BIG BEND UNIT 4

0039
04

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STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: _____ [X] New[1] [ ] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: Tampa Electric Company COUNTY: Hillsborough

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) stack emissions from combustion of coal, Unit No. 4, Big Bend Station

SOURCE LOCATION: Street Big Bend Road City Ruskin

UTM: East 361,900 North 3,075,000

Latitude 27 ° 47 ' 42 "N Longitude 82 ° 24 ' 16 "W

APPLICANT NAME AND TITLE: Tampa Electric Company

APPLICANT ADDRESS: P. O. Box 111 Tampa, FL 33601

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Tampa Electric Company

I certify that the statements made in this application for a construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: William J. Johnson

W. J. Johnson, Manager-Environmental Planning
Name and Title (Please Type)

Date: _____ Telephone No. (813)879-4111

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed: William N. Cantrell

William N. Cantrell
Name (Please Type)

(Affix Seal)

Tampa Electric Company
Company Name (Please Type)

P. O. Box 111, Tampa, FL 33601
Mailing Address (Please Type)

Florida Registration No. 23494 Date: 9/21/79 Telephone No. (813)879-4111

[1]See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

This project will be that of constructing a coal-fired boiler and associated structures for the purpose of generating steam to drive a turbine to produce electricity.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction February 1982 Completion of Construction March 1985

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Electrostatic Precipitator	$10.0 million	preliminary estimate
Flue Gas Desulfurization	85.5 million	preliminary estimate
Waste Disposal System	7.0 million	preliminary estimate

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

N.A.

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ___ Yes X No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr ___ ; if power plant, hrs/yr 6400 ; if seasonal, describe: N.A.

G. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant?	yes, ozone only
a. If yes, has "offset" been applied?	no Note 1
b. If yes, has "Lowest Achievable Emission Rate" been applied?	no Note 1
c. If yes, list non-attainment pollutants. ozone	
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI.	yes
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII.	yes
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source?	yes
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source?	yes

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Coal	See Section 111E - Fuels, for data on coal and its contaminants			
	and its utilization rates.			

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): See Section 111E

2. Product Weight (lbs/hr): _____

C. Airborne Contaminants Emitted: Calculations on Attachment B

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C. lbs per MMBTU	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
	NOTE 2		NOTE 3	NOTE 4	NOTE 5		
Particulates	433	997	0.1 / 0.03	130	50,364	115,966	
Sulfur Dioxide	5196	11,964	1.2 / 1.2	5196	51,960	119,641	
Nitrogen Dioxide	3031	6979	0.7 / 0.6	2598	2598	5982	

D. Control Devices: (See Section V, Item 4) calculation on Attachment C.

Name and Type (Model & Serial No.)	Contaminant	Efficiency NOTE 6	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5])
Electrostatic Precipitator	Particulates	99.74	0.3 - 5.0	Design
Flue Gas Desulfurization	Sulfur Dioxide	70-90%	N.A.	Design

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

[3] Calculated from operating rate and applicable standard

[4] Emission, if source operated without control (See Section V, Item 3)

[5] If Applicable

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

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1. Total Process Input Rate (lbs/hr): See Section 111E

2. Product Weight (lbs/hr): _____

C. Airborne Contaminants Emitted: Calculations on Attachment B

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr	lbs per MMBTU		lbs/hr	T/yr	
	NOTE 2		NOTE 3	NOTE 4	NOTE 5		
Particulates	433	997	0.1 / 0.03	130	50,364	115,966	
Sulfur Dioxide	5196	11,964	1.2 / 1.2	5196	51,960	119,641	
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[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

[3] Calculated from operating rate and applicable standard

[4] Emission, if source operated without control (See Section V, Item 3)

[5] If Applicable

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diameter _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner [ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight – show derivation. Maximum heat input to boiler is 4330 MMBTU/hour. Operating range is from approximately 35% to 100%.
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.,) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made. 40 CFR 60, Subport Da, June 11, 1979. See calculations on Attachment B for emission estimates. Please refer to attached PSD Application, Volume II - BACT:
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test). Section 3 - Regulatory Requirements. Please see calculations on Attachment B.
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.). Please refer to PSD Application, Volume II - BACT: Section 4 - Proposed Air Pollution Controls.
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency). Please refer to Attachment C.
6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained. Please refer to Attachment D.
7. An 8½" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map). Please refer to Attachment E.
8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram. Please refer to Attachment F.

9. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
[X] Yes [ ] No

Contaminant	Rate or Concentration
Particulate	0.03 lbs per MMBTU (≥99% removal)
Sulfur Dioxide	1.20 lbs per MMBTU (70-90% removal)
Nitrogen Dioxide	0.60 lbs per MMBTU

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy) [ ] Yes [X] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration
Particulate	0.03 lbs per MMBTU (≥ 99% removal)
Sulfur Dioxide	1.20 lbs per MMBTU (70-90% removal)
Nitrogen Dioxide	0.60 lbs per MMBTU

D. Describe the existing control and treatment technology (if any). N.A.

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:
5. Useful Life:
6. Operating Costs:
7. Energy:
8. Maintenance Cost:
9. Emissions:

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

10. Stack Parameters

a. Height: ft. b. Diameter: ft.

c. Flow Rate: ACFM d. Temperature: °F

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1. Please refer to attached PSD Application for thorough discussion of this question: Volume II - BACT, Section 5 - Alternative Air Pollution Controls; Section 6 - Evaluation of Alternative SO_2 Control Systems. Specific details will be supplied when selection of control systems vendor is made.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy*: h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy**: h. Maintenance Costs:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power – KWH design rate.

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Life: f. Operating Cost:

g. Energy: h. Maintenance Cost:

*Explain method of determining efficiency above.

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space and operate within proposed levels:

4.

a. Control Device

b. Operating Principles:

c. Efficiency*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected: Please refer to attached PSD Application: Volume II - BACT, Section 4 - Proposed Air Pollution Controls. Final details will be supplied when selection of control equipment vendor is made.

1. Control Device:
2. Efficiency*:
3. Capital Cost:
4. Life:
5. Operating Cost:
6. Energy:
7. Maintenance Cost:
8. Manufacturer:
9. Other locations where employed on similar processes:

a.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII – PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data Please refer to attached PSD Application, Volume I - PSD:

1. _____ no sites _____ TSP _____ ( ) SO^2* _____ Wind spd/dir Section 3.1 and 4.1.

Period of monitoring ____/____/____ to ____/____/____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

a) Was instrumentation EPA referenced or its equivalent? ____ Yes ____ No

b) Was instrumentation calibrated in accordance with Department procedures? ____ Yes ____ No ____ Unknown

B. Meteorological Data Used for Air Quality Modeling Please refer to PSD Application, Volume I - PSD:

1. ____ Year(s) of data from ____/____/____ to ____/____/____ Section 3.2.
month day year month day year

2. Surface data obtained from (location) _____

3. Upper air (mixing height) data obtained from (location) _____

4. Stability wind rose (STAR) data obtained from (location) _____

C. Computer Models Used Please refer to PSD Application, Volume I - PSD: Sections 3.2, 4.3; Section 5.

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
TSP	17.73 grams/sec (0.03 lbs/MMBTU)
SO^2	709.43 grams/sec (1.2 lbs/MMBTU)

E. Emission Data Used in Modeling Please refer to attached PSD Application: Appendix G.

Attach list of emission sources. Emission data required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review. Please refer to attached PSD Application.

*Specify bubbler (B) or continuous (C).

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

Please refer to attached PSD Application: Volume II - BACT: Sections 5,6,7

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology. Please refer to attached PSD Application, Volume II - BACT.

NOTES

1. Calculations (Attachment A) show that emissions of volatile organic compounds from the proposed source are below the exemption cutoff level found in 17-2.17(3)(a)1.a.

2. Calculation based on current FDER allowable emission rates.

3. Slash divides FDER allowable emission rate on the left from EPA (NSPS) emission rate on the right.

4. Calculation based on EPA (NSPS) allowable emission rate effective June 11, 1979.

5. Potential particulate emissions are calculated using a design coal at standard operating conditions.

   Potential sulfur dioxide emissions are calculated using highest sulfur coal reasonably considered.

   Potential nitrogen oxides emissions are calculated using the allowable rates since the control is the design of the boiler which cannot be changed or "turned off."

6. Efficiency for particulate is calculated using design coal at standard operating conditions (Attachment C).

   Efficiency for sulfur dioxide is based on the NSPS and on a range of sulfur content.

7. This fuel analysis is for a precipitator specification design coal. The actual coal composition may vary considerably from this analysis.

8. Gas Flow Rate, Exit Temperature, Water Vapor Content, and Velocity are given for Unit 4 only. The flue gas will enter the existing stack that also serves Unit 3.

Attachment A

CALCULATIONS

$$\frac{.01 \text{ lbs VOC}}{\text{ton coal}} \times \frac{206.5 \text{ tons}}{\text{hour}} = 2.065 \frac{\text{lbs VOC}}{\text{hour}}$$

$$\frac{.01 \text{ lbs VOC}}{\text{ton coal}} \times \frac{1{,}000{,}000 \text{ tons}}{\text{year}} \times \frac{1 \text{ ton}}{2{,}000 \text{ lbs}} \times \frac{5 \text{ ton VOC}}{\text{year}}$$

The factor $\left(\frac{.01 \text{ lbs VOC}}{\text{ton coal}}\right)$ is taken from a January 23, 1978 EPA memorandum recommending the use of this factor until AP-42 can be revised.

CALCULATIONS

IIIC. Airborne Contaminants Emitted

Emissions

Particulates

$$\frac{4330 \text{ MMBTU}}{\text{hour}} \times \frac{0.1 \text{ lbs}}{\text{MMBTU}} = \frac{433 \text{ lbs}}{\text{hour}}$$

$$\frac{433 \text{ lbs}}{\text{hour}} \times \frac{1 \text{ ton}}{2000 \text{ lbs}} \times \left(\frac{8760 \text{ hrs}}{\text{yr}} \times .5257\right) = \frac{977 \text{ tons}}{\text{year}}$$

Sulfur Dioxide

$$\frac{4330 \text{ MMBTU}}{\text{hour}} \times \frac{1.2 \text{ lbs}}{\text{MMBTU}} = \frac{5196 \text{ lbs}}{\text{hour}}$$

$$\frac{5196 \text{ lbs}}{\text{hour}} \times \frac{1 \text{ ton}}{2000 \text{ lbs}} \times \left(\frac{8760 \text{ hrs}}{\text{year}} \times .5257\right) = \frac{11,964 \text{ tons}}{\text{year}}$$

Nitrogen Dioxide

$$\frac{4330 \text{ MMBTU}}{\text{hour}} \times \frac{0.7 \text{ lbs}}{\text{MMBTU}} = \frac{3031 \text{ lbs}}{\text{hour}}$$

$$\frac{3031 \text{ lbs}}{\text{hour}} \times \frac{1 \text{ ton}}{2000 \text{ lbs}} \times \left(\frac{8760 \text{ hrs}}{\text{year}} \times .5257\right) = \frac{6979 \text{ tons}}{\text{year}}$$

Allowable Emissions

Particulates

$$\frac{4330 \text{ MMBTU}}{\text{hour}} \times \frac{0.03 \text{ lbs}}{\text{MMBTU}} = \frac{130 \text{ lbs}}{\text{hour}}$$

Sulfur Dioxide

$$\frac{4330 \text{ MMBTU}}{\text{hour}} \times \frac{1.2 \text{ lbs}}{\text{MMBTU}} = 5196 \frac{\text{tons}}{\text{year}}$$

CALCULATIONS

Nitrogen Dioxide

$$\frac{4330 \text{ MMBTU}}{\text{hour}} \times \frac{0.6 \text{ lbs}}{\text{MMBTU}} = 2598 \frac{\text{tons}}{\text{year}}$$

Potential Emissions

Particulate

$$\frac{2.67 \text{ gr}}{\text{acfm}} \times \frac{1.429 \times 10^{-4} \text{ lbs}}{\text{grain}} \times 2{,}200{,}000 \text{ acfm} \times \frac{60 \text{ min}}{1 \text{ hour}} = 50{,}364 \frac{\text{lbs}}{\text{hour}}$$

$$\frac{50{,}364 \text{ lbs}}{\text{hour}} \times \frac{1 \text{ ton}}{2000 \text{ lbs}} \times \left(\frac{8760 \text{ hrs}}{\text{year}} \times .5257\right) = 115{,}966 \frac{\text{tons}}{\text{year}}$$

Sulfur Dioxide

$$\frac{4330 \text{ MMBTU}}{\text{hour}} \times \frac{1.2 \text{ lbs}}{\text{MMBTU}} = \frac{51{,}960 \text{ lbs}}{\text{hour}}$$

$$\frac{51{,}960 \text{ lbs}}{\text{hour}} \times \frac{1 \text{ ton}}{2000 \text{ lbs}} \times \left(\frac{8760 \text{ hrs}}{\text{year}} \times .5257\right) = 119{,}641 \frac{\text{tons}}{\text{year}}$$

Nitrogen Dioxide

$$\frac{4330 \text{ MMBTU}}{\text{hour}} \times \frac{0.6 \text{ lbs}}{\text{MMBTU}} = \frac{2598 \text{ lbs}}{\text{hour}}$$

$$\frac{2598 \text{ lbs}}{\text{hour}} \times \frac{1 \text{ ton}}{2000 \text{ lbs}} \times \left(\frac{8760 \text{ hrs}}{\text{year}} \times .5257\right) = 5982 \frac{\text{tons}}{\text{year}}$$

NOTE: These particulate emissions are calculated using design inlet grain loading from the precipitator specification in order to facilitate efficiency calculations. Elsewhere in the application, a slightly different particulate emission rate has been calculated using ash content of the design coal in order to facilitate fly ash and bottom ash calculations.

Attachment C

CALCULATIONS

Inlet Grain Loading

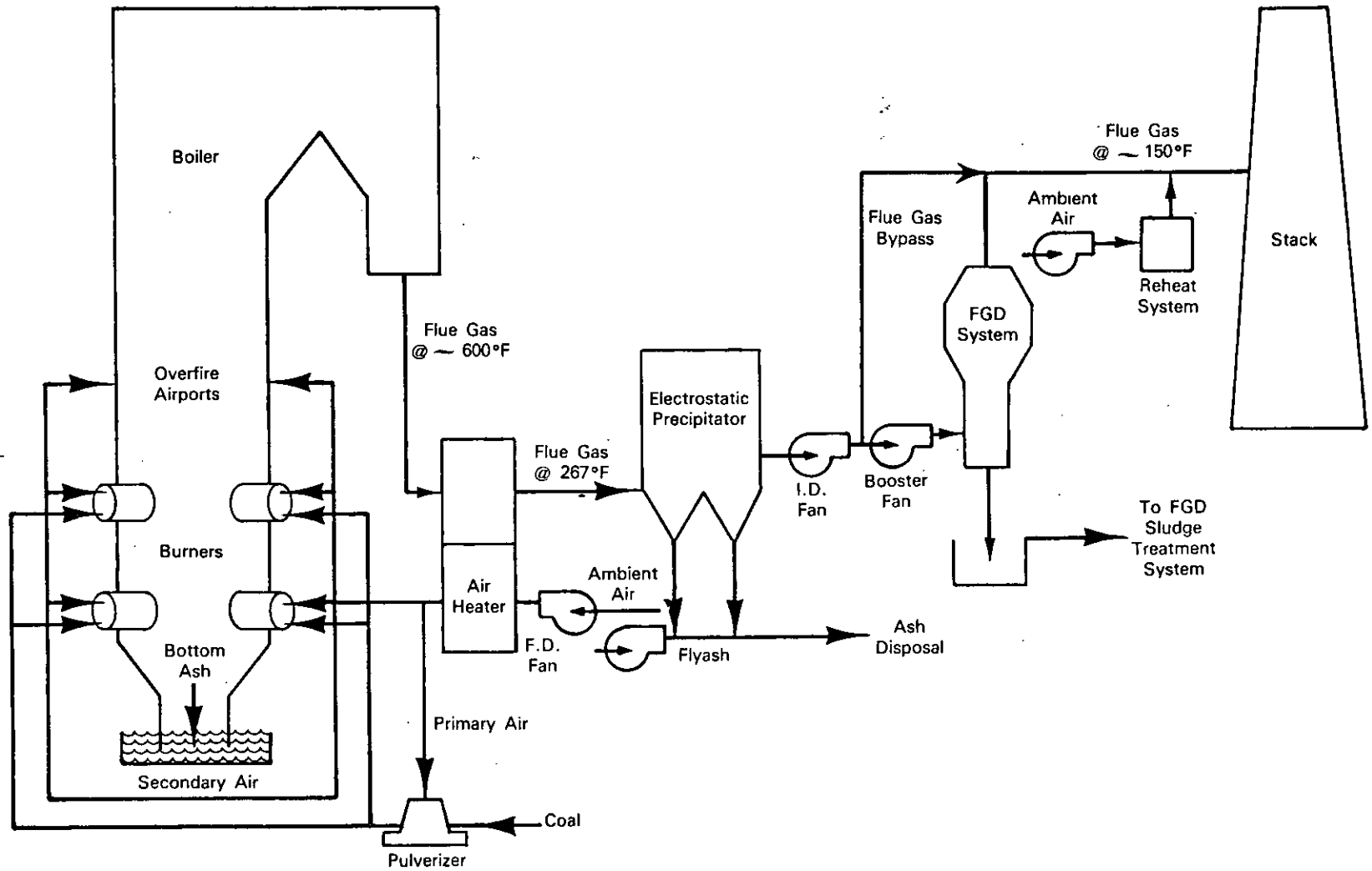
$$\frac{2.67 \text{ gr}}{\text{acfm}} \times \frac{1.429 \times 10^{-4} \text{ lbs}}{\text{grain}} \times \frac{60 \text{ min.}}{\text{hour}} \times 2{,}200{,}000 \text{ acfm} = \frac{50{,}364 \text{ lbs}}{\text{hour}}$$

Outlet Grain Loading

$$\frac{0.007 \text{ gr}}{\text{acfm}} \times \frac{1.429 \times 10^{-4} \text{ lbs}}{\text{grain}} \times \frac{60 \text{ min}}{\text{hour}} \times 2{,}200{,}000 \text{ acfm} = \frac{130 \text{ lbs}}{\text{hour}}$$

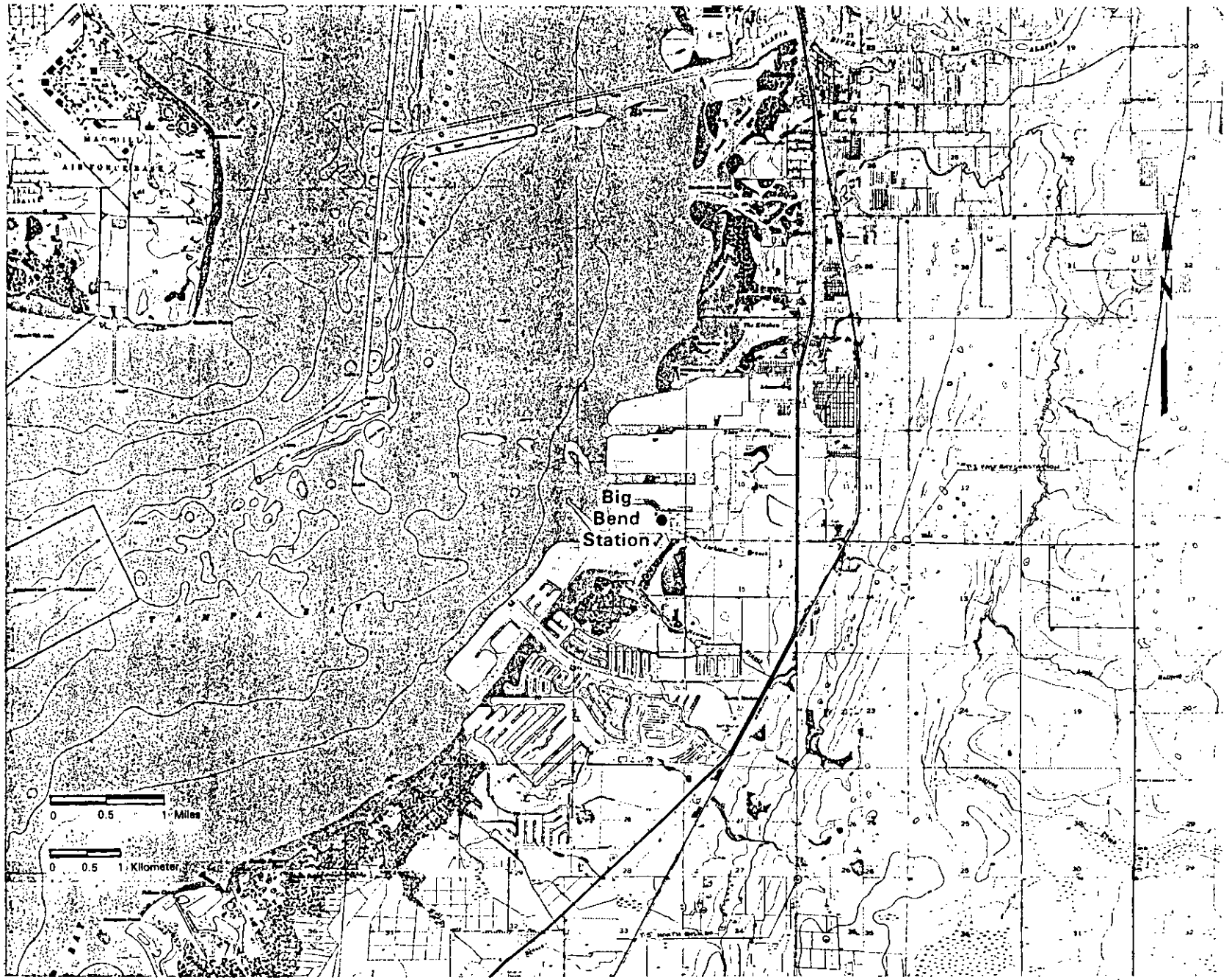
$$\text{Efficiency} = \frac{50{,}364 - 130}{50{,}364} \times 100 = 99.74\%$$

7907061



Proposed Air Pollution Control Systems for Big Bend Station Unit 4

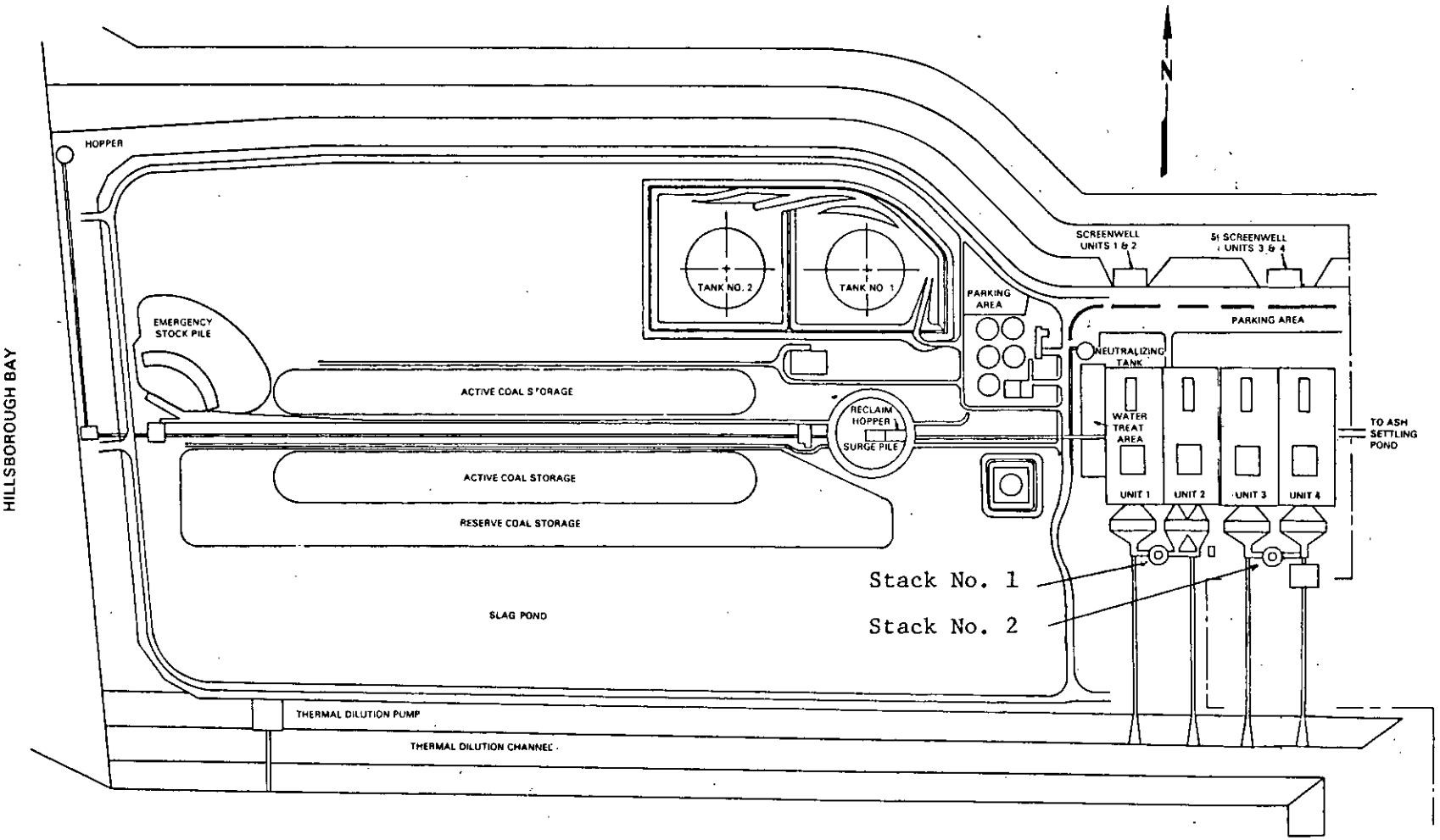
Attachment D



Site Location Map

Attachment E

7907091



Plant Layout

Attachment F