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TAMPA ELECTRIC
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Air Regulation

April 4, 1995

Mr. John Reynolds
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Certified Mail No. P 278 134 329
Return Receipt Requested

Mr. Jerry Campbell
Environmental Protection Commission
of Hillsborough County
1410 North 21 Street
Tampa, Florida 33605.

Hand Delivered

Re: Tampa Electric Company
Big Bend Station Unit 4
Site Certification PA 79-12
Coal/Petroleum Coke Blend

Gentlemen:

On March 29, 1995, Tampa Electric Company (TEC) responded to the Environmental Protection Commission of Hillsborough County's (EPC) comments about the above referenced project. In addition, TEC met with EPC on March 29, 1995 to review their concerns. Based upon the outcome of that meeting, Questions 1 through 6 of EPC's February 28, 1995 comment letter have been resolved. However, EPC is still concerned that a significant actual emission increase will occur based upon this request. Therefore, in an effort to provide additional assurance that using a fuel blend of coal and petroleum coke in Unit 4 will not increase annual emissions significantly above normal historic actual emissions, the following analysis is provided as addendum to TEC's March 29, 1995 submittal to the agency.

As pointed out by EPC and as demonstrated in the attached analysis, the initial screening of the monitored pollutants as required in the October 5, 1994, approval letter show that no significant actual emissions increase occurs for nitrogen oxides (NO_x), carbon monoxide (CO) and sulfuric acid mist (H_2SO_4). Therefore, for these pollutants, no further analysis is required.

However, as shown in Table 1, sulfur dioxide (SO_2) and particulate matter (PM) show an emissions increase. Based upon these emissions and in accordance with Prevention of Significant Deterioration (PSD) applicability requirements, TEC has done further emission comparisons.

Table 2 depicts the emissions comparison of the averaged emissions of 1993 and 1994 from the annual operating reports. As can be seen from this comparison, no actual emissions increase during the coal/petroleum coke test burn as compared to historic actual emissions occurred during the test. Additionally, no actual emission increase is expected while firing Big Bend Unit 4 using the coal.

TEC believes this additional analysis satisfactorily addresses EPC's concern. As discussed with you on previous occasions, we are extremely anxious to proceed with this project because of the immediate savings that could be realized by our Customers; therefore, we request that this permit modification be granted as soon as possible. Please call Ms. Janice Taylor or me at (813) 228-4839 if you have any further questions.

Sincerely,

Patrick A. Ho, P.E.
Manager
Environmental Planning

EP\gm\JKT705

Attachment

c/enc: Hamilton Oven, FDEP - Tallahassee
Al Linero, FDEP - Tallahassee
Jerry Kessell, FDEP - Tampa

ADDENDUM

BASELINE TEST BURN AND PETROLEUM COKE TEST BURN COMPARISON

The test burn approval requires an initial screening to determine if the fuel blend of coal and petroleum coke compared to the baseline of 100% coal represents an actual annual emissions increase. These comparisons are shown in Table 1. For this analysis, emissions were calculated using the algorithm:

$$E_A = E_r \times L \times u_A$$

Where: E_A = Annual Emission Rate (tpy)

E_r = Measured Emission Rate (lb/MMBtu)

L = Load (MMBtu/hr during stack testing)

u_A = Annual Utilization (hr/yr for 1994)

The emissions comparison for nitrogen oxides (NO_x), carbon monoxide (CO), and sulfuric acid mist (H_2SO_4) indicate no additional analysis is necessary because the actual annual emissions decrease. However, the sulfur dioxide (SO_2) and Partculate Matter (PM) emissions comparison show an actual annual emissions increase. Therefore, in accordance with rules to determine Prevention of Significant Deterioration (PSD) applicability, further actual annual emissions comparison must be done. This analysis is presented in Table 2, which compares the fuel blend test burn with historical actual emissions. Consistent with PSD rules, which require the past two years of data be applied, TEC has used the 1993 and 1994 Annual Operating Reports data to define actual SO_2 and PM emissions. As demonstrated, no actual annual SO_2 and PM emissions increase has occurred using the fuel blend as compared to actual historic emissions.

Table 1. Baseline and Petroleum Coke Test Burn Results Comparison

BASELINE TEST BURN DATA					
Pollutant	Emission Rate (lb/MMBtu)	Load (MMBtu/hr)	Emission Rate (lb/hr)	Annual Utilization (hr/yr)*	Annual Emission (tpy)
SO_2	0.25	4300.0	1075.00	8135	4372.6
NO_x	0.43	4300.0	1849.00	8135	7520.6
PM	0.0025	4300.0	10.75	8135	43.7
CO	0.01	4300.0	43.00	8135	174.9
H_2SO_4	0.007	4300.0	30.10	8135	122.4
PETROLEUM COKE TEST BURN DATA					
Pollutant	Emission Rate (lb/MMBtu)	Load (MMBtu/hr)	Emission Rate (Lb/hr)	Annual Utilization (hr/yr)	Annualized Emission (tpy)
SO_2	0.29	4318.7	1252.42	8135	5094.2
NO_x	0.42	4318.7	1813.85	8135	7377.9
PM	0.0035	4318.7	15.12	8135	61.5
CO	0.002	4318.7	8.64	8135	35.1
H_2SO_4	0.002	4318.7	8.64	8135	35.1
EMISSION RATE CHANGE (PETROLEUM COKE TEST BURN - BASELINE TEST BURN)					
Pollutant			Emission Rate (Lb/hr)		Annualized Emission (tpy)
SO_2			177.42		721.7
NO_x			-35.15		-143.0
PM			4.37		17.8
CO			-34.36		-139.8
H_2SO_4			-21.46		-87.3

*1994 Hours of Operation

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Table 2. Historical Actual Emission Data and Petroleum Coke Test Burn Results Comparison

HISTORICAL ACTUAL EMISSIONS AND PETROLEUM COKE TEST BURN EMISSIONS COMPARISON							
Pollutant	Emission Rate (lb/MMBtu)	Load (MMBtu/hr)	Emission Rate (Lb/hr)	Annual Utilization (hr/yr)*	Annual Emission (tpy)	1993 & 1994 Annual Emission (tpy)**	Annual Emission (tpy)
SO_2	0.29	4318.7	1252.42	8135	5094.2	6864.0	-1769.8
PM	0.0035	4318.7	15.12	8135	61.5	71.5	-10.0

68.5?

*1994 Hours of Operation
**Averaged 1993 and 1994 Emissions from Annual Operating Reports