TAMPA ELECTRIC

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BUREAU OF AIR REGULATION

February 7, 2006

Ms. Teresa Heron
Florida Department of
Environmental Protection
111 South Magnolia Drive, Suite 4
Tallahassee, FL 32301

Via FedEx
Airbill No. 7913 6517 8076

Re: Tampa Electric Company Big Bend Station
Title V Permit No. 0570039-023-AV
Air Construction Permit Application for
Coal, Petcoke or Slag Transloading Revised

Dear Ms. Heron,

Please find the enclosed revised air construction permit application as a follow-up to the discussions between Tampa Electric Company (TEC) and the Florida Department of Environmental Protection (Department) concerning the coal, slag, and petcoke transloading project at Big Bend Station.

TEC presently handles a variety of solid fuels at its Big Bend Station located in North Ruskin, Hillsborough County. These solid fuels include coal, coal residual, and petroleum coke (petcoke). TEC plans to receive, store, and transfer coal, petcoke and slag to trucks for subsequent use by another facility.

The coal, petcoke or slag will be brought in by barge at infrequent intervals and transloaded onto existing solid fuel handling equipment. The only new additional emission points associated with the handling of coal, petcoke or slag are: (a) the transfer of coal, petcoke or slag from a storage pile by front-end loaders to trucks, and (b) coal, petcoke or slag truck travel on Big Bend Station paved roads. All other coal, petcoke or slag handling activities will utilize existing equipment; i.e., conveyor belts, storage pile stackout, dozer operations on storage piles, etc. The coal or petcoke will be treated with a chemical surfactant prior to arriving at the Big Bend Station. Based on its glassine properties, the slag has minimal dust potential and therefore does not need to be treated with a chemical surfactant. TEC plans to handle a maximum of 150,000 tons per year (tpy) each of coal, petcoke, and slag with a maximum of 450,000 tpy for all three materials. There will be no increases in maximum hourly or annual Big Bend Station fuel yard solid fuel handling rates. TEC will continue to comply with all solid fuel yard requirements specified in its current Big Bend Station Title V operating permit.

For clarification, this revised air construction permit application is being resubmitted to the Department based on recent changes to the coal, slag, or petcoke transloading project.

TEC appreciates the cooperation of the Department in this matter. If you have any questions or comments, please contact me at (813) 228-4408.

Sincerely,

Shelly Castro
Environmental Engineer - Air Programs
Environmental, Health & Safety

EHS/rlk/SSC250

Enclosure

c/enc: Ms. Trina Vielhauer, FDEP
Mr. Jason Waters, FDEP SW
Mr. Scott Sheplak, FDEP
Mr. Sterlin Woodard, EPCHC
Ms. Alice Harman, EPCHC

BIG BEND STATION

COAL, PETCOKE, AND SLAG TRANSLOADING PROJECT

APPLICATION FOR AIR CONSTRUCTION PERMIT AND TITLE V OPERATION PERMIT REVISION

Prepared for:

TAMPA ELECTRIC
Tampa, Florida

Prepared by:

ECT

Environmental Consulting & Technology, Inc.
3701 Northwest 98th Street
Gainesville, Florida 32606

ECT No. 030609-0100

Revised February 2006

INTRODUCTION

Tampa Electric Company (TEC) previously submitted a permit exemption notification to the Florida Department of Environmental Protection (FDEP) on June 11, 2004. This permit exemption notification advised FDEP of TEC's plans to transload coal, petcoke, and slag at its Big Bend Station solid fuel yard for subsequent use by non-TEC facilities.

In response to this permit exemption notification, FDEP requested that TEC submit an air construction permit application for the transloading project since limits on capacity (i.e., maximum transloading throughput rates) cannot be authorized by a permit exemption. In response to FDEP's request, this concurrent air construction and Title V revision permit application, using DEP Form No. 62-210.900(1), Application for Air Permit—Long Form, constitutes TEC's request to transload coal, petcoke, and slag at the Big Bend Station for subsequent use by non-TEC facilities.

PROJECT DESCRIPTION

Coal, petcoke, or slag will be brought in by barge at infrequent intervals and transferred to storage piles using existing solid fuel handling equipment. The only new additional emission points associated with the transloading of coal, petcoke, or slag are: (a) the transfer of coal, petcoke, or slag from a storage pile by front-end loaders to trucks and (b) coal, petcoke, or slag truck travel on Big Bend Station paved and unpaved roads. All other coal, petcoke, or slag handling activities will utilize existing equipment (i.e., conveyor belts, storage pile stackout, dozer operations on storage piles, etc). The coal or petcoke will be treated with a chemical surfactant prior to arriving at the Big Bend Station. Based on its glassine properties, the slag has minimal dust potential and therefore does not need to be treated with a chemical surfactant. TEC plans to handle a maximum of 150,000 tons per year (tpy) each of coal, petcoke, and slag with a maximum of 450,000 tpy for all three materials. There will be no increases in maximum hourly or annual Big Bend Station fuel yard solid fuel handling rates. TEC will continue to comply with all solid fuel yard requirements specified in its current Big Bend Station Title V operating permit.

A facility plot plan showing the onsite travel path (total of 2.6 paved miles and 300 unpaved feet for one round trip) of the transloading trucks is provided in Attachment A. A process flow diagram showing the existing solid fuel and new transloading activities is provided in Attachment B. The material to be transloaded (coal, petcoke, and slag) will be received by barge and transferred to Transfer Station T2 using existing conveyors. From Transfer Station T2, the transloaded materials will be transferred to storage piles located in the fuel yard using a combination of existing conveyors. The coal, petcoke, and slag will then be loaded into trucks for offsite shipment using front-end loaders.

AIR CONSTRUCTION PERMIT APPLICATION

FDEP's Application for Air Permit—Long Form follows this introduction. A facility plot plan, process flow diagram, precautions to prevent unconfined fugitive particulate matter, and emission rate calculations are provided in Attachments A through D, respectively.

Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Air Construction Permit–Use this form to apply for an air construction permit for a proposed project:

- subject to prevention of significant deterioration (PSD) review, nonattainment area (NAA) new source review, or maximum achievable control technology (MACT) review; or
- where the applicant proposes to assume a restriction on the potential emissions of one or more pollutants to escape a federal program requirement such as PSD review, NAA new source review, Title V, or MACT; or
- at an existing federally enforceable state air operation permit (FESOP) or Title V permitted facility.

Air Operation Permit – Use this form to apply for:

- an initial federally enforceable state air operation permit (FESOP); or
- an initial/revised/renewal Title V air operation permit.

Air Construction Permit & Revised/Renewal Title V Air Operation Permit (Concurrent Processing Option) – Use this form to apply for both an air construction permit and a revised or renewal Title V air operation permit incorporating the proposed project.

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: **Tampa Electric Company**
2. Site Name: **Big Bend Station**
3. Facility Identification Number: **0570039**
4. Facility Location...:
   Street Address or Other Locator: **Big Bend Road**
   City: **Tampa** County: **Hillsborough** Zip Code: **33572**
5. Relocatable Facility? ☐ Yes ☒ No
6. Existing Title V Permitted Facility? ☒ Yes ☐ No

Application Contact

1. Application Contact Name: **Shelly Castro, Engineer – Air Programs**
2. Application Contact Mailing Address...
   Organization/Firm: **Tampa Electric Company**
   Street Address: **P. O. Box 111**
   City: **Tampa** State: **FL** Zip Code: **33601**
3. Application Contact Telephone Numbers...
   Telephone: **(813) 228-4408** ext. Fax: **(813) 228-1308**
4. Application Contact Email Address: **sscastro@tecoenergy.com**

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	
2. Project Number(s):	
3. PSD Number (if applicable):	
4. Siting Number (if applicable):	

APPLICATION INFORMATION

Purpose of Application

This application for air permit is submitted to obtain: (Check one)

Air Construction Permit

☐ Air construction permit.

Air Operation Permit

☐ Initial Title V air operation permit.
☐ Title V air operation permit revision.
☐ Title V air operation permit renewal.
☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.
☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

☒ Air construction permit and Title V permit revision, incorporating the proposed project.
☐ Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

☒ I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

Application Comment

TEC presently transloads solid fuels at the Big Bend Station for use at its Polk Power Station. This construction permit application requests approval to transload coal, petcoke or slag at the Big Bend Station fuel yard for subsequent use by non-TEC facilities.

The coal, petcoke or slag will be brought in by barge at infrequent intervals and transferred to storage piles using existing solid fuel handling equipment. The only new additional emission points associated with the transloading of coal, petcoke or slag are: (a) the transfer of coal, petcoke or slag from a storage pile by front-end loaders to trucks, and (b) coal, petcoke or slag truck travel on Big Bend Station paved and unpaved roads. All other coal, petcoke or slag handling activities will utilize existing equipment; i.e., conveyor belts, storage pile stackout, dozer operations on storage piles, etc. The coal or petcoke will be treated with a chemical surfactant prior to arriving at the Big Bend Station. Based on its glassine properties, the slag has minimal dust potential and therefore does not need to be treated with a chemical surfactant. TEC plans to handle up to 150,000 tons per year each of coal, petcoke, and slag for a total of up to 450,000 tons per year for all three materials. There will be no increases in maximum hourly or annual Big Bend Station fuel yard solid fuel handling rates. TEC will continue to comply with all solid fuel yard requirements specified in its current Big Bend Station Title V operating permit.

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Proc. Fee
010	Solid Fuel Yard, Fugitive Emissions (Transloading of coal, petcoke, or slag)	N/A	N/A

Application Processing Fee

Check one: ☐ Attached - Amount: $_____ ☒ Not Applicable

APPLICATION INFORMATION

Owner/Authorized Representative Statement **N/A**

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name:

2. Owner/Authorized Representative Mailing Address...
   Organization/Firm:
   Street Address:
   City: State: Zip Code:

3. Owner/Authorized Representative Telephone Numbers...
   Telephone: ext. Fax:

4. Owner/Authorized Representative Email Address:

5. Owner/Authorized Representative Statement:

I, the undersigned, am the owner or authorized representative of the facility addressed in this air permit application. 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 and all other requirements identified in this application to which the facility is subject. 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 the facility or any permitted emissions unit.

_____ _____

Signature Date

APPLICATION INFORMATION

Application Responsible Official Certification

Complete if applying for an initial/revised/renewal Title V permit or concurrent processing of an air construction permit and a revised/renewal Title V permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name:
   Karen Sheffield, General Manager - Big Bend Station

2. Application Responsible Official Qualification (Check one or more of the following options, as applicable):

   ☒ For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C.

   ☐ For a partnership or sole proprietorship, a general partner or the proprietor, respectively.

   ☐ For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official.

   ☐ The designated representative at an Acid Rain source.

3. Application Responsible Official Mailing Address...
   Organization/Firm: **Tampa Electric Company**
   Street Address: **P.O. Box 111**
   City: **Tampa** State: **FL** Zip Code: **33601-0111**

4. Application Responsible Official Telephone Numbers...
   Telephone: **(813) 228-4111** ext. Fax: **(813) 228-1308**

5. Application Responsible Official Email Address: **kasheffield@tecoenergy.com**

6. Application Responsible Official Certification:

   I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. 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 and all other applicable requirements identified in this application to which the Title V source is subject. 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 the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.

   Karen Sheffield — Signature
   2/6/06 — Date

APPLICATION INFORMATION

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: **32606-5004**
3. Professional Engineer Telephone Numbers...
   Telephone: **(352) 332-0444** ext. Fax: **(352) 332-6722**
4. Professional Engineer Email Address: **tdavis@ectinc.com**
5. 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.

(3) If the purpose of this application is to obtain a Title V 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 plan and schedule is submitted with this application.

(4) If the purpose of this application is to obtain an air construction permit (check here ☒, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal 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.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal 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.

Thomas W. Davis
Signature
(seal)

2/2/06
Date

* Attach any exception to certification statement.

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 :			

Facility Contact

1. Facility Contact Name: **Karen Zwolak, Senior Environmental Consultant**
2. Facility Contact Mailing Address... Organization/Firm: **Tampa Electric Company** Street Address: **P. O. Box 111** City: **Tampa** State: **FL** Zip Code: **33601**
3. Facility Contact Telephone Numbers: Telephone: **(813) 228-4111** ext. Fax: **(813) 228-1308**
4. Facility Contact Email Address: **kozwolak@tecoenergy.com**

Facility Primary Responsible Official **N/A**

Complete if an "application responsible official" is identified in Section I. that is not the facility "primary responsible official."

1. Facility Primary Responsible Official Name:
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
3. Facility Primary Responsible Official Telephone Numbers... Telephone: ( ) - ext. Fax: ( ) -
4. Facility Primary Responsible Official Email Address:

FACILITY INFORMATION

Facility Regulatory Classifications

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a "major source" and a "synthetic minor source."

1. ☐ Small Business Stationary Source	☐ Unknown
2. ☐ Synthetic Non-Title V Source	
3. ☒ Title V Source	
4. ☒ Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. ☐ Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. ☒ Major Source of Hazardous Air Pollutants (HAPs)	
7. ☐ Synthetic Minor Source of HAPs	
8. ☒ One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. ☐ One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. ☐ One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. ☐ Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment:	

FACILITY INFORMATION

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
NOX	**A**	**N**
SO2	**A**	**Y**
CO	**A**	**N**
PM10	**A**	**Y**
PM	**A**	**Y**
SAM (Sulfuric Acid Mist)	**A**	**N**
VOC	**A**	**N**
PB	**B**	**N**
H106 (Hydrogen Chloride)	**A**	**N**
H107 (Hydrogen Fluoride)	**A**	**N**
H133 (Nickel Compounds	**A**	**N**
HAPS (Total)	**A**	**N**

B. EMISSIONS CAPS

Facility-Wide or Multi-Unit Emissions Caps

1. Pollutant Subject to Emissions Cap	2. Facility Wide Cap [Y or N]? (all units)	3. Emissions Unit ID No.s Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap
SO2	**N**	**001 – 004**		**71,810**	**ESCPSD**
PM/PM10	**N**	**001 – 004**		**2,767**	**ESCPSD**

7. Facility-Wide or Multi-Unit Emissions Cap Comment:

Additional SO_2 caps for Units 001 – 003 are 6.5 lb/mmBtu (2-hour average), 31.5 ton/hr (3-hour average), and 25 ton/hr (24-hour block average). In addition, Units 001 and 002 are limited to 16.5 ton/hr SO_2 (24-hour block average).

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **Att. A** ☐ Previously Submitted, Date:
2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **Att. B** ☐ Previously Submitted, Date:
3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **Att. C** ☐ Previously Submitted, Date:

Additional Requirements for Air Construction Permit Applications

1. Area Map Showing Facility Location:
   ☐ Attached, Document ID: ☒ Previously Submitted, Date: **June 30, 2004**
2. Description of Proposed Construction or Modification:
   ☒ Attached, Document ID: **See comment below** ☐ Not Applicable
3. Rule Applicability Analysis:
   ☐ Attached, Document ID: ☒ Previously Submitted, Date: **June 30, 2004**
4. List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.):
   ☐ Attached, Document ID:_____ ☒ Not Applicable
5. Fugitive Emissions Identification (Rule 62-212.400(2), F.A.C.):
   ☐ Attached, Document ID: ☒ Previously Submitted, Date: **June 30, 2004**
6. Preconstruction Air Quality Monitoring and Analysis (Rule 62-212.400(5)(f), F.A.C.):
   ☐ Attached, Document ID:_____ ☒ Not Applicable
7. Ambient Impact Analysis (Rule 62-212.400(5)(d), F.A.C.):
   ☐ Attached, Document ID: ☒ Not Applicable
8. Air Quality Impact since 1977 (Rule 62-212.400(5)(h)5., F.A.C.):
   ☐ Attached, Document ID:_____ ☒ Not Applicable
9. Additional Impact Analyses (Rules 62-212.400(5)(e)1. and 62-212.500(4)(e), F.A.C.):
   ☐ Attached, Document ID:_____ ☒ Not Applicable
10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.):
    ☐ Attached, Document ID:_____ ☒ Not Applicable

FACILITY INFORMATION

Additional Requirements for FESOP Applications N/A

1. List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.):
   ☐ Attached, Document ID: ☐ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

See comment below

1. List of Insignificant Activities (Required for initial/renewal applications only):
   ☐ Attached, Document ID: _____ ☒ Not Applicable
2. Identification of Applicable Requirements (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought):
   ☐ Attached, Document ID: _____
   ☒ Not Applicable
3. Compliance Report and Plan (Required for all initial/revision/renewal applications):
   ☐ Attached, Document ID: _____
   Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.
4. List of Equipment/Activities Regulated under Title VI (If applicable, required for initial/renewal applications only):
   ☐ Attached, Document ID:_____
   ☐ Equipment/Activities On site but Not Required to be Individually Listed
   ☒ Not Applicable
5. Verification of Risk Management Plan Submission to EPA (If applicable, required for initial/renewal applications only) :
   ☐ Attached, Document ID:_____ ☒ Not Applicable
6. Requested Changes to Current Title V Air Operation Permit:
   ☐ Attached, Document ID:_____ ☒ Not Applicable

Additional Requirements Comment

A description of the proposed fuel yard transloading modification project is provided in the Introduction and also in Application Comment section on Page 2 of this application.

Title V operating permit renewal application was submitted on June 30, 2004. This application included a Compliance Report and Plan.

EMISSIONS UNIT INFORMATION
Section [1] of [1]

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

☒ The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

☐ The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

☐ 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).

☐ 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.

☒ 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. Description of Emissions Unit Addressed in this Section:
Solid Fuel Yard, Fugitive Emissions. Transloading of coal, petcoke, or slag.

3. Emissions Unit Identification Number: **010**

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A	**N/A**	**N/A**	**49**	☐ Yes ☒ No

9. Package Unit:
Manufacturer: Model Number:

10. Generator Nameplate Rating:

11. Emissions Unit Comment:

TEC presently transloads solid fuels at the Big Bend Station for use at its Polk Power Station. This construction permit application requests approval to transload coal, petcoke or slag at the Big Bend Station fuel yard for subsequent use by non-TEC facilities.

The coal, petcoke or slag will be brought in by barge at infrequent intervals and transferred to storage piles using existing solid fuel handling equipment. The only new additional emission points associated with the transloading of coal, petcoke or slag are: (a) the transfer of coal, petcoke or slag from a storage pile by front-end loaders to trucks, and (b) coal, petcoke or slag truck travel on Big Bend Station paved and unpaved roads.

EMISSIONS UNIT INFORMATION
Section [1] of [1]

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description:

Coal and petcoke – dust suppression by chemical surfactant

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

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate: **4,000 tons per hour**	
2. Maximum Production Rate: **N/A**	
3. Maximum Heat Input Rate: **N/A** million Btu/hr	
4. Maximum Incineration Rate: pounds/hr **N/A** tons/day	
5. Requested Maximum Operating Schedule:	
24 hours/day	**7** days/week
52 weeks/year	**8,760** hours/year

6. Operating Capacity/Schedule Comment:

Maximum throughput rate of 4,000 tons per hour is for the existing fuel yard and currently authorized solid fuels. The transloading project, which will utilize existing barge unloading and transfer equipment, will not increase current maximum hourly or annual BigBend Station fuel yard solid fuel handling rates.

Transloading of coal, petcoke, or slag will occur infrequently. Maximum hourly transloading rate to trucks is 144.2 tons per hour; only one material will be transloaded at a time. Maximum annual transloading rate is 150,000 tons for each material and 450,000 tons for all three materials combined.

EMISSIONS UNIT INFORMATION
Section [1] of [1]

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: **Existing: FH-001 through FH-031, FH-036 through FH-047, FH-050 through FH-058, FH-063, FH-067 through FH-073.** **Transloading: PET/SLAG/COAL-01, PET/SLAG/COAL-02a, PET/SLAG/COAL-02b PET/SLAG/COAL-03a, PET/SLAG/COAL-03b**	2. Emission Point Type Code: **4**

3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:

N/A

4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:
N/A

5. Discharge Type Code: **F**	6. Stack Height: **N/A** feet	7. Exit Diameter: **N/A** feet
8. Exit Temperature: **77** °F	9. Actual Volumetric Flow Rate: **N/A** acfm	10. Water Vapor: **N/A** %

11. Maximum Dry Standard Flow Rate: **N/A** dscfm	12. Nonstack Emission Point Height: **Approx. 10** feet
13. Emission Point UTM Coordinates...**N/A** Zone: East (km): North (km):	14. Emission Point Latitude/Longitude...**N/A** Latitude (DD/MM/SS) Longitude (DD/MM/SS)

15. Emission Point Comment:

The only new additional emission points associated with the transloading of coal, petcoke or slag are: (a) the transfer of coal, petcoke or slag from a storage pile by front-end loaders to trucks, and (b) coal, petcoke or slag truck travel on Big Bend Station paved and unpaved roads. All other coal, petcoke or slag handling activities will utilize existing equipment; i.e., conveyor belts, storage pile stackout, dozer operations on storage piles, etc.

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): **Handling and transfer of solid fuels, including the transloading of coal, petcoke, or slag.**		
2. Source Classification Code (SCC): **3-05-102-03**	3. SCC Units: **Tons Transferred or Handled**	
4. Maximum Hourly Rate: **4,000**	5. Maximum Annual Rate: **6,000,000**	6. Estimated Annual Activity Factor: **N/A**
7. Maximum % Sulfur: **N/A**	8. Maximum % Ash: **N/A**	9. Million Btu per SCC Unit: **N/A**
10. Segment Comment: **Maximum throughput rates are for the existing fuel yard. The transloading project, which will utilize existing barge unloading and transfer equipment, will not increase current maximum hourly or annual Big Bend Station fuel yard solid fuel handling rates.** **Transloading of coal, petcoke, or slag will occur infrequently. Maximum hourly transloading rate to trucks is 144.2 tons per hour; only one material will be transloaded at a time. Maximum annual transloading rate is 150,000 tons for each material and 450,000 tons for all three materials combined.**		

Segment Description and Rate: Segment ___ of ___

1. Segment Description (Process/Fuel Type) (limit to 500 characters):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	**062**		**WP**
PM10	**062**		**NS**

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control: **See Attachment D**
3. Potential Emissions: **N/A** lb/hour **N/A** tons/year	4. Synthetically Limited? ☒ Yes ☐ No
5. Range of Estimated Fugitive Emissions (as applicable): **N/A** to **17.5** tons/year	
6. Emission Factor: **See Attachment D** Reference: **AP-42**	7. Emissions Method Code: **3**
8. Calculation of Emissions: **See Attachment D**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **The information shown above is applicable to the proposed new coal, petcoke, or slag transloading fugitive emission points. Detailed PM/PM_{10} emission estimates are provided in Attachment D.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation. **(See Comment in Field 6)**

Allowable Emissions Allowable Emissions ____of____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): **TEC is not requesting any revisions to currently authorized emission limits as specified in Final Title V Permit No. 0570039-013-AV. The solid fuel is only subject to visible emission limitations – these limits are provided in Section G of this application.**	

Allowable Emissions Allowable Emissions ____of____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **PM10**	2. Total Percent Efficiency of Control: **See Attachment D**
3. Potential Emissions: **N/A** lb/hour **N/A** tons/year	4. Synthetically Limited? ☒ Yes ☐ No
5. Range of Estimated Fugitive Emissions (as applicable): **N/A** to **4.9** tons/year	
6. Emission Factor: **See Attachment D** Reference: **AP-42**	7. Emissions Method Code: **3**
8. Calculation of Emissions: **See Attachment D**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **The information shown above is applicable to the proposed new coal, petcoke, or slag transloading fugitive emission points. Detailed PM/PM_{10} emission estimates are provided in Attachment D.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation. **(See Comment in Field 6)**

Allowable Emissions Allowable Emissions ____of____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): **TEC is not requesting any revisions to currently authorized emission limits as specified in Final Title V Permit No. 0570039-013-AV. The solid fuel is only subject to visible emission limitations – these limits are provided in Section G of this application.**	

Allowable Emissions Allowable Emissions ____of____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION
Section [1] of [1]

G. VISIBLE EMISSIONS INFORMATION

Complete if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 2

1. Visible Emissions Subtype: **VE20**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: **20** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: **EPA Reference Method 9**	
5. Visible Emissions Comment: **Limit applicable to all unconfined emission sources.** **Rule 62-296.320(4)(b)(1), F.A.C.**	

Visible Emissions Limitation: Visible Emissions Limitation 2 of 2

1. Visible Emissions Subtype: **VE05**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: **5** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: **EPA Reference Method 9**	
5. Visible Emissions Comment: **Limit applicable to emission sources other than unconfined emission sources.** **Rule 62-296.711(2)(a), F.A.C.**	

FACILITY INFORMATION

EMISSIONS UNIT INFORMATION
Section [1] of [1]

H. CONTINUOUS MONITOR INFORMATION

Complete if this emissions unit is or would be subject to continuous monitoring.
Continuous Monitoring System: Continuous Monitor _____ of _____ **N/A**

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

FACILITY INFORMATION

EMISSIONS UNIT INFORMATION
Section [1] of [1]

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **Att. B** ☐ Previously Submitted, Date

2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID:_____ ☒ Not Applicable

3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: ☒ Not Applicable

4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID:_____ ☒ Not Applicable

5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: ☒ Previously Submitted, Date **June 30, 2004**

6. Compliance Demonstration Reports/Records
   ☐ Attached, Document ID: _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☐ Previously Submitted, Date: _____
   Test Date(s)/Pollutant(s) Tested:
   _____
   ☐ To be Submitted, Date (if known):_____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   ☒ Not Applicable
   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute
   ☐ Attached, Document ID: _____ ☒ Not Applicable

FACILITY INFORMATION

EMISSIONS UNIT INFORMATION
Section [1] of [1]

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e))
   ☐ Attached, Document ID: ☒ Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.)
   ☐ Attached, Document ID: ☒ Not Applicable
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only)
   ☐ Attached, Document ID: ☒ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements
   ☐ Attached, Document ID: ☒ Not Applicable
2. Compliance Assurance Monitoring
   ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Alternative Methods of Operation
   ☐ Attached, Document ID: _____ ☒ Not Applicable
4. Alternative Modes of Operation (Emissions Trading)
   ☐ Attached, Document ID: _____ ☒ Not Applicable
5. Acid Rain Part Application
   - ☐ Certificate of Representation (EPA Form No. 7610-1)
     - ☐ Copy Attached, Document ID:_____
   - ☐ Acid Rain Part (Form No. 62-210.900(1)(a))
     - ☐ Attached, Document ID:_____
     - ☐ Previously Submitted, Date:_____
   - ☐ Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
     - ☐ Attached, Document ID:_____
     - ☐ Previously Submitted, Date:_____
   - ☐ New Unit Exemption (Form No. 62-210.900(1)(a)2.)
     - ☐ Attached, Document ID:_____
     - ☐ Previously Submitted, Date:_____
   - ☐ Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
     - ☐ Attached, Document ID:_____
     - ☐ Previously Submitted, Date:_____
   - ☐ Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
     - ☐ Attached, Document ID:_____
     - ☐ Previously Submitted, Date:_____
   - ☐ Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
     - ☐ Attached, Document ID:_____
     - ☐ Previously Submitted, Date:_____
   - ☒ Not Applicable

FACILITY INFORMATION

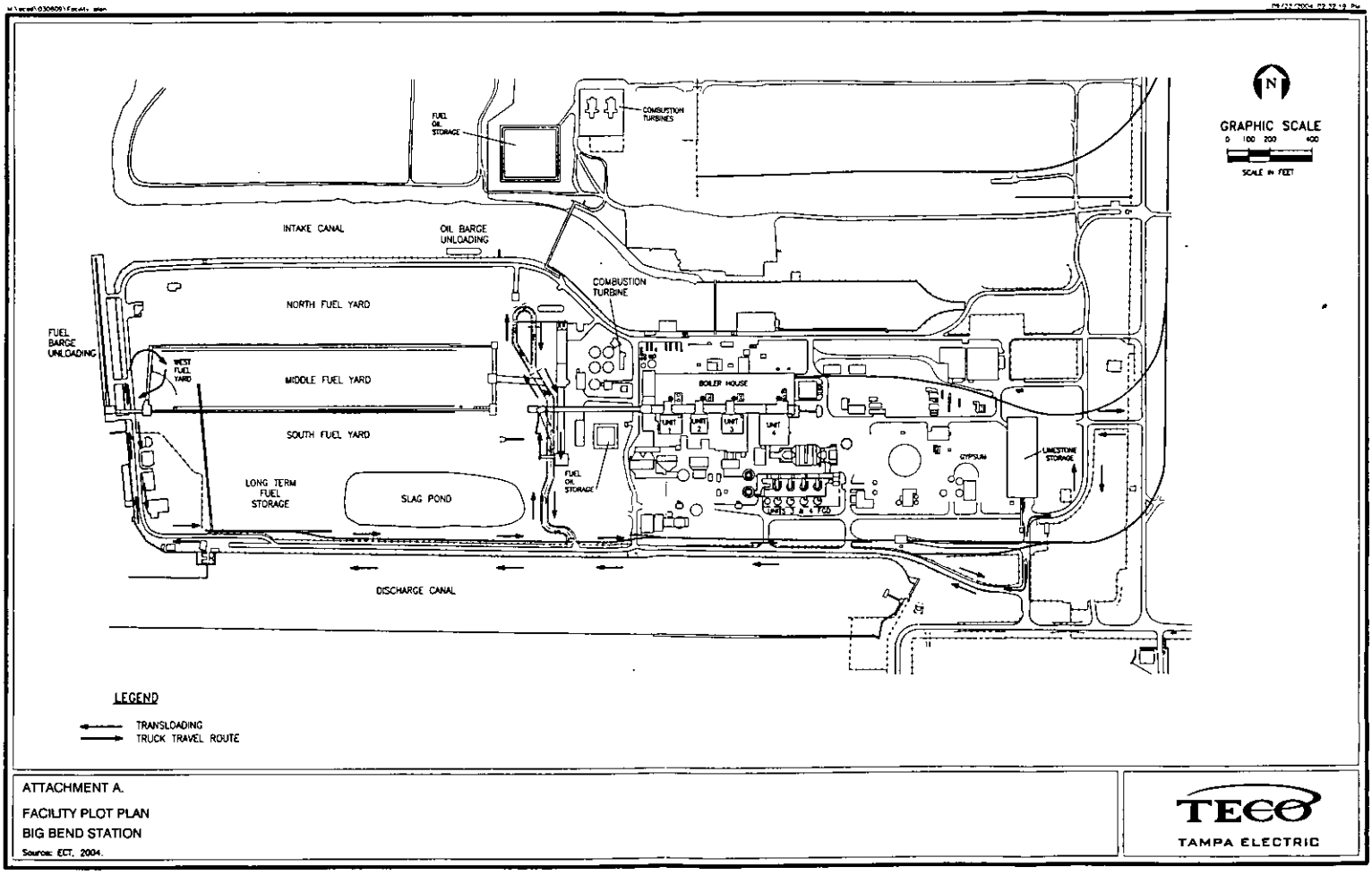
EMISSIONS UNIT INFORMATION
Section [1] of [1]

Additional Requirements Comment

Title V operating permit renewal application was previously submitted on June 30, 2004.

ATTACHMENT A

FACILITY PLOT PLAN



ATTACHMENT A.

FACILITY PLOT PLAN

BIG BEND STATION

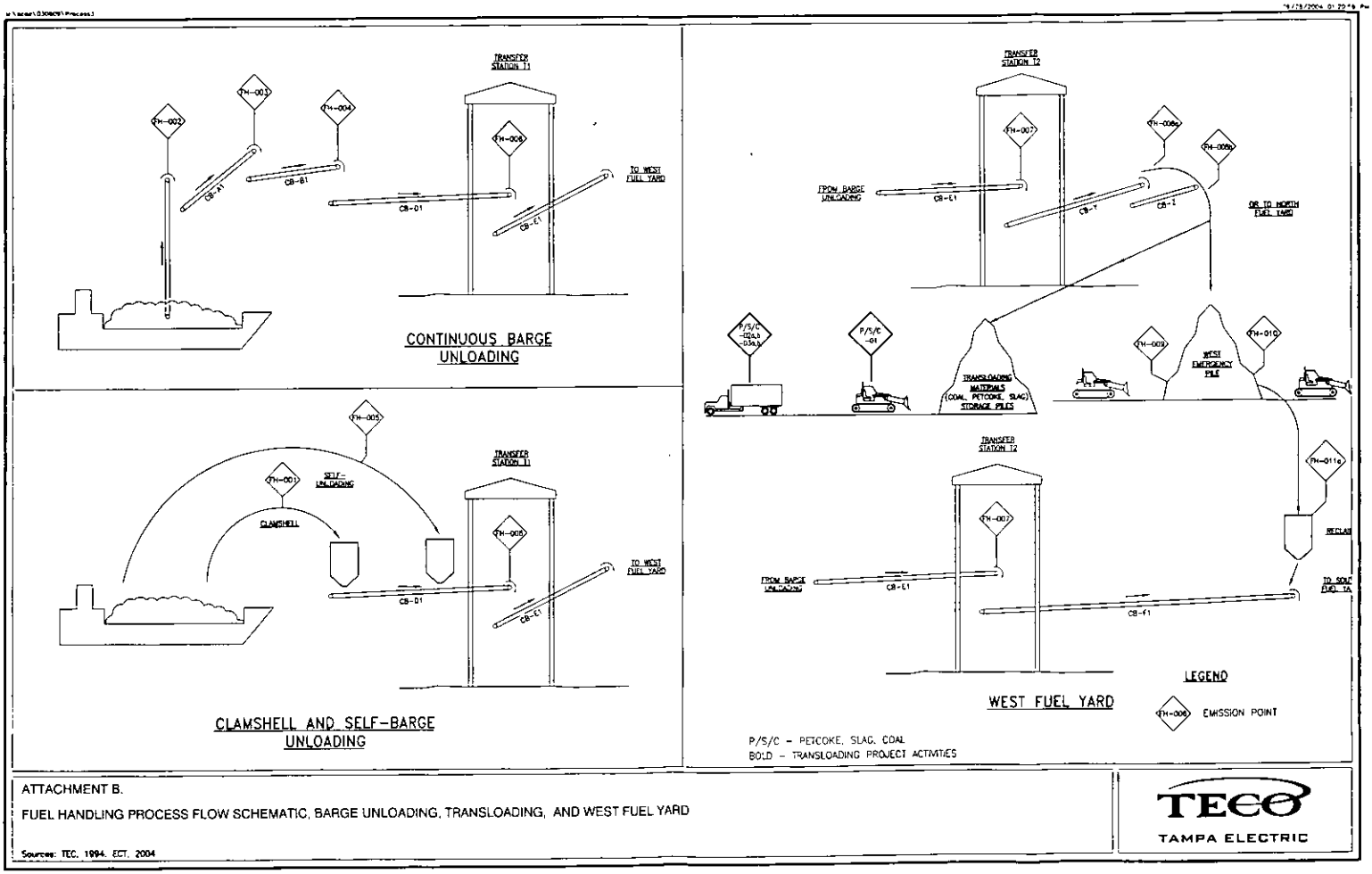
Source: ECT, 2004.

TECO

TAMPA ELECTRIC

ATTACHMENT B

PROCESS FLOW DIAGRAM



ATTACHMENT B.

FUEL HANDLING PROCESS FLOW SCHEMATIC, BARGE UNLOADING, TRANSLOADING, AND WEST FUEL YARD

Sources: TEC, 1994, ECT, 2004

TEC

TAMPA ELECTRIC

ATTACHMENT C

PRECAUTIONS TO PREVENT EMISSIONS OF UNCONFINED PARTICULATE MATTER

BIG BEND STATION

PRECAUTIONS TO PREVENT EMISSIONS OF UNCONFINED PARTICULATE MATTER

Unconfined particulate matter emissions that may result from operations include:

- Vehicular traffic on paved and unpaved roads.
- Wind-blown dust from yard areas.
- Periodic abrasive blasting.

The following techniques will be used to prevent unconfined particulate matter emissions on an as needed basis:

- Chemical or water application to:
  - Unpaved roads.
  - Unpaved yard areas.
- Paving and maintenance of roads, parking areas and yards.
- Landscaping or planting of vegetation.
- Confining abrasive blasting where possible.
- Other techniques, as necessary.

ATTACHMENT D

EMISSIONS RATE CALCULATIONS

Tampa Electric Company - Big Bend Station
Petroleum Coke/Slag/Coal Transloading PM/PM_0 Emission Estimates

Emission Point Description	Emission Point ID	Potential Emission Rates PM (lb/hr)	PM (tpy)	PM_{10} (lb/hr)	PM_{10} (tpy)
A. Petroleum Coke					
Petcoke Handling - Existing Equipment	FH-001 thru FH-008b	9.955	0.187	4.709	0.088
Petcoke Truck Loading at Storage Pile	PET-01	0.012	0.006	0.006	0.003
Trucks (Empty) - Paved Roads	PET/SLAG/COAL-02a	2.773	1.442	0.541	0.281
Trucks (Full) - Paved Roads	PET/SLAG/COAL-02b	7.844	4.079	1.530	0.796
Trucks (Empty) - Unpaved Roads	PET/SLAG/COAL-03a	0.236	0.122	0.074	0.038
Trucks (Full) - Unpaved Roads	PET/SLAG/COAL-03b	0.322	0.167	0.101	0.524
Totals		**21.141**	**6.003**	**6.959**	**1.731**
B. Slag					
Slag Handling - Existing Equipment	FH-001 thru FH-008b	18.989	0.356	8.981	0.168
Slag Truck Loading at Storage Pile	SLAG-01	0.014	0.007	0.007	0.003
Trucks (Empty) - Paved Roads	PET/SLAG/COAL-02a	2.773	1.442	0.541	0.281
Trucks (Full) - Paved Roads	PET/SLAG/COAL-02b	7.844	4.079	1.530	0.796
Trucks (Empty) - Unpaved Roads	PET/SLAG/COAL-03a	0.236	0.122	0.074	0.038
Trucks (Full) - Unpaved Roads	PET/SLAG/COAL-03b	0.322	0.167	0.101	0.524
Totals		**30.177**	**6.174**	**11.233**	**1.811**
C. Coal					
Coal Handling - Existing Equipment	FH-001 thru FH-008b	11.044	0.207	5.223	0.098
Coal Truck Loading at Storage Pile	COAL-01	0.013	0.007	0.006	0.003
Trucks (Empty) - Paved Roads	PET/SLAG/COAL-02a	2.773	1.442	0.541	0.281
Trucks (Full) - Paved Roads	PET/SLAG/COAL-02b	7.844	4.079	1.530	0.796
Trucks (Empty) - Unpaved Roads	PET/SLAG/COAL-03a	0.236	0.122	0.074	0.038
Trucks (Full) - Unpaved Roads	PET/SLAG/COAL-03b	0.322	0.167	0.101	0.524
Totals		**22.231**	**6.025**	**7.475**	**1.741**
	Totals for All Materials (all emission points)	**N/A**	**18.202**	**N/A**	**5.283**
	Totals for All Materials (new emission points)	**N/A**	**17.452**	**N/A**	**4.928**

Source: ECT, 2006.

EMISSION INVENTORY WORKSHEET

Tampa Electric Company - Big Bend Station

Petcoke Transloading

EMISSION SOURCE TYPE

FUGITIVE PM - MATERIAL TRANSFER (DROPS)

FACILITY AND SOURCE DESCRIPTION

Emission Source Description:	Fugitive PM - Transloading of Petroleum Coke
Emission Control Method(s)/ID No.(s):	Moist material, application of chemical surfactant
Emission Point ID:	FH-001 thru FH-008b, PET-01

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) x (1 - (Control Eff. / 100))

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) x (1 - (Control Eff. / 100))

Source: Section 13.2.4, AP-42, January 1995.

INPUT DATA AND EMISSIONS CALCULATIONS

Mean Wind Speed: 8.6 mph

Material Moisture Content: 7.0 weight %

Material Transfer Point	Source ID	Material Transfer Rates (ton/hr)	Material Transfer Rates (ton/yr)	Uncontrolled Emission Factor (lb PM/ton)	Control Efficiency (%)	Controlled Emission Factor (lb PM/ton)	Potential PM Emission Rates (lb/hr)	Potential PM Emission Rates (ton/yr)
Existing Equipment								
Barge Clamshell to Conveyor D1	FH-001	4,000	150,000	0.000830	25.0	0.000622	2.4888	0.0467
Barge Bucket Elevator to Conveyor A1	FH-002	4,000	150,000	0.000830	25.0	0.000622	2.4888	0.0467
Conveyor A1 to Conveyor B1	FH-003	4,000	150,000	0.000830	85.0	0.000124	0.4978	0.0093
Conveyor B1 to Conveyor D1	FH-004	4,000	150,000	0.000830	85.0	0.000124	0.4978	0.0093
Self-Unloading Barge to Conveyor D1	FH-005	4,000	150,000	0.000830	25.0	0.000622	2.4888	0.0467
Conveyor D1 to Conveyor E1	FH-006	4,000	150,000	0.000830	85.0	0.000124	0.4978	0.0093
Conveyor E1 to Conveyor Y	FH-007	4,000	150,000	0.000830	90.0	0.000083	0.3318	0.0062
Conveyor Y to Conveyor Z	FH-008a	4,000	150,000	0.000830	90.0	0.000083	0.3318	0.0062
Conveyor Z to Petcoke Storage Pile	FH-008b	4,000	150,000	0.000830	90.0	0.000083	0.3318	0.0062
New Equipment								
Front-End Loader Reclaim from Petcoke Storage Pile to Trucks	PET-01	144.2	150,000	0.000830	90.0	0.000083	0.0120	0.0062
						Totals	**9.9673**	**0.1929**

SOURCES OF INPUT DATA

Parameter	Data Source
Mean Wind Speed, mph	Climate of the States (Tampa, FL), Third Edition, 1985.
Material Moisture Content	TEC, 2004.
Material Transfer Point Identification	TEC, 2004.
Material Transfer Rates	TEC, 2004.
Control Efficiency	Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1981.

NOTES AND OBSERVATIONS

1. Material transfer rates based on 8 hrs/dy, 5 dys/wk, and 26 wks/yr operation.
2. Control Efficiencies: Side Enclosure (25%), Enclosure (85%), Treated With Dust Suppressant (90%).

DATA CONTROL

Data Collected by:	S. Castro	Date:	9/04
Evaluated by:	T. Davis	Date:	9/04
Data Entered by:	T. Davis	Date:	9/04

EMISSION INVENTORY WORKSHEET

Tampa Electric Company - Big Bend Station

Petcoke Transloading

EMISSION SOURCE TYPE

FUGITIVE PM_{10} - MATERIAL TRANSFER (DROPS)

FACILITY AND SOURCE DESCRIPTION

Emission Source Description:	Fugitive PM_{10} - Transloading of Petroleum Coke
Emission Control Method(s)/ID No.(s):	Moist material, application of chemical surfactant
Emission Point ID:	FH-001 thru FH-008b, PET-01

EMISSION ESTIMATION EQUATIONS

PM_{10} Emission (lb/hr) = 0.35 x 0.0032 x [(Wind Speed/5)$^{1.3}$ / (Material Moisture Content/2)$^{1.4}$] x Material Handled (ton/hr) x (1 - (Control Eff. / 100))

PM_{10} Emission (ton/yr) = 0.35 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) x (1 - (Control Eff. / 100))

Source: Section 13.2.4, AP-42, January 1995.

INPUT DATA AND EMISSIONS CALCULATIONS

Mean Wind Speed: 8.6 mph

Material Moisture Content: 7.0 weight %

Material Transfer Point	Source ID	Material Transfer Rates (ton/hr)	Material Transfer Rates (ton/yr)	Uncontrolled Emission Factor (lb PM/ton)	Control Efficiency (%)	Controlled Emission Factor (lb PM/ton)	Potential PM_{10} Emission Rates (lb/hr)	Potential PM_{10} Emission Rates (ton/yr)
Existing Equipment								
Barge Clamshell to Conveyor D1	FH-001	4,000	150,000	0.000392	25.0	0.000294	1.1771	0.0221
Barge Bucket Elevator to Conveyor A1	FH-002	4,000	150,000	0.000392	25.0	0.000294	1.1771	0.0221
Conveyor A1 to Conveyor B1	FH-003	4,000	150,000	0.000392	85.0	0.000059	0.2354	0.0044
Conveyor B1 to Conveyor D1	FH-004	4,000	150,000	0.000392	85.0	0.000059	0.2354	0.0044
Self-Unloading Barge to Conveyor D1	FH-005	4,000	150,000	0.000392	25.0	0.000294	1.1771	0.0221
Conveyor D1 to Conveyor E1	FH-006	4,000	150,000	0.000392	85.0	0.000059	0.2354	0.0044
Conveyor E1 to Conveyor Y	FH-007	4,000	150,000	0.000392	90.0	0.000039	0.1570	0.0029
Conveyor Y to Conveyor Z	FH-008a	4,000	150,000	0.000392	90.0	0.000039	0.1570	0.0029
Conveyor Z to Petcoke Storage Pile	FH-008b	4,000	150,000	0.000392	90.0	0.000039	0.1570	0.0029
New Equipment								
Front-End Loader Reclaim from Petcoke Storage Pile to Trucks	PET-01	144.2	150,000	0.000392	90.0	0.000039	0.0057	0.0029
						Totals	**4.7143**	**0.0912**

SOURCES OF INPUT DATA

Parameter	Data Source
Mean Wind Speed, mph	Climate of the States (Tampa, FL), Third Edition, 1985.
Material Moisture Content	TEC, 2004.
Material Transfer Point Identification	TEC, 2004.
Material Transfer Rates	TEC, 2004.
Control Efficiency	Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1981.

NOTES AND OBSERVATIONS

1. Material transfer rates based on 8 hrs/dy, 5 dys/wk, and 26 wks/yr operation.
2. Control Efficiencies: Side Enclosure (25%), Enclosure (85%), Treated With Dust Suppressant (90%).

DATA CONTROL

Data Collected by:	S. Castro	Date:	9/04
Evaluated by:	T. Davis	Date:	9/04
Data Entered by:	T. Davis	Date:	9/04

EMISSION INVENTORY WORKSHEET

Tampa Electric Company - Big Bend Station

Slag Transloading

EMISSION SOURCE TYPE

FUGITIVE PM - MATERIAL TRANSFER (DROPS)

FACILITY AND SOURCE DESCRIPTION

Emission Source Description:	Fugitive PM - Transloading of Slag
Emission Control Method(s)/ID No.(s):	Moist material, enclosures
Emission Point ID:	FH-001 thru FH-008b, PET-01

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) x (1 - (Control Eff. / 100))

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) x (1 - (Control Eff. / 100))

Source: Section 13.2.4, AP-42, January 1995.

INPUT DATA AND EMISSIONS CALCULATIONS

Mean Wind Speed: 8.6 mph

Material Moisture Content: 6.22 weight %

Material Transfer Point	Source ID	Material Transfer Rates (ton/hr)	Material Transfer Rates (ton/yr)	Uncontrolled Emission Factor (lb PM/ton)	Control Efficiency (%)	Controlled Emission Factor (lb PM/ton)	Potential PM Emission Rates (lb/hr)	Potential PM Emission Rates (ton/yr)
Existing Equipment								
Barge Clamshell to Conveyor D1	FH-001	4,000	150,000	0.000979	25.0	0.000734	2.9365	0.0551
Barge Bucket Elevator to Conveyor A1	FH-002	4,000	150,000	0.000979	25.0	0.000734	2.9365	0.0551
Conveyor A1 to Conveyor B1	FH-003	4,000	150,000	0.000979	85.0	0.000147	0.5873	0.0110
Conveyor B1 to Conveyor D1	FH-004	4,000	150,000	0.000979	85.0	0.000147	0.5873	0.0110
Self-Unloading Barge to Conveyor D1	FH-005	4,000	150,000	0.000979	25.0	0.000734	2.9365	0.0551
Conveyor D1 to Conveyor E1	FH-006	4,000	150,000	0.000979	85.0	0.000147	0.5873	0.0110
Conveyor E1 to Conveyor Y	FH-007	4,000	150,000	0.000979	85.0	0.000147	0.5873	0.0110
Conveyor Y to Conveyor Z	FH-008a	4,000	150,000	0.000979	0.0	0.000979	3.9153	0.0734
Conveyor Z to Petcoke Storage Pile	FH-008b	4,000	150,000	0.000979	0.0	0.000979	3.9153	0.0734
New Equipment								
Front-End Loader Reclaim from Slag Storage Pile to Trucks	SLAG-01	144.2	150,000	0.000979	90.0	0.000098	0.0141	0.0073
						Totals	**19.0033**	**0.3634**

SOURCES OF INPUT DATA

Parameter	Data Source
Mean Wind Speed, mph	Climate of the States (Tampa, FL), Third Edition, 1985.
Material Moisture Content	TEC, 2004.
Material Transfer Point Identification	TEC, 2004.
Material Transfer Rates	TEC, 2004.
Control Efficiency	Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1981.

NOTES AND OBSERVATIONS

1. Material transfer rates based on 8 hrs/dy, 5 dys/wk, and 26 wks/yr operation.
2. Control Efficiencies: Side Enclosure (25%), Enclosure (85%)

DATA CONTROL

Data Collected by:	S. Castro	Date:	9/04
Evaluated by:	T. Davis	Date:	9/04
Data Entered by:	T. Davis	Date:	9/04

EMISSION INVENTORY WORKSHEET

Tampa Electric Company - Big Bend Station

Slag Transloading

EMISSION SOURCE TYPE

FUGITIVE PM_{10} - MATERIAL TRANSFER (DROPS)

FACILITY AND SOURCE DESCRIPTION

Emission Source Description:	Fugitive PM_{10} - Transloading of Slag
Emission Control Method(s)/ID No.(s):	Moist material
Emission Point ID.	FH-001 thru FH-008b, PET-01

EMISSION ESTIMATION EQUATIONS

PM_{10} Emission (lb/hr) = 0.35 x 0.0032 x [(Wind Speed/5)$^{1.3}$ / (Material Moisture Content/2)$^{1.4}$] x Material Handled (ton/hr) x (1 - (Control Eff. / 100))

PM_{10} Emission (ton/yr) = 0.35 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) x (1 - (Control Eff. / 100))

Source: Section 13.2.4, AP-42, January 1995.

INPUT DATA AND EMISSIONS CALCULATIONS

Mean Wind Speed: 8.6 mph

Material Moisture Content: 6.22 weight %

Material Transfer Point	Source ID	Material Transfer Rates (ton/hr)	Material Transfer Rates (ton/yr)	Uncontrolled Emission Factor (lb PM/ton)	Control Efficiency (%)	Controlled Emission Factor (lb PM/ton)	Potential PM_{10} Emission Rates (lb/hr)	Potential PM_{10} Emission Rates (ton/yr)
Existing Equipment								
Barge Clamshell to Conveyor D1	FH-001	4,000	150,000	0.000463	25.0	0.000347	1.3889	0.0260
Barge Bucket Elevator to Conveyor A1	FH-002	4,000	150,000	0.000463	25.0	0.000347	1.3889	0.0260
Conveyor A1 to Conveyor B1	FH-003	4,000	150,000	0.000463	85.0	0.000069	0.2778	0.0052
Conveyor B1 to Conveyor D1	FH-004	4,000	150,000	0.000463	85.0	0.000069	0.2778	0.0052
Self-Unloading Barge to Conveyor D1	FH-005	4,000	150,000	0.000463	25.0	0.000347	1.3889	0.0260
Conveyor D1 to Conveyor E1	FH-006	4,000	150,000	0.000463	85.0	0.000069	0.2778	0.0052
Conveyor E1 to Conveyor Y	FH-007	4,000	150,000	0.000463	85.0	0.000069	0.2778	0.0052
Conveyor Y to Conveyor Z	FH-008a	4,000	150,000	0.000463	0.0	0.000463	1.8518	0.0347
Conveyor Z to Petcoke Storage Pile	FH-008b	4,000	150,000	0.000463	0.0	0.000463	1.8518	0.0347
New Equipment								
Front-End Loader Reclaim from Slag Storage Pile to Trucks	SLAG-01	144.2	150,000	0.000463	90.0	0.000046	0.0067	0.0035
						Totals	**8.9880**	**0.1719**

SOURCES OF INPUT DATA

Parameter	Data Source
Mean Wind Speed, mph	Climate of the States (Tampa, FL), Third Edition, 1985.
Material Moisture Content	TEC, 2004.
Material Transfer Point Identification	TEC, 2004.
Material Transfer Rates	TEC, 2004.
Control Efficiency	Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1981.

NOTES AND OBSERVATIONS

1. Material transfer rates based on 8 hrs/dy, 5 dys/wk, and 26 wks/yr operation.
2. Control Efficiencies: Side Enclosure (25%), Enclosure (85%), Treated With Dust Suppressant (90%).

DATA CONTROL

Data Collected by:	S. Castro	Date:	9/04
Evaluated by:	T. Davis	Date:	9/04
Data Entered by:	T. Davis	Date:	9/04

EMISSION INVENTORY WORKSHEET

Tampa Electric Company - Big Bend Station

Coal Transloading

EMISSION SOURCE TYPE

FUGITIVE PM - MATERIAL TRANSFER (DROPS)

FACILITY AND SOURCE DESCRIPTION

Emission Source Description:	Fugitive PM - Transloading of Coal
Emission Control Method(s)/ID No.(s):	Moist material, application of chemical surfactant
Emission Point ID:	FH-001 thru FH-008b, COAL-01

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) x (1 - (Control Eff. / 100))

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) x (1 - (Control Eff. / 100))

Source: Section 13.2.4, AP-42, January 1995.

INPUT DATA AND EMISSIONS CALCULATIONS

Mean Wind Speed: 8.6 mph

Material Moisture Content: 6.5 weight %

Material Transfer Point	Source ID	Material Transfer Rates (ton/hr)	Material Transfer Rates (ton/yr)	Uncontrolled Emission Factor (lb PM/ton)	Control Efficiency (%)	Controlled Emission Factor (lb PM/ton)	Potential PM Emission Rates (lb/hr)	Potential PM Emission Rates (ton/yr)
Existing Equipment								
Barge Clamshell to Conveyor D1	FH-001	4,000	150,000	0.000920	25.0	0.000690	2.7609	0.0518
Barge Bucket Elevator to Conveyor A1	FH-002	4,000	150,000	0.000920	25.0	0.000690	2.7609	0.0518
Conveyor A1 to Conveyor B1	FH-003	4,000	150,000	0.000920	85.0	0.000138	0.5522	0.0104
Conveyor B1 to Conveyor D1	FH-004	4,000	150,000	0.000920	85.0	0.000138	0.5522	0.0104
Self-Unloading Barge to Conveyor D1	FH-005	4,000	150,000	0.000920	25.0	0.000690	2.7609	0.0518
Conveyor D1 to Conveyor E1	FH-006	4,000	150,000	0.000920	85.0	0.000138	0.5522	0.0104
Conveyor E1 to Conveyor Y	FH-007	4,000	150,000	0.000920	90.0	0.000092	0.3681	0.0069
Conveyor Y to Conveyor Z	FH-008a	4,000	150,000	0.000920	90.0	0.000092	0.3681	0.0069
Conveyor Z to Coal Storage Pile	FH-008b	4,000	150,000	0.000920	90.0	0.000092	0.3681	0.0069
New Equipment								
Front-End Loader Reclaim from Coal Storage Pile to Trucks	COAL-01	144.2	150,000	0.000920	90.0	0.000092	0.0133	0.0069
						Totals	**11.0569**	**0.2140**

SOURCES OF INPUT DATA

Parameter	Data Source
Mean Wind Speed, mph	Climate of the States (Tampa, FL), Third Edition, 1985.
Material Moisture Content	TEC, 2004.
Material Transfer Point Identification	TEC, 2004.
Material Transfer Rates	TEC, 2004.
Control Efficiency	Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1981.

NOTES AND OBSERVATIONS

1. Material transfer rates based on 8 hrs/dy, 5 dys/wk, and 26 wks/yr operation.
2. Control Efficiencies: Side Enclosure (25%), Enclosure (85%), Treated With Dust Suppressant (90%).

DATA CONTROL

Data Collected by:	S. Castro	Date:	9/04
Evaluated by:	T. Davis	Date:	9/04
Data Entered by:	T. Davis	Date:	9/04

EMISSION INVENTORY WORKSHEET

Tampa Electric Company - Big Bend Station

Coal Transloading

EMISSION SOURCE TYPE

FUGITIVE PM_{10} - MATERIAL TRANSFER (DROPS)

FACILITY AND SOURCE DESCRIPTION

Emission Source Description:	Fugitive PM_{10} - Transloading of Coal
Emission Control Method(s)/ID No.(s):	Moist material, application of chemical surfactant
Emission Point ID:	FH-001 thru FH-008b, COAL-01

EMISSION ESTIMATION EQUATIONS

PM_{10} Emission (lb/hr) = 0.35 x 0.0032 x [(Wind Speed/5)$^{1.3}$ / (Material Moisture Content/2)$^{1.4}$] x Material Handled (ton/hr) x (1 - (Control Eff. / 100))

PM_{10} Emission (ton/yr) = 0.35 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) x (1 - (Control Eff. / 100))

Source: Section 13.2.4, AP-42, January 1995.

INPUT DATA AND EMISSIONS CALCULATIONS

Mean Wind Speed: 8.6 mph

Material Moisture Content: 6.5 weight %

Material Transfer Point	Source ID	Material Transfer Rates (ton/hr)	Material Transfer Rates (ton/yr)	Uncontrolled Emission Factor (lb PM/ton)	Control Efficiency (%)	Controlled Emission Factor (lb PM/ton)	Potential PM_{10} Emission Rates (lb/hr)	Potential PM_{10} Emission Rates (ton/yr)
Existing Equipment								
Barge Clamshell to Conveyor D1	FH-001	4,000	150,000	0.000435	25.0	0.000326	1.3058	0.0245
Barge Bucket Elevator to Conveyor A1	FH-002	4,000	150,000	0.000435	25.0	0.000326	1.3058	0.0245
Conveyor A1 to Conveyor B1	FH-003	4,000	150,000	0.000435	85.0	0.000065	0.2612	0.0049
Conveyor B1 to Conveyor D1	FH-004	4,000	150,000	0.000435	85.0	0.000065	0.2612	0.0049
Self-Unloading Barge to Conveyor D1	FH-005	4,000	150,000	0.000435	25.0	0.000326	1.3058	0.0245
Conveyor D1 to Conveyor E1	FH-006	4,000	150,000	0.000435	85.0	0.000065	0.2612	0.0049
Conveyor E1 to Conveyor Y	FH-007	4,000	150,000	0.000435	90.0	0.000044	0.1741	0.0033
Conveyor Y to Conveyor Z	FH-008a	4,000	150,000	0.000435	90.0	0.000044	0.1741	0.0033
Conveyor Z to Coal Storage Pile	FH-008b	4,000	150,000	0.000435	90.0	0.000044	0.1741	0.0033
New Equipment								
Front-End Loader Reclaim from Coal Storage Pile to Trucks	COAL-01	144.2	150,000	0.000435	90.0	0.000044	0.0063	0.0033
						Totals	**5.2296**	**0.1012**

SOURCES OF INPUT DATA

Parameter	Data Source
Mean Wind Speed, mph	Climate of the States (Tampa, FL), Third Edition, 1985.
Material Moisture Content	TEC, 2004.
Material Transfer Point Identification	TEC, 2004.
Material Transfer Rates	TEC, 2004.
Control Efficiency	Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1981.

NOTES AND OBSERVATIONS

1. Material transfer rates based on 8 hrs/dy, 5 dys/wk, and 26 wks/yr operation.
2. Control Efficiencies: Side Enclosure (25%), Enclosure (85%), Treated With Dust Suppressant (90%).

DATA CONTROL

Data Collected by:	S. Castro	Date:	9/04
Evaluated by:	T. Davis	Date:	9/04
Data Entered by:	T. Davis	Date:	9/04

EMISSION INVENTORY WORKSHEET

Tampa Electric Company - Big Bend Station

Truck Traffic (Paved Roads)

EMISSION SOURCE TYPE

FUGITIVE PM - TRUCK TRAFFIC ON PAVED ROADS

FACILITY AND SOURCE DESCRIPTION

Emission Source Description:	Fugitive PM - Transloading of Coal, Petcoke or Slag; Truck Traffic on Paved Roads
Emission Control Method(s)/ID No.(s):	Watering, As Necessary
Emission Point ID:	PET/SLAG/COAL-02

EMISSION ESTIMATION EQUATIONS

PM Emission (lb/hr) = {(0.082 x [(Silt Loading Factor/2)$^{0.65}$] x [(Truck Weight/3)$^{1.50}$ - 0.00047) x (1 - ("Wet" Days/1,460)) x Vehicle Miles Traveled (VMT)/hr x (1 - (Control Eff. / 100))

PM Emission (ton/yr) = {(0.082 x [(Silt Loading Factor/2)$^{0.65}$] x [(Truck Weight/3)$^{1.50}$ - 0.00047) x (1-("Wet" Days/1,460)) x Vehicle Miles Traveled (VMT)/yr x (1 ton/2,000 lb) x (1 - (Control Eff. / 100))

Source: Section 13.2.1, AP-42, December 2003.

INPUT DATA AND EMISSIONS CALCULATIONS

Uncontrolled Silt Loading Factor:	9.7	g/m^2	Mean Annual Number of "Wet" Days:	100	
Operating Hours:	8	hr/dy	5 dy/wk	26	wk/yr
Material Shipped by Truck:	150,000	ton/yr	Truck Travel Distance (one way):	6,864	ft
Hourly Truck Count:	11	trucks/hr	Annual Truck Count:	11,538	trucks/yr

Truck Traffic Type	Source ID	Vehicle Miles Traveled (VMT/hr)	Vehicle Miles Traveled (VMT/yr)	Vehicle Weight (ton)	Control Efficiency (%)	Potential PM Emission Rates (lb/hr)	Potential PM Emission Rates (ton/yr)
Trucks (Empty)	PET/SLAG/COAL-02a	14.423	15,000	13.0	90.0	2.773	1.442
Trucks (Full)	PET/SLAG/COAL-02b	14.423	15,000	26.0	90.0	7.844	4.079
					Totals	10.62	5.521

SOURCES OF INPUT DATA

Parameter	Data Source
Uncontrolled Silt Loading Factor	Based on factor for iron and steel production, ECT, 2004.
Mean Annual Number of "Wet" Days	Figure 13.2.1-2, Section 13.2.1, AP-42, November 2003.
Vehicle Miles Traveled, VMT	TEC, 2004.
Truck Weights, ton	TEC, 2004.
Control Efficiency	Estimated, ECT 2004.

NOTES AND OBSERVATIONS

DATA CONTROL

Data Collected by:	S. Castro	**Date:**	9/04
Evaluated by:	T. Davis	**Date:**	9/04
Data Entered by:	T. Davis	**Date:**	9/04

EMISSION INVENTORY WORKSHEET

Tampa Electric Company - Big Bend Station

Truck Traffic (Paved Roads)

EMISSION SOURCE TYPE

FUGITIVE PM_{10} - TRUCK TRAFFIC ON PAVED ROADS

FACILITY AND SOURCE DESCRIPTION

Emission Source Description:	Fugitive PM_{10} - Transloading of Coal, Petcoke or Slag; Truck Traffic on Paved Roads
Emission Control Method(s)/ID No.(s):	Watering, As Necessary
Emission Point ID:	PET/SLAG/COAL-02

EMISSION ESTIMATION EQUATIONS

PM_{10} Emission (lb/hr) = {(0.016 x [(Silt Loading Factor/2)$^{0.65}$] x [(Truck Weight/3)$^{1.5}$] - 0.00047) x (1 - ("Wet" Days/1,460)) x Vehicle Miles Traveled (VMT)/hr x (1 - (Control Eff. / 100))

PM_{10} Emission (ton/yr) = {(0.016 x [(Silt Loading Factor/2)$^{0.65}$] x [(Truck Weight/3)$^{1.5}$] - 0.00047) x (1-("Wet" Days/1,460)) x Vehicle Miles Traveled (VMT)/yr x (1 ton/2,000 lb) x (1 - (Control Eff. / 100))

Source: Section 13.2.1, AP-42, December 2003.

INPUT DATA AND EMISSIONS CALCULATIONS

Uncontrolled Silt Loading Factor:	9.7	g/m^2	Mean Annual Number of "Wet" Days:	100	
Operating Hours:	8	hr/dy	5 dy/wk	26	wk/yr
Material Shipped by Truck:	150,000	ton/yr	Truck Travel Distance (one way):	6,864	ft
Hourly Truck Count:	11	trucks/hr	Annual Truck Count:	11,538	trucks/yr

Truck Traffic Type	Source ID	Vehicle Miles Traveled (VMT/hr)	Vehicle Miles Traveled (VMT/yr)	Vehicle Weight (ton)	Control Efficiency (%)	Potential PM_{10} Emission Rates (lb/hr)	Potential PM_{10} Emission Rates (ton/yr)
Trucks (Empty)	PET/SLAG/COAL-02a	14.423	15,000	13.0	90.0	0.541	0.281
Trucks (Full)	PET/SLAG/COAL-02b	14.423	15,000	26.0	90.0	1.530	0.796
					Totals	2.07	1.077

SOURCES OF INPUT DATA

Parameter	Data Source
Uncontrolled Silt Loading Factor	Based on factor for iron and steel production, ECT, 2004.
Mean Annual Number of "Wet" Days	Figure 13.2.1-2, Section 13.2.1, AP-42, November 2003.
Vehicle Miles Traveled, VMT	TEC, 2004.
Truck Weights, ton	TEC, 2004.
Control Efficiency	Estimated, ECT 2004.

NOTES AND OBSERVATIONS

DATA CONTROL

Data Collected by:	S. Castro	**Date:**	9/04
Evaluated by:	T. Davis	**Date:**	9/04
Data Entered by:	T. Davis	**Date:**	9/04

EMISSION INVENTORY WORKSHEET

Tampa Electric Company - Big Bend Station

Truck Traffic (Unpaved Roads)

EMISSION SOURCE TYPE

FUGITIVE PM - TRUCK TRAFFIC ON UNPAVED ROADS

FACILITY AND SOURCE DESCRIPTION

Emission Source Description:	Fugitive PM - Transloading of Coal, Petcoke or Slag; Truck Traffic on Unpaved Roads
Emission Control Method(s)/ID No.(s):	Watenng, As Necessary
Emission Point ID:	PET/SLAG/COAL-03

EMISSION ESTIMATION EQUATIONS

PM Emission (lb/hr) = ((4.9 x [(surface material silt content)/12)$^{0.7}$] x [(Truck Weight/3)$^{0.45}$] x (365 - "Wet" Days/365) x Vehicle Miles Traveled (VMT)/hr x (1 - (Control Eff. / 100))

PM Emission (tons/yr) = ((4.9 x [(surface material silt content)/12)$^{0.7}$] x [(Truck Weight/3)$^{0.45}$] x (365 - "Wet" Days/365) x Vehicle Miles Traveled (VMT)/yr x (1 ton/2,000 lb) x (1 - (Control Eff. / 100))

Source: Equation 1a, Section 13.2.2, AP-42, December 2003.

INPUT DATA AND EMISSIONS CALCULATIONS

Surface Silt Content:	13.5 %	Mean Annual Number of "Wet" Days:	100		
Operating Hours:	8 hr/dy	5 dy/wk	26 wk/yr		
Coal Shipped by Truck:	150,000 ton/yr	Truck Travel Distance (one way)	150 ft		
Hourly Truck Count:	11 trucks/hr	Annual Truck Count:	11,538 trucks/yr		

Truck Traffic Type	Source ID	Vehicle Miles Traveled (VMT/hr)	Vehicle Miles Traveled (VMT/yr)	Vehicle Weight (ton)	Control Efficiency (%)	Potential PM Emission Rates (lb/hr)	Potential PM Emission Rates (ton/yr)
Trucks (Empty)	PET/SLAG/COAL-03a	0.315	328	13.0	90.0	0.236	0.122
Trucks (Full)	PET/SLAG/COAL-03b	0.315	328	26.0	90.0	0.322	0.167
					Totals	**0.56**	**0.290**

SOURCES OF INPUT DATA

Parameter	Data Source
Surface Silt Content, %	Based on average surface silt content for industnal roads, Table 13.2.2-3, AP-42, December 2003.
Mean Annual Number of "Wet" Days	Figure 13.2.2-1, Section 13.2.2, AP-42, December 2003.
Vehicle Miles Traveled, VMT	TEC, 2004.
Truck Weights, ton	TEC, 2004.

NOTES AND OBSERVATIONS

DATA CONTROL

Data Collected by:	S. Castro	**Date:**	9/04
Evaluated by:	T. Davis	**Date:**	9/04
Data Entered by:	T. Davis	**Date:**	9/04

EMISSION INVENTORY WORKSHEET

Tampa Electric Company - Big Bend Station

Truck Traffic (Unpaved Roads)

EMISSION SOURCE TYPE

FUGITIVE PM_{10} - TRUCK TRAFFIC ON UNPAVED ROADS

FACILITY AND SOURCE DESCRIPTION

Emission Source Description:	Fugitive PM_{10} - Transloading of Coal, Petcoke or Slag; Truck Traffic on Unpaved Roads
Emission Control Method(s)/ID No.(s):	Watering, As Necessary
Emission Point ID:	PET/SLAG/COAL-03

EMISSION ESTIMATION EQUATIONS

PM_{10} Emission (lb/hr) = ((1.5 x [(surface material silt content)/12)$^{0.9}$] x [(Truck Weight/3)$^{0.45}$] x (365 - "Wet" Days/365) x Vehicle Miles Traveled (VMT)/hr x (1 - (Control Eff. / 100))

PM_{10} Emission (tons/yr) = ((1.5 x [(surface material silt content)/12)$^{0.9}$] x [(Truck Weight/3)$^{0.45}$] x (365 - "Wet" Days/365) x Vehicle Miles Traveled (VMT)/yr x (1 ton/2,000 lb) x (1 - (Control Eff. / 100))

Source: Equation 1a, Section 13.2.2, AP-42, December 2003.

INPUT DATA AND EMISSIONS CALCULATIONS

Surface Silt Content:	13.5 %	Mean Annual Number of "Wet" Days:	100		
Operating Hours:	8 hr/dy	5 dy/wk	26 wk/yr		
Coal Shipped by Truck:	150,000 ton/yr	Truck Travel Distance (one way):	150 ft		
Hourly Truck Count:	11 trucks/hr	Annual Truck Count:	11,538 trucks/yr		

Truck Traffic Type	Source ID	Vehicle Miles Traveled (VMT/hr)	Vehicle Miles Traveled (VMT/yr)	Vehicle Weight (ton)	Control Efficiency (%)	Potential PM_{10} Emission Rates (lb/hr)	Potential PM_{10} Emission Rates (ton/yr)
Trucks (Empty)	PET/SLAG/COAL-03a	0.315	328	13.0	90.0	0.074	0.038
Trucks (Full)	PET/SLAG/COAL-03b	0.315	328	26.0	90.0	0.101	0.524
					Totals	0.17	0.563

SOURCES OF INPUT DATA

Parameter	Data Source
Surface Silt Content, %	Based on average surface silt content for industrial roads, Table 13.2.2-3, AP-42, December 2003.
Mean Annual Number of "Wet" Days	Figure 13.2.2-1, Section 13.2.2, AP-42, December 2003.
Vehicle Miles Traveled, VMT	TEC, 2004.
Truck Weights, ton	TEC, 2004.

NOTES AND OBSERVATIONS

DATA CONTROL

Data Collected by:	S. Castro	**Date:**	9/04
Evaluated by:	T. Davis	**Date:**	9/04
Data Entered by:	T. Davis	**Date:**	9/04