

**BIG BEND STATION
USE OF POLK POWER STATION COAL RESIDUAL
AIR CONSTRUCTION PERMIT APPLICATION**

Prepared for:



Prepared by:

ECT

Environmental Consulting & Technology, Inc.

*3701 Northwest 98th Street
Gainesville, Florida 32606*

ECT No. 001099-0100

March 2001

RECEIVED

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BUREAU OF AIR REGULATION

INTRODUCTION

Tampa Electric Company (TEC) operates four, solid fuel-fired steam boilers (Units Nos. 1 through 4) at the Big Bend Station located at Big Bend Road, Tampa, Hillsborough County, Florida. Operation of the existing steam boilers is currently authorized by Title V Final Permit No. 0570039-001-AV. Final Permit No. 0570039-001-AV was issued with an effective date of January 1, 2001 and expires on December 31, 2004.

In response to requests by the Hillsborough County Environmental Protection Commission (EPC) and the Florida Department of Environmental Protection (FDEP), TEC has evaluated the air permitting requirements associated with the combustion of coal residual generated at the Polk Power Station (PPS) in the Big Bend Station steam boilers. The coal residual is a by-product of the PPS coal gasification process that is suitable as a supplemental fuel source for the Big Bend Station due to its heat content.

In response to regulatory agency requests, TEC has prepared a Prevention of Significant Deterioration (PSD) applicability analysis for the handling, storage, and combustion of PPS coal residual at the Big Bend Station. The analysis of PSD applicability indicates that the use of PPS coal residual at the Big Bend Station is not subject to PSD permitting review. Although PPS coal residual meets the regulatory definition of "coal" and therefore is considered to be a currently authorized fuel for the Big Bend Station under the terms of Title V Final Permit No. 0570039-001-AV, TEC has also prepared an air construction permit application for the handling, storage, and combustion of PPS coal residual at the Big Bend Station as requested by EPC and FDEP.

A completed FDEP Application for Air Permit—Title V Source; DEP Form 62-210.900(1) follows this introduction. Typical PPS coal residual analyses and the PSD applicability analysis are provided in Attachments A and B, respectively. Attachment C provides emission estimates for the storage and handling of PPS coal residual. A process schematic of the

handling and storage of PPS coal residual at the Big Bend Station solid fuel yard is provided in Attachment D.



Department of Environmental Protection

Division of Air Resources Management

APPLICATION FOR AIR PERMIT - TITLE V SOURCE

See Instructions for Form No. 62-210.900(1)

I. APPLICATION INFORMATION

Identification of Facility

1. Facility Owner/Company Name: Tampa Electric Company	
2. Site Name: Big Bend Station	
3. Facility Identification Number: 0570039 [] Unknown	
4. Facility Location: Street Address or Other Locator: Big Bend Road City: North Ruskin County: Hillsborough Zip Code: 33572	
5. Relocatable Facility? [] Yes [<input checked="" type="checkbox"/>] No	6. Existing Permitted Facility? [<input checked="" type="checkbox"/>] Yes [] No

Application Contact

1. Name and Title of Application Contact: Patrick Shell Administrator – Air Programs, Environmental Affairs
2. Application Contact Mailing Address: Organization/Firm: Tampa Electric Company Street Address: 6499 U.S. Highway 41 North City: Apollo Beach State: FL Zip Code: 33572-9200
3. Application Contact Telephone Numbers: Telephone: (813)641 – 5210 Fax: (813) 641-5081

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	<i>3/16/01</i>
2. Permit Number:	<i>0570039-011-AC</i>
3. PSD Number (if applicable):	
4. Siting Number (if applicable):	

Purpose of Application

Air Operation Permit Application

This Application for Air Permit is submitted to obtain: (Check one)

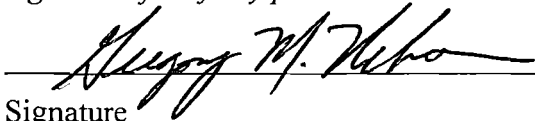
- Initial Title V air operation permit for an existing facility which is classified as a Title V source.
- Initial Title V air operation permit for a facility which, upon start up of one or more newly constructed or modified emissions units addressed in this application, would become classified as a Title V source.
Current construction permit number: _____
- Title V air operation permit revision to address one or more newly constructed or modified emissions units addressed in this application.
Current construction permit number: _____
Operation permit number to be revised: _____
- Title V air operation permit revision or administrative correction to address one or more proposed new or modified emissions units and to be processed concurrently with the air construction permit application. (Also check Air Construction Permit Application below.)
Operation permit number to be revised/corrected: _____
- Title V air operation permit revision for reasons other than construction or modification of an emissions unit. Give reason for the revision; e.g., to comply with a new applicable requirement or to request approval of an "Early Reductions" proposal.
Operation permit number to be revised: _____
Reason for revision: _____

Air Construction Permit Application

This Application for Air Permit is submitted to obtain: (Check one)

- Air construction permit to construct or modify one or more emissions units.
- Air construction permit to make federally enforceable an assumed restriction on the potential emissions of one or more existing, permitted emissions units.
- Air construction permit for one or more existing, but unpermitted, emissions units.

Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible Official: Gregory M. Nelson, Director – Environmental Affairs
2. Application Contact Mailing Address: Organization/Firm: Tampa Electric Company Street Address: 6499 U.S. Highway 41 North City: Apollo Beach State: FL Zip Code: 33572
3. Owner/Authorized Representative or Responsible Official Telephone Numbers: Telephone: (813) 641-5016 Fax: (813) 641-5081
4. Owner/Authorized Representative or Responsible Official Statement: <i>I, the undersigned, am the owner or authorized representative*(check here [✓], if so) or the responsible official (check here [], if so) of the Title V source addressed in this application, whichever is applicable. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof. I understand that a permit, if granted by the Department, cannot be transferred without authorization from the Department, and I will promptly notify the Department upon sale or legal transfer of any permitted emissions unit.</i>  Signature _____ Date <u>3/15/01</u>

* Attach letter of authorization if not currently on file.

Professional Engineer Certification

1. Professional Engineer Name: Thomas W. Davis Registration Number: 36777
2. Professional Engineer Mailing Address: Organization/Firm: Environmental Consulting & Technology, Inc. Street Address: 3701 Northwest 98th Street City: Gainesville State: FL Zip Code: 32606
3. Professional Engineer Telephone Numbers: Telephone: (352) 332-0444 Fax: (352) 332-6722

4. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

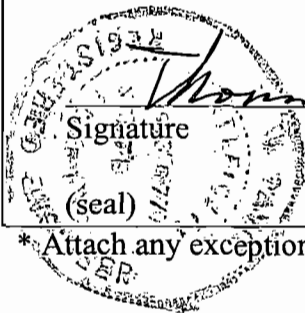
(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this Application for Air Permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

If the purpose of this application is to obtain a Title V source air operation permit (check here [], if so), I further certify that each emissions unit described in this Application for Air Permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance schedule is submitted with this application.

If the purpose of this application is to obtain an air construction permit for one or more proposed new or modified emissions units (check here [✓], if so), I further certify that the engineering features of each such emissions unit described in this application have been ~~designed~~ or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

If the purpose of this application is to obtain an initial air operation permit or operation permit revision for one or more newly constructed or modified emissions units (check here [], if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.



Signature
(seal)

3/14/01
Date

*Attach any exception to certification statement.

Scope of Application

Emissions Unit ID	Description of Emissions Unit	Permit Type	Processing Fee
001	Unit No. 1 Steam Generator	AC1B	N/A
002	Unit No. 2 Steam Generator	AC1B	N/A
003	Unit No. 3 Steam Generator	AC1B	N/A
✓ 004	Unit No. 4 Steam Generator	AC1B	N/A
010	Solid Fuel Yard, Fugitive Emissions	AC1B	N/A

Application Processing Fee

Check one: [] Attached - Amount: \$ _____ [✓] Not Applicable

Note: The Big Bend Station has been issued Final Title V Permit No. 0570039-002-AV. An application processing fee is not required pursuant to Rule 62-4.050(4)(a)2., F.A.C.

Construction/Modification Information

1. Description of Proposed Project or Alterations:

Conditions Nos. A.2.a. and B.2.a of Final Title V Permit No. 0570039-002-AV limit the fuels to be burned in Big Bend Units 1 – 4 to coal, coal/petroleum coke blends, and No. 2 fuel oil. In addition to these fuels, Tampa Electric Company (TEC) requests approval to combust residual coal generated at the TEC Polk Power Station in Big Bend Units 1 – 4. Specifically, TEC requests approval to combust up to a total 200 tons per day of Polk Power Station coal residual at the Big Bend Station.

TEC is not requesting any revisions to currently authorized emission rates for Big Bend Units 1 – 4.

An analysis of PSD applicability indicates that the combustion of Polk Power Station residual coal in Big Bend Units 1 – 4 will not be subject to PSD review. A PSD applicability analysis is provided in Attachment B. Supporting emission rate calculations for the fuel yard are provided in Attachment C.

2. Projected or Actual Date of Commencement of Construction: N/A

3. Projected Date of Completion of Construction: N/A

Application Comment

[Empty box for Application Comment]

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates: Zone: 17 East (km): 361.9 North (km): 3,075.0			
2. Facility Latitude/Longitude: Latitude (DD/MM/SS):		Longitude (DD/MM/SS):	
3. Governmental Facility Code: 0	4. Facility Status Code: A	5. Facility Major Group SIC Code: 49	6. Facility SIC(s): 4911
7. Facility Comment (limit to 500 characters): 			

Facility Contact

1. Name and Title of Facility Contact: Greg Benton, Environmental Coordinator
2. Facility Contact Mailing Address: Organization/Firm: Tampa Electric Company Street Address: Big Bend Road City: North Ruskin State: FL Zip Code: 33572
3. Facility Contact Telephone Numbers: Telephone: (813) 228-4111 Fax: (813) 228-1864

Facility Regulatory Classifications

Check all that apply:

1. [] Small Business Stationary Source?	[] Unknown
2. [✓] Major Source of Pollutants Other than Hazardous Air Pollutants (HAPs)?	
3. [] Synthetic Minor Source of Pollutants Other than HAPs?	
4. [✓] Major Source of Hazardous Air Pollutants (HAPs)?	
5. [] Synthetic Minor Source of HAPs?	
6. [✓] One or More Emissions Units Subject to NSPS?	
7. [] One or More Emission Units Subject to NESHAP?	
8. [] Title V Source by EPA Designation?	
9. Facility Regulatory Classifications Comment (limit to 200 characters):	

List of Applicable Regulations

Facility applicable regulations previously submitted with the Title V permit application;	
reference Big Bend Station Title V Operating Permit Application, Volume II,	
Attachment A.	

B. FACILITY POLLUTANTS

List of Pollutants Emitted

1. Pollutant Emitted	2. Pollutant Classif.	3. Requested Emissions Cap		4. Basis for Emissions Cap	5. Pollutant Comment
		lb/hour	tons/year		
NOX	A	N/A	N/A	N/A	
SO2	A	63,000	N/A	62-296.405 (1)(c)2.b., F.A.C.	Units 1-3, 3-hr average
SO2	A	37,500	N/A	62-204.240 (1), F.A.C.	Units 1-3, 24-hr average
SO2	A	33,000	N/A		Units 1 and 2, 3-hr average
CO	A	N/A	N/A	N/A	
PM10	A	N/A	N/A	N/A	
PM	A	N/A	N/A	N/A	
SAM	A	N/A	N/A	N/A	
VOC	A	N/A	N/A	N/A	
PB	B	N/A	N/A	N/A	
H106	A	N/A	N/A	N/A	Hydrochloric Acid
H107	A	N/A	N/A	N/A	Hydrofluoric Acid
H133	A	N/A	N/A	N/A	Nickel Cmpds.
HAPS	A	N/A	N/A	N/A	Total HAPs

Additional Supplemental Requirements for Title V Air Operation Permit Applications

Not Applicable

8. List of Proposed Insignificant Activities: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
9. List of Equipment/Activities Regulated under Title VI: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Equipment/Activities On site but Not Required to be Individually Listed <input type="checkbox"/> Not Applicable
10. Alternative Methods of Operation: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
11. Alternative Modes of Operation (Emissions Trading): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
12. Identification of Additional Applicable Requirements: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
13. Risk Management Plan Verification: <input type="checkbox"/> Plan previously submitted to Chemical Emergency Preparedness and Prevention Office (CEPPO). Verification of submittal attached (Document ID: _____) or previously submitted to DEP (Date and DEP Office: _____) <input type="checkbox"/> Plan to be submitted to CEPPO (Date required: _____) <input type="checkbox"/> Not Applicable
14. Compliance Report and Plan: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
15. Compliance Certification (Hard-copy Required): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

**A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)**

Emissions Unit Description and Status

<p>1. Type of Emissions Unit Addressed in This Section: (Check one)</p> <p><input checked="" type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).</p> <p><input type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.</p> <p><input type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.</p>			
<p>2. Regulated or Unregulated Emissions Unit? (Check one)</p> <p><input checked="" type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.</p> <p><input type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.</p>			
<p>2. Description of Emissions Unit Addressed in This Section (limit to 60 characters): Emission unit consists of a fossil fuel steam boiler with an electrical generating capacity of 445-MW. Boiler is a wet bottom unit manufactured by Riley Stoker Corporation.</p>			
<p>4. Emissions Unit Identification Number: ID: 001</p>		<p><input type="checkbox"/> No ID <input type="checkbox"/> ID unknown</p>	
<p>5. Emissions Unit Status Code: A</p>	<p>6. Initial Startup Date:</p>	<p>7. Emissions Unit Major Group SIC Code: 49</p>	<p>8. Acid Rain Unit? <input checked="" type="checkbox"/></p>
<p>9. Emissions Unit Comment: (Limit to 500 Characters)</p> <p>This permit application requests approval to combust residual coal generated at the TEC Polk Power Station in Big Bend Unit No. 1.</p>			

Emissions Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method):

**Electrostatic Precipitator
Flue Gas Desulfurization (when fired with petcoke)**

2. Control Device or Method Code(s): **010, 042**

Emissions Unit Details

1. Package Unit:

Manufacturer:

Model Number:

2. Generator Nameplate Rating: **445 MW**

3. Incinerator Information:

Dwell Temperature:

°F

Dwell Time:

seconds

Incinerator Afterburner Temperature:

°F

**B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)**

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:	4,037	mmBtu/hr
2. Maximum Incineration Rate:	lb/hr	tons/day
3. Maximum Process or Throughput Rate:		
4. Maximum Production Rate:		
5. Requested Maximum Operating Schedule:		
	24 hours/day	7 days/week
	52 weeks/year	8,760 hours/year
6. Operating Capacity/Schedule Comment (limit to 200 characters):		

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

Emission unit applicable regulations were previously submitted with the Title V permit application; reference Big Bend Station Title V Operating Permit Application, Volume II, Attachment A.	

D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? CS-001, CS-0W1		2. Emission Point Type Code: 2	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): N/A			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: 001 and 002			
5. Discharge Type Code: V	6. Stack Height: 490 feet	7. Exit Diameter: 24.0 feet (CS-001) 29.0 feet (CS-0W1)	
8. Exit Temperature: 294 °F (CS-001) 127 °F (CS-0W1)	9. Actual Volumetric Flow Rate: 3,146,368 acfm (CS-001) 2,377,871 acfm (CS-0W1)	10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates: Zone: East (km): North (km):			
14. Emission Point Comment (limit to 200 characters): Actual flow rates (Field 9) are for both Units 1 and 2 combined.			

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment 1 of 4

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Coal burned in Unit No. 1.		
2. Source Classification Code (SCC): 1-01-002-01	3. SCC Units: Tons Burned	
4. Maximum Hourly Rate: 183.5	5. Maximum Annual Rate: 1,607,460	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 3.71	8. Maximum % Ash: 10.7	9. Million Btu per SCC Unit: 22
10. Segment Comment (limit to 200 characters): Btu per SCC unit value (Field 9) based on a nominal coal heat content of 11,000 Btu/lb.		

Segment Description and Rate: Segment 2 of 4

1. Segment Description (Process/Fuel Type) (limit to 500 characters): No. 2 fuel oil burned in Unit No. 1.		
2. Source Classification Code (SCC): 1-01-005-01	3. SCC Units: 1,000 Gallons Burned	
4. Maximum Hourly Rate: N/A	5. Maximum Annual Rate: N/A	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.5	8. Maximum % Ash: 0.1	10. Million Btu per SCC Unit: 139
10. Segment Comment (limit to 200 characters): No. 2 fuel oil burned only during startup, shutdown, flame stabilization, and during the start of a mill.		

Emissions Unit Information Section 1 of 5

Segment Description and Rate: Segment 3 of 4

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Petroleum coke burned in Unit No. 1.		
2. Source Classification Code (SCC): 1-01-008-01		3. SCC Units: Tons Burned
4. Maximum Hourly Rate: 36.7	5. Maximum Annual Rate: 321,492	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 6.0	8. Maximum % Ash: 1.0	11. Million Btu per SCC Unit: 28
10. Segment Comment (limit to 200 characters): Maximum petcoke rates (Fields 4 and 5) based on 20% of coal rates.		

Segment Description and Rate: Segment 4 of 4

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Coal residual burned in Unit No. 1.		
3. Source Classification Code (SCC): 1-01-002-01		3. SCC Units: Tons Burned
6. Maximum Hourly Rate: 8.3	7. Maximum Annual Rate: 73,000	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 1.43	8. Maximum % Ash: 57.7	12. Million Btu per SCC Unit: 6.1
10. Segment Comment (limit to 200 characters): Maximum coal residual rates (Fields 6 and 7) are totals for Units 1 – 4.		

**F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)**

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
1 – NOX			NS
2 – CO			NS
3 – PM	ESP		EL
4 – PM10	ESP		NS
5 – SO2	FGD		EL
6 – VOC			NS
7 – H106 (HCl)			NS
8 – H107 (HF)			NS
7 – H133 (Ni)			NS
9 – HAPS			NS

TEC is not requesting any revisions to currently authorized emission limits as specified in Final Title V Permit No. 0570039-002-AV. The information requested by Section G of the FDEP permit application form regarding emission limitations for Unit No. 1 can be found in Final Title V Permit No. 0570039-002-AV.

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted:		2. Total Percent Efficiency of Control:	
3. Potential Emissions: lb/hour tons/year		4. Synthetically Limited? []	
5. Range of Estimated Fugitive Emissions: [] 1 [] 2 [] 3 _____ to _____ tons/year			
6. Emission Factor: Reference:		7. Emissions Method Code:	
8. Calculation of Emissions (limit to 600 characters):			
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):			

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:		2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units:		4. Equivalent Allowable Emissions: lb/hour tons/year	
5. Method of Compliance (limit to 60 characters):			
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):			

TEC is not requesting any revisions to currently authorized emission limits as specified in Final Title V Permit No. 0570039-002-AV. The information requested by Section H regarding visible emissions for Unit No. 1 can be found in Final Title V Permit No. 0570039-002-AV.

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: [] Rule [] Other
3. Requested Allowable Opacity: Normal Conditions: _____ % Exceptional Conditions: _____ % Maximum Period of Excess Opacity Allowed: _____ min/hour	
2. Method of Compliance:	
3. Visible Emissions Comment (limit to 200 characters):	

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

2. Visible Emissions Subtype:	2. Basis for Allowable Opacity: [] Rule [] Other
3. Requested Allowable Opacity: Normal Conditions: _____ % Exceptional Conditions: _____ % Maximum Period of Excess Opacity Allowed: _____ min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment (limit to 200 characters):	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
6. Continuous Monitor Comment (limit to 200 characters): Information regarding Unit No. 1 CEMS remains unchanged from the data previously provided to the Department.	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment (limit to 200 characters):	

J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
 (Regulated Emissions Units Only)

Supplemental Requirements

1. Process Flow Diagram <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested
2. Fuel Analysis or Specification <input checked="" type="checkbox"/> Attached, Document ID: Attachment A <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
3. Detailed Description of Control Equipment <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested
4. Description of Stack Sampling Facilities <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested
5. Compliance Test Report <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously submitted, Date: _____ <input checked="" type="checkbox"/> Not Applicable
6. Procedures for Startup and Shutdown <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested
7. Operation and Maintenance Plan <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested
8. Supplemental Information for Construction Permit Application <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
9. Other Information Required by Rule or Statute <input checked="" type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable Attachment B – PSD Applicability Analysis
10. Supplemental Requirements Comment: <p>Items 1, 3, 4, 6, and 7 previously submitted with the Title V permit application for Big Bend Station.</p>

Additional Supplemental Requirements for Title V Air Operation Permit Applications

Not Applicable

11. Alternative Methods of Operation [] Attached, Document ID: _____ [] Not Applicable
12. Alternative Modes of Operation (Emissions Trading) [] Attached, Document ID: _____ [] Not Applicable
13. Identification of Additional Applicable Requirements [] Attached, Document ID: _____ [] Not Applicable
14. Compliance Assurance Monitoring Plan [] Attached, Document ID: _____ [] Not Applicable
15. Acid Rain Part Application (Hard-copy Required) [] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a)) Attached, Document ID: _____ [] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) Attached, Document ID: _____ [] New Unit Exemption (Form No. 62-210.900(1)(a)2.) Attached, Document ID: _____ [] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) Attached, Document ID: _____ [] Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) Attached, Document ID: _____ [] Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) Attached, Document ID: _____ [] Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in This Section: (Check one) <input checked="" type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent). <input type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions. <input type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.			
2. Regulated or Unregulated Emissions Unit? (Check one) <input checked="" type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit. <input type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.			
3. Description of Emissions Unit Addressed in This Section (limit to 60 characters): Emission unit consists of a fossil fuel steam boiler with an electrical generating capacity of 445-MW. Boiler is a wet bottom unit manufactured by Riley Stoker Corporation.			
4. Emissions Unit Identification Number: ID: 002		<input type="checkbox"/> No ID <input type="checkbox"/> ID unknown	
5. Emissions Unit Status Code: A	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code: 49	8. Acid Rain Unit? <input checked="" type="checkbox"/>
9. Emissions Unit Comment: (Limit to 500 Characters) This permit application requests approval to combust residual coal generated at the TEC Polk Power Station in Big Bend Unit No. 2.			

Emissions Unit Control Equipment

8. Control Equipment/Method Description (Limit to 200 characters per device or method):

**Electrostatic Precipitator
Flue Gas Desulfurization (when fired with petcoke)**

2. Control Device or Method Code(s): **010, 042**

Emissions Unit Details

1. Package Unit:

Manufacturer:

Model Number:

2. Generator Nameplate Rating: **445 MW**

3. Incinerator Information:

Dwell Temperature:

°F

Dwell Time:

seconds

Incinerator Afterburner Temperature:

°F

**B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)**

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:	3,996	mmBtu/hr
2. Maximum Incineration Rate:		lb/hr tons/day
3. Maximum Process or Throughput Rate:		
4. Maximum Production Rate:		
5. Requested Maximum Operating Schedule:		
	24	hours/day 7 days/week
	52	weeks/year 8,760 hours/year.
7. Operating Capacity/Schedule Comment (limit to 200 characters):		

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

Emission unit applicable regulations were previously submitted with the Title V permit application; reference Big Bend Station Title V Operating Permit Application, Volume II, Attachment A.

D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? CS-001, CS-0W1		9. Emission Point Type Code: 2	
10. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): N/A			
11. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: 001 and 002			
12. Discharge Type Code: V	6. Stack Height: 490 feet	7. Exit Diameter: 25.0 feet (CS-001) 29.0 feet (CS-0W1)	
8. Exit Temperature: 294 °F (CS-001) 127 °F (CS-0W1)	9. Actual Volumetric Flow Rate: 3,146,368 acfm (CS-001) 2,377,871 acfm (CS-0W1)	10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates: Zone: East (km): North (km):			
14. Emission Point Comment (limit to 200 characters): Actual flow rates (Field 9) are for both Units 1 and 2 combined.			

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment 1 of 4

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Coal burned in Unit No. 2.		
4. Source Classification Code (SCC): 1-01-002-01	3. SCC Units: Tons Burned	
8. Maximum Hourly Rate: 181.6	9. Maximum Annual Rate: 1,591,135	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 3.71	8. Maximum % Ash: 10.7	13. Million Btu per SCC Unit: 22
10. Segment Comment (limit to 200 characters): Btu per SCC unit value (Field 9) based on a nominal coal heat content of 11,000 Btu/lb.		

Segment Description and Rate: Segment 2 of 4

1. Segment Description (Process/Fuel Type) (limit to 500 characters): No. 2 fuel oil burned in Unit No. 2.		
3. Source Classification Code (SCC): 1-01-005-01	3. SCC Units: 1,000 Gallons Burned	
6. Maximum Hourly Rate: N/A	7. Maximum Annual Rate: N/A	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.5	8. Maximum % Ash: 0.1	14. Million Btu per SCC Unit: 139
10. Segment Comment (limit to 200 characters): No. 2 fuel oil burned only during startup, shutdown, flame stabilization, and during the start of a mill.		

Emissions Unit Information Section 2 of 5

Segment Description and Rate: Segment 3 of 4

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Petroleum coke burned in Unit No. 2.		
3. Source Classification Code (SCC): 1-01-008-01		3. SCC Units: Tons Burned
6. Maximum Hourly Rate: 36.3	7. Maximum Annual Rate: 318,227	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 6.0	8. Maximum % Ash: 1.0	15. Million Btu per SCC Unit: 28
10. Segment Comment (limit to 200 characters): Maximum petcoke rates (Fields 4 and 5) based on 20% of coal rates.		

Segment Description and Rate: Segment 4 of 4

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Coal residual burned in Unit No. 2.		
5. Source Classification Code (SCC): 1-01-002-01		3. SCC Units: Tons Burned
10. Maximum Hourly Rate: 8.3	11. Maximum Annual Rate: 73,000	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 1.43	8. Maximum % Ash: 57.7	16. Million Btu per SCC Unit: 6.1
10. Segment Comment (limit to 200 characters): Maximum coal residual rates (Fields 6 and 7) are totals for Units 1 – 4.		

**F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)**

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
1 - NOX			NS
2 - CO			NS
3 - PM	ESP		EL
4 - PM10	ESP		NS
5 - SO2	FGD		EL
6 - VOC			NS
7 - H106 (HCl)			NS
8 - H107 (HF)			NS
7 - H133 (Ni)			NS
9 - HAPS			NS

TEC is not requesting any revisions to currently authorized emission limits as specified in Final Title V Permit No. 0570039-002-AV. The information requested by Section G of the FDEP permit application form regarding emission limitations for Unit No. 2 can be found in Final Title V Permit No. 0570039-002-AV.

**G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)**

Potential/Fugitive Emissions

1. Pollutant Emitted:		2. Total Percent Efficiency of Control:	
3. Potential Emissions: lb/hour		tons/year	4. Synthetically Limited? []
5. Range of Estimated Fugitive Emissions: [] 1 [] 2 [] 3 _____ to _____ tons/year			
6. Emission Factor: Reference:		7. Emissions Method Code:	
8. Calculation of Emissions (limit to 600 characters):			
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):			

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
4. Requested Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance (limit to 60 characters):	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

TEC is not requesting any revisions to currently authorized emission limits as specified in Final Title V Permit No. 0570039-002-AV. The information requested by Section H regarding visible emissions for Unit No. 2 can be found in Final Title V Permit No. 0570039-002-AV.

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

3. Visible Emissions Subtype:	2. Basis for Allowable Opacity: [] Rule [] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
6. Method of Compliance:	
7. Visible Emissions Comment (limit to 200 characters):	

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

4. Visible Emissions Subtype:	2. Basis for Allowable Opacity: [] Rule [] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
8. Method of Compliance:	
9. Visible Emissions Comment (limit to 200 characters):	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
13. Continuous Monitor Comment (limit to 200 characters): Information regarding Unit No. 2 CEMS remains unchanged from the data previously provided to the Department.	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
14. Continuous Monitor Comment (limit to 200 characters):	

J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements

1. Process Flow Diagram <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested
2. Fuel Analysis or Specification <input checked="" type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested Attachment A
3. Detailed Description of Control Equipment <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested
4. Description of Stack Sampling Facilities <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested
5. Compliance Test Report <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously submitted, Date: _____ <input checked="" type="checkbox"/> Not Applicable
6. Procedures for Startup and Shutdown <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested
7. Operation and Maintenance Plan <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested
8. Supplemental Information for Construction Permit Application <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
9. Other Information Required by Rule or Statute <input checked="" type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable Attachment B – PSD Applicability Analysis
10. Supplemental Requirements Comment: <p>Items 1, 3, 4, 6, and 7 previously submitted with the Title V permit application for Big Bend Station.</p>

Additional Supplemental Requirements for Title V Air Operation Permit Applications

Not Applicable

11. Alternative Methods of Operation [] Attached, Document ID: _____ [] Not Applicable
12. Alternative Modes of Operation (Emissions Trading) [] Attached, Document ID: _____ [] Not Applicable
13. Identification of Additional Applicable Requirements [] Attached, Document ID: _____ [] Not Applicable
14. Compliance Assurance Monitoring Plan [] Attached, Document ID: _____ [] Not Applicable
15. Acid Rain Part Application (Hard-copy Required) [] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a)) Attached, Document ID: _____ [] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) Attached, Document ID: _____ [] New Unit Exemption (Form No. 62-210.900(1)(a)2.) Attached, Document ID: _____ [] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) Attached, Document ID: _____ [] Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) Attached, Document ID: _____ [] Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) Attached, Document ID: _____ [] Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

**A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)**

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in This Section: (Check one) <input checked="" type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent). <input type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions. <input type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.			
2. Regulated or Unregulated Emissions Unit? (Check one) <input checked="" type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit. <input type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.			
4. Description of Emissions Unit Addressed in This Section (limit to 60 characters): Emission unit consists of a fossil fuel steam boiler with an electrical generating capacity of 445-MW. Boiler is a wet bottom unit manufactured by Riley Stoker Corporation.			
4. Emissions Unit Identification Number: ID: 003		<input type="checkbox"/> No ID <input type="checkbox"/> ID unknown	
5. Emissions Unit Status Code: <p style="text-align: center;">A</p>	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code: <p style="text-align: center;">49</p>	8. Acid Rain Unit? <input checked="" type="checkbox"/>
9. Emissions Unit Comment: (Limit to 500 Characters) <p style="text-align: center;">This permit application requests approval to combust residual coal generated at the TEC Polk Power Station in Big Bend Unit No. 3.</p>			

Emissions Unit Control Equipment

15. Control Equipment/Method Description (Limit to 200 characters per device or method):

**Electrostatic Precipitator
Flue Gas Desulfurization (optional)**

2. Control Device or Method Code(s): **010, 042**

Emissions Unit Details

1. Package Unit:

Manufacturer:

Model Number:

2. Generator Nameplate Rating: **445 MW**

3. Incinerator Information:

Dwell Temperature:

°F

Dwell Time:

seconds

Incinerator Afterburner Temperature:

°F

**B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)**

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:	4,115	mmBtu/hr
2. Maximum Incineration Rate:		lb/hr tons/day
3. Maximum Process or Throughput Rate:		
4. Maximum Production Rate:		
5. Requested Maximum Operating Schedule:		
	24 hours/day	7 days/week
	52 weeks/year	8,760 hours/year
8. Operating Capacity/Schedule Comment (limit to 200 characters):		

**C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)**

List of Applicable Regulations

Emission unit applicable regulations were previously submitted with the Title V permit application; reference Big Bend Station Title V Operating Permit Application, Volume II, Attachment A.	

**D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)**

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? CS-003		16. Emission Point Type Code: 2	
17. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): N/A			
18. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: 003 and 004 (when FGD is used)			
19. Discharge Type Code: V	6. Stack Height: 490 feet	7. Exit Diameter: 24.0 feet (CS-003)	
8. Exit Temperature: 308 °F (CS-003)	9. Actual Volumetric Flow Rate: 1,389,740 acfm (CS-003)	10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates: Zone: East (km): North (km):			
14. Emission Point Comment (limit to 200 characters):			

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment 1 of 4

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Coal burned in Unit No. 3.		
6. Source Classification Code (SCC): 1-01-002-01	3. SCC Units: Tons Burned	
12. Maximum Hourly Rate: 187.0	13. Maximum Annual Rate: 1,638,518	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 3.71	8. Maximum % Ash: 10.7	17. Million Btu per SCC Unit: 22
10. Segment Comment (limit to 200 characters): Btu per SCC unit value (Field 9) based on a nominal coal heat content of 11,000 Btu/lb.		

Segment Description and Rate: Segment 2 of 4

1. Segment Description (Process/Fuel Type) (limit to 500 characters): No. 2 fuel oil burned in Unit No. 3.		
4. Source Classification Code (SCC): 1-01-005-01	3. SCC Units: 1,000 Gallons Burned	
8. Maximum Hourly Rate: N/A	9. Maximum Annual Rate: N/A	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.5	8. Maximum % Ash: 0.1	18. Million Btu per SCC Unit: 139
10. Segment Comment (limit to 200 characters): No. 2 fuel oil burned only during startup, shutdown, flame stabilization, and during the start of a mill.		

Emissions Unit Information Section 3 of 5

Segment Description and Rate: Segment 3 of 4

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Petroleum coke burned in Unit No. 3.		
4. Source Classification Code (SCC): 1-01-008-01	3. SCC Units: Tons Burned	
8. Maximum Hourly Rate: 37.4	9. Maximum Annual Rate: 273,704	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 6.0	8. Maximum % Ash: 1.0	19. Million Btu per SCC Unit: 28
10. Segment Comment (limit to 200 characters): Maximum petcoke rates (Fields 4 and 5) based on 20% of coal rates.		

Segment Description and Rate: Segment 4 of 4

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Coal residual burned in Unit No. 3.		
7. Source Classification Code (SCC): 1-01-002-01	3. SCC Units: Tons Burned	
14. Maximum Hourly Rate: 8.3	15. Maximum Annual Rate: 73,000	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 1.43	8. Maximum % Ash: 57.7	20. Million Btu per SCC Unit: 6.1
10. Segment Comment (limit to 200 characters): Maximum coal residual rates (Fields 6 and 7) are totals for Units 1 – 4.		

**F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)**

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
1 - NOX			NS
2 - CO			NS
3 - PM	ESP		EL
4 - PM10	ESP		NS
5 - SO2	FGD		EL
6 - VOC			NS
7 - H106 (HCl)			NS
8 - H107 (HF)			NS
7 - H133 (Ni)			NS
8 - HAPS			NS

TEC is not requesting any revisions to currently authorized emission limits as specified in Final Title V Permit No. 0570039-002-AV. The information requested by Section G of the FDEP permit application form regarding emission limitations for Unit No. 3 can be found in Final Title V Permit No. 0570039-002-AV.

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted:		2. Total Percent Efficiency of Control:	
3. Potential Emissions: lb/hour		4. Synthetically Limited? [] tons/year	
5. Range of Estimated Fugitive Emissions: [] 1 [] 2 [] 3 _____ to _____ tons/year			
6. Emission Factor: Reference:		7. Emissions Method Code:	
8. Calculation of Emissions (limit to 600 characters):			
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):			

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:		2. Future Effective Date of Allowable Emissions:	
5. Requested Allowable Emissions and Units:		4. Equivalent Allowable Emissions: lb/hour tons/year	
5. Method of Compliance (limit to 60 characters):			
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):			

TEC is not requesting any revisions to currently authorized emission limits as specified in Final Title V Permit No. 0570039-002-AV. The information requested by Section H regarding visible emissions for Unit No. 3 can be found in Final Title V Permit No. 0570039-002-AV.

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

5. Visible Emissions Subtype:	2. Basis for Allowable Opacity: [] Rule [] Other
3. Requested Allowable Opacity: Normal Conditions: _____ % Exceptional Conditions: _____ % Maximum Period of Excess Opacity Allowed: _____ min/hour	
10. Method of Compliance:	
11. Visible Emissions Comment (limit to 200 characters):	

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

6. Visible Emissions Subtype:	2. Basis for Allowable Opacity: [] Rule [] Other
3. Requested Allowable Opacity: Normal Conditions: _____ % Exceptional Conditions: _____ % Maximum Period of Excess Opacity Allowed: _____ min/hour	
12. Method of Compliance:	
13. Visible Emissions Comment (limit to 200 characters):	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
20. Continuous Monitor Comment (limit to 200 characters): Information regarding Unit No. 3 CEMS remains unchanged from the data previously provided to the Department.	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
21. Continuous Monitor Comment (limit to 200 characters):	

J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements

1. Process Flow Diagram <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested
2. Fuel Analysis or Specification <input checked="" type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested Attachment A
3. Detailed Description of Control Equipment <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested
4. Description of Stack Sampling Facilities <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested
5. Compliance Test Report <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously submitted, Date: _____ <input checked="" type="checkbox"/> Not Applicable
6. Procedures for Startup and Shutdown <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested
7. Operation and Maintenance Plan <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested
8. Supplemental Information for Construction Permit Application <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
9. Other Information Required by Rule or Statute <input checked="" type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable Attachment B – PSD Applicability Analysis
10. Supplemental Requirements Comment: <p style="text-align: center;">Items 1, 3, 4, 6, and 7 previously submitted with the Title V permit application for Big Bend Station.</p>

Additional Supplemental Requirements for Title V Air Operation Permit Applications

Not Applicable

<p>11. Alternative Methods of Operation <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable</p>
<p>12. Alternative Modes of Operation (Emissions Trading) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable</p>
<p>13. Identification of Additional Applicable Requirements <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable</p>
<p>14. Compliance Assurance Monitoring Plan <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable</p>
<p>15. Acid Rain Part Application (Hard-copy Required)</p> <p><input type="checkbox"/> Acid Rain Part - Phase II (Form No. 62-210.900(1)(a)) Attached, Document ID: _____</p> <p><input type="checkbox"/> Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) Attached, Document ID: _____</p> <p><input type="checkbox"/> New Unit Exemption (Form No. 62-210.900(1)(a)2.) Attached, Document ID: _____</p> <p><input type="checkbox"/> Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) Attached, Document ID: _____</p> <p><input type="checkbox"/> Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) Attached, Document ID: _____</p> <p><input type="checkbox"/> Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) Attached, Document ID: _____</p> <p><input type="checkbox"/> Not Applicable</p>

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION (All Emissions Units)

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in This Section: (Check one) <input checked="" type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent). <input type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions. <input type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.			
2. Regulated or Unregulated Emissions Unit? (Check one) <input checked="" type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit. <input type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.			
5. Description of Emissions Unit Addressed in This Section (limit to 60 characters): Emission unit consists of a fossil fuel steam boiler with an electrical generating capacity of 486-MW. Boiler is a dry bottom, tangentially fired unit manufactured by Foster Wheeler Corporation.			
4. Emissions Unit Identification Number: ID: 004		<input type="checkbox"/> No ID <input type="checkbox"/> ID unknown	
5. Emissions Unit Status Code: A	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code: 49	8. Acid Rain Unit? <input checked="" type="checkbox"/>
9. Emissions Unit Comment: (Limit to 500 Characters) This permit application requests approval to combust residual coal generated at the TEC Polk Power Station in Big Bend Unit No. 4.			

Emissions Unit Control Equipment

22. Control Equipment/Method Description (Limit to 200 characters per device or method):

**Electrostatic Precipitator
Flue Gas Desulfurization**

2. Control Device or Method Code(s): **010, 042**

Emissions Unit Details

1. Package Unit: Manufacturer:	Model Number:
2. Generator Nameplate Rating: 486 MW	
3. Incinerator Information:	
Dwell Temperature:	°F
Dwell Time:	seconds
Incinerator Afterburner Temperature:	°F

**B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)**

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate: 4,330	mmBtu/hr
2. Maximum Incineration Rate:	lb/hr tons/day
3. Maximum Process or Throughput Rate:	
4. Maximum Production Rate:	
5. Requested Maximum Operating Schedule:	
24	hours/day 7 days/week
52	weeks/year 8,760 hours/year
9. Operating Capacity/Schedule Comment (limit to 200 characters):	

**C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)**

List of Applicable Regulations

Emission unit applicable regulations were previously submitted with the Title V permit application; reference Big Bend Station Title V Operating Permit Application, Volume II, Attachment A.	

D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? CS-004		23. Emission Point Type Code: 2	
24. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): N/A			
25. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: 003 and 004 (when FGD is used)			
26. Discharge Type Code: V	6. Stack Height: 490 feet	7. Exit Diameter: 24.0 feet (CS-004)	
8. Exit Temperature: 127 °F (CS-004)	9. Actual Volumetric Flow Rate: 2,125,325 acfm (CS-004)	10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates: Zone: East (km): North (km):			
14. Emission Point Comment (limit to 200 characters):			

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment 1 of 4

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Coal burned in Unit No. 4.		
8. Source Classification Code (SCC): 1-01-002-01	3. SCC Units: Tons Burned	
16. Maximum Hourly Rate: 196.8	17. Maximum Annual Rate: 1,724,127	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 3.71	8. Maximum % Ash: 10.7	21. Million Btu per SCC Unit: 22
10. Segment Comment (limit to 200 characters): Btu per SCC unit value (Field 9) based on a nominal coal heat content of 11,000 Btu/lb.		

Segment Description and Rate: Segment 2 of 4

1. Segment Description (Process/Fuel Type) (limit to 500 characters): No. 2 fuel oil burned in Unit No. 4.		
5. Source Classification Code (SCC): 1-01-005-01	3. SCC Units: 1,000 Gallons Burned	
10. Maximum Hourly Rate: N/A	11. Maximum Annual Rate: N/A	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.5	8. Maximum % Ash: 0.1	22. Million Btu per SCC Unit: 139
10. Segment Comment (limit to 200 characters): No. 2 fuel oil burned only during startup, shutdown, flame stabilization, and during the start of a mill.		

Emissions Unit Information Section 4 of 5

Segment Description and Rate: Segment 3 of 4

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Petroleum coke burned in Unit No. 4.		
5. Source Classification Code (SCC): 1-01-008-01		3. SCC Units: Tons Burned
10. Maximum Hourly Rate: 39.4	11. Maximum Annual Rate: 344,825	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 6.0	8. Maximum % Ash: 1.0	23. Million Btu per SCC Unit: 28
10. Segment Comment (limit to 200 characters): Maximum petcoke rates (Fields 4 and 5) based on 20% of coal rates.		

Segment Description and Rate: Segment 4 of 4

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Coal residual burned in Unit No. 4.		
9. Source Classification Code (SCC): 1-01-002-01		3. SCC Units: Tons Burned
18. Maximum Hourly Rate: 8.3	19. Maximum Annual Rate: 73,000	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 1.43	8. Maximum % Ash: 57.7	24. Million Btu per SCC Unit: 6.1
10. Segment Comment (limit to 200 characters): Maximum coal residual rates (Fields 6 and 7) are totals for Units 1 – 4.		

**F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)**

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
1 - NOX			EL
2 - CO			EL
3 - PM	ESP		EL
4 - PM10	ESP		NS
5 - SO2	FGD		EL
6 - VOC			NS
7 - H106 (HCl)			NS
8 - H107 (HF)			NS
9 - HAPS			NS

TEC is not requesting any revisions to currently authorized emission limits as specified in Final Title V Permit No. 0570039-002-AV. The information requested by Section G of the FDEP permit application form regarding emission limitations for Unit No. 4 can be found in Final Title V Permit No. 0570039-002-AV.

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted:	2. Total Percent Efficiency of Control:
3. Potential Emissions: <div style="display: flex; justify-content: space-between; width: 100%;"> lb/hour tons/year </div>	4. Synthetically Limited? []
5. Range of Estimated Fugitive Emissions: [] 1 [] 2 [] 3 _____ to _____ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters): 	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): 	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
6. Requested Allowable Emissions and Units:	4. Equivalent Allowable Emissions: <div style="display: flex; justify-content: space-between; width: 100%;"> lb/hour tons/year </div>
5. Method of Compliance (limit to 60 characters): 	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): 	

TEC is not requesting any revisions to currently authorized emission limits as specified in Final Title V Permit No. 0570039-002-AV. The information requested by Section H regarding visible emissions for Unit No. 4 can be found in Final Title V Permit No. 0570039-002-AV.

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

7. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
14. Method of Compliance:	
15. Visible Emissions Comment (limit to 200 characters):	

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

8. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
16. Method of Compliance:	
17. Visible Emissions Comment (limit to 200 characters):	

**I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)**

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
27. Continuous Monitor Comment (limit to 200 characters): Information regarding Unit No. 4 CEMS remains unchanged from the data previously provided to the Department.	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
28. Continuous Monitor Comment (limit to 200 characters):	

**J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)**

Supplemental Requirements

1. Process Flow Diagram <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested
2. Fuel Analysis or Specification <input checked="" type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested Attachment A
3. Detailed Description of Control Equipment <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested
4. Description of Stack Sampling Facilities <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested
5. Compliance Test Report <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously submitted, Date: _____ <input checked="" type="checkbox"/> Not Applicable
6. Procedures for Startup and Shutdown <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested
7. Operation and Maintenance Plan <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested
8. Supplemental Information for Construction Permit Application <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
9. Other Information Required by Rule or Statute <input checked="" type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable Attachment B – PSD Applicability Analysis
10. Supplemental Requirements Comment: <p>Items 1, 3, 4, 6, and 7 previously submitted with the Title V permit application for Big Bend Station.</p>

Additional Supplemental Requirements for Title V Air Operation Permit Applications

Not Applicable

11. Alternative Methods of Operation <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
12. Alternative Modes of Operation (Emissions Trading) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
13. Identification of Additional Applicable Requirements <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
14. Compliance Assurance Monitoring Plan <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
15. Acid Rain Part Application (Hard-copy Required) <input type="checkbox"/> Acid Rain Part - Phase II (Form No. 62-210.900(1)(a)) Attached, Document ID: _____ <input type="checkbox"/> Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) Attached, Document ID: _____ <input type="checkbox"/> New Unit Exemption (Form No. 62-210.900(1)(a)2.) Attached, Document ID: _____ <input type="checkbox"/> Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) Attached, Document ID: _____ <input type="checkbox"/> Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) Attached, Document ID: _____ <input type="checkbox"/> Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) Attached, Document ID: _____ <input type="checkbox"/> Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

**A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)**

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in This Section: (Check one) <input type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent). <input type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions. <input checked="" type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.			
2. Regulated or Unregulated Emissions Unit? (Check one) <input checked="" type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit. <input type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.			
6. Description of Emissions Unit Addressed in This Section (limit to 60 characters): Fugitive emissions associated with solid fuel storage and handling.			
4. Emissions Unit Identification Number: ID: 010		<input type="checkbox"/> No ID <input type="checkbox"/> ID unknown	
5. Emissions Unit Status Code: <p style="text-align: center;">A</p>	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code: <p style="text-align: center;">49</p>	8. Acid Rain Unit? <input type="checkbox"/>
9. Emissions Unit Comment: (Limit to 500 Characters) <p style="text-align: center;">This permit application requests approval to store and handle residual coal generated at the TEC Polk Power Station.</p>			

Emissions Unit Control Equipment

29. Control Equipment/Method Description (Limit to 200 characters per device or method):

**Application of water, as necessary.
Enclosures**

2. Control Device or Method Code(s): **062**

Emissions Unit Details

1. Package Unit: Manufacturer:	Model Number:
2. Generator Nameplate Rating: MW	
3. Incinerator Information:	
Dwell Temperature:	°F
Dwell Time:	seconds
Incinerator Afterburner Temperature:	°F

**B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)**

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:	mmBtu/hr								
2. Maximum Incineration Rate:	lb/hr tons/day								
3. Maximum Process or Throughput Rate:	4,000 tons/hour (24-hour average)								
4. Maximum Production Rate:									
5. Requested Maximum Operating Schedule:									
	<table> <tr> <td align="center">24</td> <td align="center">hours/day</td> <td align="center">7</td> <td align="center">days/week</td> </tr> <tr> <td align="center">52</td> <td align="center">weeks/year</td> <td align="center">8,760</td> <td align="center">hours/year</td> </tr> </table>	24	hours/day	7	days/week	52	weeks/year	8,760	hours/year
24	hours/day	7	days/week						
52	weeks/year	8,760	hours/year						
10. Operating Capacity/Schedule Comment (limit to 200 characters):									

**C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)**

List of Applicable Regulations

Emission unit applicable regulations were previously submitted with the Title V permit application; reference Big Bend Station Title V Operating Permit Application, Volume II, Attachment A.	

**D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)**

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? Reference TV5 permit application		30. Emission Point Type Code: 4	
31. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): Reference TV5 permit application and Attachment D Process Flow Schematic			
32. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
33. Discharge Type Code: F	6. Stack Height: feet	7. Exit Diameter: feet	
8. Exit Temperature: 77 °F	9. Actual Volumetric Flow Rate: acfm	10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: 20 feet	
13. Emission Point UTM Coordinates: Zone: East (km): North (km):			
14. Emission Point Comment (limit to 200 characters):			

**E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)**

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Solid fuel handing (including coal residual from Polk Power Station)		
10. Source Classification Code (SCC): 3-05-102-03	3. SCC Units: Tons Transferred or Handled	
20. Maximum Hourly Rate: 4,000	21. Maximum Annual Rate: 6,228,030	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):		

Segment Description and Rate: Segment _____ of _____

1. Segment Description (Process/Fuel Type) (limit to 500 characters):		
6. Source Classification Code (SCC):	3. SCC Units:	
12. Maximum Hourly Rate:	13. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	10. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):		

**F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)**

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
1 – PM			WP
2 – PM10			WP

TEC is not requesting any revisions to currently authorized emission limits as specified in Final Title V Permit No. 0570039-002-AV. The information requested by Section G of the FDEP permit application form regarding emission limitations for the solid fuel yard can be found in Final Title V Permit No. 0570039-002-AV.

**G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)**

Potential/Fugitive Emissions

1. Pollutant Emitted:	2. Total Percent Efficiency of Control:
3. Potential Emissions: <div style="display: flex; justify-content: space-around; margin-top: 5px;">lb/hourtons/year</div>	4. Synthetically Limited? <input type="checkbox"/>
5. Range of Estimated Fugitive Emissions: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 _____ to _____ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters): 	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): 	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
7. Requested Allowable Emissions and Units:	4. Equivalent Allowable Emissions: <div style="display: flex; justify-content: space-around; margin-top: 5px;">lb/hourtons/year</div>
5. Method of Compliance (limit to 60 characters): 	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): 	

TEC is not requesting any revisions to currently authorized emission limits as specified in Final Title V Permit No. 0570039-002-AV. The information requested by Section H regarding visible emissions for the solid fuel yard can be found in Final Title V Permit No. 0570039-002-AV.

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

9. Visible Emissions Subtype:	2. Basis for Allowable Opacity: [] Rule [] Other
3. Requested Allowable Opacity: Normal Conditions: _____ % Exceptional Conditions: _____ % Maximum Period of Excess Opacity Allowed: _____ min/hour	
18. Method of Compliance:	
19. Visible Emissions Comment (limit to 200 characters):	

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

10. Visible Emissions Subtype:	2. Basis for Allowable Opacity: [] Rule [] Other
3. Requested Allowable Opacity: Normal Conditions: _____ % Exceptional Conditions: _____ % Maximum Period of Excess Opacity Allowed: _____ min/hour	
20. Method of Compliance:	
21. Visible Emissions Comment (limit to 200 characters):	

I. CONTINUOUS MONITOR INFORMATION – N/A
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
34. Continuous Monitor Comment (limit to 200 characters):	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
35. Continuous Monitor Comment (limit to 200 characters):	

**J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)**

Supplemental Requirements

1. Process Flow Diagram <input checked="" type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested Attachment D
2. Fuel Analysis or Specification <input checked="" type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested Attachment A
3. Detailed Description of Control Equipment <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested
4. Description of Stack Sampling Facilities <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
5. Compliance Test Report <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously submitted, Date: _____ <input checked="" type="checkbox"/> Not Applicable
6. Procedures for Startup and Shutdown <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
7. Operation and Maintenance Plan <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Waiver Requested
8. Supplemental Information for Construction Permit Application <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
9. Other Information Required by Rule or Statute <input checked="" type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable Attachment B – PSD Applicability Analysis
10. Supplemental Requirements Comment: <p>Items 3 and 7 previously submitted with the Title V permit application for Big Bend Station.</p>

Additional Supplemental Requirements for Title V Air Operation Permit Applications

Not Applicable

<p>11. Alternative Methods of Operation <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable</p>
<p>12. Alternative Modes of Operation (Emissions Trading) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable</p>
<p>13. Identification of Additional Applicable Requirements <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable</p>
<p>14. Compliance Assurance Monitoring Plan <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable</p>
<p>15. Acid Rain Part Application (Hard-copy Required)</p> <p><input type="checkbox"/> Acid Rain Part - Phase II (Form No. 62-210.900(1)(a)) Attached, Document ID: _____</p> <p><input type="checkbox"/> Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) Attached, Document ID: _____</p> <p><input type="checkbox"/> New Unit Exemption (Form No. 62-210.900(1)(a)2.) Attached, Document ID: _____</p> <p><input type="checkbox"/> Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) Attached, Document ID: _____</p> <p><input type="checkbox"/> Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) Attached, Document ID: _____</p> <p><input type="checkbox"/> Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) Attached, Document ID: _____</p> <p><input type="checkbox"/> Not Applicable</p>

ATTACHMENT A

COAL RESIDUAL FUEL ANALYSES

Big Bend Station
 PPS Coal Residue Data

Parameter	Units	10/99	12/99	2/00	3/00	Monthly Composites				Max.	Min.	Avg.
						4/00	6/00	7/00	8/00			
Ash (as received)	wt %	41.78	49.32	49.60	38.80	57.70	38.70	44.30	43.35	57.70	38.70	45.44
Btu (as received)	Btu/lb	2,703	2,399	3,726	3,337	2,793	2,591	2,646	4,123	4,123.00	2,398.82	3,039.71
Sulfur (as received)	wt %	1.24	1.05	1.43	1.41	1.25	1.03	1.05	1.15	1.43	1.03	1.20

ATTACHMENT B

PSD APPLICABILITY ANALYSIS

ATTACHMENT B

BIG BEND STATION – UNITS 1, 2, 3, AND 4 COMBUSTION OF POLK POWER STATION COAL RESIDUAL PSD APPLICABILITY ANALYSIS

The procedures for determining applicability of the PSD NSR permitting program to modifications planned at existing major Florida facilities are specified in Rule 62-212.400(2)(d)4., F.A.C. Because the existing Big Bend Station is a major facility (i.e., has potential emissions of 100 tpy or more of an air pollutant subject to regulation under Chapter 403, Florida Statutes) that would be subject to PSD preconstruction review if it were itself a proposed new facility (i.e., has potential emissions of 100 tpy or more of a pollutant regulated under the Clean Air Act and is located in an attainment area), modifications to the existing Big Bend Station which result in a *significant net emissions increase* of any pollutant regulated under the Clean Air Act are subject to PSD NSR.

The term “significant net emission increase” is defined by Rule 62-212.400(2)(e), F.A.C. For each regulated pollutant, the net emission increase for a modification project is equal to the sum of the increases in emissions associated with the proposed project plus all facility-wide creditable, contemporaneous emission increases minus all facility-wide creditable, contemporaneous emission decreases. If this net emissions increase is equal to or greater than the applicable Table 212.400-2, F.A.C. Regulated Pollutants—Significant Emission Rates, then the net emission increase is considered to be “significant” and the modification will be subject to PSD NSR for that particular regulated pollutant.

In accordance with Rule 62-212.400(2)(e)3., F.A.C., the “contemporaneous” period for a modification project begins five years prior to the date of submittal of a complete permit application and ends when the new or modified emission units are estimated to begin operation.

In accordance with Rule 62-212.400(2)(e)4., F.A.C., contemporaneous emission increases and decreases are “creditable” if:

- (1) the emission increase or decrease will affect PSD increment consumption; i.e., will consume or expand the available increment;

- (2) The emission increase or decrease was not previously considered in the issuance of a PSD NSR permit (to avoid “double counting”); and
- (3) The FDEP has not relied on the emission increase or decrease in attainment or reasonable further progress demonstrations.

Contemporaneous emission increases and decreases are based on *actual* emission rates. The term “actual emissions” is defined by Rule 62-210.200(12), F.A.C. For new emission units, including new electric utility steam generating units, actual emissions are equal to potential emissions. For physical or operational changes to existing emissions units, actual emissions prior to the physical or operational change are generally the actual average emission rates, in tpy, for the two-year period preceding the change and which are representative of normal operations. The Department may allow the use of a different time period if it is determined that the other time period is more representative of the normal operation of an emissions unit. For changes to existing electric utility generating units, actual emissions following a physical or operational change are equal to the “representative actual annual emissions” as defined by 40 CFR 52.21(b)(33). This federal rule defines “representative actual annual emissions” as the average rate, in tpy, which a source is projected to emit a pollutant for the two-year period after a physical change or change in the method of operation, considering the effect the change will have on increasing or decreasing the hourly emission rate and on projected capacity utilization.

For emission decreases, the old level of actual or allowable emissions (whichever is lower) must be greater than the new level of actual emissions. The actual emission decrease must also take place on or before the date that emissions from the modification project first occur and must be federally enforceable on and after the date the Department issues a construction permit for the modification project.

With respect to the use of Polk Power Station (PPS) coal residual at the Big Bend Station and PSD applicability, the primary consideration is whether co-firing of PPS coal residual at Big Bend Station Units 1, 2, 3, and 4 will cause a significant increase in PM/PM₁₀ air emissions. Because the proposed use of PPS coal residual at Units 1, 2, 3, and 4 (up to 200 tons per day for all four units combined) will displace the current use of coal (in amounts equal to the heat

input of the PPS coal residual), a significant net increase due to the use of PPS coal residual will not occur as long as the emissions resulting from PPS coal residual combustion, for each PSD regulated air pollutant, do not exceed the 2 year historical average coal emission rates.

On a heat input basis, 200 tons per day of PPS coal residual (having a heat content of approximately 3,040 Btu/lb) equates to a daily heat input 1,216 MMBtu. The heat input due to PPS coal residual represents only 0.31 percent of the total maximum daily heat input of 395,472 MMBtu for Units 1 through 4. On a mass basis, 200 tons per day of PPS coal residual represents only 1.1 percent of the total maximum daily coal consumption of 17,973.6 tons for Units 1 through 4.

The pollutants addressed by the PSD regulatory program with respect to significant emission rates are listed in Chapter 62-212, Table 212.400-2, F.A.C; these pollutants and their significant emission rates are shown on Table 1. For the Big Bend Station, PM is monitored on an annual basis using EPA Reference Method 17.

Year-to-year variations in operating hours, load, or coal sulfur content are generally *not* considered operational changes and therefore do *not* constitute modifications under the PSD regulatory program. The Big Bend Station is a baseload facility. The use of PPS coal residual will not change the electrical generation capacity of the facility nor change its operating hours from what would have occurred if PPS coal residual were not utilized.

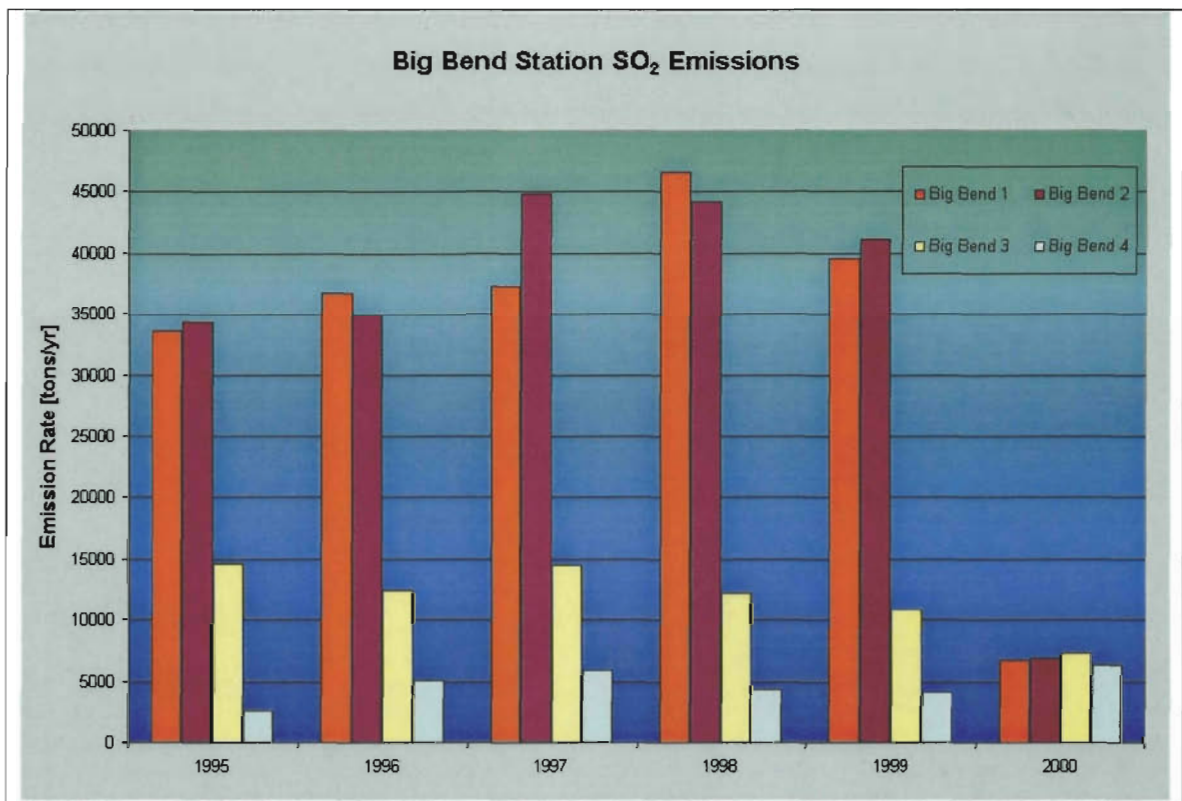
Combustion of PPS coal residual began in February 1997 at the Big Bend Station. To develop actual emission rate changes in terms of the tons per year (tpy) values shown in Chapter 62-212, Table 212.400-2, F.A.C, average tested PM emissions for calendar years 1995 and 1996 (representative of actual annual emissions prior to the change) and 1998 and 1999 (representative of actual annual emissions following the change) were evaluated. For Boiler Unit No. 3, historical data for the 1993/1994 period was used due to the extended outages (approximately 50-percent) that occurred for this unit in 1995.

Table 1. Significant Emission Rates for PSD Review

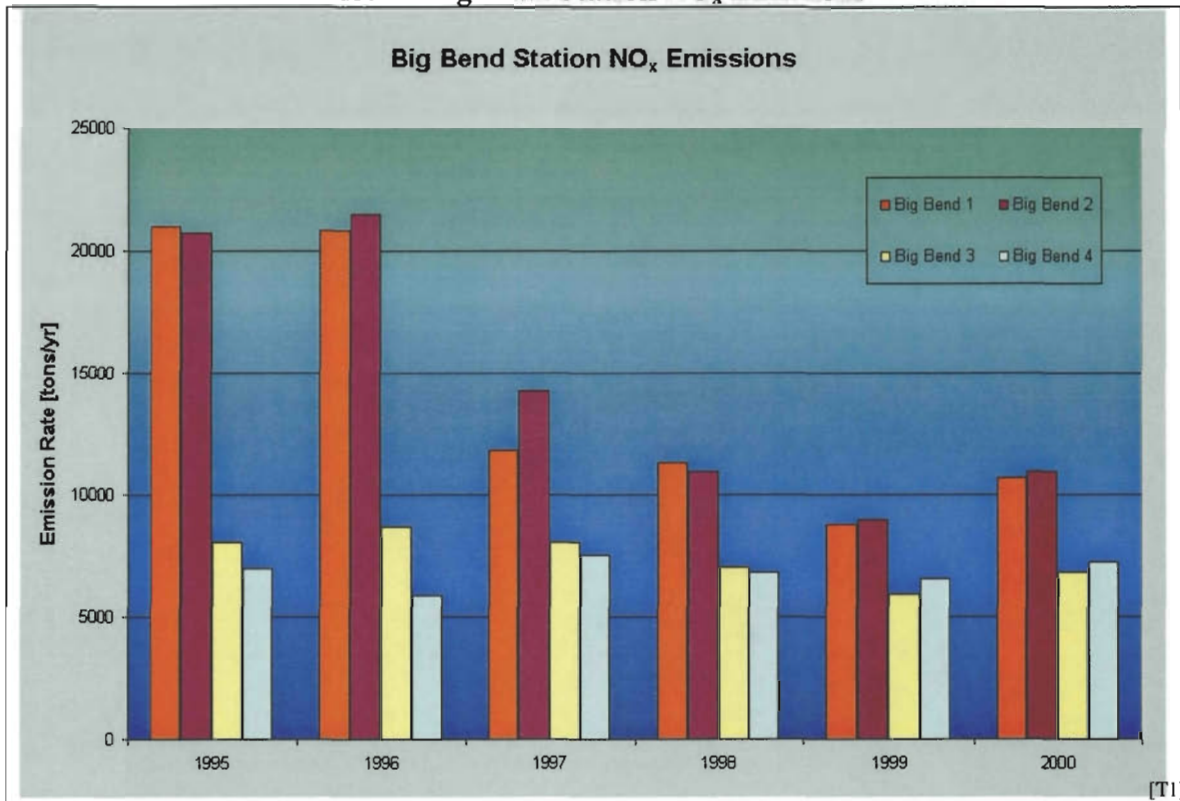
Pollutant	Emission Rate	
	(tpy)	(lb/yr)
CO	100	
NO _x	40	
SO ₂	40	
Ozone	40 (as VOC)	
PM	25	
PM ₁₀	15	
Total reduced sulfur (including H ₂ S)	10	
Reduced sulfur compounds (including H ₂ S)	10	
Sulfuric acid mist	7	
Fluorides	3	
Lead		1,200
Mercury		200
Municipal waste combustor organics		0.007
Municipal waste combustor metals	15	
Municipal waste combustor acid gases	40	
Municipal solid waste landfill emissions	50	

Source: Chapter 62-212, Table 212.400-2, F.A.C.

A discussion of the actual emission rate change for PM/PM₁₀ is provided in the following section. Due to its fuel characteristics and low usage rate compared to coal, the combustion of PPS coal residual at Big Bend Station is not expected to result in a significant net emission increase for any of the other PSD pollutants listed in Table 1. Emissions of SO₂ have decreased substantially from Big Bend Units 1 and 2 due to the operation of a new wet limestone scrubber and NO_x emissions have decreased from Big Bend Units 1 through 3 due to combustion modifications such as the installation of new coal classifiers and the tuning of air to fuel ratios. The following plots demonstrate the reductions in actual Big Bend Station SO₂ and NO_x annual emission rates that have occurred since 1995.



Plot 2 - Big Bend Station NO_x Emissions



Particulate Matter (PM/PM₁₀)

The ash content of PPS coal residual (average 45.4 percent by weight, as-received basis) is higher than the ash content of coal (approximately 10.0 percent by weight, as-received basis). Accordingly, emissions of PM/PM₁₀ could potentially increase due to the substitution of PPS coal residual for coal. However, Units 1, 2, 3, and 4 are each equipped with efficient electrostatic precipitators (ESPs) for PM/PM₁₀ removal. Accordingly, the increase in PPS coal residual ash content and low mass fraction of PPS coal residual in the PPS coal residual/coal blend would not be expected to result in any measurable increase in PM/PM₁₀ emission rates.

An estimate of potential PM/PM₁₀ increases due to the combustion of PPS coal residual was performed based on boiler and control system characteristics. For Units 1 through 3 wet bottom boilers, ash generated during the combustion process will partition approximately 80-percent to bottom ash and 20-percent to flyash. For each ton of PPS coal residual containing 45.4-percent ash, 0.363 and 0.091 tons of bottom ash and flyash will be generated, respectively. ESP control efficiency for Units 1 through 3 is conservatively assumed to be

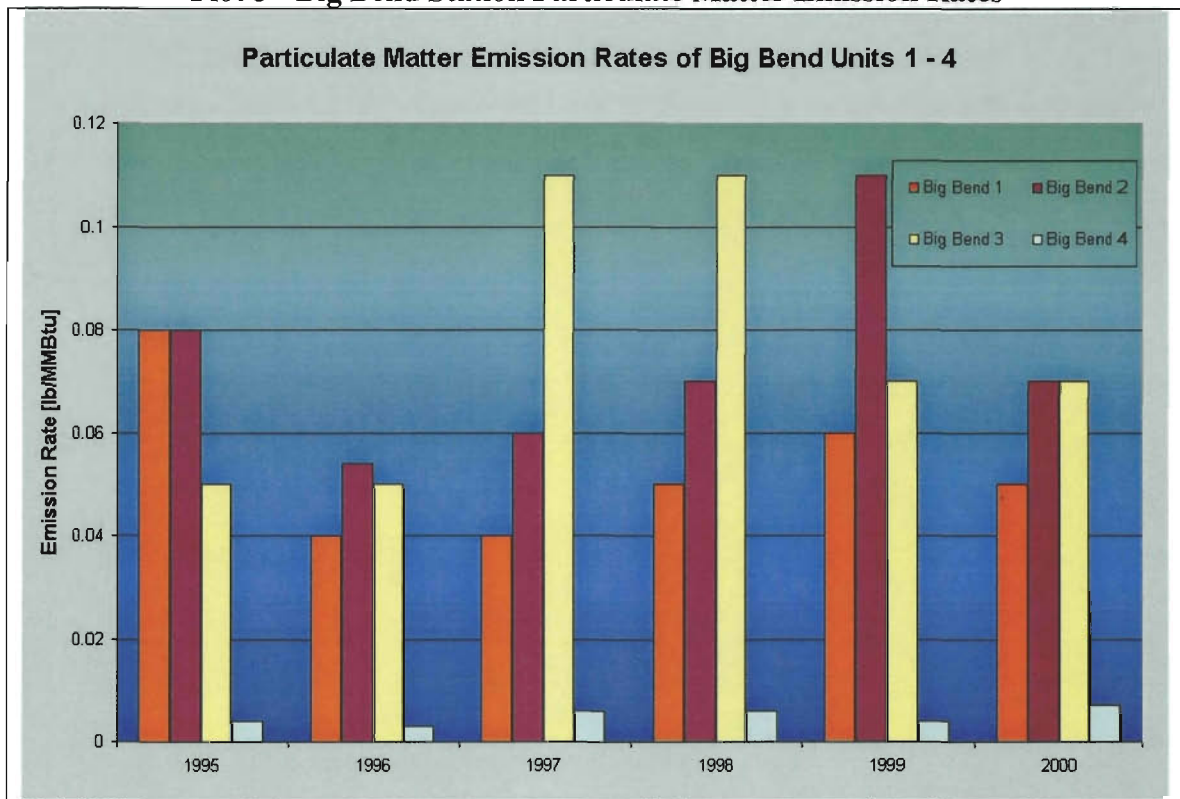
99.90-percent. Accordingly, each ton of PPS coal residual will result in 0.000091 tons of PM/PM₁₀ emissions. Assuming 200 tons per day and 365 days per year operation, up to 73,000 tons per year of PPS coal residual may be combusted at the Big Bend Station resulting in a potential PM/PM₁₀ emission rate increase of 6.6 tons per year. For dry-bottom Boiler No. 4, fuel ash partitioning would be expected to be the opposite of a wet-bottom boiler. However, Boiler No. 4 is subject to NSPS Subpart Db and has a more efficient ESP than Units 1 through 3. Assuming that each ton of PPS coal residual combusted in Unit No. 4 generates 0.363 tons of flyash, a ESP control efficiency of 99.95-percent, and approximately 18,250 tons per year of PPS coal residual combusted in Unit No. 4, PM/PM₁₀ emission increases due to PPS coal residual are estimated to be 3.3 tons per year. Based on this analysis, it is concluded that the use of PPS coal residual at Big Bend Station Units 1, 2, 3, and 4 will not cause a significant increase in PM/PM₁₀ emissions.

An analysis of 95/96 and 98/99 annual PM emission rates based on annual stack test data was conducted although this comparison is not considered to accurately reflect the impact of PPS coal residual combustion due to the variability inherent in PM stack testing. In addition, there are a number of other variables, in addition to fuel characteristics, which effect PM emissions. For example, ESP performance during the annual PM stack tests would be expected to play a major role in PM emission rates. Factors effecting PM/PM₁₀ emissions are discussed in the following sections.

ESP Performance

PM emissions may vary from year to year due to maintenance scheduling, outage scheduling, and actual performance of each ESP. Currently, TEC performs a major outage on each unit at Big Bend Station once every four years. During these major outages, the ESP internals are washed and inspected. As internal parts become worn, they are replaced. After work is performed during a major outage, the performance of the ESP will tend to degrade until the next major outage. The plot below illustrates the particulate matter emission rate of each unit from 1995 through 2000.

Plot 3 - Big Bend Station Particulate Matter Emission Rates



As the plot demonstrates, TEC has operated each ESP at Big Bend Station in compliance with the applicable emission limits governing these units. Although TEC has maintained each ESP during this period of time, the particulate matter emission rates fluctuate from year to year due to normal operational variation. In some cases, the emission rate increases, and in some cases, the emission rate actually decreases.

Test Measurement Variability

Also contributing to the variability in the PM emission rate is the uncertainty associated with the annual compliance test. During the annual compliance test, Method 17 is used to measure the PM emission rate in pounds per hour. This rate is determined by measuring the concentration of PM in the flue gas, measuring the flue gas flow rate, and multiplying the results. However, TEC has determined that there are significant cyclonic, pitch, and wall effects associated with the flow of flue gas in each stack. These effects can result in the misrepresentation of the flue gas flow rate measurement, which, in turn, affects the final calculation of the particulate matter emission rate.

Particulate Matter Emissions Calculation

In addition to normal operational variation and measurement uncertainty, PM emissions may fluctuate year to year due to the extrapolation of the three hour annual compliance test to an annual PM mass emission rate. The annual PM emissions are calculated by multiplying the emission rate determined during one test by the annual heat input to each unit. This introduces some uncertainty into the calculation because the emission rate determined during the annual compliance test at full load is not representative of the emission rate during other parts of the year and at other loads. In fact, PM emission rates may vary over the course of the year due to changes in meteorological conditions, variations in input parameters, and the normal cycling of maintenance as discussed above. These issues as well as the uncertainty introduced during the actual testing were discussed in the enclosed letter to Mr. Matthew O'Connor of the Hillsborough County Environmental Protection Commission dated January 28, 2000.

In an effort to optimize the removal efficiency of each ESP serving Big Bend Unit 1 this spring, TEC will be modifying and balancing the flow characteristics both to and within each ESP unit. In addition, the ash transport system and hopper level controls will be upgraded. Over the course of the next few years, similar optimization projects will be implemented on the ESPs serving Big Bend Units 2, 3 and 4. In addition, TEC will undertake a BACT analysis for each ESP at Big Bend Station and will implement the results by May 1, 2004.

The comparison of tested PM emissions is provided on Attachment I. As noted above, the change in annual PM emission rates based on stack test data is attributed to variability in ESP performance and stack testing rather than the use of PPS coal residual. Examining the test data for 1998 and 1999 supports this conclusion. PPS coal residual was combusted at Big Bend Station during these two years. For example, Boilers Nos. 2 and 3 show a 1998/1999 year-to-year variation in PM emission rates of 476 and 572 tons/yr, respectively. Because PPS coal residual only constitutes approximately 1.0-percent of the PPS coal residual/coal blend combusted at Big Bend Station, it is reasonable to conclude that the combustion of PPS coal residual is not the cause of the variations in year-to-year PM test results.

In addition to PM/PM₁₀ emissions due to the combustion of PPS coal residual at the Big Bend Station, fugitive PM/PM₁₀ emissions will occur due to the handling and storage of the PPS coal residual. These fugitive emissions are minor since the PPS coal residual has a relatively high moisture content of 5.0-percent. Estimates of potential PM/PM₁₀ emissions due to the handling and storage of PPS coal residual at the Big Bend Station are included as Attachment C.

In summary, it is concluded that the use of a PPS coal residual at Big Bend Station Units 1, 2, 3, and 4 has not caused a significant increase in PM/PM₁₀ emissions.



TAMPA ELECTRIC

January 28, 2000

Matthew O'Connor
Air Compliance Engineer
Air Management Division
Environmental Protection Commission
of Hillsborough County
1410 N. 21st Street
Tampa, Florida 33605

Via FedEx
Airbill No. 7925 4235 7383

**Re: Tampa Electric Company
Big Bend Station
Response on Petroleum Coke Reports**

Dear Mr. O'Connor:

This letter is provided in response to your letter dated January 12, 2000 concerning the Big Bend Petroleum Coke Reports. You made specific inquiry into the reason for the seeming increase in particulate matter emissions for both the Big Bend 3 & 4 Units.

The basis for each of the annual particulate emission estimates is one Method 17 (BB3) or Method 5-B (BB4) stack test conducted in accordance with 40 CFR 60, Appendix A. The result of this single annual test is used to represent the unit's particulate emission rate for that year. The stack test emission rate, in pounds per mmBtu, is simply multiplied by the unit's annual heat input as calculated by total fuel throughput to derive the tons per year of particulate matter reported. In using this methodology the inherent variability of the emission measurement can cause small changes that, when multiplied over the course of a year, may seem larger than they really are. This makes the use of this process to make comparison of one year's emission to another difficult. The following explanation of these variables and additional information should provide assurance that the changes in particulate emissions are unrelated to the combustion of petroleum coke and that in actuality the emissions represented in these reports are overstated.

As demonstrated during the test burning of Petcoke in 1995 and 1996, as well as previous and subsequent stack tests, the unit's emission rates of particulate matter vary up and down regardless of the combustion of petroleum coke. Also, a factor that is not currently being considered in the reported numbers is the additional particulate removal provided by the flue gas desulfurization (FGD) process which is required when burning petroleum.

Mr. Matthew O ' Connor

January 28, 2000

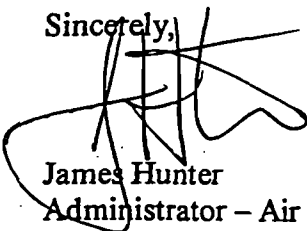
Page 2 of 2

In consideration of the variability of the measurement process, TEC has recently demonstrated through EPA Method 2F and 2G that there are significant cyclonic, pitch and wall effects in the stack gas flow for stacks CS002 and CS003. At this time, the sampling location for the BB3 particulate matter testing has not been checked; however, similar results are anticipated. A potential effect of these flow anomalies is increased variability in EPA Method 2, which is currently utilized in conjunction with Methods 5-B and 17, therefore, resulting in potential variation in particulate matter emission rates from test to test.

Finally, there are normal variations in the operation of any large industrial process. These variations are always within the boundaries of any and all emission requirements, but may fluctuate due to slight variations in input parameters (such as reductions in fuel sulfur), the normal cycling of process for operational or maintenance reasons or changes in meteorological conditions. At this time TEC has not been able to determine any specific process that may have made the stack test in question higher than the previous, but it seems apparent that the combustion of petcoke has little if any influence on the outcome.

If you have any questions or need further information, please contact me at 813/641-5033.

Sincerely,



James Hunter
Administrator - Air Programs
Environmental Planning

EP\gm\JH911

ATTACHMENT C

**SOLID FUEL YARD
EMISSION CALCULATIONS**

EMISSION INVENTORY WORKSHEET								FUG-PM	
Tampa Electric Company - Big Bend Station									
EMISSION SOURCE TYPE									
FUGITIVE PM - MATERIAL TRANSFER (DROPS)								Figure:	
FACILITY AND SOURCE DESCRIPTION									
Emission Source Description:		Fugitive PM - Polk Power Station Coal Residual (Drops)							
Emission Control Method(s)/ID No. (s):		Moist material, enclosures							
Emission Point ID:		FUG-PM							
EMISSION ESTIMATION EQUATIONS									
PM Emission (lb/hr) = 0.74 x 0.0032 x [(Wind Speed/5) ^{1.3} / (Material Moisture Content/2) ^{1.4}] x Material Handled (ton/hr)									
PM Emission (ton/yr) = 0.74 x 0.0032 x [(Wind Speed/5) ^{1.3} / (Material Moisture Content/2) ^{1.4}] x Material Handled (ton/yr) x (1 ton/2,000 lb)									
Source: Section 13.2-4, AP-42, January 1995.									
INPUT DATA AND EMISSIONS CALCULATIONS									
Mean Wind Speed:		8.6 mph		Material Moisture Content:		5.0 weight %			
Material Transfer Point	Source ID	Material Transfer Rates		Uncontrolled Emission Factor (lb PM/ton)	Control Efficiency (%)	Controlled Emission Factor (lb PM/ton)	Potential Emission Rates		
		(lb/hr)	(tpy)				(lb)	(tons)	
Dump Truck to Storage Pile	SF-1	50,000	73,000	0.001329	0.0	0.001329	0.03322	0.04850	
Front End Loader to Hopper No. 1	SF-2	50,000	73,000	0.001329	0.0	0.001329	0.03322	0.04850	
Hopper No. 1 to Belt Conveyor No. 1	SF-3	50,000	73,000	0.001329	100.0	0.000000	0.000000	0.000000	
Belt Conveyor No. 1 to Hopper No. 2	SF-4	50,000	73,000	0.001329	0.0	0.001329	0.03322	0.04850	
Hopper No. 2 to Belt Conveyor No. 2	SF-5	50,000	73,000	0.001329	100.0	0.000000	0.000000	0.000000	
Totals							0.0997	0.1455	
SOURCES OF INPUT DATA									
Parameter		Data Source							
Mean Wind Speed, mph		Climate of the States (Tampa, FL), Third Edition, 1985.							
Material Moisture Content		TEC, 2001.							
Material Transfer Point Identification		TEC, 2001.							
Material Transfer Rates		TEC, 2001.							
Control Efficiency		Complete enclosure - 100%.							
NOTES AND OBSERVATIONS									
Hourly rates based on 200 tons per day and 8 hours per day operation.									
DATA CONTROL									
Data Collected by:		P. Shell				Date: 3/01			
Evaluated by:		T. Davis				Date: 3/01			
Data Entered by:		T. Davis				Date: 3/01			

EMISSION INVENTORY WORKSHEET								FUG-PM10	
Tampa Electric Company - Big Bend Station									
EMISSION SOURCE TYPE									
FUGITIVE PM₁₀ - MATERIAL TRANSFER (DROPS & SCREENING)								Figure:	
FACILITY AND SOURCE DESCRIPTION									
Emission Source Description:		Fugitive PM - Polk Power Station Coal Residual (Drops)							
Emission Control Method(s)/ID No.(s):		Moist material, enclosures							
Emission Point ID:		FUG-PM ₁₀							
EMISSION ESTIMATION EQUATIONS									
PM ₁₀ Emission (lb/hr) = 0.35 x 0.0032 x [(Wind Speed/5) ³ / (Material Moisture Content/2) ⁴] x Material Handled (ton/hr)									
PM ₁₀ Emission (ton/yr) = 0.35 x 0.0032 x [(Wind Speed/5) ³ / (Material Moisture Content/2) ⁴] x Material Handled (ton/yr) x (1 ton/2,000 lb)									
Source: Section 13.2-4, AP-42, January 1995.									
INPUT DATA AND EMISSIONS CALCULATIONS									
Mean Wind Speed:		8.6 mph		Material Moisture Content:		5.0 weight %			
Material Transfer Point	Source ID	Material Transfer Rates		Uncontrolled Emission Factor (lb PM/ton)	Control Efficiency (%)	Controlled Emission Factor (lb PM/ton)	Potential Emission Rates		
		(lb/hr)	(tpy)				(lb)	(tons)	
Dump Truck to Storage Pile	SF-1	50,000	73,000	0.000628	0.0	0.000628	0.01571	0.02294	
Front End Loader to Hopper No. 1	SF-2	50,000	73,000	0.000628	0.0	0.000628	0.01571	0.02294	
Hopper No. 1 to Belt Conveyor No. 1	SF-3	50,000	73,000	0.000628	100.0	0.000000	0.00000	0.00000	
Belt Conveyor No. 1 to Hopper No. 2	SF-4	50,000	73,000	0.000628	0.0	0.000628	0.01571	0.02294	
Hopper No. 2 to Belt Conveyor No. 2	SF-5	50,000	73,000	0.000628	100.0	0.000000	0.00000	0.00000	
						Totals	0.0471	0.0688	
SOURCES OF INPUT DATA									
Parameter		Data Source							
Mean Wind Speed, mph		Climate of the States (Tampa, FL), Third Edition, 1985.							
Material Moisture Content		TEC, 2001.							
Material Transfer Point Identification		TEC, 2001.							
Material Transfer Rates		TEC, 2001.							
Control Efficiency		Complete enclosure - 100%.							
NOTES AND OBSERVATIONS									
Hourly rates based on 200 tons per day and 8 hours per day operation.									
DATA CONTROL									
Data Collected by:		P. Shell				Date: 3/01			
Evaluated by:		T. Davis				Date: 3/01			
Data Entered by:		T. Davis				Date: 3/01			

**TECO Big Bend
PPS Coal Residual
Storage Pile Dimensions**

Pile Dimension Calculations:

Pile	Pile Length (ft)	Pile Width (ft)	Pile Height (ft)	Pile Base Area (ft ²)	Pile Base Area (acre)	Pile Volume (ft ³)
Coal Residual	511.3	170.4	25.0	87,119	2.000	2,177,975

Sources: ECT, 2001.
TEC, 2001.

EMISSION INVENTORY WORKSHEET	FUG-PM10
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Tampa Electric Company - Big Bend Station

EMISSION SOURCE TYPE	
FUGITIVE PM₁₀ - ACTIVE OUTDOOR STORAGE	Figure:

FACILITY AND SOURCE DESCRIPTION	
Emission Source Description:	Fugitive PM - Active Outdoor Storage Pile
Emission Control Method(s)/ID No. (s):	Moist Material
Emission Point ID:	FUG-PM ₁₀

EMISSION ESTIMATION EQUATIONS	
PM ₁₀ Emission (lb/hr) = Emission Factor (lb PM/acre/day) x Storage Pile Area (acres) x (1 day/24 hrs)	
PM ₁₀ Emission (ton/yr) = Emission Factor (lb PM/acre/day) x Storage Pile Area (acres) x Storage Period (dys/yr) x (1 ton/2,000 lb)	
Source: ECT, 2001.	

INPUT DATA AND EMISSIONS CALCULATIONS								
--	--	--	--	--	--	--	--	--

Storage Pile Material Type	Source ID	Period of Storage (dys/yr)	Pile Area (acre)	Uncontrolled Emission Factor (lb PM/acre/dy)	Control Efficiency (%)	Controlled Emission Factor (lb PM/acre/dy)	Potential PM ₁₀ Emission Rates	
							(lb/hr)	(tpy)
Polk Power Station Coal Residual	SF-6	365	2 000	6 3	70.0	1.89	0.157	0.690

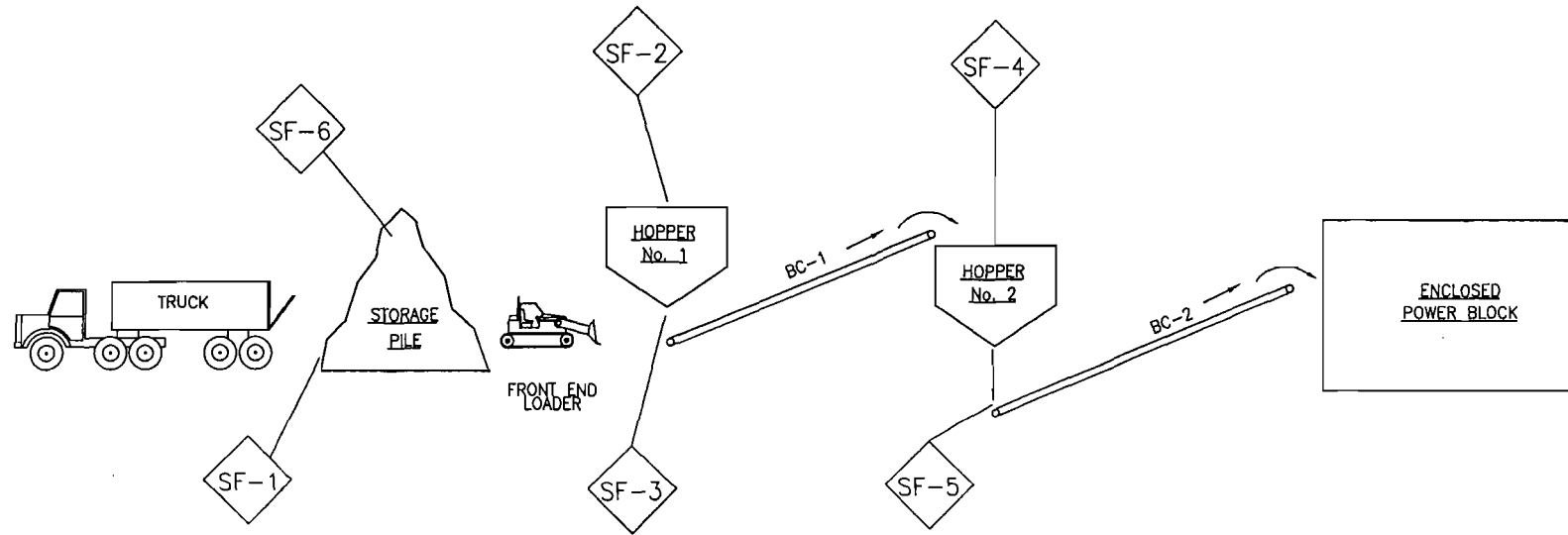
SOURCES OF INPUT DATA	
Parameter	Data Source
Uncontrolled Emission Factors	Section 8.19.1-1, AP-42, September 1991
Control Efficiency	Based on high moisture content.
Pile Size (acre)	TEC and ECT, 2001.

NOTES AND OBSERVATIONS	


DATA CONTROL			
Data Collected by:	P. Shell	Date:	3/01
Evaluated by:	T. Davis	Date:	3/01
Data Entered by:	T. Davis	Date:	3/01

ATTACHMENT D

**COAL RESIDUAL STORAGE & HANDLING
PROCESS FLOW SCHEMATIC**



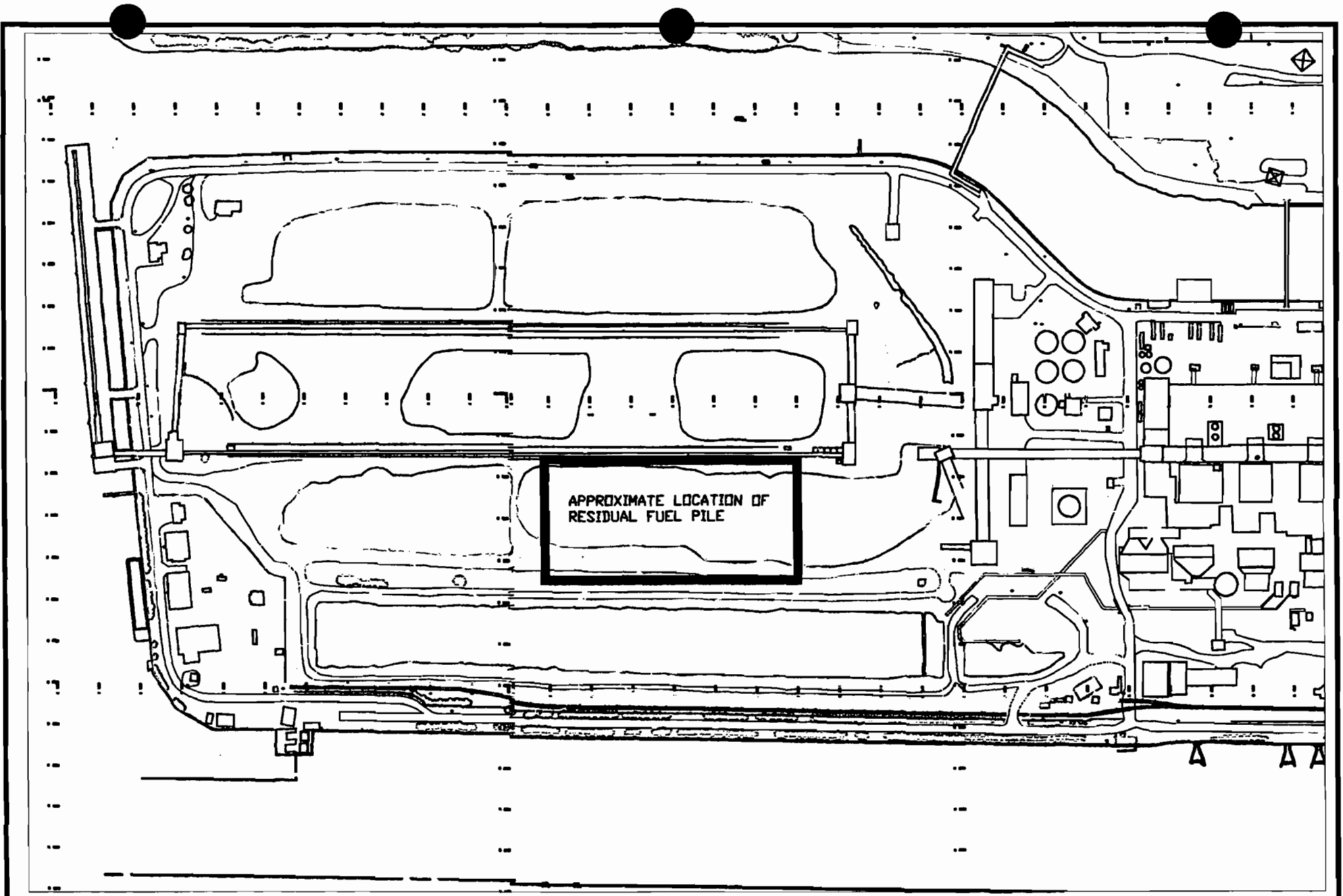
LEGEND

-  SF-1 EMISSION POINT
- BC BELT CONVEYOR

ATTACHMENT D.
BIG BEND STATION
COAL RESIDUAL STORAGE AND HANDLING PROCESS SCHEMATIC

Source: ECT, 2001.





ENERGY SUPPLY - GENERATION ENGINEERING

**FUELYARD SHOWING
LOCATION OF RESIDUAL
FUEL PILE
BIG BEND STATION**

DRAWN BY:	CHECKED BY:	REFERENCE FILE	FILENAME	SKETCH NUMBER
MJS			FUELPILE	SK-1
APPROVED BY:	DATE	DRAWING SCALE	JOB NUMBER	
	3/14/01	NO SCALE		

