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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

OCT 15 1981

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30365

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Heywood A. Turner
Senior Vice President Production
Tampa Electric Company
Post Office Box 111
Tampa, Florida 33601

Re: PSD-FL-040 / Tampa Electric Company
Big Bend Station, Unit 4

Dear Mr. Turner:

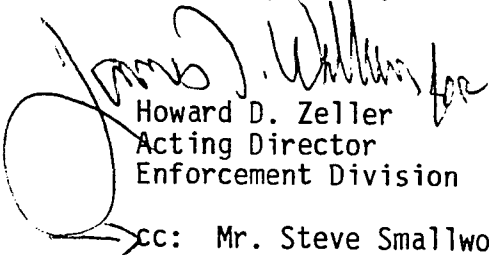
The review of your March 1980 application to construct a coal-fired steam electric generating unit (Unit 4) located at Big Bend Station near Ruskin, Florida, has been completed. The construction is subject to rules for the Prevention of Significant Air Deterioration (PSD) contained in 40 C.F.R. §52.21.

We have determined that the construction as described in the application meets all applicable requirements of the PSD regulations. Accordingly, enclosed with this letter is your permit package including a Permit to Construct, Part I: Specific Conditions, and Part II: General Conditions. This authorization to construct is based solely on the requirements of 40 C.F.R. §52.21 and does not apply to other permits issued by this or any other agency.

This final permit decision is subject to appeal under 40 C.F.R. §124.19 by petitioning the Administrator of the EPA within 30 days after receipt of this notice of the final permit decision. The petitioner must submit a statement of reasons for the appeal and the Administrator must decide on the petition within a reasonable time period. If the petition is denied, the permit becomes immediately effective. The petitioner may then seek judicial review.

Authority to construct this facility will take effect on the date specified in the permit. The complete analysis which justifies this approval has been fully documented for future reference is necessary. Any questions concerning this approval may be directed to Mr. Richard Schutt, Chief, Permit Processing Section, at 404/881-2017.

Sincerely yours,


Howard D. Zeller
Acting Director
Enforcement Division

cc: Mr. Steve Smallwood, FL DER





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30365

PERMIT TO CONSTRUCT UNDER THE RULES FOR THE
PREVENTION OF SIGNIFICANT DETERIORATION OF AIR QUALITY

Pursuant to and in accordance with the provisions of Part C, Subpart 1 of the Clean Air Act, as amended, 42 U.S.C. § 7470 et seq., and the regulations promulgated thereunder at 40 C.F.R. § 52.21, as amended at 45 Fed. Reg. 52676, 52735-41 (August 7, 1980),

Tampa Electric Company
Post Office Box 111
Tampa, Florida 33601

is hereby authorized to construct/modify a stationary source at the following location:

Big Bend Station, Unit 4
Tampa Electric Company
Ruskin, Florida

UTM Coordinates: 361.6 East, 3075.0 North

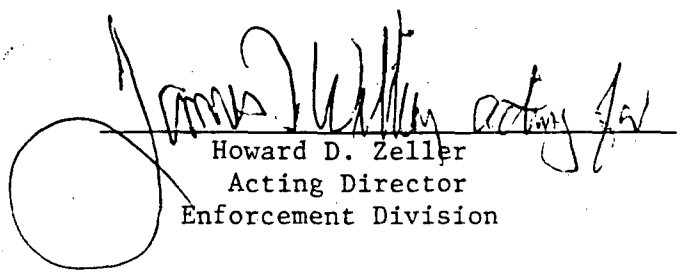
Upon completion of this authorized construction and commencement of operation/production, this stationary source shall be operated in accordance with the emission limitations, sampling requirements, monitoring requirements and other conditions set forth in the attached Specific Conditions (Part I) and General Conditions (Part II).

This permit shall become effective on November 14, 1981.

If construction does not commence within 18 months after the effective date of this permit, or if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time this permit shall expire and authorization to construct shall become invalid.

This authorization to construct/modify shall not relieve the owner or operator of the responsibility to comply fully with all applicable provisions of Federal, State, and Local law.

12/15/81
Date Signed


Howard D. Zeller
Acting Director
Enforcement Division

PART I: SPECIFIC CONDITIONS

1. The proposed steam generating station shall be constructed and operated in accordance with the capabilities and specifications of the application including the 417 megawatt net generating capacity and the 4330 MMBtu/hr heat input rate.
2. Emissions shall not exceed the allowable emission limits listed in Table 1 for SO₂, NO_x, PM, and CO.
3. Compliance with the boiler allowable emission limits required in Condition 2 will be demonstrated with performance tests conducted in accordance with the provisions of 40 CFR 60.46a, 48a and 49a, including applicable test methods, sampling procedures, sample volumes, sampling periods, etc. Compliance with opacity limits on the limestone and flyash handling system baghouse, the limestone day silos and the flyash silos will be determined with EPA reference method 9 (Appendix A, 40 CFR 60). These facilities are exempted from mass emission rate compliance tests unless opacity limits are exceeded or the Administrator (or his representative) otherwise determines that such performance testing is required. All facilities will operate within 10 percent of maximum operating capacity during performance tests.
4. The applicant will install and maintain continuous monitoring and recording opacity meter, sulfur dioxide and nitrogen oxide analyzers, oxygen and/or CO₂ analyzer in accordance with the provisions of 40 CFR 60.47a.

5. The following requirements will be met to minimize fugitive emissions of particulate from the coal storage and handling facilities, the limestone storage and handling facilities, haul roads and general plant operations:
 - a. All conveyors and conveyor transfer points will be enclosed to preclude PM emissions excepting the coal handling stacker reclaimer, the tail end conveyor feeding the tripper and the barge unloading belt which are exempted for feasibility considerations;
 - b. Coal storage piles will be shaped, compacted and oriented to minimize wind erosion;
 - c. Water sprays for storage piles, handling equipment etc., including the handling equipment exempted from the conveyor enclosure requirement, will be applied during dry periods and as necessary to all facilities to maintain opacity (determined with reference Method 9) below 20 percent;
 - d. The limestone handling receiving hopper, conveyor transfer points and day silos will be maintained at negative pressures with the exhaust vented to a control system(s); and
 - e. The flyash handling system (including transfer and silo storage) will be maintained at negative pressures and vented to a control system.

6. The applicant will perform post-construction continuous ambient monitoring of sulfur dioxide emissions in accordance with EPA Region IV policies and procedures and the guidance offered in "Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD), EPA-450/2-78-019, May 1978 and the quality

assurance procedures of 40 CFR 58 Appendix B. Such monitoring will be continued for a period of at least 1 year and until determined by the Administrator (or his representative) that the effects of the modification on ambient air quality have been quantified.

7. The applicant will comply with all requirements and provisions of the New Source Performance Standard for electric utility steam generating units (40 CFR 60 Part Da). In addition, the applicant must comply with the provisions and the requirements of the attached General Conditions.
8. While Tampa Electric Company has complied with the regulations entitling them to this PSD permit (40 CFR 52.21), this does not constitute an environmental endorsement of this permit nor does it in any way prejudice or predetermine the ongoing EIS review.
9. If it is determined through the NPDES permitting process or related EIS review, that cooling towers would be required for the construction and operation of the facility at this location, this permit would be revoked and a complete new application would be required addressing all new emissions and subsequent requirements for this new plant configuration.
10. The applicant must submit to EPA Region IV's Consolidated Permits Branch within five (5) working days after it becomes available, copies of all technical data pertaining to the selected control devices, including formal bids from vendors, guaranteed efficiencies or emission rates. Although the type of control equipment described in the application has been determined by EPA to be adequate, EPA may, upon review of the data, disapprove the application if EPA determines the selected devices to be inadequate to meet the emission limits specified in this conditional approval.
11. The applicant shall maintain records of all coal washing and preparation activities for any coal which is to be fired in Big Bend Unit No. 4. These reports shall be submitted to EPA on a quarterly basis.

1. The permittee shall notify the permitting authority in writing of the beginning of construction of the permitted source within 30 days of such action and the estimated date of start-up of operation.
2. The permittee shall notify the permitting authority in writing of the actual start-up of the permitted source within 30 days of such action and the estimated date of demonstration of compliance as required in the specific conditions.
3. Each emission point for which an emission test method is established in this permit shall be tested in order to determine compliance with the emission limitations contained herein within sixty (60) days of achieving the maximum production rate, but in no event later than 180 days after initial start-up of the permitted source. The permittee shall notify the permitting authority of the scheduled date of compliance testing at least thirty (30) days in advance of such test. Compliance test results shall be submitted to the permitting authority within forty-five (45) days after the complete testing. The permittee shall provide (1) sampling ports adequate for test methods applicable to such facility, (2) safe sampling platforms, (3) safe access to sampling platforms, and (4) utilities for sampling and testing equipment.
4. The permittee shall retain records of all information resulting from monitoring activities and information indicating operating parameters as specified in the specific conditions of this permit for a minimum of two (2) years from the date of recording.
5. If, for any reason, the permittee does not comply with or will not be able to comply with the emission limitations specified in this permit, the permittee shall provide the permitting authority with the following information in writing within five (5) days of such conditions:
 - (a) Qualitative and quantitative description of noncomplying emission(s),
 - (b) cause of noncompliance,
 - (c) anticipated time the noncompliance is expected to continue or, if corrected, the duration of the period of noncompliance,
 - (d) steps taken by the permittee to reduce and eliminate the non-complying emission,and
 - (e) steps taken by the permittee to prevent recurrence of the noncomplying emission.

Failure to provide the above information when appropriate shall constitute a violation of the terms and conditions of this permit. Submittal of this report does not constitute a waiver of the emission limitations contained within this permit.

6. Any change in the information submitted in the application regarding facility emissions or changes in the quantity or quality of materials processed that will result in new or increased emissions must be reported to the permitting authority. If appropriate, modifications to the permit may then be made by the permitting authority to reflect any necessary changes in the permit conditions. In no case are any new or increased emissions allowed that will cause violation of the emission limitations specified herein.
7. In the event of any change in control or ownership of the source described in the permit, the permittee shall notify the succeeding owner of the existence of this permit by letter and forward a copy of such letter to the permitting authority. Such notification must be given prior to transfer of ownership.
8. The permittee shall allow representatives of the State environmental control agency and/or representatives (including contractors) of the Environmental Protection Agency, upon the presentation of credentials:
 - (a) to enter upon the permittee's premises, or other premises under the control of the permittee, where an air pollutant source is located or in which any records are required to be kept under the terms and conditions of the permit;
 - (b) to have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit, or the Act;
 - (c) to inspect at reasonable times any monitoring equipment or monitoring method required in this permit;
 - (d) to sample at reasonable times any emission of pollutants;and
 - (e) to perform at reasonable times an operation and maintenance inspection of the permitted source.
9. All correspondence required to be submitted by this permit to the permitting agency shall be mailed to the:

Chief, Compliance Branch
Enforcement Division, EPA Region IV
345 Courtland Street, NE
Atlanta, Georgia 30365
10. The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

The emission of any pollutant more frequently or at a level in excess of that authorized by this permit shall constitute a violation of the terms and conditions of this permit.

TABLE 1
ALLOWABLE EMISSION LIMITS

<u>Facility</u>	<u>SO₂</u>		<u>NO_x</u>		<u>PM</u>		<u>CO</u>		<u>Opacity</u>
	<u>lb/MMBtu</u>	<u>lb/hour</u>	<u>lb/MMBtu</u>	<u>lb/hr</u>	<u>lb/MMBtu</u>	<u>lb/hr</u>	<u>lb/MMBtu</u>	<u>lb/hr</u>	
1. Unit 4 Boiler (4330 MMBtu/hr) Continuous Limit					0.03	130	0.014	61	20% ^a
30 Day Rolling Average	0.82	3576	0.6	2598					
2. Limestone and Handling System Baghouse						0.65 ^b			5%
3. Limestone Day Silo						0.05 ^b			5%
4. Flyash Silos and Handling System						0.2 ^b			5%

^a Not to be exceeded for more than one six minute period per hour and never to exceed 27 percent opacity.

^b Exempt from compliance testing provided opacity limit is maintained.

Response to Comment on the Revised Preliminary Determination

Tampa Electric Company

PSD-FL-040

Comments were received from one source during the public comment period for Tampa Electric Company's (TECO) proposed electric generating unit (Big Bend Unit 4). The public comment period, which closed on September 2, 1981, was for the Revised Preliminary Determination issued in the Draft Environmental Impact Statement. A summary of the comments received and EPA Region IV responses are as follows:

Comment 1:

The commenter noted that a sentence in the BACT discussion for NO_x and CO referred to a requirement for a flue gas O₂ or CO₂ monitor. They felt it should have been deleted since the monitor requirement had been deleted.

Response 1:

That reference to the flue gas O₂ or CO₂ monitor was included in error. It has been omitted in the Final Determination.

Comment 2:

The commenter questioned the need to "always provide 25% or greater reduction in potential SO₂ emissions" through coal washing and preparation as they understand Condition 11 to require.

Response 2:

Condition 11 requires that "The applicant shall maintain records of all coal washing and preparation activities. . . "; however, in order to prevent any misinterpretation the reference to a minimum potential SO₂ emission removal will be stricken. Condition 11 will remain in the Final Determination but will be reworded for clarity and precision.

Comment 3:

The commenter noted that the potential annual SO₂ emissions in Table I was incorrect.

Response 3:

The correct number of 15,552 tons/yr will be inserted in the Final Determination.

Comments on EPA's Preliminary Determination on
the Big Bend Unit 4 PSD Application

p. E-5

In the discussion of BACT for NO_x and CO, the sentence "An attachment to this preliminary determination summary specifies combustion control requirements to balance the trade-offs between NO_x and CO emissions through the use of a flue gas oxygen or CO_2 monitor." should be deleted since the attachment and requirements have been deleted from the preliminary determination as noted in the response to Comment No. 3 on page E-23.

p. E-14 (Condition No. 11)

The applicant will demonstrate compliance with the NSPS requirements for percent reduction of potential sulfur dioxide emissions by monitoring coal characteristics and flue gas sulfur dioxide content, and through other procedures established in 40 CFR Subpart Da, as discussed on p. E-4. The BACT analysis assumed 25% reduction in potential sulfur dioxide emissions (not sulfur) through coal washing and preparation. This assumption was based on coal washing data indicating 25% reduction is possible. However, should the coal washing and preparation not always provide 25% or greater reduction in potential SO_2 emissions, flexibility has been designed into the control equipment to achieve an overall reduction in potential SO_2 emissions of 90%. For these reasons, Condition No. 11 should be deleted.

p. E-17, Table 1

The potential emissions of SO_2 should be 15,552 tons/hr to reflect the 0.82 lbs. SO_2 /MMBTU emission rate.

(Submitted by Mr. Heywood A. Turner at the EIS Public Hearing on August 19, 1981; to be entered into the official record.)

RESPONSE TO COMMENT
TAMPA ELECTRIC COMPANY
(PSD-FL-040)

One letter of comment was received during the public comment period for Tampa Electric Company's (TECO) proposed electric generating unit (Big Bend Unit 4). The Public Notice was published December 31, 1980. Due to a substantial error in the BACT evaluation for the SO₂ emission limit, EPA has decided to issue this revised Preliminary Determination for public comment prior to a Final Determination. A summary of the substantive comments received and EPA Region IV responses are as follow:

Comment 1:

The commenter pointed out that the basis for the SO₂ allowable emission limit included in the Preliminary Determination was in error and that the resulting limit (0.63 lb/MMBtu) was too restrictive.

Response 1:

Following reevaluation of the application and review of the additional information submitted with the comments, EPA concludes that the data in the application was misinterpreted in developing the SO₂ allowable emissions limit in the original Preliminary Determination. In response to the comment, EPA has reevaluated the SO₂ BACT analysis and determined an SO₂ allowable limit (0.82 lb/MMBtu), based on the higher end of a proposed allowable range contained in an addendum to the application.

Comment 2:

The commenter was concerned that water spraying of the coal pile and drop points, as proposed in the application, was required during all dry and high wind periods, second that water spraying of the limestone was unnecessarily required, and third that enclosed limestone conveyors need not be exhausted to a control system.

Response 2:

The applicant is required, as specified in Condition 5c. to utilize water sprays during dry periods to maintain opacity of all fugitive sources below 20 percent. Compliance with this condition of approval does not necessarily require water spraying during all dry periods or periods of high wind. Neither does it mandate water spraying of limestone. If the limestone storage pile is enclosed, as specified in the comments, it likely will not require spraying. With respect to the comment on transfer conveyor exhaust, the language of the Preliminary Determination was somewhat misleading. The intent was to require exhaust and control of conveyor transfer points, (as proposed in the application). The matter has been clarified in this Preliminary Determination.

Comment 3:

The commenter feels that use of a flue gas oxygen meter to balance CO and NO_x emissions from a utility boiler is not practical or feasible due to variations in the allowable O₂ range with boiler load and with the properties of the coal being fired.

Response 3:

EPA acknowledges the commenter's concerns here and has therefore revised this permit providing TECO the option of either monitoring for O₂ or CO₂. EPA will consider either choice as being an effective means of balancing NO_x and CO emission tradeoffs in order to satisfy this particular permit requirement.

Comment 4:

The commenter feels that the SO₂ post-construction monitoring requirement is unjustified.

Response 4:

In as much as the proposed new source will be increasing SO₂ emissions into the Big Bend region by as much as 12,000 tons per year and existing ambient air monitoring data at 4 of the 5 stations in the vicinity show concentrations in excess of 50 percent of the SO₂ NAAQS, EPA maintains the post-construction SO₂ monitoring requirement to establish the impact of the new source on existing ambient air quality.

Comment 5:

The commenter objected to the requirement for monitoring of the pH in the FGD system as unreasonable.

Response 5:

Upon reevaluation of the proposed FGD control instrumentation, EPA agrees that redundant scrubber inlet and exit SO₂ analyzers provides sufficient assurance that compliance of the SO₂ emissions limit should be maintained.

Comment 6:

The commenter questioned the requirement to submit a new PSD permit if the design of the system is modified to include brackish water cooling towers.

Response 6:

As stated by Region IV new source review staff in a meeting with TECO regarding the environmental impact statement, the addition of the cooling towers (PM emitting sources) to the proposed construction would necessitate resubmittal of the PSD application. The air quality analysis, particularly with respect to fugitive PM emissions, would be in question. In addition, the modification would be regarded as a significant modification to the plant design proposed for PSD preconstruction review.

Comment 7:

The commenter requested clarification on the degree of detail necessary for FGD system design parameters required for submittal and was concerned about confidentiality of certain materials.

Response 7:

The required submittal is not meant to be exhaustive or time consuming; however, sufficient detail on scrubber and ESP design (liquid/gas flow characteristics, capacity, controls, performance guarantees etc.) should be submitted to allow a determination on whether or not the unit can achieve the required control levels. The application discusses only "generic" control systems. Integral to this discussion is the characteristics of the selected coal. As to confidentiality of submitted materials, any such materials contained in the submittal should be clearly marked. Confidential materials will be maintained in a separate locked file and its review will be restricted to the engineer(s) responsible for evaluating system design. Other individuals and the general public will not be afforded direct access to the materials.

This Preliminary Determination takes into consideration the comments and responses discussed previously and additional minor comments included in the same submittal. A copy of the comments received have been appended to the Preliminary Determination and will be placed on display in the same location as the original Preliminary Determination for public information



POST OFFICE BOX 111 TAMPA, FLORIDA 33601 TELEPHONE (813) 879-4111

January 28, 1981

Mr. Tommie A. Gibbs, Chief
Air Facilities Branch
United States Environmental
Protection Agency
Region IV
345 Courtland Street
Atlanta, Georgia 30308

RE: Tampa Electric Company
Big Bend Station - Unit 4
PSD Application #PSD-FL-040

Dear Mr. Gibbs:

We have reviewed the Big Bend Unit 4 PSD Application Preliminary Determination and are submitting the attached comments. These comments are presented in a format and sequence similar to that of the Preliminary Determination.

As discussed with EPA representatives on January 14, 1981, we are most concerned with the calculated 30 day rolling average SO₂ limitation and specific conditions 5,7 and 8. Our comments with respect to these major items as well as numerous other items are provided within.

Should you have any questions regarding this matter, please contact Mr. Jerry Williams, Manager, Environmental Planning.

Sincerely,

Alex Kaiser
Vice President-Energy Supply

attachment

TAMPA ELECTRIC COMPANY COMMENTS ON THE
PSD - FL - 040 APPLICATION PRELIMINARY DETERMINATION

II. LOCATION

o Page 1

The northern and southern property boundaries are not Big Bend Road and U.S. Highway 41. The site is located west of Highway 41 with plant properties both north and south of Big Bend Road.

III. PROJECT DESCRIPTION

o Page 1

Big Bend Unit 4 will have a net generating capacity of 417 MWe. The gross generating capacity will be 486 MWe. The maximum heat input rate is 4330 million BTU's per hour.

Coal washing facilities at the generating site were not included as part of the application and are not planned for Big Bend Station. The coal will be washed prior to delivery to Big Bend Station.

o Page 2

Due to the as-received moist nature of the limestone to be utilized at Big Bend Station and the rainfall amounts throughout the year, the limestone will be stored within a building.

IV. SOURCE IMPACT ANALYSIS

A. Best Available Control Technology Analysis (BACT)

1. Sulfur Dioxide Emissions Control

o Page 3

Five percent of the potential SO₂ Emissions are expected to remain in the ash.

o Pages 3 and 4

The calculated thirty day rolling average emission limitation of 0.63 lbs./MMBTU was based on fuel F-2B, a fuel utilized in specifying the Flue Gas Desulfurization (FGD) system. As noted on page 4-12 of Volume 2 in the application, the fuel quality analysis presented for fuel F-2B reflected a 25% removal of potential SO₂ emissions due to coal washing.

EPA concluded in the determination that 90% reduction in potential SO₂ emissions resulting from 25% removal by washing, 5% retention in the ash, and 86% removal by the FGD system constituted BACT. However, in calculating the SO₂ limitation based on the 90% removal criteria, EPA failed to recognize the washed condition of the coal. The EPA calculations are as follows:

Uncontrolled SO ₂ emissions	6.30 lbs./MMBTU	90% Removal
Emissions after washing	4.72 lbs./MMBTU	
Emissions after 5% ash retention	4.50 lbs./MMBTU	
Emissions after FGD system	0.63 lbs./MMBTU	

EPA began their 90% removal calculations with an uncontrolled SO₂ emission rate of 6.3 lbs./MMBTU which is actually an emission rate after coal washing. Thus, a 25% removal from coal washing was calculated twice. The calculations should have been made as follows:

Uncontrolled SO ₂ emissions	8.40 lbs./MMBTU	90% Removal
Emissions after washing	6.30 lbs./MMBTU	
Emissions after 5% ash retention	6.00 lbs./MMBTU	
Emissions after FGD system	0.84 lbs./MMBTU	

The correct emission limitation is 0.84 lbs./MMBTU. The 0.63 lbs./MMBTU calculated by EPA reflects an overall reduction in potential SO₂ emissions of 93%.

At the request of EPA, TECO submitted a proposed 30 day rolling average SO₂ emission limitation range of 0.77 to 0.82 lbs./MMBTU. This information was submitted based on data provided by the potential coal suppliers for Big Bend Unit 4. This value range is consistent with and below the above calculated emission limit of 0.84 lbs./MMBTU. EPA, however, rejected the TECO proposal as too high an emission limit and has required the incorrectly calculated emission limit of 0.63 lbs./MMBTU.

2. PARTICULATE MATTER (PM)

o Page 5

It is noted that during dry periods and high winds, water spraying of the coal pile and all drop points is required. It was proposed in the application that water spraying be utilized, for fugitive emissions control during high winds and dry periods. However, these techniques are not necessary control measures during all dry and high wind periods. When weather conditions that may require water spraying for fugitive emissions control are anticipated, arrangements are made for the services of a water tank truck.

The limestone to be utilized by the Unit 4 FGD System will be very moist. To avoid additional moisture from precipitation, the limestone storage pile will be enclosed within a building. Due to the moist, as-received, nature of the limestone, water spraying will not be necessary. The limestone conveyors will be covered or enclosed but venting to a control device is not necessary and has never been proposed. As noted in the application, the rail car/truck unloading facilities and the limestone day silos will be provided with exhaust systems venting to bag filters.

3. NITROGEN OXIDES (NO_x) AND CARBON MONOXIDE (CO)

o Page 5

An attachment to the Preliminary Determination specifies combustion control requirements to balance the tradeoffs between NO_x and CO emissions through the use of a flue gas oxygen monitor. This technique is not considered practical or feasible for a utility boiler. Big Bend Unit 4 and

other utility boilers incorporate flue gas oxygen analyzers for proper control of combustion. For a specific design coal, boiler excess oxygen will range from a high value at low operational load to a low value at maximum design capacity. Even these values are fine tuned by the boiler operator for proper steam temperature and are affected by combustion air temperature and other boiler conditions. As the coal (and its carbon content) change, the excess oxygen requirements change over the various load conditions. Therefore, if some maximum excess oxygen value is used for one coal to control NO_x , another coal may still comply with NO_x limits even though the excess oxygen value is higher than the set limit. These values also change at low loads for different coals and boiler conditions and apply in the same manner to CO compliance. During startups, shutdowns and load changes, it would be normal for the excess oxygen to vary outside of the set range while still being in compliance. Note that there will be a continuous monitor for showing compliance with NO_x emission limits. The excess oxygen analyzer is not load dependent; it is used for boiler combustion control and can not be reasonably used for CO and NO_x emission limit control based on some specific coal or operational condition.

A. Air Quality Analysis

1. Increment Analysis

o Page 7

In the last paragraph, third line "... area source has occurred..." should be "... area sources have occurred..."

2. NAAQS Impact

o Page 10

It is noted in the preliminary determination that the applicant proposes and EPA agrees that an adequate demonstration has been made that NAAQS level will not be violated. However, the EPA will require continuous SO_2 monitoring by the applicant to verify the results of the analysis. Guidelines for when post construction monitoring should be required are provided on Page 4, Section 2.1.2 of Ambient Monitoring Guidelines For Prevention of Significant Deterioration (PSD), EPA - 450/4-80-012, November 1980 and are as follows:

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2.1.2 Criteria Pollutants - Postconstruction Phase

EPA has discretion in requiring postconstruction monitoring data under section 165 (a)(7) of the Clean Air Act and in general will not require postconstruction monitoring data. However, to require air quality monitoring data implies that the permit granting authority will have valid reasons for the data and, in fact, will use the data after it is collected. Generally, this will be applied to large sources or sources whose impact will threaten the standards or PSD increments. Examples of when a permit granting authority may require postconstruction monitoring data may include:

a. NAAQS are threatened - The postconstruction air quality is projected to be so close to the NAAQS that monitoring is needed to certify attainment or to trigger appropriate SIP related actions if nonattainment results.

b. Source impact is uncertain or unknown - Factors such as complex terrain, fugitive emissions, and other uncertainties in source or emission characteristics result in significant uncertainties about the projected impact of the source or modification. Postconstruction data is justified as a permit condition on the basis that model refinement is necessary to assess the impact of future sources of a similar type and configuration:

It is felt that the Big Bend situation does not fit these guidelines for required postconstruction modeling. The predicted ambient air quality impacts do not threaten NAAQS or PSD increments. The preconstruction ambient air monitoring data provided in the application indicate that the SO₂ ambient air quality in the site vicinity does not approach AAQS except for one reading at a particular station. On May 7, 1977, maximum 24 hour and 3 hour values representing 90% of the respective standard were recorded. However, since that time SO₂ emissions from Big Bend have been reduced by 3.5 tons per hour on a 3-hour average and by 7 tons per hour on a 24-hour average. In addition, the SO₂ ambient air quality data indicate that no other reading exceeded 80% of the standard with the arithmetic mean concentrations not exceeding 30% of the applicable standard. Therefore, based on the EPA guidelines, the ambient air monitoring data, and the Big Bend emission reductions, the requirement for postconstruction monitoring is not justified.

C. Class I Area Impact.

o Page 10

In the last paragraph, fourth line, distance is misspelled.

D. Growth Impacts

o Page 11

Based on surveys and previous construction at Big Bend, approximately 90 percent of the construction workers will be hired from within the Tampa area work force.

V. CONCLUSION

o Page 12

#1 As previously noted, Big Bend 4 will have a gross generating capacity of 486 MW_e with a net generating capacity of 417 MW_e. The maximum heat input rate is 4330 MMBTU/HR.

#3 In the last sentence, it is believed opacity should be capacity.

#5 As previously noted, compliance with the condition "Use of Flue Gas Oxygen Meter as BACT for combustion controls" is not considered feasible or practical.

#6c As previously noted, water spraying will not be provided for limestone handling and storage.

#6d As previously noted, it is unnecessary for the limestone conveyors to be maintained at negative pressures with the exhaust vented to a control system.

#7 While the effluent pH of some FGD systems may provide an indication of SO₂ removal efficiency, such is not the case for the Big Bend Unit 4 system.

The FGD System that Tampa Electric Company has purchased is a limestone based two loop process which produces a gypsum by-product. Control of reagent addition is by an SO₂ mass flow signal. The inlet and outlet SO₂ values are compared, controlling the SO₂ removal efficiency to the setpoint (i.e. 86%) removal. In the two loop process, the first loop operates at a low pH for production of gypsum and some SO₂ removal, while the second loop operates at high pH for dissolution of limestone and the major amount of SO₂ removal. It is possible for the system to meet the required SO₂ removal efficiency while the pH in any one loop is less than it was at some other time for the same overall SO₂ removal. This is because of the two independent loops. While pH is monitored, it is not a direct control value and should not be used as such. Therefore, it is not reasonable to maintain or require a minimum pH value in this system.

- #8 As noted, earlier, the need for post construction monitoring is not warranted.
- #11 It is not clear why a complete new application would be necessary if cooling towers were required for the facility. The use of cooling towers would have no effect on the information in the application as submitted to date. It would be more reasonable to require that the additional necessary information and analyses due to cooling tower operation be submitted if towers are to be utilized. Then the permitting authority could make the proper changes in the permit conditions. This condition is redundant in light of general condition number 6.
- #12 It is not clear as to what detail of technical data is required by the Agency. In addition, formal bids from vendors are considered confidential and are not available for reproduction and distribution.

GENERAL CONDITIONS

#1 & #2

The definitions of start of construction and start of operation are not clear. It is assumed that start of construction is the physical placement of facilities. Start of operation is assumed to mean the beginning of steady on-line commercial operation.

#8a This condition should include the wording ..."at reasonable times....", similar to items 8(b) through 8(e).

ATTACHMENT - "Use of flue gas oxygen meter as BACT for combustion controls"

As previously noted, this procedure is not practical or feasible and as written may constitute non-compliance when, in fact, all emission limitations are met.

Table 1 For the pollutant CO the potential emissions should be 267 Tons/Year.

Table 5 As previously noted the 30 day rolling average SO₂ emission limitation was calculated incorrectly.

In Item 2, flyash should not be included. The flyash handling system and flyash silos are vented to the same bag house. Flyash handling is included in the Item 4 emission rate of 0.2 lb./HR.