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BUREAU OF AIR REGULATION



TAMPA ELECTRIC

May 12, 2000

Ms. Cindy L. Phillips, P.E.  
Bureau of Air Regulation  
Florida Department of Environmental Protection  
111 South Magnolia Avenue, Suite 4  
Tallahassee, Florida 32301

Via FedEx  
Airbill No. 7910 8439 4693

Re: Tampa Electric Company  
Permit Revisions for Big Bend Unit 3, AO29-179911 and Unit 4, PSD-FL-040

Dear Ms. Phillips:

Tampa Electric Company has received your additional information request letter dated April 19, 2000 and offers the following responses:

**DEP Request 1**

Since vanadium catalyzes SO<sub>2</sub> to SO<sub>3</sub>, thus forming acid mist, there is a link to a directly regulated pollutant. Though sulfuric acid mist emissions testing was performed by TEC during the original petcoke permitting for Big Bend Units 3 and 4, you have provided no correlation of future potential sulfur acid mist emissions to future vanadium content of the petcoke. This information is needed for reasonable assurance.

**TEC Response**

TEC understands the Department's concern regarding increased sulfuric acid mist emissions as a result of increasing the amount of vanadium in the petcoke burned in Big Bend Units 3 and 4. However, increasing the percent vanadium present in the petcoke ash does not necessarily increase the mass of vanadium introduced to the boiler. In fact, in most cases, combusting low ash, high percent vanadium petcoke results in less vanadium introduced to the boiler by mass than a high ash, lower percent vanadium petcoke. Since TEC is restricted to combusting petcoke with a vanadium content of no greater than 35% in the ash, this effectively limits the ability of TEC to purchase and combust petcoke with relatively low percent ash and low vanadium content by mass.

As mentioned above, the permits governing Big Bend Units 3 and 4 allow for TEC to combust petcoke with a mineral ash vanadium content no greater than 35% without regard to the percent ash in the petcoke. However, since the ash content of the petcoke varies on a shipment to

Ms. Cindy L. Phillips, P.E.

May 12, 2000

Page 2 of 3

shipment basis, the concentration of the vanadium in the petcoke also varies on a shipment to shipment basis. In some cases, this prevents TEC from acquiring lower ash petcoke. For example, under the current permit limits, TEC may combust petcoke with 1% ash containing 3,500 ppm vanadium, but may not combust 0.5% ash containing 2,000 ppm vanadium. This is because the 1% ash petcoke contains 35% vanadium, but the 0.5% ash petcoke actually contains 40% vanadium. To resolve this problem, TEC requests that the vanadium content limit in the petcoke be changed from 35% of the mineral ash to 3,500 ppm vanadium in the ash. This concentration-based limit is no less stringent than the current limit and will allow TEC to combust petcoke with lower ash contents without increasing the mass of vanadium introduced to the boiler.

### **DEP Request 2**

**Please describe how the annual emissions provided in the "Emissions Summary during Petcoke Combustion" were calculated, i.e., CEMs data, quarterly stack test, etc.**

### **TEC Response**

The NO<sub>x</sub> and SO<sub>x</sub> values provided in the "Emissions Summary during Petcoke Combustion" were based on 12 months of CEM data from October 1 through September 30 of each year. The PM data was calculated by multiplying the PM emissions rate measured during annual compliance tests by the monthly heat input for the period from October 1 through September 30 of each year.

### **DEP Request 3**

**Please describe specifically what fuel will be burned to ensure compliance with the SO<sub>2</sub> standards during periods of FGD downtime (as stated in your response to FDEP Request 7.)**

### **TEC Response**

Specific Condition 30.B. of the Consent Decree between EPA and TEC states that:

"Whenever Tampa Electric operates Unit 3 without treating all emissions from that Unit with the scrubber, Tampa Electric shall: (1) combust only *Alternative Coal* (emphasis added) at Unit 3 during the outage (except for coal already bunkered in the hopper(s) for Unit 3 at the time the outage commences)"

*Alternative Coal* is defined as "coal with a sulphur content of no more than 2.2 lb/mmBTU, on an as determined basis."

Ms. Cindy L. Phillips, P.E.  
May 12, 2000  
Page 3 of 3

Therefore, TEC feels that this requirement provides FDEP with reasonable assurance that no SO<sub>2</sub> standards will be violated during periods of FGD downtime.

If you have any further questions, you may contact Shannon Todd or me at (813) 641-5125.

Sincerely,



Gregory M. Nelson, P.E.  
P.E. License No. 44078  
Director  
Environmental Affairs

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c: Mr. J. Campbell, EPCHC  
Mr. A. Linero, FDEP  
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