STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

May 24, 1984

Mr. T. R. Schmalz
Engineering and Enviromental Services
Royster Company
P. O. Drawer 797
Mulberry, Florida 33860

Dear Mr. Schmalz:

Your reply to our May 2 letter in which we requested additional information on the proposed modification to Royster's sulfuric acid plant, shows the sulfur dioxide and sulfuric acid mist emissions will increase by more than the significant emissions rates listed in Table 500-2 of Chapter 17-2, FAC. Therefore, the proposed modification is subject to review under Rule 17-2.500, FAC, Prevention of Significant Deterioration (PSD). Please furnish us the information requested in items A through E of the Department's May 2 letter to you.

Modeling will be required to determine increment consumption (item B) and the ambient air quality standard analysis (item C). If you have any questions on the additional information needed to complete Royster's application, please call Willard Hanks or Tom Rogers at (904)488-1344.

As soon as you furnish the rest of the information requested in our May 2 letter, we will resume processing your application.

Sincerely,

C. H. Fancy, P.E.

CHF/WH/s
cc: Bill Thomas, SW District

No. 0156510

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

SENT TO: Mr. T. R. Schmalz

STREET AND NO.

P.O., STATE AND ZIP CODE

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	SPECIAL DELIVERY	¢
	RESTRICTED DELIVERY	¢
	RETURN RECEIPT SERVICE — SHOW TO WHOM AND DATE DELIVERED	¢
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PS Form 3800, Apr. 1976

PS Form 3811, Jan. 1979

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2. ARTICLE ADDRESSED TO:
   Mr. T. R. Schmalz
   P. O. Drawer 797 /
   Mulberry, FL 33860

3. ARTICLE DESCRIPTION:

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Floyd Lewis

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☆GPO : 1979-300-459

ROBERT W. HEINZ
VICE PRESIDENT, FLORIDA OPERATIONS

Royster

May 9, 1984

CERTIFIED MAIL

DER
MAY 14 1984
BAQM

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

Dear Mr. Fancy:

The additional information which was requested in your certified letter of May 2, 1984 is herewith transmitted. The five items which were requested are addressed in the enclosures.

In the second part of the letter there were other items which were indicated as possibly being required if PSD review is necessary. We presumed that Standards of Performance for New Stationary Sources would apply in this case and the application for Permit to Construct reflects this in the entries on page 3 of 6, Item D. Items A through E will require that we retain a consulting firm to perform since we do not have in-house expertise. As for Item F, to the best of my knowledge the E.P.A. has designated that for contact sulfuric acid plants the double absorption process, which is what the Royster Plant is, is B.A.C.T. To answer Item G continuous stack monitoring is presently required for our operations. Certification tests were performed for our DuPont 460 Analyzer System and results were submitted to Mr. Robert Garrett, DER in September, 1981. It has been in continuous service and will be in use also after the modifications.

If the department is going to require that a full blown PSD review be performed it would be appreciated that we know this as soon as possible so that we can proceed.

Very truly yours,

T. R. Schmalz, P.E.
Manager, Engineering &
Environmental Services

cc: Bill Thomas, Southwest District
Florida DER
7601 Highway 301 North
Tampa, Florida 33610 (w/enclosures)

Information submitted as requested for Items 1 through 5, reference FDER letter of May 2, 1984.

Item 1.

The actual emissions of sulfur dioxide and acid mist from all sources in the December, 1977 period are somewhat difficult to define. This period was during the "Purasiv" debacle and emissions at any given time were dependent on what the "Purasiv" performance was at the moment.

Enclosed is a listing of stack tests performed on the sulfuric acid plant during 1977 and 1978 which show low SO_2 emissions of less than 1#/T H_2SO_4 to high emissions of as much as 80#/T H_2SO_4 while producing approximately 1000 TPD of 100% basis H_2SO_4. Acid mist emissions also show a wide variation in values during the period in question from lows of 0.03#/T H_2SO_4 to highs of 7#/T H_2SO_4. It cannot be recalled why there were no tests conducted in December of 1977, but it is surmised that requirements for testing in other plant areas plus the shortened month due to holidays probably are the reason for this void in the data.

Item 1 - Exhibit

for Ind. Bellflower Dyo 3/25/80

Form 106

SULFURIC ACID STACK

Date	Stack Volume dry CFM 68°F, 1 atm	Emission SO_2 by Volume Lab	Photometric		100% H_2SO_4 Tons/Day	Specific Emission lb SO_2/Ton H_2SO_4	lb mist/Ton H_2SO_4
1/5/77	79300	90.7 ppm	?	Purasiv on stream	1025	1.68	0.0245
2/11	89400	85.2 ppm	4 ppm	"	1249	1.46	0.254
2/15	88100	0.44%	0.50%	—	~~1200~~ Lo.1 → 1201	~~75.6~~ 76.5	~~0.51~~ 0.52
3/4	88400	434 ppm	12 ppm	Purasiv on stream	1160	7.91	0.205
3/11	77000	0.39%	?		1163	30.5	0.56
4/13	76400	162 ppm	12 ppm	Purasiv on stream	850	3.36	0.29
4/19 (Purasiv Down)	76100(?)	0.45%	0.54%	Purasiv Down	1070	76.5	0.16
5/6	66500 (61966 SCFM)	0.57%	0.49%	Purasiv Down	1125	~~68.5~~ 68.1	0.48
			mist by Vol @20°C				
5/26	93300 (86939 SCFM)	~~1054~~ ppm	2.29 ppm 9.3 mg M./M³	Purasiv on stream	~~1144~~ ~~1054~~	~~20.5~~ ~~22.2~~	~~0.5~~ 0.0740
5/27	91600 (85355 SCFM)	727 ppm	3.15 ppm 12.8	"	1245	12.8	0.0848
5/31	87000 (81068 SCFM)	389 ppm	10.7 ppm 43.4	"	1158	6.99	0.293
6/16	69200 (64482 SCFM)	0.46%	15.9 ppm 64.9	Purasiv Down 125	1086	70.6	0.37
6/30	78900 (73,520 SCFM)	121 ppm	4.0 ppm 16.3	Purasiv on Stream	1160	1.97	0.10
7/27	76400 (71,191 SCFM)	95.2 ppm	9.0 ppm 36.7	"	1132	1.54	0.22
9/15	74400	550 ppm	12.5 ppm 51.1	"	1010	9.70	0.34
10/6	68700	0.52%	85.8 ppm 349.7	Purasiv Down	991	82.2 - wow!!!	2.2
10/27	64200	0.24%	113. 457.2	Purasiv Down 19.5	754	40.6	2.9

Sulfuric Acid Stack

Form 104-

Date	Stack Volume dry CFM 68°F, 1 atm	Emission SO_2	Acid Mist mg/scm		Actual Production Tons/Day	Specific Emission lb SO_2/Ton H_2SO_4	lb Mist/Ton
11/1/77 1/1/77	60700	1.6 %	793	Pursuit on Stream	10.0 441	218.8	4.1
← Boiler Tube Failure							
11/11 1/11	64200	0.38%	1198	Pursuit not on Stream	959	61.2	7.2
11/14 1/14	57000	212. ppm	11	Pursuit on Stream	968	2.98	0.059
11/15 1/15	68600	51. ppm	3	Pursuit on Stream	949	0.885	0.0215
11/28 1/28	74400	44. ppm	11	Pursuit on Stream	1116	0.695	0.0657
11/29 1/29	Tests 77700	36 ppm	19	Pursuit on Stream	17.33 hr 724 / 24 hr 1003	0.656 ~~0.906~~	0.133 ~~0.188~~
Difference	78200	90 ppm	122		Prod. Rate	6.69 ~~2.94~~	0.854 ~~1.16~~
Avg	78200	46 ppm	99			0.865 ~~1.20~~	0.692 ~~0.956~~

Ex. 175e
for Ident.
Bellflower Deps.
03/25/80
[illegible]

Item 1 – Enclosure

Date	Stack Volume dry CFM @ 65°F, 1 atm	Emissions SO_2	Acid Mist mg/dscm	Actual Production Tons H_2SO_4/operating day	Specific Emission lb SO_2/ton H_2SO_4	lb Mist/ton
1/12/78	78800	108 ppm	9.2	1010	2.02	0.065
2/2	77800	576	16.3	995	10.78	0.11
2/27	72700	352	9.7	977	6.27	0.065
3/28	88900	17	11.4	963	0.38	0.095
4/14	79400	60	4.4	925	1.24	0.034
5/17	76400	408	41.9	298	8.61	0.33
6/30	78300	132	4.6	901	2.74	0.036
7/21	81500	15	11.0	901	0.34	0.090
8/28	72900	222	36.	867	4.46	0.27
11/2	76100	200	9.0	843	4.32	0.073
9/18	72200	910	149.	248	(14.1)	0.86
8/31	80960	503	3.6	440	(12.2)	0.033
9/19	76200	729	28.	816	(16.3)	0.23
9/29	62800	1908	41.3	830	35.1	0.29
10/2	63000	1531	64.0	678	29.6	0.46
10/8	59600	1930	35.6	726	36.9	0.26
10/10	66000	1890	30.8	845	33.2	0.20

Economizer tube failure

Due to frequent downtimes & lack of coal inventory to keep kilns in operation

9/25 @ 2130 Kilns taken off stream

?

Date	Stack Volume dry CFM @ 68°F, 1 atm	Emission $ppm SO_2$	Emission Acid Mist mg/cu M	Prodn Rate tons H_2SO_4/per day	Specific Emission lb SO_2/ton H_2SO_4	Specific Emission lb mist/ton
10/16/76	62700	1872	31.2	892	31.5	0.20
10/27	63000	1812	42.7	864	31.6	032
Double Absorption on Stream						
12/15	57700	97	40	1171	1.15	0.18
12/22	69,500	199	9.6	1420	2.34	0.04

Item 2.

AC 53-2584 Issued : December 16, 1974
Expired: September 16, 1975

Purpose of construction: Install SO_2 Recovery unit (Purasiv) in order to meet existing source emission limits.

* Permitted production rate: 1003 TPD - 100% H_2SO_4

* Restriction in operating hours: None

* Allowable emissions of SO_2: 10030#/Day

* Allowable emissions of Acid mist: N.A.

Actual emissions of SO_2: 1178#/Day

Actual emissions of Acid Mist: 616#/Day

AC 53-6458A Issued : August 28, 1978
Expired: August 30, 1979

Purpose of construction: Install double absorption equipment due to failure of the Purasiv unit to perform consistently to meet production and emission requirements.

* Permitted production rate: 1400 TPD - 100% H_2SO_4

* Restriction in operating hours: None

* Allowable emissions of SO_2: 504#/HR.

* Allowable emissions of acid mist: N.A.

Actual emissions of SO_2: 215#/HR.

Actual emissions of acid mist: 3.75#/HR.

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* Operating conditions were not stipulated in the Construction Permits, but in subsequent Operation Permits.

The actual emissions were determined by stack testing the data and which was submitted to DER for demonstration of compliance.

Item 3.

Enclosed are copies of the contract documents describing the waste heat boiler. On the process diagram submitted with the application for Permit to Construct (supplement 3.) it is labeled BOILER.

Item 4.

Also enclosed is a copy of the cooling tower specifications. The alternate bid was selected for purchase and a purchase order has been issued. Drift loss is specified to be 0.2% of circulating flow.

5.3 STEAM GENERATION EQUIPMENT

Fire-tube Boiler complete with inlet chamber (01-F-003) and Steam Drum

Refer to Data Sheet, Page 5-9A

The fire-tube boiler/steam drum system shall be designed to recover heat from the hot sulfur furnace exit gas and to cool the gas to the first catalyst pass inlet temperature. Steam shall be generated at a nominal boiler pressure of 900 psig.

The boiler shall be of single pass design. Fouling resistance shall be minimum of 0.002°F ft^2 hr/Btu for the tube side based on the inside diameter of the tubes and 0.0005°F ft^2 hr/Btu for the shell side based on the outside diameter of the tubes.

The boiler shall incorporate a natural circulation system consisting of the boiler and elevated steam drum connected by multiple riser and downcomer circulation piping. The minimum circulation ratio shall be 15 to 1. The varying rate of steam generation along the length of the boiler is recognized in sizing and arranging risers and downcomers. Nozzle arrangement shall be such that each riser handles approximately equal mass flow rates from the tube bundle. The riser and downcomer adjacent to the inlet tubesheet is arranged to provide adequate cooling of the tubesheet and prevent vapor blanketing. Maximum water velocity in a downcomer shall be 6.5 ft/sec. Number and size of the riser pipes are such that plug or slug two phase flow regimes are avoided at all loads between design steam production and 60% steam production. Minimum clearance between the centerline of the outermost tube and inside diameter of the shell shall be 4" to facilitate steam release. Riser connections shall be positioned on the top centerline

of the boiler shell. Downcomer connections shall be positioned radially, baffled to prevent tube erosion, and directed internally for uniform distribution across the tube bundle. Sufficient risers and downcomers shall be placed on each side of tube support baffles for proper operation of the boiler.

Shell side and steam drum design pressure shall be normal operating pressure (psig) divided by 0.9 plus the static head of liquid from the top of the elevated steam drum to the bottom of the boiler (based on water with a 1.0 sp. gr.). Shell side and steam drum design temperature shall be the larger of the temperatures corresponding to saturation temperature at a pressure equal to the design pressure or the normal operating temperature plus 40°F. Tubeside design pressure shall be equal to the maximum pressure developed by the main blower under shut-off conditions. Tubeside design temperatures (inlet and exit channels) shall be: for internally lined channels with internal and/or external insulation, the larger of the calculated metal temperature or 650°F; for channels without internal lining, operating temperature plus 50°F.

The inlet channel of the boiler shall be refractory lined. The type of refractory used shall be suitable for the gas temperature, pressure, and composition. The lining shall be such that the channel metal temperature is maintained between 400°F and 600°F. The exterior of the boiler shall be insulated to conserve heat and for personnel protection. The inlet tubesheet shall be refractory lined on the hot face and ceramic ferrules will be inserted in each tube. The minimum thickness of the ferrule shall be 1/8". The ferrules shall extend a minimum distance of $2\frac{1}{2}$" inside the water side face of the tubesheet.

A corrosion allowance of 1/16" shall be added to all shellside and steam drum components (except the tubes) and to all tubeside components. Channels shall be minimum 3/8" thickness. Shellside and steam drum materials shall be carbon steel conforming to the applicable specifications listed in Section 1 of the ASME Code and carbon steel plate material thicker than 5/8" shall be in accordance with ASME specification SA 516 Grade 70; carbon steel flanges and forgings shall be in accordance with specification number SA 105; carbon steel pipes shall be in accordance with ASME specification SA 106 Grade B or C. Channel material shall conform to the applicable specifications listed in Section VIII of the ASME code and for design temperatures above 700°F but less than 900°F, ASME specification SA 515 Grade 70 for plate, SA 105 for forgings. Tubesheet material shall be SA 515 Grade 70. Tube material shall be SA 178A.

The tubes shall be expanded, strength welded and re-expanded into flanged tube sheets. The depth of the tube to the tube sheet welds shall be a maximum one third of tube sheet thickness. The material of the channel shell shall be preheated in accordance with ASME Code. The shell shall be post weld heat treated after completion of welding with temperature and hold times in accordance with ASME Code, Section 1, Power Boilers.

Tube supports shall be provided as required to prevent tube vibration in accordance with the standards of Tubular Exchanger Manufacturers Association, latest Edition. Each tube support plate shall support every tube and be circumferentially trimmed to give maximum possible clearance to the inside diameter of the shell. Tube support plates shall be positioned along the length of the shell in such a manner that they shall not interfere with the recirculation between the inlet and outlet nozzles in any section of the boiler.

Ductwork connections shall be reinforced at the junction to the channel using reinforcing pad. Access to the internal refractory and to the tube to tubesheet joints shall be by flanged manway (minimum 24" inside diameter of refractory) located in the head of each channel.

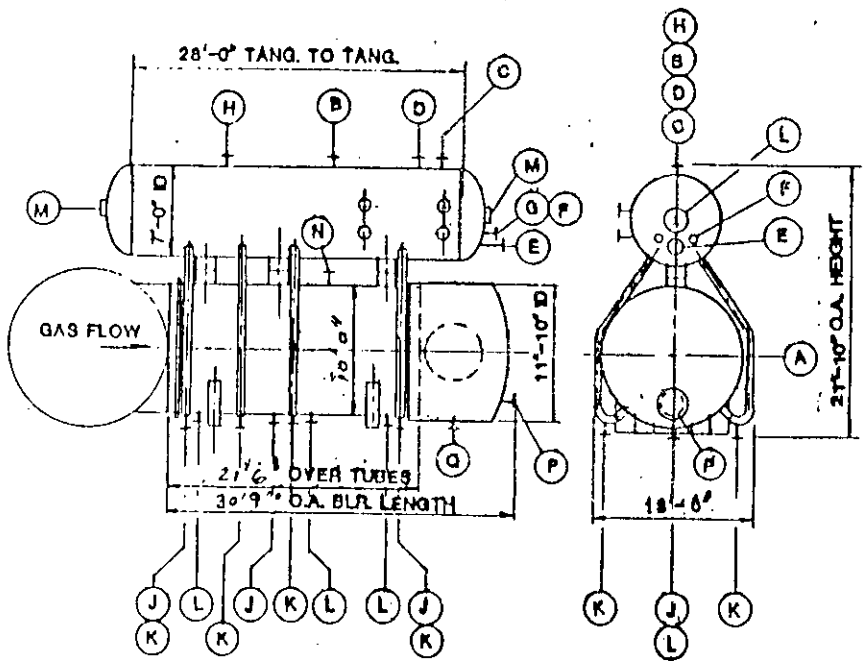
Shellside connections include: a 2" start-up steam connection, with blind flange, on the bottom centerline of the shell with internal sparger pipe; two 1½" blowdown connections located as close as possible to the waterside face of each tubesheet on the bottom centerline of the shell; one 1½" drain connection, with blind flange, on the bottom centerline of the shell; two 6" pad on shell type inspection openings located as close as practical to the waterside face of each tubesheet on the horizontal centerline of the boiler.

Each shellside opening shall be reinforced for the pressure and temperature stamped on the boiler and for the test conditions. Each manway shall be fitted with a davit.

Steam shall be released and separated in the drum by means of steam separation systems of proven design. The steam drum shall include all necessary nozzles, two 24 inch diameter manways, steam baffles, mesh type steam purifier, internal feedwater distribution pipe, continuous blowdown and stainless steel chemical feed pipe. The drum shall be sized to retain an amount of water equal to a minimum of 7 (seven) minutes operation at design steaming rate, measured from the low trip point (shutdown setting) level to the downcomer piping off-takes.

Suitable instrumentation, piping, valves, relief valves and drains shall be included for an operable system.

External insulation for fire tube boiler and steam drum shall be furnished.



MK.	SIZE	QTY.	SERVICE
A	60"	1	GAS OUTLET
B	8"	1	STEAM OUTLET
C	3"	1	SAFETY VALVE
D	4"	1	SAFETY VALVE
E	6"	1	BLR. FDWTR. W/INT. PIPE
F	1"	1	CONT. BLOWDOWN W/INT. PIPE
G	3/4"	1	CHEMICAL FD. W/INT. PIPE
H	1 1/2"	1	VENT
J	2"	3	BLOW - OFF
K	1 1/2"	8	DOWNCOMER DR. W/BF
L	8"	3	HANDHOLE W/BF
M	24"	2	MANWAY W/DAVIT
N	20"	1	MANWAY W/DAVIT
P	24"	1	MANHOLE W/FINGE
Q	2"	1	CHAMBER DRAIN

NOTES:

1. ALL DIMENSIONS ARE APPROXIMATE.

MATERIALS	
FIRE TUBE BOILER	
SHELL	SA-516-70
FRONT TUBE SHEET	1 STAINLESS STEEL REFRACTORY
	CUPS, ZIRCONIUM SILICATE
	FERRULES
OUTLET TUBE SHEET	SA-516-70
TUBES	SA-178A
GAS INLET CHAMBER	SA-516-70
	THREE LAYERS OF BRICKLINING
GAS OUTLET CHAMBER	SA-516-70
TUBE BUNDLE DIAMETER	10'0"
TUBE BUNDLE LENGTH	21'6"
TUBE DIAMETER	2" OD x .220" MIN WALL
NUMBER OF TUBES	132 B
STEAM DRUM	
SHELL	SA-516-70
INTERNALS	-
DIAMETER	84" ID
LENGTH	28'-0" TL/TL
EXTERNAL INSULATION	MINERAL WOOL W/ ALUMINUM JACKET
	FIELD INSTALLED

DESIGN DATA (APPROXIMATE)

STEAM		
STEAM GENERATED	174000	LBS/HR
OPERATING PRESSURE	914	PSIG
DESIGN PRESSURE	1000	PSIG
HYDROSTATIC PRESSURE	1500	PSIG
OPERATING TEMPERATURE	536	°F
DESIGN TEMPERATURE	588	°F
CONTINUOUS BLOWDOWN	3	%
TOTAL HEAT	120.9 (10)^6	BTU/HR
HEATING SURFACE (INTERNAL)	11356	SQ. FT.
GAS		
TOTAL GAS	378000	LBS/HR
GAS INLET PRESSURE	109	"H_2O
GAS PRESSURE DROP	18.5	"H_2O
GAS TEMPERATURE INLET	2084	°F
GAS TEMPERATURE OUTLET	580	°F

LURGI CORPORATION
EASTERN DIVISION

BOILER 01-E-003

STEAM DRUM 01-V-004

PROPOSAL NO.

COOLING TOWER INSTITUTE
INQUIRY & BID FORM
Mechanical Draft Water-Cooling Tower

Customer	Manufacturer
LURGI CORPORATION 666 KINDERKAMACK ROAD RIVER EDGE, NJ 07661 ATTN: STEVEN G. HAYNES SUBCONTRACTS BUYER Inquiry No. 2-6012-S-003-23 Date: Orig. 1/30/84 Rev.	LILIE-HOFFMANN COOLING TOWERS, INC. 186 E. KIRKHAM ST. LOUIS, MO. 63119 PHONE: 314 - 962-3872 Proposal No. 9248-7636G Date: Orig. 2/24/84 Rev.

All data set forth herein is in accordance with definitions and standards published by the Cooling Tower Institute.

Symbol * = minimum information to be filled-in by customer, other items may be specified at customer's option.

	BASE BID HEAVY DUTY INDUSTRIAL CTI CODE TOWER	ALTERNATE BID
GENERAL		
Selection	S15M-3240-2	S16M-4848-2
Tower Model		
Type	INDUCED DRAFT COUNTERFLOW	
DESIGN & OPERATING CONDITIONS		
*Circulating Water Flow, U.S. GPM	14,300	23,000
*Hot (inlet) Water Temp. F.	115	115
*Cold (outlet) Water Temp. F.	90	90
*Wet Bulb Temp. F., Inlet	80	80
Ambient		
Tower Pump Head, Ft.	20.7	21.5
Total Fan B.H.P., (Driver Output)	116.4	190.4
Drift Loss, % of circulating flow	0.2	
Evaporation Loss (at design)	2.5%	
*Design Wind Load, Lbs./sq. ft.	30	
Mi./hr.	100	
*Design Seismic Load, % G	---	
*Tower Site (ground level, roof, etc.)	GROUND LEVEL	
*Elevation Above Sea Level, ft.	0	
*Tower Exposure	UNOBSTRUCTED	
STRUCTURAL DETAILS		
Number of Cells	2	2
Fans per Cell	1	1
Total Number of Fans	2	2
Nominal Cell Dimen., L×W, ft.	32x40	48x48
Overall Tower Dimension, L×W, ft.	67x43	99x51
Height--Basin Curb to Fan Deck, ft.	30	30
Fan Stack Height, ft.	9	9
Overall Tower Height, ft.	39	39
Inside Basin Dimensions, ft.	65'-6"x41'-6"	97'-6"x49'-6"
*Column Extensions, Perimeter, below basin curb, ft.	1	
Internal, below curb, ft. (max.)	1	
Anchorage	ALL COLUMNS	

COOLING TOWER INSTITUTE
INQUIRY & BID FORM

Inquiry No. 2-6012-S-
Proposal No. 9248-7636C

STRUCTURAL DETAILS (Cont'd.)	BASE BID	ALTERNATE BID
Hot Water Inlet–Number	2	2
Nom. Diameter, in.	20	24
Description	Terminating with a separate flanged connection at outside of tower for each cell.	
Height Inlet Above Basin Curb, ft.	15	16
*Access to Top of Tower	ONE STAIRWAY & ONE LADDER	
Shipping Weight, lbs.	128,000	189,000
Operating Weight, lbs.	196,000	296,000

MATERIALS OF CONSTRUCTION	
Framework Members	DOUGLAS FIR
Casing	8 OZ. CORRUGATED FRP
Filling	CELLULAR PVC
Support	DOUGLAS FIR
Drift Eliminators	PVC
Spacer	PVC
Fan Stacks	FRP
Louvers, Material	SAME AS CASING
Partitions	FRP
Fan Deck	11/8" CCX FIR PLYWOOD
Water Distribution–Type	LOW PRESSURE DOWNSPRAY
Material	FRP HEADERS; PVC LATERALS
Lumber Pre-Treatment	ACC
Type of Treatment	PRESSURE
Items Treated	ALL LUMBER
Splashers or Spray Nozzles	POLYPROPYLENE NOZZLES
Stairway and Handrail	DOUGLAS FIR
Structural Connectors	BOLTED BLOCKS
Ring Joint Connectors	304 STAINLESS STEEL
Bolts, Nuts, Washers	304 STAINLESS STEEL
Anchor Connectors	EPOXY COATED CAST IRON
Nails	304 STAINLESS STEEL
Mechanical Equipment Support	UNITIZED, GALVANIZED STRUCTURAL STEEL, EPOXY COATED
*Anchor Bolts–Material	
Furnished by	PURCHASER
*Cold Water Basin–Material	CONCRETE
Furnished by	PURCHASER
*Basin Accessories, by Mfg.	PURCHASER
Anchor Bolt Grouting, By	LILIE-HOFFMANN

MECHANICAL EQUIPMENT		
Fans		
Number	2	2
Type or Model	APT-28B-6	APT-28B-6
Manufacturer	HUDSON PRODUCTS	
Diameter, ft.	28	28
Number of Blades	6	6

COOLING TOWER INSTITUTE
INQUIRY & BID FORM

Inquiry No. 2-6012-S
Proposal No. 9248-76360

MECHANICAL EQUIPMENT (Cont'd.)	BASE BID	ALTERNATE BID
Fans		
Fan Speed, RPM	134.6	
Tip Speed, FPM	11,841	
BHP per fan, driver output	58.2	95.2
Blade Material	FIBERGLASS REINFORCED EPOXY	
Hub Material	GALVANIZED STEEL	
Total Static Pressure, in. H_2O	.4204	.3479
Velocity Pressure, in. H_2O	.0559	.1414
Air Delivery per Fan, ACFM	574,719	914,763
Fan Static Efficiency TOTAL FAN EFFICIENCY	74%	74%
Speed Reducer		
Number	2	2
Type	SPIRAL BEVEL	
Model	1008	1110
Manufacturer	AMARILLO GEAR CO.	
Reduction Ratio	13:1	13:1
AGMA Mechanical H.P. Rating	75	125
Service Factor at Rated H.P. of Driver	2.58	2.63
No. of Reductions	2	
	OIL FILL, DRAIN, VENT & SIGHT GLASS LINES EXTEND TO OUTSIDE OF FAN STACK	
Drive Shaft		
Number	2	2
Type	FLEXIBLE, NON LUBRICATED	
Model	40-LT-10.7	40-LT-10.7
Manufacturer	DANA FORMSPRAG	
Rated H.P.	250	250
Drive Shaft Material	18-8 STAINLESS STEEL	
Coupling Material	18-8 STAINLESS STEEL	
Driver		
Number	2	2
*Kind	ELECTRIC MOTOR	
*Type	TEFC, 2 SPEED, 1.15 S.F., W/SPACE HEATER	
Manufacturer	LOUIS ALLIS	
Full Load Speed, RPM	1750/875	
*Elec. Char.–phase/cycles/volts	3/60/460	
Rated H.P.	60	100

*MOTOR CONTROLS AND ELECTRICAL WORKS TO BE FURNISHED BY OTHERS, A VIBRATION CUT OUT SWITCH FOR EACH INDIVIDUAL DRIVE IS INCLUDED FOR MOUNTING BY OTHERS

ADDITIONAL DATA		
DRAWINGS	4-5	WEEKS AFTER RECEIPT OF ORDER
SHIPMENT	10-12	WEEKS AFTER APPROVAL OF DRAWINGS
ERECTION		APPROXIMATELY 5-6 WEEKS

Item 5.

Catalyst replacement will be performed by removing the existing catalyst by means of a portable industrial vacuum unit which is equipped with classification and air filtering equipment. The dust and the catalyst from this operation will be disposed of on property by placing it in the gypsum storage pile.

Introduction of new catalyst to the converter is done by hand placement of the catalyst from the 1000 liter fibre drums in which it is shipped into the converter. Normal careful handling of the new catalyst is always practiced to avoid breakage. No special problems of fugitive dust generation are generally encountered in this process.

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

May 2, 1984

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. T. R. Schmalz
Royster Company
Post Office Drawer 797
Mulberry, Florida 33860

Dear Mr. Schmalz:

The Department has made a preliminary review of your application for a permit to modify an existing sulfuric acid plant. Additional information needed to process the application is listed below.

1. What were the actual sulfur dioxide and acid mist emissions from all sources at this plant as of the baseline date (December, 1977)?

2. Please list the date each application for permit to construct was submitted for the sulfuric acid plant, the purpose of the construction, the permitted production rate, any permitted restriction in hours of operation, and the allowable and actual emissions of sulfur dioxide and acid mist (give basis for determining actual emissions). Were any of the construction permits subject to review under the PSD regulations?

3. Please provide a brief description of the waste heat boiler and note where it will be located on the process drawing.

4. Please provide a brief description of the cooling water tower and estimate the spray loss from it.

5. How will fugitive dust be controlled when the catalyst is replaced? How will the catalyst "dust" be disposed of?

Based on the information in the application, the sulfur dioxide emissions from the modification (Rule 17-2.100(105), FAC) will increase by more than the significant emission rate of 40 TPY that is listed in Table 500-2 of Rule 17-2, Florida Administrative Code (FAC). Therefore, the modification may be subject to Prevention of Significant Deterioration (PSD) Regulations (Rule 17-2.500, FAC) and the modified plant will need to at least comply with Standards of Performance for New Stationary Sources (NSPS, 40 CFR 60). If the proposed modifications are subject to the PSD regulations, the Department will also need the following information.

A. An analysis of existing air quality;

B. A PSD increment analysis;

C. A Florida Ambient Air Quality Standards (AAQS) analysis;

D. An analysis of impacts on soils, vegetation, and visibility and of growth-related air quality impacts; and

E. A "good engineering practice (GEP)" stack height evaluation.

F. Please provide a Best Available Control Technology (BACT) recommendation (Rule 17-2.630, FAC) for the sulfuric acid plant.

G. What continuous emission instrument will be used to comply with the monitoring requirements of 40 CFR 60.84?

Enclosed is a copy of a current application form. Please use this form for future applications for permits to construct or operate air pollution sources.

If you have any questions on the information requested, please write to me or call Willard Hanks at (904) 488-1344. If you prefer, we can discuss this matter at the Department's Office in Tallahassee. We will resume processing your application as soon as you furnish the requested information.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management

CHF/dt

Enclosure: Application

cc: Bill Thomas, Southwest District

No. 0156502

RECEIPT FOR CERTIFIED MAIL

**NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL**

(See Reverse)

SENT TO
Mr. T. R. Schmalz
STREET AND NO.

P.O., STATE AND ZIP CODE

POSTAGE		$
CONSULT POSTMASTER FOR FEES — OPTIONAL SERVICES	CERTIFIED FEE	¢
	SPECIAL DELIVERY	¢
	RESTRICTED DELIVERY	¢
	RETURN RECEIPT SERVICE — SHOW TO WHOM AND DATE DELIVERED	¢
	RETURN RECEIPT SERVICE — SHOW TO WHOM, DATE, AND ADDRESS OF DELIVERY	¢
	RETURN RECEIPT SERVICE — SHOW TO WHOM AND DATE DELIVERED WITH RESTRICTED DELIVERY	¢
	RETURN RECEIPT SERVICE — SHOW TO WHOM, DATE AND ADDRESS OF DELIVERY WITH RESTRICTED DELIVERY	¢
TOTAL POSTAGE AND FEES		$

POSTMARK OR DATE
5/3/84

PS Form 3800, Apr. 1976

PS Form 3811, Jan. 1979

SENDER: Complete items 1, 2, and 3.
Add your address in the "RETURN TO" space on reverse.

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2. ARTICLE ADDRESSED TO:
Mr. T. R. Schmalz
P. O. Drawer 797
Mulberry, FL 33860

3. ARTICLE DESCRIPTION:
REGISTERED NO. | CERTIFIED NO. 0156502 | INSURED NO.

(Always obtain signature of addressee or agent)

I have received the article described above.
SIGNATURE [X] Addressee [ ] Authorized agent

4. DATE OF DELIVERY 5-7-84
POSTMARK

5. ADDRESS (Complete only if requested)

6. UNABLE TO DELIVER BECAUSE:
CLERK'S INITIALS

RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

☆GPO 1979-300-459