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AIR REGULATION

August 10, 1998

Mr. Joseph Kahn, P.E.
New Source Review Section
Florida Department of Environmental Protection
111 South Magnolia Drive, Suite 4
Tallahassee, FL 32301

Via FedEx
Airbill No. 805858540248

**Re: Tampa Electric Company
Big Bend Units 1 & 2 FGD System
Response to Request for Additional Information**

Dear Mr. Kahn:

In response to your letter of August 5, 1998, Tampa Electric Company hereby provides the following responses to your request for additional information on the new FGD system for Big Bend Units 1 & 2. Responses to questions not addressed in this letter will be forwarded to you within the next few days.

FDEP Question 2:

Please provide more detail about how CEMS will be used to demonstrate compliance with all sulfur dioxide emissions limits applicable to Units 1 and 2.

TEC Response:

The specific details of the CEMS Compliance Plan have not yet been completed. It is anticipated that the CEMS Compliance Plan will be submitted to the appropriate agency personnel by mid-1999 for review and approval. In general, it is not anticipated at this time that this plan will be significantly different from that of any other facility using CEMS for compliance demonstration purposes.

FDEP Question 6:

Please provide a process diagram of the proposed FGD system showing pertinent gas and liquid streams.

TEC Response:

Please see the attached process diagrams.

FDEP Question 7:

Please provide further design information on the FGD system including pressure drop, gas velocity, materials of construction of the spray tower and major internal components.

Mr. Joseph Kahn, P.E.
August 10, 1998
Page 2 of 2

TEC Response:

<i>Absorber Pressure Drop:</i>	<i>6" w.c.</i>
<i>Absorber Gas Velocity:</i>	<i>14 ft/sec.</i>
 <i>Materials of Construction:</i>	
<i>Absorber Shell</i>	<i>A-36 (carbon steel) with C-276 (alloy) Cladding</i>
<i>Absorber Spray Piping</i>	<i>C-276 (alloy)</i>
<i>Absorber Oxidation Air Piping</i>	<i>FRP (fiberglass reinforced pipe)</i>

FDEP Question 8:

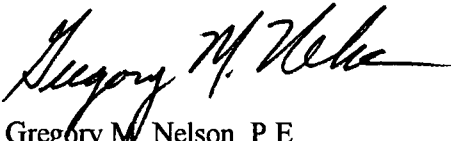
Please provide an estimate of the auxiliary power requirements of the FGD system and associated equipment.

TEC Response:

The electrical load for the Big Bend FGD system and associated equipment will be approximately 13 MVA.

Thank you for your continued assistance in this matter. Should you have any questions, please call me at (813) 641-5016.

Sincerely,



Gregory M. Nelson, P.E.
Manager
Environmental Planning

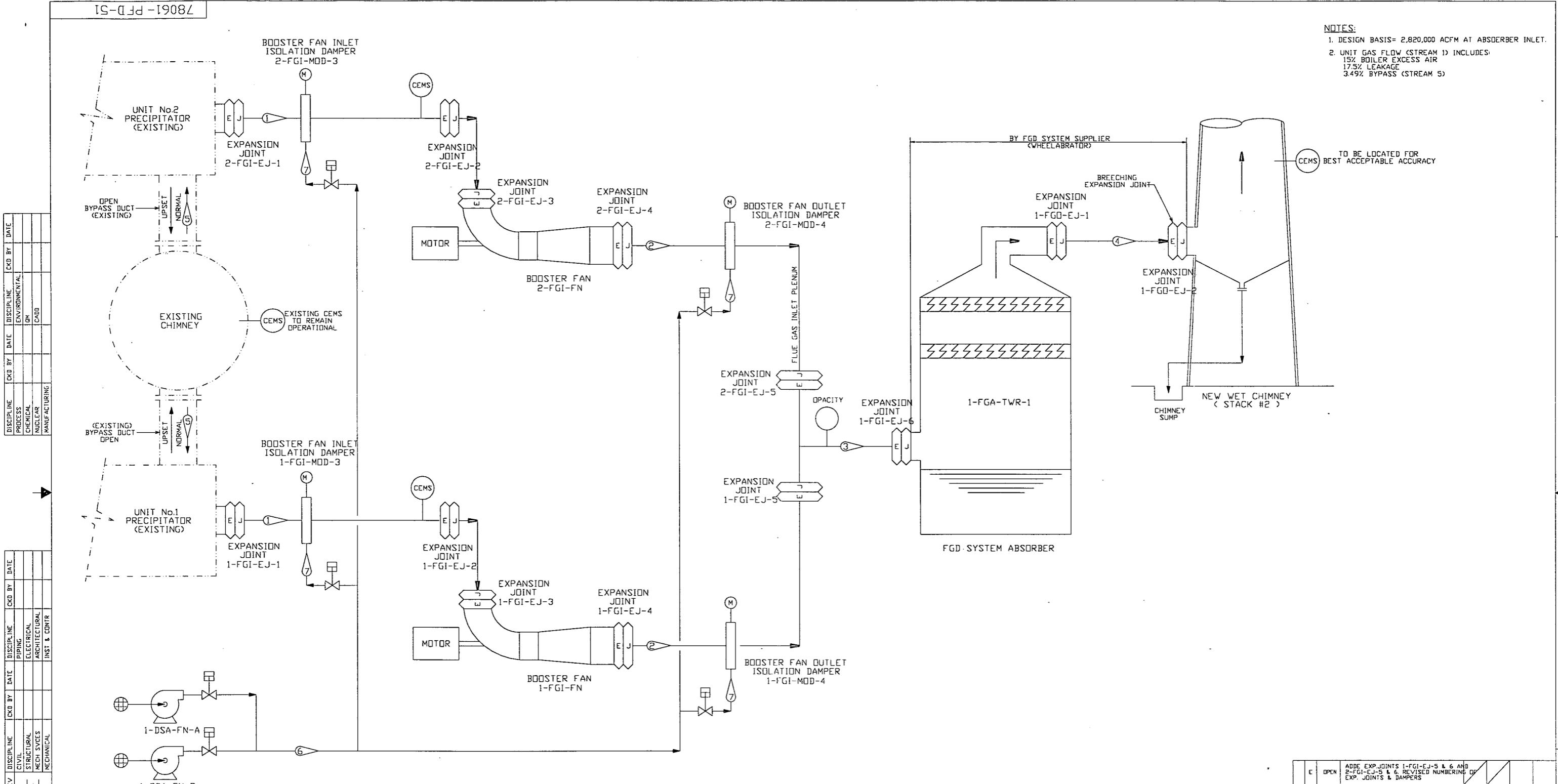
EP\gm\GMN115

Enclosure

c/enc: Mr. Clair Fancy, FDEP
Mr. Rick Kirby, EPCHC

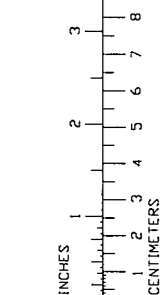
EPA
SWD
T. Davis, P.E.

NOTES:
 1. DESIGN BASIS= 2,820,000 ACFM AT ABSORBER INLET.
 2. UNIT GAS FLOW (STREAM 1) INCLUDES:
 15% BOILER EXCESS AIR
 17.5% LEAKAGE
 3.49% BYPASS (STREAM 5)



DISCIPLINE	DATE	CHKD BY	DATE
ENVIRONMENTAL			
PROCESS			
CHEMICAL			
NUCLEAR			
MANUFACTURING			

REV	DISCIPLINE	DATE	CHKD BY	DATE
	CIVIL			
	STRUCTURAL			
	MED. SVCS			
	MECHANICAL			
	ELECTRICAL			
	ARCHITECTURAL			
	INST. & CONTR.			



DAMPER SEAL AIR FANS
 (1) OPERATING, (1) SPARE

	1	2	3	4	5	6	7
	BOOSTER FAN INLET (UNIT GAS FLOW)	BOOSTER FAN DISCHARGE	FGD ABSORBER INLET	FGD ABSORBER OUTLET	NORMAL BYPASS FLOW	SEAL AIR BLOWER DISCHARGE	SEAL AIR TO DAMPER
FLOW RATE	4,860,233	4,872,171	9,155,463	9,768,217	149,505	47,752	11,938
	LB/HR	979,651	982,298	1,969,889	2,170,066	32,999	2,647
	SCFM	1,431,798	1,401,237	2,820,000	2,459,659	11,800	2,950
	ACFM						
TEMPERATURE	300-F	300-F	300-F	132-F	95-F	95-F	95-F
PRESSURE	407.0	417.0	414.8	408.8	407.0	425.0	425.0
DENSITY	0.0566	0.0580	0.0541	0.0662	0.0710	0.0674	0.0674
NOTES:	SEE NOTE No. 2	INCLUDES STREAM 7	SEE NOTE No. 1				

E	OPEN	ADDE EXP JOINTS 1-FGI-EJ-5 & 6 AND 2-FGI-EJ-5 & 6. REVISED NUMBERING OF EXP. JOINTS & DAMPERS	
D	5/28/98	FOR CLIENT & IN-HOUSE REVIEW	
C	5/27/98	REVISED BOOSTER FANS FROM CENTRIFUGAL TO AXIAL, REVISED SEAL AIR AND FLOW TABLE. ISSUED FOR ENVIRONMENTAL PERMITTING	
B	5-6-98	ADDED TAGS, DELETED EXPANSION JOINTS	
A	4-21-98	PRELIMINARY LICENSING INFORMATION	
DATE	DESCRIPTION	SCALE	DATE
DATE	DESCRIPTION	SCALE	DATE

TECO
 TAMPA ELECTRIC
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TAMPA ELECTRIC
 BIG BEND STATION
 A TECO ENERGY COMPANY

FGD PROJECT
 PROCESS FLOW DIAGRAM
 GAS FLOW

DWG NO 78061-PFD-51
 REV E

78061.001
Tampa Electric Co.
Big Bend 1&2 FGD Retrofit Project

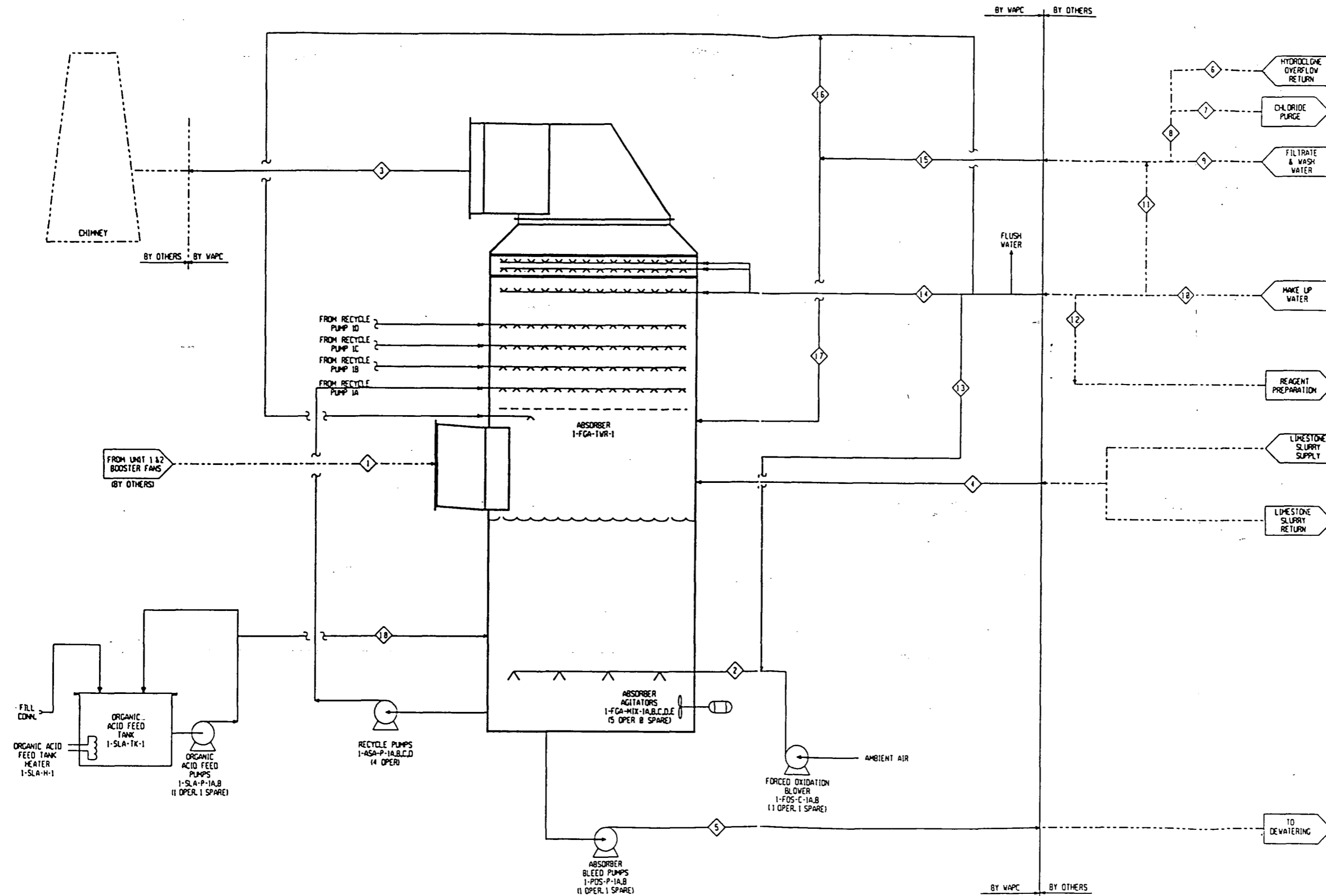
I. Brodsky
8/7/98 *IB*

FGD Absorber Area Flow Streams
(Ref: WAPC Process Flow Diagram 3826-3-001)
(See RE&C PFD-51 for Gas Flow Material Balance)

PFD Stream No.		1	2	3	4	5	13	14	15	16	17	18	*
Description	Units	Flue Gas to Absorber	Oxidation Air to Absorber	Flue Gas to Stack	Limestone Slurry to Absorber	Absorber Blowdown	Oxid. Air Saturation Water	Makeup Water to M.E. Wash	Total FGD Return Water	Return Water to Quench	Return Water to Rec. Tank	Organic Acid to Absorber	Recycle Pump flow (ea. of 4)
24 hr. Average Flow	gpm lb/hr scfm	See PFD-51	145,806 29,432	See PFD-51	346 222,541	1,196 703,255	25 12,505	254 127,046	1,538 754,302	429 210,580	1,108 543,722	0.26 132	41,000 2.41E+07
Temperature	°F		250		95	130	95	95	105	105	105	150	130
Suspended Solids	wt%		-		35%	20%	0%	0%	3%	3%	3%	25% soln.	20%
Sp. Gravity	SGU		-		1.29	1.18	1.00	1.00	1.02	1.02	1.02	1.04	1.18

* **NOTE:** Absorber recycle pump flow taken from Wheelabrator data sheets in contract Specification P214H.
All other flows from Wheelabrator material balances, 3826-JLM-R1, of 6/26/98

NOTES:
1. WORK THIS DWG WITH MATERIAL BALANCE



FD-0006

JOB NO. 78061.001
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NO.	REVISION	DATE	NO.	REVISION	DATE	REV.	DATE	TO	FOR	REV.	DATE	TO	FOR	DRW. BY	DATE	SCALE	CERTIFIED	DATE
1	ADDED NOTE, FLUSH WATER & GEN REVISIONS	6-25-98												MTM	5-13-98	NONE		
														JLM	5-18-98			

ISSUE RECORD

DRW. BY: MTM DATE: 5-13-98
 APPR. BY: JLM DATE: 5-18-98
 SCALE: NONE
 CERTIFIED: [] DATE: []

TAMPA ELECTRIC COMPANY
 BIG BEND STATION UNITS 1 & 2
 FGD SYSTEM RETROFIT PROJECT

Wheelabrator Air Pollution Control

PROCESS FLOW DIAGRAM

J.O. No. 78061

3826-3-001 1