



RECEIVED

JUN 19 1995

Bureau of
Air Regulation

June 14, 1995

Mr. A. A. Linero
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

**Via Facimile and
Certified Mail No. P 880 003 416
Return Receipt Requested**

**Re: Tampa Electric Company
Big Bend Unit No. 4; PSD-FL-040**

Dear Mr. Linero:

On June 6, 1995, we received correspondence and attachments from Mr. Clair Fancy concerning our request for an amendment to PSD-FL-040 for Tampa Electric Company's Big Bend Unit 4. The material includes the Department's Notice of Intent to Issue the Permit Amendment to allow firing of a blend of coal and petroleum coke in the unit. Proposed permit conditions are included.

We have reviewed the proposed revision to the specific permit conditions and have the following suggestions: the new proposed specific conditions should be clarified as follows:

New Specific Condition 1. A.:

1. A. Fuels fired shall consist of coal or a 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).

New Specific Condition 1. B.:

1. B. Gravimetric scale data verifying that the 20% maximum petroleum coke content by weight on a monthly basis has not been exceeded shall be maintained and submitted to the Department and the Environmental Protection Commission of Hillsborough County (EPCHC) with each annual operating report.

Mr. A. A. Linero
June 14, 1995
Page 2 of 2

New Specific Condition 1. C.:

1. C. Pursuant to Rule 62-212.200(2)(d), Florida Administrative Code (F.A.C.), the actual emissions of the No. 4 unit shall equal the representative actual emissions as defined in 40 CFR 52.21(b)(33), **when the unit is firing petroleum coke**. The permittee shall maintain and submit to the Department and EPCHC on an annual basis for a period of 5 years from the date the unit begins firing petroleum coke, data demonstrating that the operational change did not result in an emission increase.

These changes will make clear that the amendments to the PSD permit apply to the operational change that has been proposed, in accordance with the applicable regulations.

We are available to discuss this clarification at your convenience. If you have any questions, please contact Janice Taylor or me at (813) 228-4839.

Sincerely,



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

EPgmUKT711

c: B. Thomas, FDEP, Tampa
J. Kessel, FDEP, Tampa
J. Harper, EPA
J. Bunyak, NPS
H. Oven, FDEP, Tallahassee

Florida Department of
Environmental Protection

Memorandum

TO: Al Linero
John Reynolds

FROM: Buck Oven *BJO*

DATE: June 14, 1995

SUBJECT: TEC Big Bend - Petcoke Modification

Attached is a copy of the existing conditions of certification for Big Bend 4. Please provide me with a marked up copy of the conditions that will implement the request to burn Petcoke in accordance with the revised PSD permit.

Attach:

State of Florida Department of Environmental Regulation
Tampa Electric Company
Big Bend Unit 4
PA 79-12

CONDITIONS OF CERTIFICATION (Revised 6-2-81)

I. Air

The construction and operation of Big Bend Unit 4 at the Tampa steam electric power plant site shall be in accordance with all applicable provisions of Chapters 17-2, 17-4, 17-5 and 17-7, Florida Administrative Code. In addition to the foregoing, the permittee shall comply with the following conditions of certification:

A. Emission Limitations

1. Based on a maximum heat input of 4,330 million BTU per hour, stack emissions from Big Bend Unit 4 shall not exceed the following when burning coal ~~X~~ *or coal/petroleum coke blend*:
 - a. SO₂ - 1.2 lb. per million BTU heat input, maximum two hour average, 0.84 lb/MMBtu on a 30-day rolling average.
 - b. NO_x - 0.60 lb. per million BTU heat input.
 - c. Particulates - 0.03 lb. per million BTU heat input.
 - d. Visible emissions - 20% (6-minute average), except one 6-minute period per hour of not more than 27% opacity.
2. The height of the boiler exhaust stack for Unit 4 shall not be less than 490 ft. above grade.
3. Particulate emissions from the coal handling facilities:
 - a. The permittee shall not cause to be discharged into the atmosphere from any coal processing or conveying equipment, coal storage system or coal transfer and loading system processing coal, visible emissions which exceed 20 percent opacity. Particulate emissions shall be controlled by use of control devices.
 - b. The permittee must submit to the Department within ten (10) working days after it becomes available, copies of technical data pertaining to the selected particulate emissions control for the coal handling facility. These data should include, but not be limited to, guaranteed efficiency and emission rates, and major design parameters such as air/cloth

ratio and flow rate. The Department may, upon review of these data, disapprove the use of such device if the Department determines the selected control device to be inadequate to meet the emission limits specified in 3(a) above. Such disapproval shall be issued within 30 days of receipt of the technical data.

4. Particulate emissions from limestone and flyash handling shall not exceed the following:
 - a. Limestone silos - 0.05 lb/hr.
 - b. Limestone hopper/transfer conveyors - 0.65 lb/hr.
 - c. Flyash handling system - 0.2 lb/hr.
5. Visible emissions from the following facilities shall be limited to 5% opacity: (a) limestone and flyash handling system, (b) limestone day silos and (c) flyash silos.
6. Compliance with opacity limits of the facilities listed in Condition 5 will be determined by EPA reference method 9 (Appendix A, 40 CFR 60).
7. Construction shall reasonably conform to the plans and schedule given in the application.
8. The permittee shall report any delays in construction and completion of the project to the Department's Southwest District Office.
9. Reasonable precautions to prevent fugitive particulate emissions during construction, such as coating of roads and construction sites used by contractors, will be taken by the permittee.
10. Coal should not be burned in the unit unless both electrostatic precipitator and limestone scrubber are operating properly.
11. Coal burned in the unit should be washed before it is transported to the plant site.

B. Air Monitoring Program

1. The permittee shall install and operate continuously monitoring devices for the Unit 4 boiler exhausts for sulfur dioxide, nitrogen dioxide, oxygen and opacity. The monitoring devices shall meet the applicable requirements of Section 17-2.08, FAC, and 40 CFR 60.47a. The opacity monitor may be placed in the duct work between the electrostatic precipitator and the FGD scrubber.

2. The permittee or Hillsborough county shall operate the two ambient monitoring devices for sulfur dioxide in accordance with EPA reference methods in 40 CFR, Part 53, and two ambient monitoring devices for suspended particulates. The monitoring devices shall be specifically located at a location approved by the Department. The frequency of operation shall be every six days commencing as specified by the Department.
3. The permittee shall maintain a daily log of the amounts and types of fuels used and copies of fuel analyses containing information on sulfur content, ash content and heating values.
4. The permittee shall provide sampling ports into the stack and shall provide access to the sampling ports, in accordance with DER publication, Standard Sampling Techniques and Methods of Analysis for the Determination of Air Pollutants from Point Source, July, 1975.
5. The ambient monitoring program may be reviewed by the Department and the permittee annually beginning two years after start-up of Unit 4.
6. Prior to operation of the source, the permittee shall submit to the Department a standardized plan or procedure that will allow the permittee to monitor emission control equipment efficiency and enable the permittee to return malfunctioning equipment to proper operation as expeditiously as possible.

C. Stack Testing:

1. Within 60 calendar days after achieving the maximum capacity at which each unit will be operated, but no later than 180 operating days after initial start-up, the permittee shall conduct performance tests for particulates, SO₂, NO_x and visible emissions during normal operations near 4,330 MMBtu/hr heat input and furnish the Department a written report of the results of such performance tests within 30 days. The performance tests will be conducted in accordance with the provisions of 40 CFR 60.46a, 48a, and 49a.
2. Performance tests shall be conducted and data reduced in accordance with methods and procedures in accordance with DER's Standard Sampling Techniques and Methods of Analysis for Determination on Air Pollutants from Point Sources, July, 1975.

3. Performance tests shall be conducted under such conditions as the Department shall specify based on representative performance of the facility. The permittee shall make available to the Department such records as may be necessary to determine the conditions of the performance tests.
4. The permittee shall provide 30 days prior notice of the performance tests to afford the Department the opportunity to have an observer present.
5. Stack tests for particulates and SO₂ shall be performed annually in accordance with conditions C. 2, 3, and 4 above.

D. Reporting

1. For Unit 4, stack monitoring, fuel usage and fuel analysis data shall be reported to the Department's Southwest District Office on a quarterly basis commencing with the start of commercial operation in accordance with 40 CFR, Part 60, Section 60.7., and in accordance with Section 17-2.08, FAC.
2. Utilizing the SAROAD or other format approved in writing by the Department, ambient air monitoring data shall be reported to the Bureau of Air Quality Management of the Department quarterly. Commencing on the date of certification, such reports shall be due by the last day of the month following the quarterly reporting period.
3. Beginning one month after certification, the permittee shall submit to the Department a quarterly status report briefly outlining progress made on engineering design and purchase of major pieces of equipment (including control equipment). All reports and information required to be submitted under this condition shall be submitted to the Administrator of Power Plant Siting, Department of Environmental Regulation, 2600 Blair Stone Road, Tallahassee, Florida, 32301.

II. Water Discharges

Any discharges into any waters of the State during construction and operation of Big Bend Unit 4 shall be in accordance with all applicable provisions of Chapter 17-3, Florida Administrative Code, and 40 CFR, 423, Effluent Guidelines and Standards for Steam Electric Power Generating Point Source Category, except as provided herein. Also, the permittee shall comply with the following conditions of certification:

A. Plant Effluents and Receiving Body of Water

For discharges made from the power plant the following conditions shall apply:



RECEIVED

MAY 30 1995

Bureau of
Air Regulation

May 24, 1995

Mr. Hamilton Oven, P.E.
Administrator, Siting Coordination Office
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Federal Express #5085772801

**Re: Tampa Electric Company
Big Bend Station-Fuel Handling Facilities
Case No. PA 79-12C**

Dear Mr. Oven:

As you are aware, TEC submitted a request to modify the approved fuel handling facilities on January 13, 1995 to your office. Comments from both the Florida Department of Environmental Protection (FDEP) Bureau of Air Regulation - Tallahassee, and the Environmental Protection Commission of Hillsborough County (EPC), have been received. TEC received the Bureau of Air Regulation's comment letter on February 25, 1995, and EPC's memorandum on March 17, 1995. Subsequently, TEC has met with EPC to resolve most of their concerns and received a follow up comment letter on April 12, 1995 on outstanding issues. TEC offers the detailed comments below on the Bureau's and EPC's respective February and April letters to resolve all issues so this permit modification may be issued:

**RESPONSE TO FLORIDA DEPARTMENT OF ENVIRONMENTAL
PROTECTION COMMENTS OF FEBRUARY 23, 1995**

FDEP Comment 1. The calculation of Appendix 1 which deals with particulate matter emissions from coal handling sources, the moisture content of the coal was assumed to be 7 percent. AP-42, Section 11.2.3 suggests a mean moisture content for the coal to be 2.3 percent. Please explain the deviation from this value, and recalculate the emissions.

TEC's Response: This issue was addressed to the satisfaction of the FDEP in the Addendum and Responses to Information Requests submitted to FDEP in June 1993. To expedite the modification approval process, that response is repeated below.

Based on available coal source information and TEC's extensive experience in receiving and using coal at its other existing power stations, the minimum

moisture content of the coal is expected to be approximately 7 percent. The assumed maximum moisture content of the coal of 15 percent is also based on available information on the characteristics of coals under consideration for the project. Therefore, the moisture content of coal to be delivered and handled at the Polk Power Station is expected to range from 7 to 15 percent.

To provide a more conservative analysis of potential particulate matter (PM) impacts, estimates and modeling analysis of the PM emission from coal handling sources are based on the expected 7 percent minimum moisture content of the coal.

FDEP Comment 2. **The modification states that the maximum amount of fuel transloaded annually will remain unchanged at 1,428,030 tons. Please state what percentage of that amount will be petroleum coke.**

TEC's Response

The percentage of petroleum coke transloaded on an annual basis will not be fixed. The dispersion modeling presented in the modification request was based on the worst-case scenario of transloading coal, only. Due to the higher moisture content of petroleum coke as well as other physical characteristics, lower particulate matter emissions are expected when transloading petroleum coke as compared to transloading an equal quantity of coal. Because the worst-case emission scenario of transloading 100 percent coal did not cause a significant impact, a fixed annual coal/petroleum coke throughput percentage is not necessary.

Attachment 1 provides analysis on petroleum coke characteristics.

FDEP Comment 3. **Please provide data (particle size, silt content, moisture content, etc.) to show that petroleum coke is similar in characteristics to coal for emission calculations, and specifically for fugitive emissions evolution.**

TEC's Response

Please see Attachment 1.

**RESPONSE TO THE ENVIRONMENTAL PROTECTION COMMISSION OF
HILLSBOROUGH COUNTY LETTER OF APRIL 11, 1995**

Comment 1. **In the Final Order Modifying Conditions of Certification dated April 6, 1994 which authorized the increased transloading transfer of coal, the test method in condition I.A.3.a was an EPA Reference Method 22.**

For any opacity limits over 0 percent, a Method 9 must be conducted. We recommend that during this modification, this condition be changed to require the appropriate test method (EPA Reference Method 9, 40 CFR 60, Appendix A).

*TEC's
Response*

TEC has no objection to this method.

EPC Comment 2.

We recommend that condition I.A.3.a be modified to require a 5 percent opacity limit for the following reasons:

- a. **The fuel transloading operation is equivalent to a stevedoring operation. All of the permits issued to other stevedoring operations (with the exception of iron scrap handling at 10 percent) in Hillsborough County Port areas have established a 5 percent opacity limitation. We believe it is important to be consistent with similar operations.**
- b. **The permit that was issued for the TEC facility in Polk County handling this very same coal established a 5 percent opacity limitation. Hillsborough County has a particulate matter maintenance area and remains unclassifiable for PM10. Clearly there is justification for establishing an equivalent opacity standard at the Big Bend terminal.**
- c. **There is a residential community south of the Big Bend facility and we believe a 5 percent opacity limitation would be provided reasonable assurance that the expanded fuel transloading stevedoring operation would not adversely impact that area.**
- d. **The emissions factors that were used by TEC for the increased fuel through the coal yard and for the requested change in the transloading configuration indicated the net emissions increase was below 25 TPY. These emissions factors along with the magnitude of the net emissions change indicate a 5 percent opacity standard should be achievable. A 20 percent opacity standard does not give us reasonable assurance that their calculated emission estimates are being met.**
- e. **With the increased fuel through the coal yard and other changes that have been made at the Big Bend facility, the particulate**

matter modeling that was originally conducted to exempt the facility from particulate matter operations would show an impact if operations were modeled under current conditions. Therefore, the 5 percent opacity standard for the transloading operation would be appropriate by rule.

- f. A 5 percent standard would give us further assurance that petroleum coke is equivalent to coal as the applicant claims. Our agency has had complaints regarding petroleum coke stevedoring in the past, and we feel a 5 percent standard would give us assurance the proper handling procedures would be followed.**

TEC's Response:

As detailed to FDEP's satisfaction in TEC's February 24, 1994 letter (Attachment 2), a 5 percent opacity standard is not applicable for these sources. Additionally, TEC is unaware of any new or modified regulations that have changed which would require a 5 percent opacity limit for these sources.

With regards to EPC's comments, TEC believes the emissions sources that are referenced in EPC's letter are in or near the particulate matter Air Quality Maintenance Area (AQM) and are required to meet the Reasonable Achievable Control Technology (RACT) 5 percent opacity standard for unconfined emissions. The Polk Power Station coal yard sources are confined sources within the AQM Area of Influence and the 5 percent opacity standard is applicable.

As shown in Attachment 2, the Big Bend coal yard emissions sources are exempted from RACT based upon emission types and location. The dispersion modeling to demonstrate RACT exemption is not required in this case.


The emissions factors TEC used for this proposed modification were obtained from AP-42, Section 11.2, Fugitive Dust Sources. These factors are the best available for this analysis and are an accepted standard. It should be noted that the proposed reconfiguration of the transloading operation represents a decrease in emissions from the permitted transloading configuration.

Mr. Hamilton S. Oven, P.E.
May 24, 1995
Page 5

Based upon the above discussion and as shown in previous correspondence, TEC still believes the Big Bend sources are not subject to RACT requirements and the general opacity limit of 20 percent of Rule 62-296.310(2) is the applicable standard.

TEC believes this letter addresses all agencies concerns and request this permit modification be approved as soon as possible. Please feel free to call Ms. Janice Taylor or me at (813) 228-4839 should you have any further questions.

Sincerely,



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

EP\sn\JKT708

Enclosures

c/enc: Al Linero, FDEP-Tallahassee
Sayed Arif, FDEP-Tallahassee
Jerry Kissel, FDEP-Tampa
Jerry Campbell, EPCHC

TYPICAL PETROLEUM COKE ANALYSIS

TYPICAL ANALYSIS, DRY BASIS	RANGE
Sulfur, wt. %	4.0 - 5.0
Volatiles, Content, wt. %	9 - 14
Vanadium, ppm	1100 - 1900
Nickel, ppm	100 - 200
Iron, ppm	50 - 100
Silicon, ppm	100 - 500
Nitrogen, wt. %	.6 - 1.6
Ash, wt. %	< 1.0
Calorific Value, BTU/#	13,500 - 14,000
Carbon, wt. %	85.0 - 95.0
Moisture, wt. %	7 - 10

PETROLEUM COKE TRACE METAL ANALYSIS**FROM TYPICAL SUPPLIER**

TRACE ELEMENT	RESULTS	
	SUPPLIER 1 mg/kg (ppm)	SUPPLIER 2 mg/kg (ppm)
ALUMINUM	279.0	69.8
ANTIMONY	< 0.5	< 0.5
ARSENIC	< 0.1	< 0.1
BARIUM	5.98	5.20
BERYLLIUM	< 0.01	< 0.01
CADMIUM	< 0.01	< 0.01
CHROMIUM	19.8	15.6
COPPER	< 0.5	< 0.5
FLUORINE	4.3	5.7
LEAD	< 0.5	< 0.5
MANGANESE	1.87	1.09
MERCURY	< 0.05	< 0.05
NICKEL	105.0	203.0
SELENIUM	< 0.1	< .01
SILICON	577.0	514.0
SILVER	< 0.5	< 0.5
SODIUM	215.0	223.0
THALLIUM	< 0.01	< 0.01
VANADIUM	534.0	750.0
ZINC	15.7	15.8



February 24, 1994

Mr. H.S. Oven, P.E.
Administrator
Siting Coordination Section
Florida Department of Environmental Protection
Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

**VIA FACSIMILE and
Certified Mail #P278 133 018
Return Receipt Requested**

Re: Tampa Electric Company
Big Bend Station Unit 4
Modification of Conditions of Certification PA 79-12

Dear Mr. Oven:

Thank you for the opportunity to review the draft Order for the above referenced project. Our comments on the draft Order are listed below. We have also attached a copy of the draft Order that has been marked up with our comments.

Page 1 Please modify the first paragraph as shown on the attachment. This change to the Conditions of Certification and the PSD permit was made in 1988.

Page 2 In the first full paragraph, we believe that the reference to "Big Bend Station" should read "Big Bend Unit 4."

Also, please change Condition I.A.3.a. as indicated on the attachment. Rule 17-296.711, F.A.C. is not applicable to the emission points cited in Condition I.A.3.a. The correct opacity limit for these emission points is 20%, pursuant to Rule 17-293.310(2)(a), F.A.C.

Rule 17-296.700, F.A.C., Reasonable Available Control Technology (RACT) Particulate Matter, generally applies to any source that emits PM and is located in a PM air quality maintenance area or in the area of influence of a PM air quality maintenance area. However, Rule 17-296.700(2)(d), F.A.C., exempts from regulation "any source of unconfined particulate matter which is located more than 5 kilometers (km) outside the boundary of a particulate matter air quality maintenance area." Because the Big Bend Station sources subject to

Condition I.A.3.a emit unconfined PM and are located more than 5 km outside the boundary of a PM air quality maintenance area, the Rule 17-296.700(2)(d), F.A.C., exemption makes Rule 17-296.711, F.A.C. non-applicable. Because no other specific rule applies, the general 20% opacity limit of Rule 17-293.3410(2)(a) becomes the applicable limit. Additional detail is provided below.

Unconfined emissions are "emissions which escape and become airborne from unenclosed operations or which are emitted into the atmosphere without being conducted through a stack" [17-296.200(193), F.A.C.]. Big Bend Station coal processing or conveying equipment, coal storage system, or transloading source/emission point (i.e., off-loading or loading of coal and coal piles) are sources of unconfined PM emissions because the PM is either from unenclosed operations or is not emitted through a stack.

The PM air quality maintenance nearest to Big Bend Station is "that portion of Hillsborough County which falls within the area of a circle having a center point at the intersection of U.S. 41 South and State Road 60 and a radius of 12 kilometers" [17-275.600(3)(a), F.A.C.] Unconfined PM sources are exempt from Rule 17-296.711, F.A.C., if these sources are greater than 5 km distant from this air quality maintenance area. Thus, the rule exemption applies to unconfined PM emission sources greater than 17 km distant from the intersection of U.S. 41 South and State Road 60. This highway intersection is located at Universal Transverse Coordinates (UTM) East 362,039 and North 3,092,482. The south bank of the Big Bend Station intake water channel, which is north of the PM emission sources, is located at UTM East 361,485 and North 3,075,373. The distance between these 2 points is 17.119 km. Because the water intake channel is between the highway intersection and the PM emission sources, the PM emission sources must be greater than 17 km distant from the intersection of U.S. 41 South and State Road 60.

Given this demonstration, the Big Bend Station sources subject to Condition I.A.3.a. emit unconfined PM and are not located within 5 km of a PM air quality maintenance area. Thus, the Rule 17-296.700(2)(d), F.A.C., exemption makes Rule 17-296.711, F.A.C. non-applicable. Because no other specific rule applies, the general 20% opacity limit of Rule 17-293.3410(2)(a) becomes the applicable limit.

Delete requirement for the visible emissions compliance tests. Based on our comment above, we do not see the need or basis for these tests.

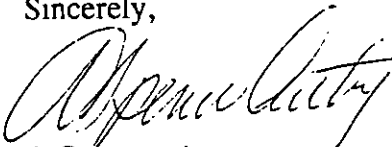
Mr. H.S. Oven, P.E.
February 24, 1994
Page 3

Page 4 In Conditions I.A.3.d. and e., we would like to have the word "transloading" inserted as indicated in the attachment. We believe that this insertion better clarifies the conditions.

Page 6 In the first paragraph, the word "Regulation" should be replaced with "Protection" as shown in the attachment.

Should you have any questions or comments on the above information, please do not hesitate to contact Greg Nelson at 813/228-4847.

Sincerely,



A. Spencer Autry
Director
Environmental

sn\LL669

Enclosure

COMMISSION

DOTTIE BERGER
PHYLLIS BUSANSKY
JOE CHILLURA
CHRIS HART
JIM NORMAN
ED TURANCHIK
SANDRA WILSON



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)272-5788

ECOSYSTEMS MANAGEMENT DIVISION
TELEPHONE (813)272-7104

EXECUTIVE DIRECTOR

ROGER P. STEWART

April 11, 1995

Mr. Hamilton S. Oven, Jr., P.E.
Administrator
Florida Department of Environmental
Protection
3900 Commonwealth Blvd.
Tallahassee, FL 23299-3000

Re: Tampa Electric Company Big Bend Station
Coal Yard Modification
PA79-12C Modifications

Dear Mr. Oven:

On March 29, 1995, representatives from the Environmental Protection Commission (EPC) of Hillsborough County met with Tampa Electric Company (TEC) to discuss the above referenced project. During the meeting, TEC discussed their draft response to EPC's comments on the project. Based on our review of the material submitted and the original project submitted we have the following comments:

1. In the Final Order Modifying Conditions of Certification dated April 6, 1994 which authorized the increased transloading transfer of coal, the test method in condition I.A.3.a was an EPA Reference Method 22. For any opacity limit over 0% a Method 9 must be conducted. We recommend that during this modification, this condition should be changed to require the appropriate test method (EPA Reference Method 9, 40 CFR 60, Appendix A).
2. We recommend that condition I.A.3.a be modified to require a 5% opacity limit for the following reasons:
 - a. The fuel transloading operation is equivalent to a stevedoring operation. All of the permits issued to other stevedoring operations (with the exception of iron scrap handling at 10%) in Hillsborough County Port areas have established a 5% opacity limitation. We believe it is important to be consistent with similar operations.

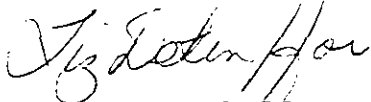
Bureau of
Air Regulation
APR 13 1995
RECEIVED

- b. The permit that was issued for the TEC facility in Polk County handling this very same coal established a 5% opacity limitation. Hillsborough County has a particulate matter maintenance area and remains unclassifiable for PM10. Clearly there is justification for establishing an equivalent opacity standard at the Big Bend terminal.
- c. There is a residential community south of the Big Bend facility and we believe a 5% opacity limitation would be provided reasonable assurance that the expanded fuel transloading stevedoring operation would not adversely impact that area.
- d. The emission factors that were used by TEC for the increased fuel through the coal yard and for the requested change in the transloading configuration indicated the net emissions increase was below 25 TPY. These emissions factors along with the magnitude of the net emissions change indicate a 5% opacity standard should be achievable. A 20% opacity standard does not give us reasonable assurance that their calculated emission estimates are being met.
- e. With the increased fuel through the coal yard and other changes that have been made at the Big Bend facility, the particulate matter modelling that was originally conducted to exempt the facility from particulate matter RACT is no longer applicable. We believe the facility operations would show an impact if operations were modelled under current conditions. Therefore, the 5% opacity standard for the transloading operation would be appropriate by rule.
- f. A 5% standard would give us further assurance that petroleum coke is equivalent to coal as the applicant claims. Our agency has had complaints regarding petroleum coke stevedoring in the past, and we feel a 5% standard would give us assurance the proper handling procedures would be followed.

Mr. Hamilton S. Oven, Jr., P.E.
April 11, 1995
Page 3

Should you require additional information or have any questions on these items please contact me or Liz Deken at Suncom 543-5530 (or (813) 272-5530).

Sincerely,



Jerry Campbell, P.E.
Assistant Director
Air Management Division


bm

cc: Al Linero, FDEP-Tallahassee
Jerry Kissel, FDEP-Southwest District
Janice Taylor, TEC

Memorandum

Florida Department of
Environmental Protection

TO: Buck Oven

FROM: Clair Fancy 

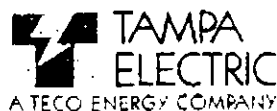
DATE: March 8, 1995

SUBJ: Revised Permit Conditions - TECO Unit 3 & 4 Integration
Site Certification PA 79-12

Attached are revisions to the subject permit conditions that were requested by the permittee. TECO asked that this be handled separately from the other requested revisions due to the urgent nature of this project.

CHF/jr/t

Attachment



March 6, 1995

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

VIA FACSIMILE

**RE: Tampa Electric Company
Big Bend Station, Unit 3 & 4 FGD Integration
Permit Number PA79-12**

Dear Mr. Reynolds:

Pursuant to our telephone conversation on March 3, 1995, we would like to propose the following changes to your Draft language to the subject permit.

Second Paragraph of Draft Language

Current language:

When Units 3 and 4 are operating in the integrated mode (Unit 3 flue gases routed through the Unit 4 air pollution control system), the continuous monitoring system shall measure sulfur dioxide emissions at the inlet and outlet of the Unit 4 air pollution control system and from the Unit 3 stack, while emissions of nitrogen oxides, oxygen and/or carbon dioxide and opacity shall be measured in the Unit 4 inlet duct prior to the FGD system. Opacity shall also be monitored from the Unit 3 stack to verify the occurrence of any bypassing of the flue gases in the integrated mode.

Revised language (language removed is lined through, language added is shaded):

When Units 3 and 4 are operating in the integrated mode (Unit 3 flue gases routed through the Unit 4 ~~air pollution control~~ FGD system), the continuous monitoring system shall measure sulfur dioxide emissions at the inlet and outlet of the Unit 4 ~~air pollution control~~ FGD system and from the Unit 3 stack, while emissions of nitrogen oxides, oxygen and/or carbon dioxide and opacity shall be measured in the Unit 4 inlet duct prior to the FGD system. ~~Opacity shall also be monitored from the Unit 3 stack to verify the occurrence of any bypassing of the flue gases in the integrated mode.~~

The changes above clarify the paragraph in two areas. First, the only Unit 4 air pollution control system that the Unit 3 flue gas passes through is the FGD system. Therefore it is more appropriate to reference only the FGD system in the amended language.

Mr. John Reynolds

March 6, 1995

Page 2 of 2

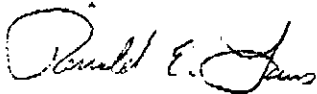
Second, the requirement to monitor opacity in the Unit 3 stack for bypassing of flue gas will not be effective for this purpose. The Unit 3 flue gas is routed to the Unit 4 FGD system downstream of the Unit 3 electrostatic precipitator and the existing Unit 3 opacity monitors. The Unit 4 flue gases cannot be bypassed prior to the Unit 4 electrostatic precipitator or the Unit 4 opacity monitor. Therefore, the opacity monitor would not see any change in opacity as a result of bypassing.

The combined Unit 3 and 4 treated flue gases will pass through both the Unit 3 and the Unit 4 stacks when operating in the integrated mode. The Unit 4 stack alone is not capable of handling the flue gas velocity associated with the gas volume of both units.

Drawing Number B4277-SK-001 included in the Modification 1 package, submitted with the January 30, 1995 letter, reflects the orientation of the Unit 3 and 4 electrostatic precipitators, emission monitors and duct arrangements relative to the Unit 4 FGD system. This document may be helpful in reviewing the relative configurations.

Thank you for your consideration and assistance in this matter. If you have any comments or questions, please call Ronald Laws or me at (813) 228-4843.

Sincerely,



Ronald E. Laws, P.E.
Senior Engineer
Environmental Planning

EPWREL030

c: Hamilton S. Owen, Jr., FDEP

COMMISSION

DOTTIE BERGER
PHYLLIS BUSANSKY
JOE CHILLURA
CHRIS HART
JIM NORMAN
ED TURANCHIK
SANDRA WILSON

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)272-5788

ECOSYSTEMS MANAGEMENT DIVISION
TELEPHONE (813)272-7104

M E M O R A N D U M

DATE: February 17, 1995

TO: Rick Kirby

FROM: *EW* Sterlin Woodard & *ET* Eric Peterson THRU: Jerry Campbell,
P.E.

SUBJECT: TECO'S Big Bend Unit #4 Petroleum Coke Test Burn

We have completed our review of the compliance test TECO submitted to this office on February 1, 1995 in response to the FDEP's October 5, 1994 letter authorizing them to burn petroleum coke, and have the following comments:

1. Condition #3 of the authorization requires that a minimum of three (3) separate samples should be collected, and analyzed for sulphur, nitrogen, and metals during the particulate matter test runs. Two (2) samples were taken during the seven (7) test runs while burning coal, but the third sample was taken after the completion of the particulate matter testing on November 3. During the petroleum coke blend test, all three (3) required samples were taken during the six (6) particulate matter runs. Therefore, only the 2 samples collected during the coal particulate matter test runs should be used for comparison with the sulphur, nitrogen and metals content of the petroleum coke blend particulate test runs.
2. Condition's 5 and 6 of the authorization require that the petroleum coke shall be limited to 20% by weight of the blend and not to exceed 67,190 lb/hr. The test report did not include the amount of coal or petroleum coke burned to demonstrate compliance with these conditions. The information, therefore, should be submitted.

3. Condition #7 of the authorization requires that if the plant CEM's are used for the test, then they should be quality assured pursuant to 40CFR60, Appendix F. It also requires that the RATA and cylinder gas audit be submitted with the report. A review of the Relative Accuracy Test Audit Data Assessment Report of Section D-3 of the report, indicates that the plant CEM's required by Subpart D.a. were used. However, page 6 of Section 3 of the reports indicates that a "transportable" CEM or TCEM's was used. If the plant CEM's were not used, then the TCEM test data should be submitted.
4. Condition #19 of the authorization requires that the test be conducted at 90-100% of the 4330 MMBTU/HR maximum heat input rate listed in the Cite Certification and PSD permit. The test report listed the electrical energy generated during the testing in MW instead of the heat input of the fuel. The required heat input should be submitted with the report to demonstrate compliance with the condition, and ensure that the maximum heat input rate was not exceeded.
5. Condition #20 of the authorization required that TECO get prior approval of the proposed test methods to be employed during testing. We never received TECO's proposal for approval. Condition #7 required that they test for PM, CO, and H₂SO₄ mist. TECO used method 5B "Determination of Nonsulfuric Acid Particulate Matter from Stationary Sources", which has a negative bias and under reports the particulate matter emissions since it does not include H₂SO₄ mist. TECO normally uses EPA method 17 to test for particulate matter which includes any H₂SO₄ acid mist being emitted. Based on the H₂SO₄ acid mist test (EPA Method 8) the negative bias appears to be approximately 12 lb/hr for the baseline test. Since the average emissions for the seven (7) particulate matter runs is approximately 13 lb/hr, the negative bias is considerable (~92%). The particulate matter emissions are, therefore, more closely equal to 0.005 lb/MMBTU for the baseline or coal burn but, since the same bias was introduced during the petroleum coke blend test, the results are appropriate for comparison purposes only.
6. Table 4.1.1 and 4.1.3 lists CEM Data Daily Averages during the petroleum coke test burns. The overall averages for SO₂ outlet and NO_x inlet appear to be calculated incorrectly. The corrected averages are 0.33 and 0.51 lb/MMBTU, respectively.

7. A review of the stack tests indicate that the particulate matter emissions increased over 40%; the sulfur dioxide emissions increased over 89%; the nitrogen oxide emissions increased over 18%. Using the CEM data daily averages sulfur dioxide emissions increased over 32%, and the nitrogen oxide emissions increased over 19%. Using the procedures referenced in 40CFR60, Appendix C and the authorization letter an analysis of the results indicates that an increase in actual emissions did occur. In 1992 and 1993 TECO Big Bend #4 reported average emissions of 58 tpy of particulate matter; 3,454 TPY of Sulfur Dioxide; 3,350 TPY of nitrogen oxides. This, along with the 40%, 89% and 18% increases for the particular pollutants during the test, suggests that significant increases (in excess of those listed in Table 62-212.400-2) in actual emissions would result and trigger PSD for particulate matter, sulfur dioxide and nitrogen oxides. We suggest that TECO submit an application to modify their Cite Certification and PSD permits if they plan to burn petroleum coke blend as an alternative fuel in Unit #4.



RECEIVED

JAN 17 1995

Bureau of
Air Regulation

January 13, 1995

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

**CERTIFIED MAIL #P 278 133 763
RETURN RECEIPT REQUESTED**

**RE: Tampa Electric Company
Big Bend Station, Unit 3 & 4 FGD Integration
Permit Numbers PA79-12, PSD-FL-040, AO29-179911**

Dear Mr. Reynolds:

Pursuant to our discussions, we would like to propose the following amendments to the subject permits.

Big Bend Unit 4 Site Certification PA79-12

Condition I.B.1 Air Monitoring Program (page 2)

Current language:

The permittee shall install and operate continuously monitoring devices for the Unit 4 boiler exhausts for sulfur dioxide, nitrogen dioxide, oxygen and opacity. The monitoring devices shall meet the applicable requirements of Section 17-2.08, FAC, and 40 CFR 60.47a. The opacity monitor may be placed in the duct work between the electrostatic precipitator and the FGD scrubber.

Amended Language:

The permittee shall install and operate continuous monitoring devices for the Unit 4 boiler exhausts for sulfur dioxide, nitrogen dioxide, oxygen and/or Carbon Dioxide, and opacity. The monitoring devices shall meet the applicable requirements of 40 CFR 60.47a. The opacity monitor may be placed in the duct work between the electrostatic precipitator and the FGD scrubber.

When Unit 3 and 4 are operating in the integrated mode, the continuous monitoring system will measure SO₂ from both the inlet ducts from Units 3 and 4 as well as SO₂ exiting from the Unit 3 and Unit 4 chimneys. The unit emissions will be calculated by taking a ratio of the unit's generating load in megawatts. The emissions of nitrogen oxides, oxygen, and/or carbon dioxide and opacity will be measured in the Unit 4 inlet duct prior to the FGD system.

When Unit 3 and 4 are not operating in the integrated mode, the continuous monitoring system will measure only Unit 4 inlet duct and Unit 4 chimney for SO₂ emissions. The emissions of nitrogen oxides, oxygen, and/or carbon dioxide and opacity will be measured in the Unit 4 inlet duct prior to the FGD system.

Mr. John Reynolds
January 13, 1995
Page 2

Big Bend Unit 4 PSD-FL-040

No changes proposed.

Big Bend Unit 3 AO29-279911

Cover letter:

Current language of second paragraph:

For the operation of a 4115 MMBTU/hr. coal fired steam generator designated as Unit No. 3 at the Big Bend Station. This "wet" bottom boiler was manufactured by Riley-Stoker and is an opposed-fired turbo boiler. The generator has a nameplate capacity of 445.5 MW. Particulate emissions generated during the operation of the unit are controlled by dry electrostatic precipitator manufactured by Research-Cottrell, Inc.

Proposed language:

For the operation of a 4115 MMBTU/hr. coal fired steam generator designated as Unit No. 3 at the Big Bend Station. This "wet" bottom boiler was manufactured by Riley-Stoker and is an opposed-fired turbo boiler. The generator has a nameplate capacity of 445.5 MW. Particulate emissions generated during the operation of the unit are controlled by dry electrostatic precipitator manufactured by Research-Cottrell, Inc.

Unit 3 may also operate in an integrated mode with the Unit 4 FGD system. During operation in integrated mode, Unit 3 SO₂ emissions shall be treated as Unit 4 SO₂ emissions and will meet Unit 4 SO₂ emission limits.

All stack testing denoted in the permit shall be performed in the non-integrated mode of operation.

Thank you for your consideration and assistance in this matter. If you have any comments or questions, please call Ronald Laws at (813) 228-4843 or me at (813) 228-4844.

Sincerely,



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

EP\sn\REL015

c: Hamilton S. Oven, Jr., FDEP
G. Harper, EPA

Revised Permit Conditions

**TECO Big Bend Station Units 3&4 Integration
PA 79-12**

Specific Condition 1.B.1 is revised as indicated below:

The permittee shall install and operate continuous monitoring devices for the Unit 4 boiler exhausts for sulfur dioxide, nitrogen oxides, oxygen and/or carbon dioxide, and opacity. The monitoring devices shall meet the applicable requirements of 40 CFR 60.47a. The opacity monitor shall be placed in the duct between the electrostatic precipitator and the FGD scrubber.

When Units 3 and 4 are operating in the integrated mode (Unit 3 flue gases routed through the Unit 4 FGD system), the continuous monitoring system shall measure sulfur dioxide emissions at the inlet and outlet of the Unit 4 FGD system and from the Unit 3 stack, while emissions of nitrogen oxides, oxygen and/or carbon dioxide and opacity shall be measured in the Unit 4 inlet duct prior to the FGD system.

When Units 3 and 4 are not operating in the integrated mode, the continuous monitoring system shall measure sulfur dioxide emissions only at the Unit 4 inlet duct and the Unit 4 stack, while emissions of nitrogen oxides, oxygen and/or carbon dioxide and opacity shall be measured in the Unit 4 inlet duct prior to the FGD system.