

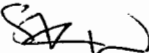

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AIR MANAGEMENT DIVISION  
MEMORANDUM

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TO: JERRY THROUGH: STERLIN   
FROM: PATRICK   
SUBJECT: BIG BEND'S NEW SO2 LIMIT  
DATE: DECEMBER 11, 1997

I have two quarters of valid data the whole Big Bend station, 4<sup>th</sup> Quarter 1996 and 2<sup>nd</sup> Quarter 1997. During these two quarters the station exceeded the 18.75 ton/hr on a rolling 24 hour average, ~143 hours, i.e. 143 24 hour rolling averages were exceeded. I made a comparison to what is reported in the corresponding SO2 quarterly reports. The results are in the table below. Note that the current Tampa Electric quarterly report is a daily 24 hour average, not a rolling 24 hour average hence the low number of times > 18 tons/hr.

Quarter/Month	CEM (24 rolling average > 18.75 tons/hr SO2) i.e. hours > 18.75 on a 24 hour average	Current quarterly submittals from TEC > 18 ton/hr
4 <sup>th</sup> 1996/October	65	6
4 <sup>th</sup> 1996/November	38	3
4 <sup>th</sup> 1996/December	0	6
2 <sup>nd</sup> 1997/April	0	0
2 <sup>nd</sup> 1997/May	0	0
2 <sup>nd</sup> 1997/June	40	10

**Conclusions:** The fuel sampling provides only a snap shot of the emissions and can under or over estimate the actual SO2 emissions due to coal quality variability. The best example is June 1997. If you look at the Tampa Electric submittal and compare it to the 8 1/2" x 14" chart. The variability of the coal's sulfur content is evidenced by the variability of hourly SO2 emissions. On days with high coal sulfur variability, several hourly observations can be aligned vertically on the chart. On days with low coal variability the hourly readings are grouped together, e.g. April 30<sup>th</sup> through may 12<sup>th</sup>. Therefore coal sampling is not very representative of the true lb/MMBtu sulfur content of the bunkered fuel when there is high variability in the quality of the coal.

**Recommendation:** The 18.75 ton/hr limit should be on a rolling 24 hour average and demonstrated by CEM.

**Attachments:**

CEM emission charts, the red line is the 24 hour rolling average.  
TEC 4<sup>th</sup> quarter 1996 and 2<sup>nd</sup> quarter 1997 SO2 reports

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document2

AMPA ELECTRIC COMPANY  
BIG BEND UNITS 1-3

## QUARTERLY SO2 EMISSIONS REPORT

MONTH: YEAR:  
APRIL 1997

ANALYSIS MONTH APRIL	BIG BEND 1 LBS. SO2/ MMBTU	BIG BEND 2 LBS. SO2/ MMBTU	BIG BEND 3 LBS. SO2/ MMBTU	BIG BEND 1-3 TOTAL SO2 TONS/HR
1	*	2.03	4.62	12
2	*	2.77	3.36	11
3	*	2.56	3.32	11
4	*	2.68	3.99	12
5	*	3.53	5.07	15
6	*	3.22	3.23	11
7	*	3.01	4.27	13
8	*	3.38	4.72	15
9	*	3.42	4.63	14
10	*	3.19	4.74	15
11	*	3.80	4.53	15
12	*	3.47	3.54	14
13	*	3.34	3.08	13
14	*	3.40	4.71	16
15	*	3.29	4.42	15
16	*	3.52	4.43	16
17	*	2.93	4.56	14
18	*	2.93	4.23	13
19	*	2.93	4.05	12
20	*	3.23	3.70	13
21	*	2.64	3.54	11
22	*	2.40	3.57	12
23	*	2.89	2.67	10
24	*	3.10	4.02	13
25	*	2.48	4.64	14
26	*	2.66	4.52	13
27	*	2.64	4.62	14
28	*	3.15	4.37	14
29	*	3.11	4.76	14
30	*	3.43	4.74	14

\* UNIT NOT IN SERVICE

MPA ELECTRIC COMPANY  
 BIG BEND UNITS 1-3  
 QUARTERLY SO2 EMISSIONS REPORT

BEST AVAILABLE COPY

MONTH: YEAR:  
 MAY 1997

ANALYSIS MONTH MAY	BIG BEND 1 LBS SO2/ MMBTU	BIG BEND 2 LBS SO2/ MMBTU	BIG BEND 3 LBS SO2/ MMBTU	BIG BEND 1-3 TOTAL SO2 TONS/HR
1	*	3.53	4.58	14
2	*	3.38	5.10	17
3	*	2.82	4.81	15
4	*	3.18	4.69	14
5	*	3.47	4.09	14
6	*	3.30	3.87	12
7	*	3.80	5.32	15
8	*	3.25	4.62	12
9	*	3.35	4.57	14
10	*	3.55	4.47	14
11	*	3.34	4.34	14
12	*	3.76	4.71	15
13	*	3.23	4.30	12
14	*	3.41	4.02	13
15	*	3.22	4.46	13
16	*	3.63	4.03	14
17	*	2.85	3.74	12
18	3.05	2.72	2.97	10
19	2.49	2.89	3.16	11
20	*	2.22	2.20	9
21	2.56	2.27	3.27	10
22	2.69	2.44	2.69	8
23	2.45	2.61	2.62	9
24	2.38	2.10	2.58	8
25	2.35	2.24	2.97	7
26	2.40	2.43	4.65	10
27	2.66	2.86	4.60	12
28	2.43	2.40	4.49	12
29	2.84	2.97	4.23	12
30	2.63	2.04	4.29	11
31	2.97	2.90	4.39	12

\* UNIT NOT IN SERVICE

TAMPA ELECTRIC COMPANY  
BIG BEND UNITS 1-3  
QUARTERLY SO2 EMISSIONS REPORT

MONTH: YEAR:  
JUNE 1997

ANALYSIS MONTH JUNE	BIG BEND 1 LBS. SO2/ MMBTU	BIG BEND 2 LBS. SO2/ MMBTU	BIG BEND 3 LBS. SO2/ MMBTU	BIG BEND 1-3 TOTAL SO2 TONS/HR
1	2.07	2.79	4.76	14
2	3.48	3.86	4.72	19
3	3.12	4.35	4.44	19
4	2.99	2.25	4.40	15
5	3.04	2.57	4.40	17
6	3.04	2.74	5.08	19
7	3.14	3.32	4.57	16
8	3.57	3.05	4.62	17
9	3.89	3.34	4.67	18
10	3.14	3.03	4.36	15
11	3.42	3.02	4.35	18
12	3.57	3.33	4.36	19
13	3.58	3.72	4.26	18
14	3.25	3.17	4.34	13
15	3.18	*	4.34	14
16	3.71	3.17	4.43	16
17	3.47	2.86	4.47	18
18	3.60	3.42	3.56	19
19	3.67	3.19	4.71	19
20	3.21	3.08	4.55	20
21	3.35	3.19	4.59	20
22	3.54	3.43	5.62	21
23	3.67	3.12	4.57	18
24	2.56	2.45	4.05	13
25	2.31	2.19	2.66	11
26	2.70	2.50	4.27	17
27	3.00	3.18	4.41	18
28	3.42	3.32	4.55	20
29	3.42	3.34	4.73	20
30	3.29	2.99	4.63	14

\* UNIT NOT IN SERVICE

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AMP ELECTRIC COMPANY  
BIG BEND UNITS 1-3  
QUARTERLY SO2 EMISSIONS REPORT

MONTH: YEAR:  
OCTOBER 1996

ANALYSIS MONTH OCTOBER	BIG BEND 1 LBS. SO2/ MMBTU	BIG BEND 2 LBS. SO2/ MMBTU	BIG BEND 3 LBS. SO2/ MMBTU	BIG BEND 1-3 TOTAL SO2 TONS/HR
1	1.76	1.79	4.17	14
2	1.97	1.87	4.34	14
3	1.74	1.70	4.39	15
4	1.92	2.14	4.54	16
5	1.77	1.57	4.54	16
6	1.85	1.73	4.43	15
7	2.36	2.34	4.40	17
8	2.30	2.29	4.70	17
9	2.17	*	4.36	11
10	1.90	2.04	4.27	12
11	1.78	2.31	4.29	14
12	1.86	1.83	4.93	15
13	1.98	1.71	4.61	14
14	2.60	1.78	4.73	17
15	1.88	1.11	4.89	14
16	1.79	1.57	4.68	15
17	1.56	1.47	4.80	15
18	1.89	1.71	5.01	16
19	1.72	1.74	4.84	15
20	2.26	2.20	4.61	16
21	2.68	2.33	4.83	18
22	2.22	2.36	5.01	17
23	2.81	2.68	4.70	19
24	3.41	3.39	4.05	21
25	3.44	3.59	3.85	21
26	2.96	3.03	2.58	15
27	3.51	3.41	4.22	21
28	3.11	2.77	4.90	21
29	2.84	2.71	4.71	19
30	3.10	2.73	4.51	19
31	2.92	2.58	3.33	16

\* UNIT NOT IN SERVICE

AMPA ELECTRIC COMPANY  
BIG BEND UNITS 1-3  
QUARTERLY SO2 EMISSIONS REPORT

MONTH: YEAR:  
NOVEMBER 1996

ANALYSIS MONTH NOVEMBER	BIG BEND 1 LBS. SO2/ MMBTU	BIG BEND 2 LBS. SO2/ MMBTU	BIG BEND 3 LBS. SO2/ MMBTU	BIG BEND 1-3 TOTAL SO2 TONS/HR
1	2.78	2.80	3.61	17
2	3.11	2.73	4.65	20
3	2.81	2.93	4.41	14
4	2.74	2.96	4.59	19
5	3.09	2.65	4.76	20
6	3.02	4.13	2.56	18
7	3.47	2.53	4.10	19
8	3.19	2.17	4.45	18
9	3.25	4.12	3.98	21
10	3.15	3.16	3.36	17
11	2.92	2.74	4.40	16
12	2.57	2.84	4.13	17
13	2.45	2.07	4.70	15
14	2.20	1.88	4.06	9
15	*	2.14	4.33	10
16	*	2.74	3.21	8
17	*	2.22	2.31	6
18	*	3.03	2.52	9
19	*	2.27	3.18	10
20	*	2.84	4.19	12
21	3.08	2.85	4.35	14
22	2.89	2.88	4.52	17
23	2.79	2.48	4.28	17
24	2.64	2.37	4.34	15
25	2.56	1.99	4.14	12
26	2.87	2.36	4.52	16
27	2.26	2.08	4.49	14
28	2.27	1.91	4.05	13
29	2.23	1.87	4.41	11
30	2.20	*	4.53	11

\* UNIT NOT IN SERVICE

AMPA ELECTRIC COMPANY  
 BIG BEND UNITS 1-3  
 QUARTERLY SO2 EMISSIONS REPORT

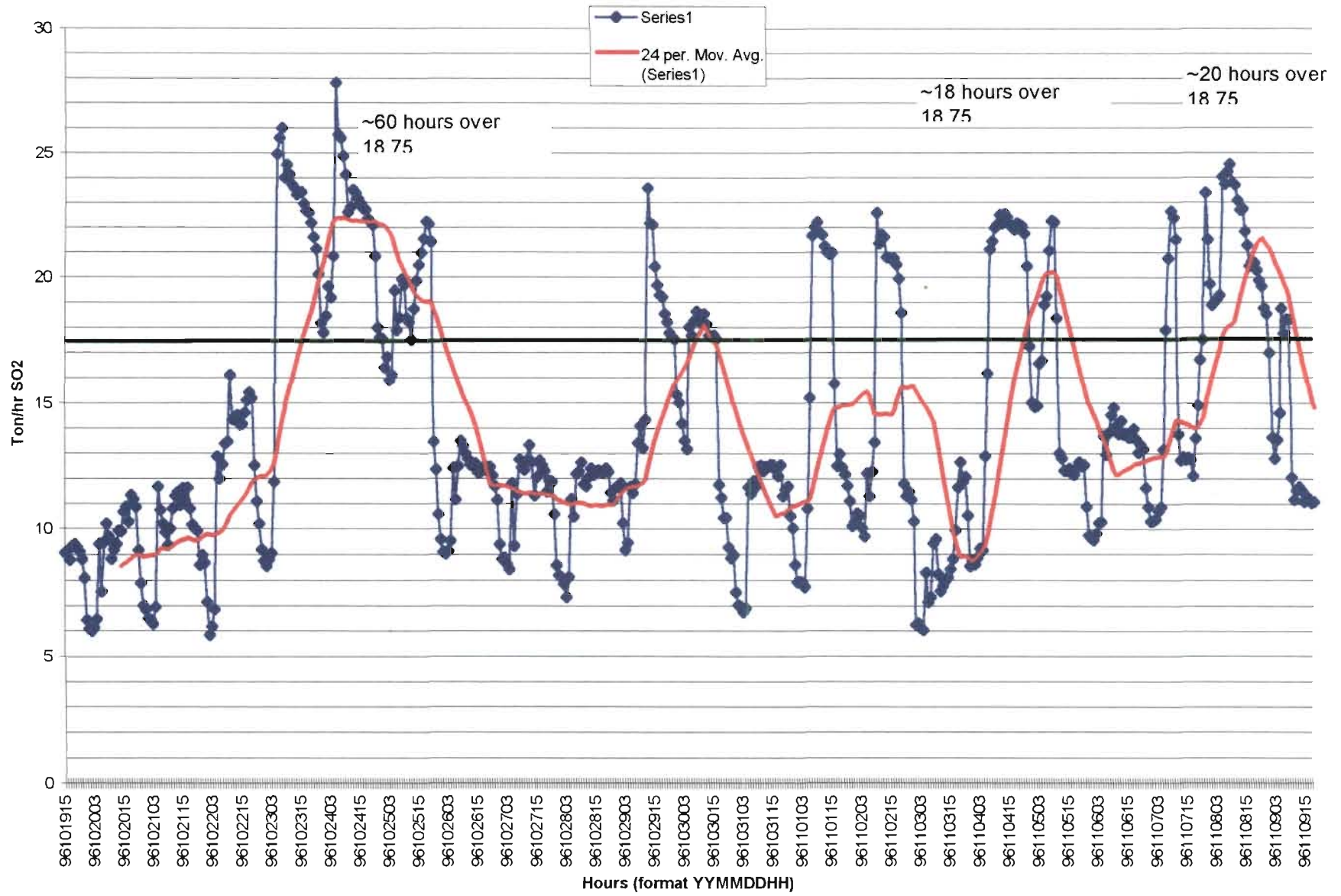
MONTH: YEAR:  
 DECEMBER 1996

ANALYSIS MONTH DECEMBER	BIG BEND 1 LBS. SO2/ MMBTU	BIG BEND 2 LBS. SO2/ MMBTU	BIG BEND 3 LBS. SO2/ MMBTU	BIG BEND 1-3 TOTAL SO2 TONS/HR
1	2.34	*	4.46	12
2	2.87	*	4.55	13
3	2.98	*	4.41	15
4	2.59	*	4.63	14
5	3.31	*	4.52	15
6	3.29	*	4.48	14
7	2.87	*	4.70	11
8	3.30	*	4.50	8
9	3.06	*	*	5
10	3.27	*	*	6
11	2.80	*	*	5
12	3.27	*	4.60	6
13	3.41	*	4.60	12
14	3.58	*	4.65	14
15	3.22	*	4.20	13
16	3.36	2.98	3.93	16
17	3.08	2.87	4.44	18
18	3.33	3.04	4.30	19
19	4.16	4.00	4.72	23
20	4.02	4.23	4.34	26 **
21	3.28	2.87	4.31	21
22	2.36	2.15	3.92	15
23	3.22	*	4.08	14
24	3.48	2.93	4.44	16
25	3.35	3.04	4.20	14
26	3.18	2.94	4.29	17
27	4.16	3.25	4.49	18
28	3.47	2.98	4.32	16
29	3.59	2.86	4.26	18
30	3.28	4.34	4.37	22
31	3.59	3.65	4.11	20

\* UNIT NOT IN SERVICE

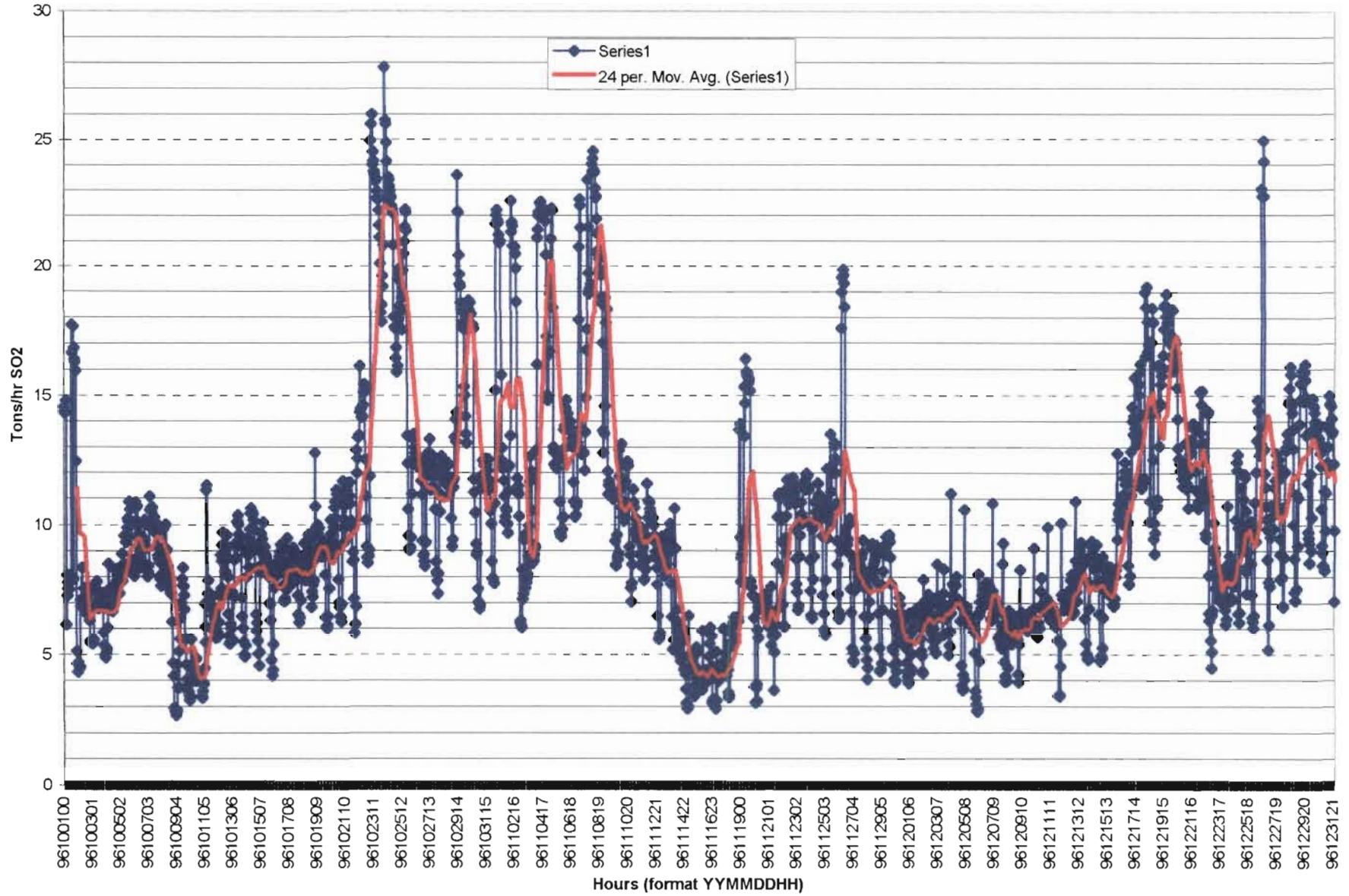
\*\*UPON REEVALUATION OF THESE FUEL ANALYSIS, IT APPEARS THAT A SAMPLING ANOMALY OCCURRED CAUSING A BIASED FUEL ANALYSIS. TEC HAS REVIEWED CEM SO2 EMISSION RATES AND CALCULATED THE ACTUAL SO2 OUTLET EMISSIONS FOR BB 1-3 WERE 15 TON/HR (AS SHOWN ON ATTACHED WORKSHEETS). IT SHOULD BE NOTED THAT BIG BEND 3 WAS OPERATING IN FULL INTEGRATED MODE (SCRUBBED) AND ALL FUEL ANALYSIS IS FOR SO2 INLET EMISSIONS.

1996 4th quarter

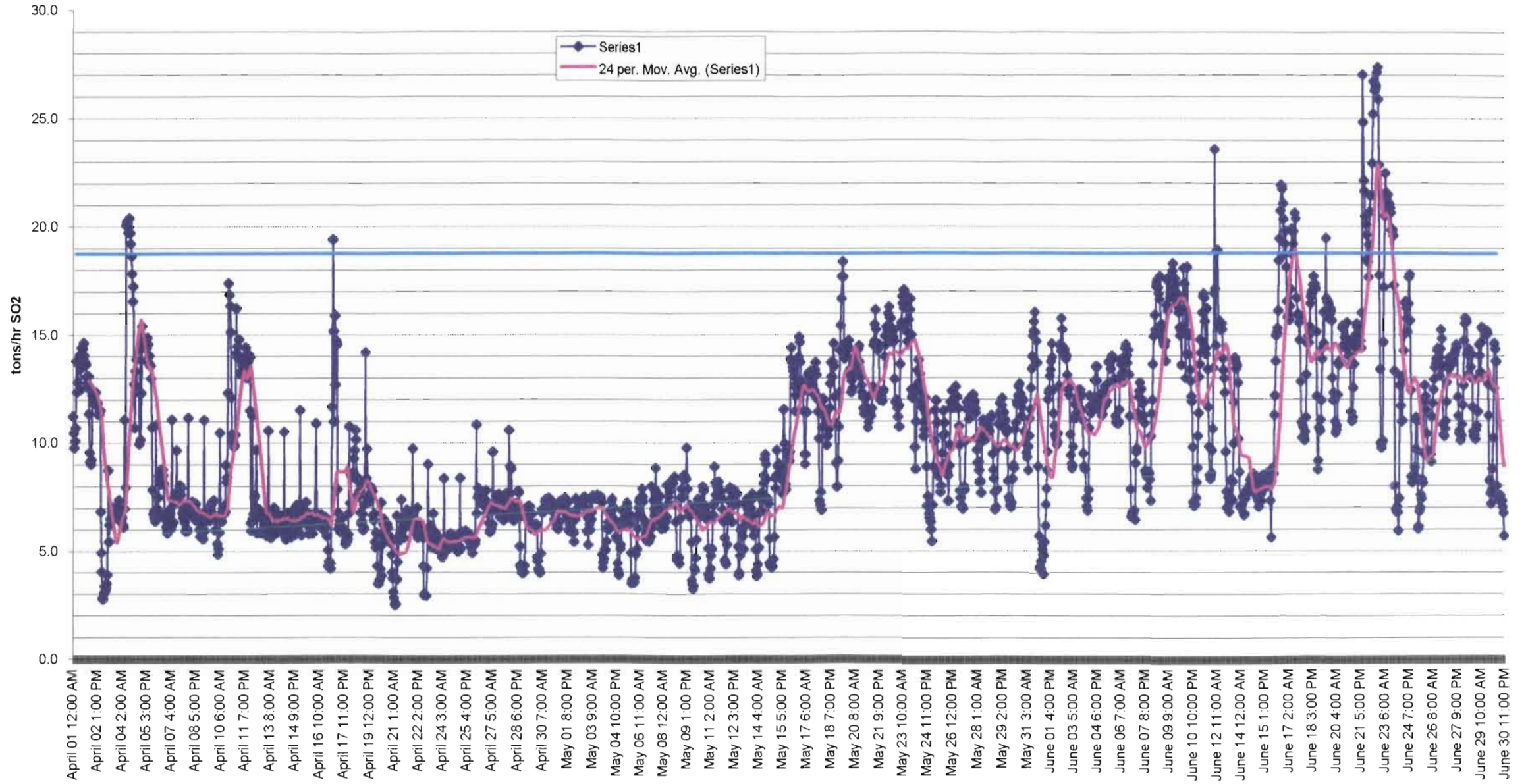




1996 QUARTER 4



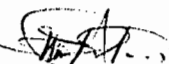
1997 Quarter 2



Florida Department of  
**Environmental Protection**

**Memorandum**

TO: Al Linero, PE

FROM: Lennon Anderson 

DATE: January 16, 1998

SUBJECT: TECO Gannon Coal Yard Project

In response to your January 12 memo, the following documents and information are being provided to assist with making a PSD Applicability Determination:

- Table showing the permitted PM, and SO<sub>2</sub> emission limits for all Gannon units.
- Gannon Reconversion Meeting, dated June 5, 1980.
- The proposed coal conversion order, dated June 23, 1980.
- Florida's State Implementation Plan submittal: TECO Gannon conversion to coal, dated December 3, 1980.
- Florida's Revised State Implementation Plan submittal: TECO Gannon conversion to coal, dated February 16, 1982.
- EPA's final SIP approval of the conversion, dated June 29, 1982.
- Letter from Martin Costello stating that the Gannon Station switched to Powder River Basin (PRB) coal on or before September 16.
- Fee Forms for years 1994, 1995, and 1996.
- Data on coal located in Cambell Co., Wyoming from Bobcock & Wilson.
- Analysis of coal from PRB.
- Article on B.C. Cobb Generating Plant which uses PRB coal: started in late '80s.

Conversations with Mr. Allen Coombs and Mr. Ken Evans at Cobb Generating Plant revealed that efficiencies of the two ESPs range from 98-99 percent. Each ESP has four fields. The plant's PM emission is 0.18 lbs per 1000 pound coal with an opacity limit of 20 percent. Allen and Ken can be reached at 616/727-6216 and 517/788-0404, respectively.

It is interesting to note that although TECO-Gannon switched to PRB coal, the PM in 1996 was greater than 1995 and 1994. Also, please note that the final SIP approval shielded the boilers from NSPS and PSD but it does not shield the coal yard from NSPS and PSD applicability.

Let me know if you have any questions or need additional information.

Attachments

cc: Cindy Phillips w/o attachments

COMMISSION

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M E M O R A N D U M

**RECEIVED**

JAN 20 1998

BUREAU OF  
AIR REGULATION

**DATE:** January 15, 1998

**TO:** Clair Fancy

**FROM:** Jerry Campbell *Jc*

**SUBJECT:** Sulfur Dioxide Standards at Big Bend

We noted the reduced SO<sub>2</sub> standard of 18.75 tons of SO<sub>2</sub> for Units 1, 2 and 3 on a 24 hour average in the draft Title V permit. We applaud the Department's initiative and ask that you consider revisiting TEC's whole SO<sub>2</sub> program. The State's SO<sub>2</sub> limitations at Gannon and Big Bend are health based standards, that we have long felt were not practically enforceable. The complexity of their standards and their compliance methodology defies logic, and we would favor a more straightforward approach.

The attached analysis indicates what can be done using CEM data. This particular analysis was in response to the question of how often TEC operated above the 18.75 figure during two discrete quarters. The table on the front page shows there is not good correlation between CEMs data and the current methodology. Considering that the current methodology consists of composite fuel samples and voodoo statistics, we will take the continuous emission monitor data every time. Perhaps we could offer to get away from stack testing, thus providing some incentive for TEC as well.

As you consider this matter, please keep in mind we are not necessarily advocating more stringent standards. Naturally we would like to see TEC move from health-based emission limits to technology-based standards, and the Acid Rain program is probably driving them to it; but in the absence of evidence of an ambient problem, we primarily seek an enforceable standard.

Thanks for your efforts and we look forward to hearing from you.

cag

cc: Bill Thomas  
Patrick Ho

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MAR 04 1998

BUREAU OF  
AIR REGULATION

March 3, 1998

Ms. Cindy L. Phillips, P.E.  
Title V Section  
Florida Department of Environmental Protection  
Twin Towers Office Building  
111 South Magnolia Drive, Suite 4  
Tallahassee, Florida 32301

Via FedEx  
Airbill No. 800926219560

Re: Tampa Electric Company  
Big Bend Station  
Draft Title V Air Operation Permit  
FDEP File No. 0570039-002-AV

*Cindy*  
Dear Ms. Phillips:

Please find enclosed TEC's detailed comments regarding the above referenced draft Title V permit. In addition, TEC believes that reference to used oil burning needs to be addressed in this permit. I look forward to meeting with you on March 10, 1998 to further discuss the conditions of this permit.

Please feel free to telephone me at (813) 641-5039, if you have any questions prior to our meeting. Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "Janice K. Taylor".

Janice K. Taylor  
Senior Engineer  
Environmental Planning

EP\gm\UKT826

Enclosure

c/enc: Mr. Scott Sheplak, FDEP-Tallahassee  
Mr. Jerry Kissel, FDEP-SW District  
Mr. Richard Kirby, EPCHC - Via FedEx  
Airbill No. 800926219629

**TAMPA ELECTRIC COMPANY  
 COMMENTS REGARDING THE TITLE V AIR OPERATION PERMIT FOR  
 BIG BEND STATION  
 FDEP FILE NO. 0570039-002-AV**

**Section II. Facility-wide Conditions**

TEC Comment 1:

TEC requests Appendix U-1, List of Unregulated Emissions Units and Activities, as cited in Condition 5, be modified as follows to delete the noted activities:

<u>E.U. ID No.</u>	<u>Brief Description of Emissions Units and/or Activities</u>
-xxx	Slag and bottom ash sources BH-001 through BH-004 Gypsum handling and storage sources GH-001 through GH-017 <del>No. 2 Fuel Oil Storage Tanks &gt;550 gallons</del> Vehicle Refueling Operations <del>Turbine Vapor Extractor</del>

TEC Comment 2:

Consistent with the previously issued Title V Air Operation Permit for Hookers Point Station, TEC requests Appendix E-1, List of Exempt Emissions Units and/or Activities, as cited in Condition 6, be modified as follows to include:

- Insignificant*
14. Storage tanks. *fuel oil ? combined VOC emissions = 5 ton threshold*
  15. Turbine vapor extractors.
  16. Architectural coatings. *?*
  17. Surface coating operations utilizing only coatings containing 5.0 percent or less VOCs, by volume.
  18. Evaporation of non-hazardous boiler chemical cleaning waste which was generated on site. *292,000 gal/yr*

**Section III. Regulated Emissions Units Conditions.**

TEC Comment 3:

The description of Unit 2 should designate the generation capacity. "The generator nameplate capacity is 445.5 MW". *same as Unit 1*

TEC Comment 4:

Condition A.1 should be changed to delineate averaging time:

A.1. Capacity. The maximum permitted heat input rate on a monthly average basis for each unit is as follows:....

*see A.16. reflects that language.*

*Monthly? 30 day rolling?  
hr*

TEC Comment 5:

Specific Condition A.2 should be amended to delete the last sentence in this paragraph. TEC's understands that these tests must be conducted in steady state mode. Therefore, to comply, the unit must be in manual operations (i.e. operated by control room operator).

*EPC*

TEC Comment 6:

The draft permit contains two Conditions A.2. TEC suggests that the first Condition A.2. be integrated into Condition A.1, similar to the structure of Condition B.1, or moved to follow Condition A.11 in the Test Methods and Procedures section.

TEC Comment 7:

Because there is no underlying applicable requirements, TEC requests that the second Condition A.2.a be modified as follows to delete any reference to vanadium:

Normal operations: The only fuel allowed to be burned in Units Nos. 1 and 2 is coal. The only fuels allowed to be burned in Unit No. 3 are coal and coal/petroleum coke blend containing a maximum of 20% petroleum coke by weight. The sulfur content of the petroleum coke shall not exceed 6.0% by weight (dry basis). ~~Vanadium content of the mineral ash from the petroleum coke fired shall not exceed 35.0% by weight (ignited basis).~~

*Public notice change it in PSD or Siting*

TEC Comment 8:

TEC requests second Condition A.2 be modified as follows to clarify when fuel oil combustion is allowed:

b. Startup operation: In addition to the fuels allowed to be burned during normal operation, each unit may also burn new No. 2 oil during startup, including starting a mill on an already operating unit.

*normal? The injection of nonhazardous boiler chemical cleaning waste is allowed. Normal op? gallon limit*

TEC Comment 9:

Dispersion modeling submitted under separate cover has demonstrated modeled compliance with the National and Florida ambient air quality standards for sulfur dioxide for Big Bend Station operating at the existing permit conditions. On this basis, TEC requests Condition A.8.a be modified as follows:

Nonintegrated Operation - Units No. 1, No. 2, and No. 3, each shall not emit more than 6.5 pounds of sulfur dioxide per million Btu heat input on a two-hour average; nor shall Units No. 1, No. 2, and No. 3, in total emit more than 31.5 tons per hour of sulfur dioxide on a three-hour average and ~~25~~ ~~18.75~~ tons per hour of sulfur dioxide on a 24-hour block average. *(midnight to midnight)*  
? 24

TEC Comment 10:

To promote clarity, TEC requests Condition A.8.b be modified as follows:

Integrated Operation - While in the integrated mode Units 3 and 4 shall meet the pounds per million Btu and percent reduction sulfur dioxide limitations that are applicable to Unit No. 4. (Specific Conditions B.5, and B.6, and B.8.) *whole*

TEC Comment 11:

Specific Condition A.9 states that during integrated conditions, Unit No. 3 shall meet the nitrogen oxide limitations that are applicable to Unit No. 4. This statement should be deleted as the integration mode of operations pertains to SO2 emissions only. No applicable requirement for Unit 3 to meet the Unit 4 NOx emissions limits in any operating mode.

*0.7 vs. 0.6 solid  
0.3 liquid*

*NOx monitors prior to scrubber*

TEC Comment 12:

Consistent with existing operation permits for Big Bend Station, TEC requests the following statement be added to Specific Condition A.14:

A test under sootblowing conditions which demonstrates compliance with a non-sootblowing limitation will be accepted as proof of compliance with that non-sootblowing limitation.

*normal operation*



TEC Comment 13:

Consistent with Comment 6, TEC requests Condition A.16(3) be modified at follows:

Daily composite fuel sampling and analysis to show compliance with the emissions cap for Units 1 through 3 of 25 ~~18.75~~ tons of sulfur dioxide per hour on a 24-hour average.

TEC Comment 14:

Specific Condition A.25 should be amended as follows to provide compliance clarity:

... This report shall contain the 30-day NO<sub>x</sub> rolling average...

TEC Comment 15:

Specific Condition B.2 should be amended to delete the last sentence in this paragraph. TEC's understanding is that these tests must be conducted in steady state mode. *normal operation* Therefore to comply the unit must be in manual operations (i.e. operated by control room operator).

TEC Comment 16:

Because no underlying applicable requirements exist, TEC requests that the Condition B.2 be modified as follows to delete any reference to vanadium:

- a. Normal operations: The only fuels fired in Unit No. 4 shall be coal or a coal/petroleum coke blend containing a maximum of 20.0% petroleum coke by weight. The sulfur content of the petroleum coke shall not exceed 6.0% by weight (dry basis). ~~Vanadium content of the mineral ash from the petroleum coke fired shall not exceed 35.0% by weight (ignited basis).~~ *Public notice if in AC*

TEC Comment 17:

Specific Condition B.1 should be consistent with Specific Condition A.1 to clarify averaging time of monthly basis.

*30 day rolling avg? any Mon? ?*

TEC Comment 18:

TEC requests Condition B.2 be modified as follows to clarify when fuel oil combustion is allowed, that injection of nonhazardous boiler cleaning chemical waste is allowed, and to eliminate an vague and unnecessary language:

- b. Startup operation: In addition to the fuels allowed to be burned during normal operation, Unit 4. may also burn new No. 2 oil during startup, including starting an additional mill on an already operating unit. ? Why
- e. ~~Coal should not be burned in Unit No. 4 unless both electrostatic precipitator and limestone scrubber are operating properly.~~ permit requirement too ambiguous
- c. The injection of nonhazardous boiler chemical cleaning waste is allowed. gallon per unit

TEC Comment 19:

TEC notes a typographic error in the first Condition B.3. "Glue gas" should read "flue gas".

TEC Comment 20:

TEC notes that Condition B.4 is followed by a second Condition B.3. TEC recommends that the "B" conditions be renumbered sequentially from this point forward, starting at B.5.

TEC Comment 21:

TEC requests Condition B.5 be clarified as follows:

Sulfur dioxide emissions from Unit No. 4 when combusting solid fuel ~~or solid-derived fuel~~ shall not exceed. . . denfuse

TEC Comment 22:

TEC requests that Condition B.7 be eliminated to reduce unnecessary paperwork. The heat input obtained from oil combustion is negligible compared to the heat input obtained from solid fuel combustion. Because of this large disparity, the results obtained from the calculations required under Condition B.7 are the same regardless of whether the oil figures are included in the equation.

~~\_\_\_\_\_~~ rule limit during startup problem?

TEC Comment 23:

TEC requests Condition B.8 be changed as follows to be consistent with the other portions of the permit and to delete a regulatory requirement not currently in the Unit 4 permit :

Nitrogen dioxide emissions from Unit No. 4 when combusting ~~bituminous coal or a coal/petroleum coke blend. . . Nitrogen dioxide emissions from Unit No. 4 when combusting liquid fuel shall not exceed 0.30 lb/million Btu heat input.~~

*check in rule*

*NO  
Startup exempt  
if burn used oil on  
a regular basis this  
applic.*

TEC Comment 24:

TEC requests that Condition B.9 be eliminated, consistent with TEC Comment 22.

*look at*

TEC Comment 25:

Specific Condition B.28 should be changed to reflect TEC previous request to delete Specific Condition B.7.as follows:

TECO shall determine compliance with . . . specific conditions B.5. ~~and B.7.~~ . . .

TEC Comment 26:

Specific Condition B.29 should be changed to reflect TEC previous request to delete Specific Condition B.9.as follows:

TECO shall determine compliance with ..... specific conditions B.8. ~~and B.9.~~.....

TEC Comment 27:

TEC notes the condition numbering sequence is B.38, B.39, B.43, B.44. . . . Conditions B.40, B.41, and B.42 are missing or the numbering scheme is in error. If Conditions B.40, B.41, and B.42 are missing, TEC requests the opportunity to review these conditions before this draft permit is finalized.

TEC Comment 28:

Because an ambient air standard no longer exists for total suspended particulate matter (TSP), TEC requests Condition B.46.a be modified as follows:

TECO shall continue to operate the existing two ambient air monitoring devices for sulfur dioxide in accordance with EPA reference methods in 40 CFR 53, ~~and existing two ambient monitoring devices for suspended particulates~~ at the locations designated on Figure 2. The monitoring devices shall be specifically located at a location approved by the Department. The frequency of operation shall be ~~every six days for TSP and continuous for SO<sub>2</sub>~~ . . . *ms*

TEC Comment 29:

TEC requests that Condition B.46.b be eliminated. TEC does not believe the Florida Department of Environmental Protection (FDEP) has the authority to require PM<sub>2.5</sub> monitoring solely through the Title V Air Operation Permit program. ✓

TEC Comment 30:

TEC notes that the internal numbering scheme in Condition B.65 is inconsistent.

*1 known*

TEC Comment 31:

TEC requests that Condition B.71 be eliminated because this condition is obsolete.

*OK notice language*

TEC Comment 32:

TEC requests that Condition C.2 be eliminated. The existing operating permits for these emissions units do not contain an operating hours limit.

*AC's FAX*

TEC Comment 33:

TEC requests the fly ash handling description be modified as follows to reflect the Title V Air Operation Permit application:

Fly Ash silo No. 1 handles fly ash from Steam Generator Units No. 1 and No. 2. Fly ash is pneumatically conveyed from the individual electrostatic precipitators to Silo No. 1. Also, the fly ash may be pneumatically conveyed from tanker trucks to Silo No. 1, Silo No. 2, and between Silos No. 1 and No. 2.

*fly ash*

*trunk  
tanker truck 3*

*not w/a truck*

TEC Comment 34:

TEC requests that Condition D.1 be modified as follows to be consistent with the existing operating permits and the Title V Air Operation Permit application:

... For Fly Ash Silo No. 2, the maximum permitted loading rate is 44.5 ~~11.9~~ tons per hour. ...

*As permit?*



TEC Comment 35:

TEC notes that Conditions D.9 and D.13 regulate the same activity with different language. TEC request that Condition D.13 be eliminated to promote clarity. ✓

TEC Comment 36:

TEC notes that Conditions D.10 and D.12 regulate the same activity with different language. TEC requests that Condition D.12 be eliminated to promote clarity. ✓

TEC Comment 37:

*Sum 17*

TEC notes that Condition D.5 specifies EPA Method 17 as the compliance demonstration method; Condition D.7 specifies EPA Method 5 as the compliance demonstration method; and Condition D.11 specifies EPA Method 5 or 17 as the compliance demonstration method. To resolve this inconsistency, TEC requests that Conditions D.5 and D.7 be modified to allow either EPA Method 5 or 17, consistent with Condition D.11. ✓

---

TEC Comment 36:

TEC requests that Condition E.4 be eliminated because this condition is obsolete. ✓

TEC Comment 37:

TEC requests that Condition F.5 be eliminated because this condition is obsolete. ✓

TEC Comment 38:

TEC requests that Condition H.1 be deleted as there is no current permit or regulatory requirement for this condition.

*look revise*

TEC Comment 39:

TEC requests that Condition H.3.a be clarified as follows:

Pursuant to Chapter 1-3.62 of the Environmental Protection Commission of Hillsborough county, visible emissions shall not exceed 20 % opacity for any unconfined emission unit in the fuel yard. ~~Unconfined emissions as (sic) defined by Rule 62-296.200, F.A.C., shall include static fuel piles, etc.~~ Pursuant to Rule 62.296,711(2), F.A.C. visible emissions shall not exceed 5 percent opacity for the remaining emissions units in the fuel yard.

TEC Comment 40:

TEC requests that Condition H.4 be eliminated because this condition is obsolete.

TEC Comment 41:

Clarify Specific Condition I.1:

... 2 gallons per hour on a 24-hour basis. ✓

TEC Comment 42:

TEC requests that Condition I.2 be modified as follows to be consistent with the Title V Air Operation Permit application.

Surface coating operations are allowed to operate for a total 8,760 ~~3,500~~ hours per year.

TEC Comment 43:

TEC requests that Condition J.1 be modified as follows for clarity:

The maximum annual usage of abrasive blast media in the abrasive blast booth shall not exceed 3 tons per year. ? 300 TON TOTAL

TEC Comment 44:

In both Specific Condition J.5 and J.7 require either 12 month consecutive or rolling 12 month totals be kept. TEC requests that both these conditions be changed to reflect a calendar year. As FDEP is aware, annual emissions reporting is based on calendar year and TEC believes additional record keeping is not warranted.

TEC Comment 45:

TEC believes these two statements in Specific Condition J.7 are unrelated. TEC requests that this condition be divided into two separate conditions to promote clarity.



TAMPA ELECTRIC

March 10, 1998

Mr. Cleveland G. Holladay  
Engineer IV  
Florida Department of Environmental Protection  
Twin Towers Office Building  
111 South Magnolia Drive, Suite 4  
Tallahassee, Florida 32301

**Via Hand Delivery**

**Re: Tampa Electric Company  
Big Bend Station  
Draft Title V Air Operation Permit  
FDEP File No. 0570039-002-AV  
Air Dispersion Modeling**

Dear Mr. Holladay:

Attached please find TEC's air dispersion modeling report for the above referenced facility.

Please feel free to telephone me at (813) 641-5039 if you have any questions regarding this report.  
Thank-you.

Sincerely,

A handwritten signature in black ink, appearing to read 'Janice K. Taylor', is written over a white background.

Janice K. Taylor  
Senior Engineer  
Environmental Planning

EPgmJKT828

Attachment

c: Mr. Scott Sheplak, FDEP-Tallahassee  
Ms. Cindy Phillips, FDEP-Tallahassee  
Mr. Jerry Kissel, FDEP-SW District  
Mr. Richard Kirby, EPCHC

TAMPA ELECTRIC COMPANY  
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OUTSIDE HILLSBOROUGH COUNTY 1 (888) 223-0800





# Department of Environmental Protection

Lawton Chiles  
Governor

Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Virginia B. Wetherell  
Secretary

FAX

DATE: March 11, 1998

TO: Janice Taylor, Tampa Electric Co.

FROM: Cindy Phillips, FDEP

RE: We forgot to discuss the used oil issue yesterday. I've attached a sample of the latest used oil permitting language for you to review. This is what I plan to include in the Big Bend Permit. I've also attached one of the old combustion turbine AC permits. If you have any questions, please give me a call at 850/921-9534.

Total number of pages (including cover letter): 5

SAMPLE OF  
USED OIL PERMIT  
LANGUAGE

**Subsection D. Common Conditions.**

**E.U.**

<b><u>ID No.</u></b>	<b><u>Brief Description</u></b>
-007	Fossil Fuel Fired Steam Generator Unit No. 7
-008	Fossil Fuel Fired Steam Generator Unit No. 8

**The following specific conditions apply to the emissions units listed above:**

- D.1. Used Oil.** Burning of on-specification used oil is allowed at these emissions units in accordance with all other conditions of this permit and the following conditions:
- a. **On-specification Used Oil Emissions Limitations:** These emissions units are permitted to burn on-specification used oil, which contains a PCB concentration of less than 50 ppm. On-specification used oil is defined as used oil that meets the specifications of 40 CFR 279 - Standards for the Management of Used Oil, listed below. "Off-specification" used oil shall not be burned. Used oil which fails to comply with any of these specification levels is considered "off-specification" used oil.

<b>CONSTITUENT/PROPERTY</b>	<b>ALLOWABLE LEVEL</b>
Arsenic	5 ppm maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Total Halogens	1000 ppm maximum
Flash point	100 degrees F minimum

- b. **Quantity Limitation:** These emissions units are permitted to burn "on-specification" used oil, not to exceed 1.5 million gallons during any consecutive 12 month period.
- c. **PCB Limitation:** Used oil containing a PCB concentration of 50 or more ppm shall not be burned at this facility. Used oil shall not be blended to meet this requirement.
- d. **Operational Requirements:** On-specification used oil with a PCB concentration equal to or greater than 2 ppm and less than 50 ppm shall be burned only at normal source operating temperatures. On-specification used oil with a PCB concentration equal to or greater than 2 ppm shall not be burned during periods of startup or shutdown.
- e. **Testing Requirements:** The owner or operator shall sample and analyze each batch of used oil to be burned for the following parameters:
  - (1) Arsenic, cadmium, chromium, lead, total halogens, flash point and PCBs.
  - (2) Testing (sampling, extraction and analysis) shall be performed using

approved methods specified in EPA Publication SW-846 (Test Methods for Evaluating Solid Waste, Physical/Chemical Methods).

- (3) Alternatively, the owner or operator may rely on other analyses or other information to make the determination that the used oil meets the specifications of 40 CFR 279.11. Documentation used to make the determination shall be maintained at the facility.
- f. Record Keeping Requirements: The owner or operator shall obtain, make, and keep the following records related to the use of used oil in a form suitable for inspection at the facility by the Department: [40 CFR 279.72, 40 CFR 279.74(b) and 761.20(e)]
  - (1) The gallons of on-specification used oil placed in inventory each month. (This record shall be completed no later than the fifteenth day of the succeeding month.)
  - (2) The total gallons of on-specification used oil placed in inventory in the preceding consecutive 12-month period. (This record shall be completed no later than the fifteenth day of the succeeding month.)
  - (3) Results of the analyses required above.
- g. Reporting Requirements: The owner or operator shall submit to the Northeast District office and the Northeast District Branch Office, within thirty days of the end of each calendar quarter, the analytical results and the total amount of on-specification used oil placed in inventory during the quarter.

The owner or operator shall submit, with the Annual Operation Report form, the analytical results and the total amount of on-specification used oil placed in inventory during the previous calendar year.

[Rule 62-4.070(3) and 62-213.440, F.A.C., 40 CFR 279 and 40 CFR 761, unless otherwise noted.]



STATE OF FLORIDA  
DEPARTMENT OF POLLUTION CONTROL

WEST CENTRAL REGION  
Post Office Box 944  
Winter Haven, Florida 33880

November 29, 1973  
Hillsborough County - AP  
TECO-Big Ben Gas Turbine, Unit 1

Mr. Alex Kaiser, Director  
Tampa Electric Company  
P. O. Box 111  
Tampa, Florida 33601

Dear Mr. Kaiser:

Pursuant to your recent application, please find enclosed a Permit (No. AC-29-2209 ) dated 8-27-73 to construct/~~operate~~ the subject pollution source.

This permit will expire on 6-27-74 , and will be subject to the conditions, requirements and restrictions checked or indicated otherwise in the attached sheet "Construction/~~Operation~~ Permit Conditions".

This permit is issued under the authority of Florida Statutes 403.061(16). The time limits imposed herein are a condition to this permit and are enforceable under Florida Statute 403.161. You are hereby placed on notice that the Department will review this permit before the scheduled date of expiry and will seek court action for violation of the conditions and requirements of this permit.

You have ten days from the date of receipt hereof within which to seek a review of the conditions and requirements contained in this permit.

Your continued cooperation in this matter is appreciated and in future communication please refer to your permit number.

Sincerely,

T. E. Huhnicutt  
P. E. III

*file*

STATE OF FLORIDA  
DEPARTMENT OF POLLUTION CONTROL

CONSTRUCTION PERMIT

FOR Tampa Electric Company  
P. O. Box 111  
Tampa, Florida 33601

PERMIT NO. AC-29-2209

DATE 8-27-73

PURSUANT TO THE PROVISION OF SECTION 403.061(16) OF CHAPTER 403, FLORIDA STATUTES, AND CHAPTER 17-4, FLORIDA ADMINISTRATIVE CODE, THIS PERMIT IS ISSUED TO:

Mr. Alex Kaiser, Director

FOR THE CONSTRUCTION OF:

Gas turbine, not to be operated more than 10 hrs/day, 365 days/yr.

LOCATED AT: Big Bend Road, North Ruskin

UTM: I7-690.50 E 597.00 N.

IN ACCORDANCE WITH THE APPLICATION DATED August 16, 1973

AND IN CONFORMITY WITH THE STATEMENTS AND SUPPORTING DATA ENTERED THEREIN, ALL OF WHICH ARE FILED WITH THE DEPARTMENT AND ARE CONSIDERED A PART OF THIS PERMIT.

THIS PERMIT SHALL BE EFFECTIVE FROM THE DATE OF ITS ISSUANCE UNTIL 6-27-74

AND SHALL BE SUBJECT TO ALL APPLICABLE LAWS OF THE STATE AND THE RULES AND REGULATIONS OF THE DEPARTMENT.

Thomas E. Hunnicutt  
P. E. III

FORM 1-J

EXECUTIVE DIRECTOR  
Roger P. Stewart  
Environmental Protection  
Commission

COMMISSION

DOTIE BERGER  
JOE CHILURA  
CHRIS HART  
JIM NORMAN  
IAN PLATT  
THOMAS SCOTT  
ED TURANCIK



WATER MANAGEMENT DIVISION  
1900 9TH AVENUE  
TAMPA, FLORIDA 33605  
TELEPHONE (813) 272-5660  
FAX (813) 272-6167

AIR MANAGEMENT DIVISION  
TELEPHONE (813) 272-5530

WASTE MANAGEMENT DIVISION  
TELEPHONE (813) 272-5788

WETLANDS MANAGEMENT DIVISION  
TELEPHONE (813) 272-7104

EXECUTIVE DIRECTOR

ROGER R. STEWART

ENVIRONMENTAL PROTECTION COMMISSION  
OF HILLSBOROUGH COUNTY

FAX TRANSMITTAL SHEET

DATE: 3/19/98

TO: Cindy Phillips

FAX PHONE: speed VOICE PHONE: 562-78-1344

TOTAL NUMBER OF PAGES INCLUDING THIS COVER PAGE: 3

EPC FAX TRANSMISSION LINE: (813) 272-5605

FOR RETRANSMISSION OR ANY FAX PROBLEMS, CALL: (813) 272-5530

FROM: Rick Kirby

(CIRCLE APPLICABLE SECTION BELOW)

AIR DIVISION

- ENFORCEMENT

- ENGINEERING

- SUPPORT OPERATIONS

SPECIAL INSTRUCTIONS: One for you & one for Lennon  
Hard copy w/ attachments mailed.



**COMMISSION**

DOTTIE BERGER  
 JOE CHILLURA  
 CHRIS HART  
 JIM NORMAN  
 JAN PLATT  
 THOMAS SCOTT  
 ED TURANCHIK

**EXECUTIVE DIRECTOR**

ROGER P. STEWART



ADMINISTRATIVE OFFICES, LEGAL &  
 WATER MANAGEMENT DIVISION  
 1900 9TH AVENUE  
 TAMPA, FLORIDA 33605  
 TELEPHONE (813) 272-5960  
 FAX (813) 272-5157

AIR MANAGEMENT DIVISION  
 TELEPHONE (813) 272-5530  
 WASTE MANAGEMENT DIVISION  
 TELEPHONE (813) 272-5780

WETLANDS MANAGEMENT DIVISION  
 TELEPHONE (813) 272-7104

**MEMORANDUM**

**DATE:** March 19, 1998  
**TO:** Cindy Phillips, P.E.  
**FROM:** RK Richard C. Kirby, P.E. **THRU:** Jerry Campbell, P.E.  
**SUBJECT:** TECO Big Bend 0570039-002-AV

This memo is written to summarize the remaining issues which EPC has with the referenced Title V permit. These issues have been discussed with you and with representatives of TECO.

1. The EPC feels strongly that annual limits based on a calendar year are inappropriate. Permit limits should be based, at a maximum, on an annual limit rolled monthly. As back-up for this request, I have attached a copy of page 9 from EPA's guidance dated June 13, 1989, "Limiting Potential to Emit in New Source Permitting." Also:
2. TECO still has not provided information requested regarding their flue gas conditioning system. They should submit a compliance plan to be included in the permit which addresses the issue.
3. We fully support the DEP's requirement for testing during soot blowing and non-soot blowing conditions.
4. Emissions tests should be conducted while boilers are in the automatic mode as opposed to manually controlled to achieve steady state. Attached is a copy of EPA's "A Guideline for Evaluating Compliance Test Results". This document explains under which circumstances testing outside of the 90-110 percent isokinetic range is acceptable.
5. We request that issues in my May 12, 1997, letter to Stanley Martin of TECO, be addressed. Perhaps including a compliance plan in the permit to address these issues is appropriate.

cag



COMMISSION

DOTTIE BERGER  
JOE CHILLURA  
CHRIS HART  
JIM NORMAN  
JAN PLATT  
THOMAS SCOTT  
ED TURANCHIK

EXECUTIVE DIRECTOR

ROGER P. STEWART



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TELEPHONE (813) 272-5788

WETLANDS MANAGEMENT DIVISION  
TELEPHONE (813) 272-7104

**RECEIVED**

**MAR 23 1998**

**BUREAU OF  
AIR REGULATION**

MEMORANDUM

DATE: March 19, 1998  
TO: Cindy Phillips, P.E.  
FROM: **RK** Richard C. Kirby, P.E. THRU: Jerry Campbell, P.E.  
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cag



#### IV. Time Periods For Limiting Production and Operation

As discussed above, a limitation specifically recognized by the regulations as reducing potential to emit is a limitation on production or operation. However, for these limitations to be enforceable as a practical matter, the time over which they extend should be as short term as possible and should generally not exceed one month. This policy was explained in a March 13, 1987 memorandum from John Seitz to Bruce Miller, Region IV. The requirement for a monthly limit prevents the enforcing agency from having to wait for long periods of time to establish a continuing violation before initiating an enforcement action.

EPA recognizes that in some rare situations, it is not reasonable to hold a source to a one month limit. In these cases, a limit spanning a longer time is appropriate if it is a rolling limit. However, the limit should not exceed an annual limit rolled on a monthly basis. EPA cannot now set out all-inclusive categories of sources where a production limit longer than a month will be acceptable because every situation that may arise in the future cannot now be anticipated. However, permits where longer rolling limits are used to restrict production should be issued only to sources with substantial and unpredictable annual variation in production, such as emergency

A GUIDELINE FOR EVALUATING COMPLIANCE TEST RESULTS  
(Isokinetic Sampling Rate Criterion)

R. T. Shigehara  
Emission Measurement Branch, ESED, OAQPS, EPA

Introduction

The sampling rate used in extracting a particulate matter sample is important because anisokinetic conditions can cause sample concentrations to be positively or negatively biased due to the inertial effects of the particulate matter. Hence, the calculation of percent isokinetic (I) is a useful tool for validating particulate test results. Section 6.12 of the recently revised Method 5<sup>1</sup> states, "If 90 percent  $\leq I \leq$  110 percent, the results are acceptable. If the results are low in comparison to the standard and I is beyond the acceptable range, or, if I is less than 90 percent, the Administrator may opt to accept the results."

This guideline provides a more detailed procedure on how to use percent isokinetic to accept or reject test results when the sampling rate is beyond the acceptable range. The basic approach of the procedure is to account for the inertial effects of particulate matter and to make a maximum adjustment on the measured particulate matter concentration.<sup>2</sup> Then, after comparison with the emission standard, the measured particulate matter concentration is categorized (1) as clearly meeting or exceeding the emission standard or (2) as being in a "gray area" zone. In the former category, the test report is accepted; in the latter, a retest should be done because of anisokinetic sampling conditions.

Procedure

1. Check or calculate the percent isokinetic (I) and the particulate

matter concentration ( $c_s$ ) according to the procedure outlined in Method 5. Note that  $c_s$  must be calculated using the volume of effluent gas actually sampled (in units of dry standard cubic feet, corrected for leakage). Calculate the emission rate (E), i.e. convert  $c_s$  to the units of the standard. For the purposes of this guideline, it is assumed that all inputs for calculating E are correct and other specifications of Method 5 are met.

2. Compare E to the standard. Then accept or reject  $c_s$  using the criteria outlined below. (A summary is given in Table I):

a. Case 1 - I is between 90 and 110 percent. The concentration  $c_s$  must be considered acceptable. A variation of  $\pm 10$  percent from 100 percent isokinetic is permitted by Method 5.

b. Case 2 - I is less than 90 percent.

(1) If E meets the standard,  $c_s$  should be accepted, since  $c_s$  can either be correct (if all particulate matter are less than about 5 micrometers in diameter) or it can be biased high (if larger than 5 micrometer particulate matter is present) relative to the true concentration; one has the assurance that  $c_s$  is yielding an E which is definitely below the standard.

(2) If E is above the standard, multiply  $c_s$  by the factor (I/100) and recalculate E. If, on the one hand, this adjusted E is still higher than the standard, the adjusted  $c_s$  should be accepted; a maximum adjustment which accounts for the inertial effects of particulate matter has been made and E still exceeds the standard. On the other hand, if the

adjusted E is lower than the standard, a retest should be done.

c. Case 3 - I is greater than 110 percent.

(1) If E exceeds the standard,  $c_s$  should be accepted, since  $c_s$  can either be equal to the true concentration or biased low relative to it; one has the assurance that E is definitely over the standard.

(2) If E is below the standard, multiply  $c_s$  by the factor (I/100) and recalculate E. If, on the one hand, this adjusted E is still lower than the standard, the adjusted  $c_s$  should be accepted; a maximum adjustment which accounts for the inertial effects of particulate matter has been made and E still meets the standard. On the other hand, if the adjusted E exceeds the standard, a retest should be done.

Table I. Summary of Procedure

Case	I	Category	Decision
1	90 - 110		Accept
2	< 90	$E \leq \text{Em. Std.}$	Accept
		$c_s (I/100) \rightarrow E_{\text{adj}} > \text{Em. Std.}$	Accept
		$c_s (I/100) \rightarrow E_{\text{adj}} \leq \text{Em. Std.}$	Retest
3	> 110	$E > \text{Em. Std.}$	Accept
		$c_s (I/100) \rightarrow E_{\text{adj}} \leq \text{Em. Std.}$	Accept
		$c_s (I/100) \rightarrow E_{\text{adj}} > \text{Em. Std.}$	Retest

### Summary

A procedure for accepting or rejecting particulate matter test results based on percent isokinetic has been outlined. It provides a mechanism for accepting all data except where anisokinetic sampling might affect the validity of the test results. This procedure is one of several useful tools for evaluating testing results.

### References

1. Method 5 - Determination of Particulate Emissions from Stationary Sources. Federal Register. 42(160):41776-41782, August 18, 1977.
2. Smith, W. S., R. T. Shigehara, and W. F. Todd. A Method for Interpreting Stack Sampling Data. Stack Sampling News. 1(2):8-17, August 1973.



TAMPA ELECTRIC

April 8, 1998

REC'D

APR 08 1998

ENV. PROT. COMM  
OF H.C.

Richard Garrity, Ph.D.  
Director of District Management  
Southwest District  
Florida Department of Environmental Protection  
3804 Coconut Palm Drive  
Tampa, Florida 33619

Via Hand Delivery

Mr. Roger Stewart  
Executive Director  
Environmental Protection Commission of  
Hillsborough County  
1900 Ninth Avenue  
Tampa, Florida 33605

Via Hand Delivery

Re: Tampa Electric Company  
CAAA Phase II SO<sub>2</sub> Compliance Strategy

Dear Sirs:

I am pleased to inform you that after much consideration, Tampa Electric Company (TEC) has completed the development of its CAAA Phase II SO<sub>2</sub> Compliance Strategy. In order to meet the applicable SO<sub>2</sub> emissions reduction requirements, TEC's primary compliance strategy calls for the construction of a flue gas desulfurization system capable of accommodating and treating the gas streams from both Big Bend Units 1 and 2.

I will be contacting your staff in the near future to discuss this project in more detail. In the meantime, should you have any questions, please do not hesitate to give me a call at (813) 641-5016.

I look forward to meeting with your agency to discuss our compliance plan.

Sincerely,

Gregory M. Nelson, P.E.  
Administrator - Air Programs  
Environmental Planning

EP/gm/CMN/06

c: Mr. Bill Thomas, FDEP - Tampa  
Mr. Iwan Choronenko, EPCHC  
Mr. Jerry Campbell, EPCHC

TAMPA ELECTRIC COMPANY  
P. O. BOX 111 TAMPA, FL 33601-0111

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HTTP://WWW.TECENERGY.COM

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HILLSBOROUGH COUNTY (813) 223-0800  
OUTSIDE HILLSBOROUGH COUNTY 1 (888) 223-0800



# Department of Environmental Protection

*Handwritten signature*  
Cindy

Lawton Chiles  
Governor

Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Virginia B. Wetherell  
Secretary

October 1, 1998

## CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Gregory M. Nelson, P.E.  
Manager - Environmental Planning  
Tampa Electric Company  
6944 US Highway 41 North  
Apollo Beach, Florida 33572-9200

Re: Request for Ambient Sulfur Dioxide Predictions in the Vicinity of F. J. Gannon Station  
FDEP File Nos. 0570040-002-AV and 057004-007-AC

Dear Mr. Nelson:

During our meeting of February 17, 1998 to discuss the Title V draft permits for the F.J. Gannon Station we discussed the likelihood of modeled exceedances of the ambient air quality standards for sulfur dioxide. We requested and believe TEC agreed to provide, more detailed modeling incorporating physical features (such as nearby buildings) capable of affecting the results.

The concern about the potential exceedances has increased because modeling performed for a project at the nearby Cargill Fertilizer Complex indicated modeled exceedances to which the Gannon Station contributes. Additionally the recent Big Bend scrubber and Gannon coalyard pollution control project (PCP) applications indicate that actual emissions at Gannon may increase. While these emissions increases appear to be within the permitted emission limits of the plant, the likelihood of actual (rather than modeled ambient exceedances) is increased.

The information needed is similar to what was submitted for the Big Bend Station in March. Please provide the requested information for the Gannon Station by October 30. If you are unable to provide it, please submit the data on the physical details of the plant in a format compatible with the Building Profile Input program (BPIP) to determine the appropriate downwash parameters for ISCST3. Please include a detailed map for the Gannon Station similar to the one provided for the Big Bend Station showing the location of all of the fence line receptors used in the air quality impact analysis.

If you should have any questions, please call me or Cleve Holladay (meteorologist) at 850/921-8986.

Sincerely,

*Handwritten signature of C. H. Fancy*  
C. H. Fancy, P.E., Chief  
Bureau of Air Regulation

CHF/ch

Enclosure

cc: Doug Neeley, EPA  
Iwan Choronenko, HCEPC  
Howard Rhodes, DEP  
Bill Thomas, DEP SWD



# Department of Environmental Protection

Lawton Chiles  
Governor

Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Virginia B. Wetherell  
Secretary

August 19, 1998

VIA HAND DELIVERY

Mr. Gregory M. Nelson, P.E.  
Manager - Environmental Planning  
Tampa Electric Company  
PO Box 111  
Tampa, Florida 33601-0111

Re: Permit Amendment to Nos. AO 29-219924 (Unit 1) and AO 29-179912 (Unit 2)  
Big Bend Station, Coal-fired Steam Generator Units 1 and 2

Dear Mr. Nelson:

The Department has reviewed Tampa Electric Company's letter dated August 19, 1998, in accordance with guidance memo DARM-PER/GEN-25, requesting an amendment to its operation permits to allow installation of a flue gas desulfurization system for Units 1 and 2 at the Big Bend Station. This request is acceptable and the permits are hereby amended as follows:

New Specific Condition:

The permittee is authorized to add a flue gas desulfurization system for Units 1 and 2 at Tampa Electric Company's Big Bend Station. This amendment is limited to the installation of the flue gas desulfurization system. This amendment does not authorize changes or modification at the Big Bend Station of the systems for handling solid fuel, nor authorize the use of petcoke fuel in any amount in Units 1 and 2.

A person whose substantial interests are affected by this permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the

*"Protect, Conserve and Manage Florida's Environment and Natural Resources"*



Mr. Gregory M. Nelson, P.E.  
Tampa Electric Company  
Permit Amendment to Nos. AO 29-219924 (Unit 1) and AO 29-179912 (Unit 2)  
August 19, 1998  
Page 2 of 3

proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief; and (f) A demand for relief.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by rule 28-106.301

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation is not available in this proceeding.

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Any party to this order has the right to seek judicial review of it under section 120.68 of the Florida Statutes, by filing a notice of appeal under rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000, 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 must be filed within thirty days after this order is filed with the clerk of the Department.

Mr. Gregory M. Nelson, P.E.  
Tampa Electric Company  
Permit Amendment to Nos. AO 29-219924 (Unit 1) and AO 29-179912 (Unit 2)  
August 19, 1998  
Page 3 of 3

A copy of this letter shall be filed with the referenced permit and shall become part of the permit.

Sincerely,



Howard L. Rhodes, Director  
Division of Air Resources  
Management

**CERTIFICATE OF SERVICE**

The undersigned duly designated deputy agency clerk hereby certifies that this amendment was sent by hand delivery (\*) and copies were mailed by U.S. Mail before the close of business on 8-19-98 to the person(s) listed:

Mr. Gregory M. Nelson, P.E., TEC \*  
Mr. Bill Thomas, P.E., DEP/SWD  
Mr. Ivan Choronenko, HCEPC

Clerk Stamp

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

  
(Clerk)

8-19-98  
(Date)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET, SW  
ATLANTA, GEORGIA 30303-8909

MAY 29 1998

RECEIVED

JUN 03 1998

BUREAU OF  
AIR REGULATION

4APT-AEEB

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. Greg Nelson  
Administrator  
Air Program and Environmental Planning  
Tampa Electric Company  
P. O. Box 111  
Tampa, Florida 33601-0111

SUBJ: Tampa Electric Company (TECO)  
Request for Information Pursuant to Section 114 of  
the Clean Air Act (CAA)

Dear Mr. Nelson:

During the week of March 23, 1998, the United States Environmental Protection Agency (EPA) conducted inspections of TECO's Big Bend and Gannon Stations. The purpose of EPA's inspection was to verify the compliance status of air pollution emission sources. However, during these inspections certain information pertinent to EPA's questions was not provided. Therefore, pursuant to Section 114(a) of the CAA, 42 U.S.C. Section 7414(a), as amended, you are hereby required to respond to the Information Request enclosed herein as Enclosure A within 20 calendar days of your receipt of this letter.

Compliance with this Information Request is mandatory and information provided by you may be used by EPA in civil or criminal proceedings. Failure to respond fully and truthfully to each and every question or information request within twenty (20) calendar days of receipt of this letter may result in enforcement action against you by EPA pursuant to Section 113 of the CAA, 42 U.S.C. §7413. This statute permits EPA to seek the imposition of penalties of up to twenty-seven thousand five hundred dollars (\$27,500) per day of continued noncompliance. Please be further advised that submittal of false, fictitious or fraudulent statements or representation may subject you to criminal penalties under Section 113 of the CAA, 42 U.S.C. §7413(c).

All the information required in this letter, along with documentation to support the information, shall be submitted to this office no later than 20 calendar days after the date of your receipt of this letter. The information provided must follow a restatement of each request, **separately for Gannon and Big Bend Stations**, and if no information is available, this must be stated. Each supporting document submitted must be clearly marked to indicate which request(s) it is responsive to. Please address your response to:

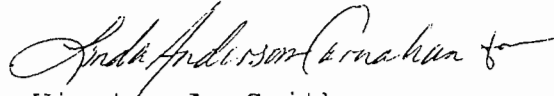
Winston A. Smith  
Director  
Air, Pesticides and Toxics  
Management Division  
U.S. Environmental Protection Agency  
Region 4  
61 Forsyth Street, S.W.  
Atlanta, Georgia 30303  
Attention: Mirza P. Baig

Please be advised that failure to comply with the above requirements within the specified time frame will constitute a violation of Section 114(a) of the CAA and may result in initiation of a separate enforcement action pursuant to Section 113 of the Act.

Although the information requested herein must be submitted to EPA, you are entitled to assert a business confidentiality claim pursuant to the regulations set forth in 40 CFR Part 2, §2.208. If EPA determines that the information you have designated meets the criteria in 40 CFR Part 2, §2.208, the information will be disclosed only to the extent and by means of the procedures specified in 40 CFR Part 2, Subpart B. Unless a confidentiality claim is asserted at the time the requested information is submitted, EPA may make the information available to the public without further notice to you.

If you have any questions relating to this letter, please contact Mr. Mirza P. Baig, Air Compliance Engineer, of the Air Enforcement Section at (404) 562-9196.

Sincerely yours,



Winston A. Smith  
Director  
Air, Pesticides and Toxics  
Management Division

Enclosure

cc: Mr. Iwan Choronenko  
Hillsborough County Environmental Protection Commission  
Mr. Howard Rhodes, Tallahassee FDEP  
Mr. Jim Pennington, Tallahassee FDEP  
Mr. Bill Thomas, Tampa FDEP

## ENCLOSURE A

### Section 1- General Information

1. Provide an organizational chart which includes all the different departments and the heads of the departments (at TECO) including the president, plant (station) manager, operations manager, maintenance manager, engineering manager, and the environmental department.
2. State the name of each of the following plant personnel for the last five years, how long each has worked at this position, and a brief description of their duties:
  - a) Plant (Station) Manager
  - b) Operations Manager
  - c) Maintenance Manager
  - d) Engineering Manager
  - e) Environmental Manager
3. Identify the position(s) of all plant personnel who keep records of work orders and engineering drawings for capital projects at the Gannon and Big Bend Stations. Identify the locations at which records are kept. Provide the name of the individual at each position, the length of time the individual held the position, and the name of the individual's supervisor from 1980 until the present time.

### Section 2- Process Information

4. Provide schematics for boiler units 1 through 6 at Gannon Station and boiler units 1 through 4 at Big Bend Station for both the original design at the date of their construction and the present design of those boilers. These schematics must include all major components of the boiler units which are at a minimum: superheaters, economizers, reheaters, air heaters, boiler tubes, cooling water tubes, burners, cyclones, pulverizers, ash pits, coal grates, ash hoppers, flue gas recirculation systems, air inlet ducts, turbo apertures, ductwork leading gas from the boiler, location of all the duct dampers, and air reheaters. Note this list is not meant to be comprehensive and all other major components of the boiler units must be identified in the schematics. Identify all differences between the original design and the present design and include the date that the change occurred. Differences

shall include changes in type, size, material of construction, capacity, operational rate, efficiency, or operational parameters of boiler equipment. This list of differences is not meant to be comprehensive and all differences must be provided.

5. Describe each major component of the boiler units in terms of its original and present design, stating its general function, the maximum capacity, the normal capacity, and the minimal operational conditions for both the original and present design. In addition, provide as a minimum for each boiler unit in its original and present design: the number of reheat and superheater tubes, the number of economizer tubes, the material of construction for the boiler tubes, the type of burners, the type of cyclones, the type of pulverizers, the number of pulverizers, number of ash hoppers, and the velocity of the air stream before and after the turbo aperture. Provide all upper and lower operational limits. Capacity is not to be limited to steam. All limitations on coal feed, air feed, temperature, flue gas conditioning, etc. should be provided.
6. Provide a narrative for each boiler schematic stating the normal operating, minimal designed, and maximum designed volumetric air/gas flow on a wet and dry basis from the air inlet to the outlet from the boiler units for both the original and the present designs. All recirculation loops must be included. Any split air/gas streams must be quantified. Normal operating temperatures and pressures of the air/gas streams must be quantified as the air/gas passes through each major component of the unit. Any differences in the original and the present design or the parameters (temperature, pressure, and air flow rate) of the air/gas flow through the boiler units must be clearly noted. Describe any process changes, quantify the emission increase or decrease associated with the change, and include the date of any change.
7. Provide a narrative for each boiler schematic describing water and steam flow through the boiler systems for both present and original design. The normal operating, the minimal designed, and maximum designed temperature and pressure of the water and steam must be quantified as it enters and exits each major component of the boiler units for both the present design and the original design. Any differences in the original and the present

design or the parameters (temperature, pressure, and flow rate) of the water and steam flow through the boiler units must be clearly noted. Describe any process changes, quantify the emission increase or decrease associated with the change, and include the date of any change.

8. Provide a narrative for each boiler schematic explaining normal designed flow, minimal designed flow, and maximum designed flow of coal, bottom ash, and fly ash through each major component of each unit for both present and original design. The temperature and the percentage of oxygen during the coal burning must be quantified. Explain how the bottom ash is handled. Any differences in the original and the present design or the parameters (temperature, flow rate, or percent oxygen) of the coal, flyash, or bottom ash through the boiler units must be clearly noted. Describe any process changes, quantify the emission increase or decrease associated with the change, and include the date of the change. Include the projected emissions from each section that a measurement may be reasonably taken. Maximum and minimum values for each parameter which impacts the performance or emissions of the unit.
9. Provide a schematic for the gas stream exiting boiler units 1 through 6 at Gannon Station and boiler units 1 through 4 at Big Bend Station and follow the gas stream until it exits out of its respective stack for both the present and original design. The schematic shall include all ducts, dampers, flue gas conditioning (FGC) systems, and control equipment. Quantify the normal operating, maximum designed, and minimum designed air flow rate, temperature, and pressure for each portion of the process. Describe any process changes, quantify the emission increase or decrease associated with the change, and include the date of the change.
10. Provide a schematic of the electrostatic precipitators (ESP) for each of the boiler units at Gannon and Big Bend Stations for both the original and the present design. This schematic shall include the number of chambers for each ESP, the number of fields, the number of plates in each field, the surface area of each plate, the number of rappers, the position of the transformers, and the total collection area of each field. If any of the parameters of the ESPs have changed from the original design, then describe the change in detail, quantify any



emission rate increase or decrease, and include the date of the change.

11. Provide a narrative of each ESP schematic providing the maximum designed air flow rate, the maximum dust loading rate, the designed operating temperature range, the designed pressure range of the gas stream, the designed rapper rate, the optimal primary and secondary current for each ESP, and the optimal primary and secondary voltage for each ESP. Test data of inlet and outlet flue gas compositions should be supplied.
12. Describe the normal operation of each ESP at Gannon and Big Bend Stations. Describe any interlocks that were initially installed on the ESPs and the boilers; how the interlocks operate; when the interlocks were changed or disabled; and describe any current interlocks on the boilers and ESPs. Provide an operational history of the boilers and the ESPs. In particular, state when any of the boilers were operating without its associated ESP. Describe how the voltages and currents are controlled or regulated. If the voltages and currents are controlled manually, provide the name of the employee(s) that regulates these parameters, how the parameters are regulated, what protocol this employee(s) follows, and how this protocol has changed since 1980. If any of the ESPs are or have been controlled by software programs, provide the following information for the past 18 years: the name of the company who designed the software; the name of the software; when it was installed; if the software has been modified; describe the principles built into the software to control voltage and current; and explain when the ESPs are controlled manually and when the ESPs are controlled by the software. If any particulate matter removal efficiency test has been conducted on Big Bend units 1-4 or Gannon units 3-6 ESPs, provide a copy of all preliminary and final reports including ESP, boiler, and FGC operating parameters. Provide all background data that is appropriate for the evaluations of the emission rates.
13. Describe the normal maintenance schedules (daily, quarterly, annual, etc.) and work performed for each schedule on each ESP at Gannon and Big Bend Stations. As a minimum state if and how often the following are checked and/or recorded: Transformer-Rectifier set readings, rapper and vibrator control readings, ash

removal system, operation of rappers and vibrators, control sets for internal dirt, air filters to control sets and precipitator top housing, ESP voltage-current data, graph ESP voltage-current data, pressurization of precipitator top housing, and standby fan operation. State how often an internal inspection is usually performed and the usual work performed. Provide a copy of any TECO personnel or contractor reports for any of the ESPs at Gannon or Big Bend Stations for the last 15 years.

14. Provide the dates of the last two internal inspections for each ESP and the actual inspection and follow-up work performed at Gannon and Big Bend Stations. Provide a maintenance history on the ESPs on each unit for the last five years which includes man-hours, maintenance requests and history, dollars expended, and capital projects.
15. Provide the dates for the conversion from coal to oil for Units 1 through 4 at Gannon Station. Describe any changes to the Station that were made to accommodate this conversion and any contemporaneous changes at Gannon or Big Bend Stations. Provide the dates for the conversion back to coal from oil, and describe any changes to the Station that were made to accommodate this conversion or any contemporaneous changes.

### Section 3 - Fuel

16. Provide a copy of the coal sampling procedures for Big Bend and Gannon Stations used to demonstrate compliance with the sulfur dioxide limits at these facilities. Include a description of amounts of coal sampled, times of sampling, riffing procedures, sample analyses, times of analysis, and calculations to determine SO<sub>2</sub> reported values. Provide a copy of the coal analyses (percent sulfur and BTU values) used to determine compliance with the Big Bend Station SO<sub>2</sub> limits for 1997.
17. It is our understanding that a weekly composite sample is developed from daily composite samples for each unit, at both stations. Provide referee samples for each unit, for each Station, on daily basis, for the following dates:
  - a) November 12 through 18, 1994

- b) April 3 through 10, 1995
  - c) August 2 through 8, 1995
  - d) February 5 through 11, 1996
  - e) November 20 through 26, 1996
  - f) March 25 through April 13, 1997
  - g) December 1 through 6, 1997, and
  - h) March 1 through 6, 1998.
18. State whether the sulfur content of the coal and the BTU value of the coal are calculated on a wet or dry basis to determine compliance with the SO<sub>2</sub> limits in the permits for Gannon and Big Bend Stations.
  19. Provide a detailed description of the method(s) and frequency used to determine physical inventory of coal in storage at the Gannon and Big Bend Stations.
  20. Provide the raw data (physical measurements) and the formulae used to calculate coal inventory for calendar years 1982 through 1997 at Gannon and Big Bend Stations.
  21. Provide the results of the coal physical inventory, including losses, gains and coal consumed for calendar years 1982 through 1997 at Gannon and Big Bend Stations.
  22. Provide a detailed description of any special handling or segregation practices used at the station when non-compliant (containing sulfur in excess of 2.4 lb/million BTU) coal is received at the Gannon or Big Bend Station.
  23. Provide a typical coal and petroleum coke purchase contract for Gannon and Big Bend Stations. State the percentage of spot buying contracts (less than 6 months) versus long-term contracts (more than 6 months).
  24. Quantify the approximate percentage of coal received by rail and the percentage received by barge.
  25. Define the term "dead storage" as used in the air permit for Gannon Plant. State if this practice is active, and if not when it was stopped.

26. Provide the estimated coal percentage for calendar years 1982 through 1997 at Gannon and Big Bend Stations.  
(Estimated coal percentage is defined as the amount of coal burned at the station which was not physically measured by a scale divided by the total coal burned.)
27. Provide the estimated petroleum coke percentage for calendar years 1995 (first year of use) through 1997.  
(Estimated petroleum coke percentage is defined as the amount of coke burned at the station which was not physically measured by a scale divided by the total coke burned.)
28. Justify the bituminous categorization of all coal shipments in the past year with a BTU value of less than 11,500 BTUs/lb.

#### Section 4 - Station Performance

29. Provide the following performance parameters for each unit at Gannon and Big Bend Stations for calendar years 1980 through 1997:
  - a) Gross heat rate
  - b) Net heat rate
  - c) Availability
  - d) Capacity factor
  - e) Forced outage rate
  - f) Planned (maintenance) outage rate
  - g) Forced derating rate
  - h) Gross generation
  - I) Net generation
  - j) Hours of operation
  - k) Number of startups
30. Provide the actual generation derating in MWH attributable to opacity for each unit at Big Bend and Gannon Stations for calendar years 1992 through 1997.
31. Provide the actual generation derating in MWH attributable to SO<sub>2</sub> emissions for each unit at Gannon and Big Bend Stations for calendar years 1992 through 1997.

#### Section 5 - Station Operations

32. Provide the initial date that steam was supplied to a purchaser outside of Gannon or Big Bend Stations.  
Provide the quantities provided on an hourly and annual

- basis. Provide the quality (pressure and temperature) of the steam supplied to offsite vendors.
33. Provide the net annual electrical generation sales and purchases for the TECO system from or to sources outside the system for the last 15 years.
  34. Provide the dates when use of flue gas recirculation (FGR) was discontinued on any units at Gannon or Big Bend Stations.
  35. Provide copies of all correspondence with Babcock & Wilcox or any other boiler manufacturer, consultant, or expert regarding the decision to discontinue the use of FGR, including any engineering analysis performed.
  36. Provide a description of the resulting effects on boiler operation and maintenance from the discontinued use of FGR for each unit. This description shall include changes in boiler slagging characteristics, effect on sootblower operations, effects on tube metal temperatures, effects on heat absorption in the water side of the boiler, effects on superheat (SH) and reheat (RH) steam temperatures, and changes in SH and RH attemperation.
  37. Provide a description and the capacities of boiler makeup water system changes and additions including any portable facilities since 1980 at Gannon and Big Bend Stations.
  38. Provide a description of all changes made in unit startup procedures since 1980 at Gannon and Big Bend Stations such as extending turbine heat soak periods for cold startups and placing precipitators in service.
  39. Provide a schematic of any FGC systems that have ever been used for the units at Big Bend and Gannon Stations. Include design operating parameters, manufacturer's guarantees on performance, and the actual operating parameters and procedures for the FGC system during any compliance tests. Quantify any emissions increase or decrease due to the addition or removal of any FGC system and any contemporaneous projects. Include the removal date of the system and the date of any related projects which affected emissions during this contemporaneous time period.

40. State the normal soot blowing schedule for each unit at Gannon and Big Bend Stations.
41. During the stack test conducted on November 16, 1994, on Big Bend Unit 4 the air flow was 2,169,559 ACFM. However, the air flow was 1,483,500 ACFM on this unit during the stack test conducted on April 5, 1995. Explain the difference in air flow.
42. Provide a summary table for each unit at Gannon and Big Bend Stations, for each operating day during calendar year 1997, showing the number of electrically isolatable sections on each unit's ESP and the number of sections energized on each date. Give a detailed reason for sections which are not energized.
43. Provide a listing of all flue gas desulfurization system malfunctions, including but not limited to absorber module outages on all dates that Units 3 and 4 at Big Bend Station have operated in an integrated mode (from the date Unit 3 began petroleum coke firing through March 31, 1998). Fully describe for each malfunction period the specific reason for the malfunction and the exact number of hours of the malfunction.
44. Provide a diagram of the flyash handling system for the Gannon and Big Bend Stations. Include blowers, valves and connections to the boilers for flyash re-injection and connections to silos.
45. Provide the "Estimated Average Heat Input" report for all of the units at the Big Bend and Gannon Stations for 1997.

#### Section 6 Capital Improvements and Additions

46. Provide a copy of the preliminary, draft, and final reports on all life extension studies performed for all units at Gannon and Big Bend Stations.
47. Provide the work authorization packages for the following projects:
  - a) The replacement of the Unit 3 superheater at Gannon Station.
  - b) The replacement of unit 6 generator at Gannon Station.

- c) The replacement of unit 4 cyclones at Gannon Station.
- d) The replacement of unit 3 furnace floor at Gannon Station.
- e) The coal yard changes and additions associated with the increase in throughput permitted in 1988 at Gannon Station.
- f) The replacement of the Unit 1 furnace floor tubes at Big Bend Station.
- g) The replacement of Unit 1 furnace wall tubes at Big Bend Station.
- h) The installation of Unit 1 flue gas conditioning system at Big Bend Station.
- i) The replacement of the reheat section on Unit 1 at Big Bend Station.
- j) The replacements of reheat/superheat sections on Unit 2 at Big Bend Station
- k) The repairs on boiler penthouse on Unit 2 at Big Bend Station.



# Department of Environmental Protection

Lawton Chiles  
Governor

Virginia B. Wetherell  
Secretary

November 25, 1998

## CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Gregory M. Nelson, P.E.  
Manager - Environmental Planning  
Tampa Electric Company  
6944 US Highway 41 North  
Apollo Beach, Florida 33572-9200

Re: Request for Additional Information Regarding Air Construction Permit Application  
DEP File Nos. 0570040-009-AC

**F.J. Gannon Station, Units 5 and 6 Stack Height Increase Request**

Dear Mr. Nelson:

The Department has received your application for the Unit 5 and 6 stack height increase construction. The application was received on October 30, 1998. In order to continue processing your application, the Department will need the additional information below. Should your response to any of the below items require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

1. The proposed 24-hour maximum plant emission limit of 267 tons provides an average hourly emission rate of 11.5 tons for use in the assessment of compliance with the 24-hour ambient air quality standard. Based on your submittal the appropriate emission rate for assessing the 3-hour ambient air quality standard is the presently allowable 2.4 lb/MMBtu for each unit. Please provide assurance through air quality impact modeling results that this limit will meet the 3-hour standard.
2. If the exit stack temperatures and velocities vary with load, the air quality impact modeling should address the worst impact considering various combinations of loads (e.g., 100, 75, and 50 percent loads) for the six boilers. You have provided the information for the 100 percent load case. Please provide similar information for the 75 and 50 percent load cases.
3. The comments above address similar comments contained in the enclosed correspondence from EPA Region 4.
4. Although the cover letter stated that a request to burn used oil and oil-contaminated solids was included as part of the application, we did not see any information regarding this in the application. Our preference would be to process such a request separately from the stack height issue.

The Department will resume processing your application after receipt of the requested information. Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. As a result your response should be certified by a professional engineer registered in the State of Florida. Material changes to the application should also be accompanied by a new certification statement by the authorized representative or responsible official. Rule 62-4.055(1), F.A.C. requires that the applicant submit additional information



Mr. Gregory M. Nelson, P.E.  
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requested by the Department, or request an extension of time to respond, within ninety days. A copy of your response should be sent to Mr. Bill Thomas, P.E., DEP Southwest District and Mr. Iwan Choronenko, Hillsborough County EPC.

If you should have any questions, please call Cleve Holladay (meteorologist) at 850/921-8986.

Sincerely,



A.A. Linero, P.E.  
New Source Review Section

AAL/ch

Enclosure

cc: Mr. Brian Beals, EPA  
Mr. Thomas Davis, P.E.  
Mr. Bill Thomas, P.E., SWD  
Mr. Iwan Choronenko, HCEPC

11/24/98

To: Cleve Holladay - FL DEP

From: Stan Krivo - USEPA Region 4

Subject: Review Comments  
Units 5 and 6 Stack Height Increase  
TECO - F.J. Gannon Station  
Tampa, Florida

We have completed our review of the information provided in the *F.J. Gannon Station Units 5 and 6 Stack Height Increase Construction Permit Application* dated October 1998. Our review comments were discussed with you on 19 November 1998. This memorandum summarizes the results of this discussion:

1. Air Quality Impact Assessment - An air quality impact modeling assessment was performed for the proposed modified stack/emission configuration and submitted to Florida Department of Environmental Protection (FL DEP) on 15 October 1998. This document was not available for our review. Copies of the air quality report were requested for the Air & Radiation Technology and the Air Planning Branches.
2. Modifications - The proposed modifications to the Gannon Station include: 1) A more stringent 24-hour maximum plant wide emission limit of 276 tons and 2) Raising Units 5 and 6 stacks to 361 feet. The current allowable hourly and weekly emission limits of 2.4 lb/MMBtu and 1780.8 tons, respectively, are still applicable.
3. 3-Hour NAAQS - The proposed 24-hour maximum plant emission limit of 267 tons provides an average hourly emission rate (11.5 tons) for use in the assessment of compliance with the 24-hour NAAQS. The appropriate emission rate for assessing the 3-hour NAAQS is the allowable 2.4 lb/MMBtu for each unit. The air quality impact modeling should include assessment of this 3-hour standard.
4. Load Variation - If the exit stack temperatures and velocities vary with load, the air quality impact modeling should address the worst impact considering various combinations of loads (e.g., 100, 75, and 50 percent loads) for the 6 boilers.
5. Class I Area Impacts - Because of the nearness of the Chassahowitzka Wilderness Area to the Gannon Station, the Land Manager (USFWS) for this Class I area should be notified of this project.

Please let me know if you have any comments or questions concerning this summary.