber that would contribute to the higher total fluoride emissions. A cost evaluation of this scrubbing arrangement is enclosed. The cost-benefit analysis indicates that this alternative is cost prohibitive, based on FDEP BACT criteria.

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

Very truly yours,

KOOGLER & ASSOCIATES

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

Par.
encl.

c: C. Dave Turley, IMC

REVISED SCRUBBING SYSTEM COST ANALYSIS
IMC New Wales – Multifos Kiln C Scrubbing System

The estimated cost, associated with installation of the scrubbing system discussed with FDEP that also includes a venturi scrubber upstream of the packed scrubber, is summarized below.

Total Installed Cost, as revised:		= $839,000
Direct Annual Cost	Labor	= $ 28,800
	Maintenance	= $ 54,000
	Incremental Optg. Costs	= $126,000
	Total DC	= $208,800
Indirect Annual Cost	(0.1715 TCI, EPA combined factor) (includes capital recovery at 15 year life, 10% int.)	= $143,900
Total Annual Cost	(DC + IC)	= $352,700

Based on the above annual cost, the cost of fluoride control can be estimated with a conservative assumption that all fluorides from the existing scrubber, of 4.4 tpy (requested allowable rate), are captured.

Annual Cost of fluoride control	($352,700 / 4.4 tpy)	= $ 80,200/ton

The revised cost estimate includes the ductwork and scrubber body changes to withstand the new suction conditions. This alternative is rejected as BACT based on the above control cost that far exceeds $10,000 per ton fluoride controlled. The estimated control costs would be much higher if the loss of plant production, due to plant downtime associated with equipment installation, was included in the above analysis.

4. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(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

(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.

If the purpose of this application is to obtain a Title V source air operation permit (check here [ ], 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 schedule is submitted with this application.

If the purpose of this application is to obtain an air construction permit for one or more proposed new or modified emissions units (check here [X], 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.

If the purpose of this application is to obtain an initial air operation permit or operation permit revision for one or more newly constructed or modified emissions units (check here [ ], 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.

Signature

Date 11/9/01

(seal)

* Attach any exception to certification statement.

This is to certify our letters to FDEP dated 8/22/01 and 11/09/01.

PENN PRO
CAD Design & Technical Services

Mr. George Bien
IMC Phosphates
P.O. Box 2000
Mulberry, FL 33860-100

10/11/01

REF: PENN PRO estimate for "C" Kiln Fluorine Scrubber Replacement
Revision 2

I have completed the revised order of magnitude cost estimate for "C" Kiln Fluorine Scrubber replacement with a DR Technology Venturi scrubber.

The DR Technology Venturi Scrubber data was provided to PENN PRO by IMC and reviewed with Richard Swartz at DR technology by me. Richard advised me that the existing SO2 scrubber can be used "as is" with the new operating and fan conditions.

This should be verified in writing by DR technology should this project proceed before finalizing the capital cost. I have not included any funds for any SO2 scrubber modifications.

In addition, the existing pond water supply has been deemed sufficient for the new scrubber conditions by IMC. The existing "hot" system will be converted to a "cold" system as we discussed. PENN PRO has not checked this system. Funds for the piping modifications are included in the estimate.

I faxed the scrubber fan data for the new conditions, provided by you, to Robinson Fan, Pete Beringer. His reply indicates that a new fan will be required with the new conditions. I have attached the revised fan curve proposal provided by Robinson Fan. This is just a preliminary review by Robinson Fan. It the project does become a reality; the local office will have the factory engineers run the calculations for official verification. A new 250 HP motor will be required as well as foundation modifications.

The Cross Flow Scrubber body will need to be replaced to withstand the new suction conditions as well as the modifications for inlet ductwork to the venturi.

I have also assumed that IMC would re-use the existing packing in the new scrubber body.

I have based the revised estimate on a compressed schedule for Kiln downtime.

The estimate of Kiln downtime is 3 weeks on a premium time basis. The job will require 2-3 weeks before to prep and start electrical and piping additions and 1-2 weeks after to install the monorail system to pull the Kimre panels. This is field time only.

The estimated cost for this project is $ ~~565,000.00~~ $839,000

If you have any questions, please call

Sincerely

Robert A. Herz, P.E.
Project Manager