Memorandum

Florida Department of Environmental Protection

TO:

Brian Beals, EPA Atlanta

FROM:

Jerry Kissel, Air Program SWD

DATE:

October 8, 1997

Tampa Electric Co's (TECO) Gannon plant has separate permits for its' coal yard and its' boilers. In order to reduce NO_x emissions, they are changing to a lower btu/lb western coal and have applied for a modification to the coal yard permit to increase the annual throughput. The coal yard modification is not PSD-significant.

The increased coal throughput will cause a PSD-significant increase in PM at the boilers. Should this factor be brought into the evaluation of the coal yard application? Debottlenecking has been mentioned, and TECO has stated that de-bottlenecking refers to an increase in <u>production</u> from their boilers (and there will be no increase in production), not to an increase in emissions from their boilers.

I talked to Greg Worley on this today, who said that it is the total facility <u>emissions</u> which must be evaluated, so I believe we have our answer, but I'd appreciate a written reply.

Thanks

cc: R. Kirby, EPC
A. Linero, DEP

J. Taylor, TECO

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OCT 13 1997

BUREAU OF AIR REGULATION

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D.E.R.

September 24, 1997

SEP 2 4 1997

SOUTHWEST DISTRICT TAMPA

Mr. Gerald Kissell, P.E.
Air Permitting Supervisor
Florida Department of Environmental Protection (FDEP)
Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Re:

Tampa Electric Company (TEC)

Gannon Station

Fuel Yard Modification Construction Permit Application

Response to Agency Comments

Application Reference No. 0570040-006-AC

Dear Mr. Kissell:

Enclosed are three (3) signed and sealed copies of TEC's responses to agency comments regarding the above referenced construction permit application. One (1) "binder ready" copy, suitable for incorporation with the previously submitted "working" copy, has been provided to assist with your review. Also, as per your request, one (1) signed and sealed copy has been sent to Mr. Rick Kirby, P.E. at the Environmental Protection Commission of Hillsborough County (EPCHC).

This submission is in response to several requests for clarification that resulted from our meeting on September 10, 1997, and subsequent agency correspondence that summarized that meeting, dated September 18, 1997, TEC. TEC has responded to each of the agency comments, including the "bottle neck" issue, in detail. However, the "bottle neck" issue was not identified in the original letter of incompleteness and should not be considered in determining the completeness of this permit application.

RECEIVED

Via Hand Delivery

OCT 3 0 1997

BUREAU OF AIR REGULATION

TAMPA ELECTRIC COMPANY

P.O. BOX 111

TAMPA, FL 33601-0111

HILLSBOROUGH COUNTY 223-0800

OUTSIDE OF HILLSBORDUGH COUNTY 1-888-223-0800

HTTP://WWW.TECDENERGY.COM

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Mr. Gerald Kissell, P.E. September 24, 1997 Page 2 of 2

TEC would be pleased to meet with you or your staff at your convenience to discuss these responses in detail. If you have any additional questions or comments, feel free to contact me at (813) 641-5087. Thank you for your assistance on this project.

Sincerely,

Laura A. Rector

Engineer - Environmental Planning

Lawal Rocher

EP\gm\LAR093

Enclosures

c/enc: Mr. Richard Kirby - EPCHC



Department of Environmental Protection

Lawton Chiles Governor Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

Virginia B. Wetherell Secretary

September 18, 1997

Mr. Patrick A. Ho Tampa Electric Company Post Office Box 111 Tampa, FL 33601-0111

Dear Mr. Ho:

Re: Gannon Fuel Yard Modification, Application

Reference 0570040-006-AC

On August 20, 1997, the Department received your response to the incompletness letter of July 25, 1997. During the meeting on September 10, 1997 these responses were discussed. This meeting brought up more questions. The application is still incomplete and the Department is requesting the following information pursuant to Rule 62-4.050(1), F.A.C.:

1. Please respond to the items specified in the attached letter from the EPCHC.

Note - Rule 62-4.050 requires application of this type to be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses for additional information of an engineering nature. Therefore, your response to the above requested information should be certified as above.

Pursuant to the provisions of Section 120.660, Florida Statutes, and Rule 62-4.070(5), Florida Administrative Code, if the Department does not receive a response to this request for information within 90 days of the date of this letter, the Department will issue a final order denying your application. You need to respond within 30 days after you receive this letter, responding to as much of the information as possible and indicating when a response to any unanswered questions will be submitted. If the response will require longer than 90 days to develop, you should develop a specific time table for the submission of the requested information for Department review and consideration. Failure to comply with a time table accepted by the Department will be grounds for the Department to issue a Final Order for Denial for lack of timely response. A denial for lack of information or response will be unbiased as to the merits of the application. The applicant can reapply as soon as the requested information is available."

Mr. Patrick A. Ho Tampa Electric Company September 18, 1997 Page Two

A copy of your response should also be sent to Mr. Rick Kirby of the EPCHC, If you have any questions, please call me at (813)744-6100 extension 105.

Sincerely,

George W Richardson Air Permitting Engineer

Southwest District

cc: Rick Kirby, EPCHC

Enclosure

16:58

COMMISSION DOTTIE BERGER JOE CHILLURA **CHRIS HART** TIM-NORMAN JAN PLATT THOMAS SCOTT ED TURANCHIK

EXECUTIVE DIRECTOR

ROGER P. STEWART



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AIR MANAGEMENT DIVISION TELEPHONE (813) 272-5530

WASTE MANAGEMENT DIVISION TELEPHONE (813) 272-5789

WETLANDS MANAGEMENT DIVISION TELEPHONE (813) 272-7104

MEMORANDUM

DATE:

September 16, 1997

TO:

Jerry Kissel, FDEP

FROM:

Jeff Ouellette $\mathfrak{T}^{\mathcal{O}}$

Rick Kirby THRU:

SUBJECT:

Tampa Electric Company - Gannon Coal Yard

(0570040-006-AC)

The following comments are being provided as discussed during the meeting with Tampa Electric Company (TEC) on September 10, 1997 in regards to the proposed increase in coal yard throughput from 2.85 million tons per year to 4.0 million tons per year.

- The increase in allowable coal throughput of the fuel yard seems to remove a "bottle neck" in fuel usage in the furnaces. TEC should provide reasonable assurance that the increase in coal yard throughput will not cause a significant increase in pollutants emitted from any of the boiler units 1-6. attached letters from EPA as well as a portion of the New Source Review Workshop Manual, explain the reasoning behind the concern the EPC has with this issue.
- The EPC does not have confidence that the control efficiencies used to calculate particulate matter emissions are accurate. In the previous permit, control efficiencies were considerably lower and TEC has not provided any reasonable explanation for the use of 90% for all activities at the facility. should compare emissions estimates done to estimates using AP-42, Chapter 11.9 - Western Surface Coal Mining. Estimates should be done for bulldozing active piles and wind erosion and maintenance from active piles.
- 3. The moisture content used in the calculations at the facility are for total material moisture. Based on input from USEPA, it is appropriate to use the surface moisture content. facility should recalculate coal yard figures based on surface moisture content of 2%.

Jerry Kissel September 16, 1997 Memorandum Page 2

- 4. The EPC does not consider the drop equation appropriate for crushing activities at the facility. In order to provide a more accurate assessment of emissions from the crushers, TEC should propose a new method for calculating these emissions.
- 5. Per agreement between EPC, DEP, and TECO during our meeting September 10, 1997, the issue of NSPS applicability to the replacement coal crushers is not part of this application.

bm

F.J. GANNON STATION

FUEL YARD MODIFICATION CONSTRUCTION PERMIT APPLICATION



JUNE 1997

ADDENDUM SEPTEMBER 1997

Tampa Electric Company - F.J. Gannon Station Fuel Yard Construction Permit Application Responses

EPCHC Comment No. 1

The increase in allowable coal throughput of the fuel yard seems to remove a "bottle neck" on fuel usage in the furnaces. TEC should provide reasonable assurance that the increase in coal yard throughput will not cause a significant increase in pollutants emitted from any of the boiler units 1-6. The attached letters from EPA, as well as a portion of the New Source Review Workshop Manual, explain the reasoning behind the concern EPCHC has with this issue.

TEC Response No. 1

The increase in allowable fuel yard throughput does not remove a bottleneck in steam generator usage. U.S. Environmental Protection Agency (EPA) guidance in the New Source Review Workshop Manual and in the Environmental Protection Commission of Hillsborough County (EPCHC)-provided letters indicates that a bottleneck is removed if a modification at one point in a process allows for increased production at a second point in the process, regardless of whether a modification occurs at that second point.

In the existing F.J. Gannon Station air operation permits for each solid fuel-fired steam generator, the Operation and Emission Limitations permit conditions identify a unit-specific maximum fuel heat input rate. Each steam generating unit is capable of and has operated at its maximum potential production output rate (in million British thermal units per hour [MMBtu/hr]). The Powder River Basin (PRB) coal that is now being burned in a blend with other coals at F.J. Gannon Station has a lower heat content than coals that have been burned previously. Because the PRB coal has a lower heat content, more coal must be burned to generate the same quantity of energy. However, no aspect of the steam generating units,

including the maximum potential and actual output (MMBtu/hr), changes as a result of PRB coal combustion. In other words, the proposed fuel yard modification will not result in an increase in the production rate or output of these units. Because an increase in production from the steam generating units does not occur, the fuel yard modification does not represent the removal of a bottleneck and Prevention of Significant Deterioration (PSD) review of the steam generating units emissions is not required or appropriate.

EPCHC Comment No. 2

The EPCHC does not have confidence that the control efficiencies used to calculate particulate matter emissions are accurate. In the previous permit, control efficiencies were considerably lower and TEC has not provided any reasonable explanation for the use of 90 % for all activities at the facility. TECO should compare emission estimates done using AP-42, Chapter 11.9 - Western Surface Coal Mining. Estimates should be done for bulldozing active piles and wind erosion and maintenance from active piles.

TEC Response No. 2

Particulate matter (PM) and respirable particulate matter (PM₁₀) emissions from fuel yard emission sources are currently controlled using a combination of enclosures, dust suppressant, and wind shields. Dust suppressant is currently applied to the fuel at three fuel yard locations:

- The transfer from Conveyors C and L to Conveyors D1 and D2.
- The transfers from Conveyors D1 to M1 and from Conveyor D2 to M2.
- The transfers from Conveyor M1 to Conveyor E1 and from Conveyor M2 to Conveyor E2.

- The transfers from Conveyors F1 to G1 and Conveyors F2 to G2.
- The crushers.

As a part of this fuel yard modification project, a sixth coating of dust suppressant will be applied to the fuel. Currently, fuel being unloaded from barges and railcars is not treated with dust suppressant until the material is transferred from Conveyors C and L to Conveyors D1 and D2. After modification, the fuel will arrive at F.J. Gannon Station with a preapplied coating of dust suppressant or the dust suppressant will be applied as the material is unloaded. This additional coating will provide significantly more PM emission control as the fuel is unloaded and initially handled. This additional coating will also provide additional assurance of PM emission compliance over the entire fuel yard.

Given this increased PM emission control and the evolution of emission factors since the fuel yard was permitted in 1983, a review of the previously assigned control efficiencies was undertaken for each fuel yard emission source. If appropriate, the assigned control efficiency was adjusted to reflect the increased emission control and/or to add conservatism to the fuel yard PM and PM₁₀ emission estimates. The results of this review are summarized in Table 1. Overall, the emission control efficiency was increased for 15 emission sources, decreased for 19 emission sources, and not changed for 6 emission sources. In general, the increases in control efficiency reflect the additional dust suppressant application and the decreases in control efficiency were accepted to add conservatism to the emission estimates.

Tractors operating to maintain the fuel storage piles cause PM and PM₁₀ emissions. These emissions are included in the F.J. Gannon Station emissions inventory as source FH-044. The appropriate emission calculation spreadsheets are included in Appendix B of the construction permit application. The emission factor used to estimate these emissions was obtained from Section 13.2.2, Unpaved Roads, of the Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources (AP-42). The Fifth Edition of AP-42, including Supplements A and B, was used. EPCHC noted that Section 11.9. of AP-42, Western Surface Coal Mining,

includes an algorithm for coal bulldozing operations. EPCHC thought that using this algorithm might be more appropriate than using the unpaved road emission factor. Both emission factors have been reviewed. The unpaved road emission factor was selected because:

- In Section 13.2.4, Aggregate Handling and Storage Piles, AP-42 specifically recommends using the unpaved roads emission factor from Section 13.2.2 to calculate emissions from equipment on coal storage piles.
- The unpaved roads emission factor has a higher emission factor quality rating than the western surface coal mining emission factor. The unpaved roads emission factor has an unadjusted A rating, which must be adjusted one step down to B because annual conditions are being evaluated. The western surface coal mining emission factor has an unadjusted B rating, which must be adjusted at least one step down to C because an eastern power plant fuel yard is being evaluated. AP-42 actually recommends a C rating if the western surface coal mining emission factor is applied to an eastern coal mine. AP-42 is silent on applying the factor to any other industrial operation, so the best possible rating for the western coal mining emission factor in this situation is C.
- The Florida Department of Environmental Protection (FDEP) and EPCHC have agreed with using the unpaved roads emission factor to estimate fuel storage pile emissions at other facilities, including the recently permitted Big Bend Station fuel yard transloading project.

Given this background, Tampa Electric Company (TEC) believes using the unpaved road emission factor is more appropriate for calculating PM and PM_{10} emissions caused by maintenance operations on the F.J. Gannon Station fuel yard.

EPCHC Comment No. 3

The moisture content used in the calculations at the facility are for total material moisture. Based on input from USEPA, it is appropriate to use the surface moisture content. The facility should recalculate coal yard figures based on surface moisture content of 2 %.

TEC Response No. 3

TEC believes that total material moisture content is the appropriate parameter to use for calculating PM and PM_{10} emissions with AP-42 emission factors for the following reasons.

- The AP-42 emission factors consistently reference "material moisture content" when discussing emission factor inputs. No reference exists to material surface moisture content.
- Appendix C.2 of AP-42 identifies the procedures for laboratory analysis of dust loading samples. In this appendix, the recommended procedure for determining material moisture content is American Society For Testing and Materials (ASTM) methods such as D-2216. Method D-2216 is the Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock. This method defines the water content of a material as "the ratio of the mass of water contained in the pore spaces of soil or rock material, to the solid mass of particles in that material, expressed as a percentage." By incorporating this ASTM method into AP-42, EPA clearly intended material moisture content to include all of the moisture contained in a material, not just surface moisture. Consistent with this approach, TEC has used the total minimum coal moisture content to estimate PM and PM₁₀ emissions using AP-42 emission factors.
- TEC's approach to estimating PM and PM_{10} emissions from fuel yard sources is consistent with past determinations by TEC and other utility companies. TEC is not

aware of any Florida construction permit application that included fugitive dust emission estimates based on surface moisture content.

TEC would be pleased to review the input EPCHC received from EPA regarding this issue. Without this information, TEC cannot analyze the apparent inconsistency with EPA's AP-42. In addition, TEC does not understand the basis for EPCHC's suggestion to use a surface moisture content of 2 percent. As stated above, TEC believes total moisture is the appropriate parameter. However, even if surface moisture content was to be used in the AP-42 emission factors, TEC has no data indicating that 2 percent is an appropriate surface moisture content value for the fuels currently in use at F.J. Gannon Station.

EPCHC Comment No. 4

The EPCHC does not consider the drop equation appropriate for crushing activities at the facility. In order to provide a more accurate assessment of emissions from the crushers, TEC should propose a new method for calculating these emissions.

TEC Response No. 4

The F.J. Gannon Station crushers are sealed units with no opening to the atmosphere other than the points of transfer into and out of the crushers. The emissions that are released from these transfer points are included in the fuel yard emissions inventory as emission sources FH-031 through FH-035. No other emissions are released from the crushers. Therefore, consistent with the existing fuel yard permit, no other crusher-associated emission sources are included in the fuel yard emissions inventory

EPCHC Comment No. 5

Per agreement between EPCHC, DEP, and TECO during our meeting September 10, 1997, the issue of NSPS applicability to the replacement coal crushers is not part of this application.

TEC Response No. 5

The issue of New Source Performance Standards (NSPS) applicability to the replacement coal crushers is not part of the F.J. Gannon Station fuel yard modification construction permit application.

TABLE 1. F.J. Gannon Station - Fuel Yard PM Emission Control Methods and Efficiencies

	Emission	Historic Emission	Historic Emission	Proposed Emission	Proposed Emission	Control Efficiency
Emission Source Description	Point ID	Control Method	Control Efficiency	Control Method	Control Efficiency	Change ¹
-			(pct)		(pct)	-
					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Barge to West Clamshell	FH-002	None	0	Dust Suppressant	95	I
Barge to Continuous Unloader	FH-003	None	0	Dust Suppressant	95	· I
West Clamshell to West Hopper	FH-005	Wind Shield	25	Dust Suppressant	95	I
Continuous Unloader to Conveyor A	FH-006	Wind Shield	25	Dust Suppressant	95	I
Conveyor A to Continuous Feeder	FH-007	Enclosure	50	Dust Suppressant and Enclosure	95	I
West Hopper to Conveyor B	FH-009	Enclosure	50	Dust Suppressant and Enclosure	95	I
Conveyor B to Conveyor C	FH-011	Enclosure	50	Dust Suppressant and Enclosure	90	I
Conveyor C to Conveyor D1/D2	FH-012	Dust Suppressant and Enclosure	95	Dust Suppressant and Enclosure	90	D
Rail Car to Hopper	FH-013	Enclosure	40	Dust Suppressant and Enclosure	95	I
Hopper to Conveyor L	FH-014	Enclosure	50	Dust Suppressant and Enclosure	95	I
Conveyor L to Conveyor D1/D2	FH-015	Dust Suppressant and Enclosure	95	Dust Suppressant and Enclosure		NC
Conveyor D1 to Conveyor M1	FH-016	Dust Suppressant and Enclosure	95	Dust Suppressant and Enclosure	90	D
Conveyor D2 to Conveyor M2	FH-017	Dust Suppressant and Enclosure	95	Dust Suppressant and Enclosure	90	D
Conveyor M1 to Conveyor E1	FH-018	Dust Suppressant and Enclosure	95	Dust Suppressant and Enclosure	90	
Conveyor M2 to Conveyor E2	FH-019	Dust Suppressant and Enclosure	95	Dust Suppressant and Enclosure	90	D
Conveyor E1 to Storage Pile	FH-020	Dust Suppressant	0	Dust Suppressant	70	I
Conveyor E2 to Storage Pile	FH-021	Dust Suppressant	0	Dust Suppressant	70	I
Fuel Storage - North Stockpile	FH-022	Dust Suppressant	50 live/70 dead	Dust Suppressant	50	D
Fuel Storage - South Stockpile	FH-023	Dust Suppressant	50 live/70 dead	Dust Suppressant	50	D
Underground Reclaim System to Conveyor F1	FH-024	Dust Suppressant and Enclosure	85	Dust Suppressant and Enclosure	85	NC
Underground Reclaim System to Conveyor F4	FH-025	Dust Suppressant and Enclosure	85	Dust Suppressant and Enclosure	85	NC
Underground Reclaim System to Conveyor F3	FH-026	Dust Suppressant and Enclosure	85	Dust Suppressant and Enclosure		NC
Underground Reclaim System to Conveyor F2	FH-027	Dust Suppressant and Enclosure	85	Dust Suppressant and Enclosure	85	NC
Conveyor F1 to Conveyor G1/G2	FH-028	Dust Suppressant and Enclosure	95	Dust Suppressant and Enclosure	90	D
Conveyor F4 to Conveyor G1/G2	FH-029	Dust Suppressant and Enclosure	95	Dust Suppressant and Enclosure	90	D
Conveyor F3 to Conveyor G1/G2	FH-030	Dust Suppressant and Enclosure	95	Dust Suppressant and Enclosure	90	D
Conveyor F2 to Conveyor G1/G2	FH-031	Dust Suppressant and Enclosure	95	Dust Suppressant and Enclosure	90	D
Conveyor G1 to Hammermill Crusher 1	FH-032	Dust Suppressant and Enclosure	70	Dust Suppressant and Enclosure	90	I
Conveyor G2 to Hammermill Crusher 2	FH-033	Dust Suppressant and Enclosure	70	Dust Suppressant and Enclosure		I
Hammermill Crusher 1 to Conveyor H1	FH-034	Dust Suppressant and Enclosure	70	Dust Suppressant and Enclosure		I
Hammermill Crusher 2 to Conveyor H2	FH-035	Dust Suppressant and Enclosure	70	Dust Suppressant and Enclosure	90	I
Conveyors H1/H2 to Conveyors J1/J2	FH-036 -	Rotoclones	95	Rotoclones	75	D
Conveyors J1/J2 to Bunkers	FH-041					
Conveyor D1 to Conveyor G1/G2 (Bypass)	FH-042	Dust Suppressant and Enclosure	- 95	Dust Suppressant and Enclosure	90	D
Conveyor D2 to Conveyor G1/G2 (Bypass)	FH-043	Dust Suppressant and Enclosure	95	Dust Suppressant and Enclosure		D
Storage Pile Maintenance	FH-044	Dust Suppressant	50	Dust Suppressant	50	NC

¹Change from historic emission control efficiency to proposed emission control efficiency.

For the fuel yard, the emission control efficiency was increased for 15 emission sources, decreased for 19 emission sources, and not changed for 6 emission sources.

I = Increased efficiency

D = Decreased efficiency

NC = No change in efficiency

Signature Pages

Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible Official:

Patrick Ho, Manager, Environmental Planning

2. Owner/Authorized Representative or Responsible Official Mailing Address:

Organization/Firm:

Tampa Electric Company

Street Address:

P.O. Box 111

City:

Tampa

State: Florida

Zip Code: 33601-0111

3. Owner/Authorized Representative or Responsible Official Telephone Numbers:

Telephone: (813) 641-5044

Fax: (813) 641-5081

4. Owner/Authorized Representative or Responsible Official Statement:

I, the undersigned, am the owner or authorized representative* of the non-Title V source addressed in this Application for Air Permit or the responsible official, as defined in Rule 62-210.200, F.A.C., 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.

Signature

Date

* 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: Florida

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 $[\checkmark]$ 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 Date

Date

^{*} Attach any exception to certification statement.

DOCUMENT II.E.6.2

PM₁₀ EMISSION SUMMARY AND DEMONSTRATION OF NO PREVENTION OF SIGNIFICANT DETERIORATION APPLICABILITY

DOC.II.E.6.2 - SUMMARY OF PM10 EMISSION CHANGES						
	PM10 Emission					
	Emission Future					
Emission Point Description	Point ID	Actual	Actual	Change		
•		(tpy)	(tpy)	(tpy)		
		```		(17)		
Barge to clamshell	FH-002	0.09	0.02	-0.07		
Barge to continuous unloader	FH-003	0.09	0.02	-0.07		
Clamshell to barge unloading hopper	FH-005	0.03	0.02	-0.01		
Continuous unloader to conveyor A	FH-006	0.03	0.02	-0.01		
Conveyor A to continuous feeder	FH-007	0.03	0.02	-0.01		
Barge unloading hopper to conveyor B	FH-009	0.03	0.02	-0.01		
Conveyor B to conveyor C	FH-011	0.06	0.09	0.03		
Conveyor C to conveyors D1, D2	FH-012	0.04	0.09	0.05		
Rail car to rail unloading hopper	FH-013	0.03	0.00	-0.03		
Rail unloading hopper to conveyor L	FH-014	0.03	0.00	-0.03		
Conveyor L to conveyors D1, D2	FH-015	0.02	0.00	-0.02		
Conveyor D1 to conveyor M1	FH-016	0.03	0.05	0.02		
Conveyor D2 to conveyor M2	FH-017	0.03	0.05	0.02		
Conveyor M1 to conveyor E1	FH-018	0.03	0.05	0.02		
Conveyor M2 to conveyor E2	FH-019	0.03	0.05	0.02		
Conveyor E1 to fuel storage pile	FH-020	0.08	0.13	0.05		
Conveyor E2 to fuel storage pile	FH-021	0.08	0.13	0.05		
Fuel storage pile	FH-022/023	0.08	0.08	0.00		
Underground reclaim to conveyor F1	FH-024	0.03	0.04	0.01		
Underground reclaim to conveyor F4	FH-025	0.03	0.04	0.01		
Underground reclaim to conveyor F3	FH-026	0.00	0.00	0.00		
Underground reclaim to conveyor F2	FH-027	0.03	0.04	0.01		
Conveyor F1 to conveyors G1, G2	FH-028	0.02	0.03	0.01		
Conveyor F4 to conveyors G1, G2	FH-029	0.02	0.03	0.01		
Conveyor F3 to conveyors G1, G2	FH-030	0.00	0.00	0.00		
Conveyor F2 to conveyors G1, G2	FH-031	0.02	0.03	0.01		
Conveyor G1 to crushers	FH-032	0.03	0.05	0.02		
Conveyor G2 to crushers	FH-033	0.03	0.05	0.02		
Crushers to conveyor H1	FH-034	0.03	0.05	0.02		
Crushers to conveyor H2	FH-035	0.03	0.05	0.02		
Conveyor H1 to bunkering	FH-036/041	2.97	2.97	0.00		
Conveyor H2 to bunkering	FH-036/041	2.97	2.97	0.00		
Conveyor D1 to conveyor G1, G2	FH-042	0.00	0.00	0.00		
Conveyor D2 to conveyor G1, G2	FH-043	0.00	0.00	0.00		
Dozer operations of storage piles	FH-044	10.86	10.86	0.00		
Truck unloading - auxiliary	AH-001	0.00	0.01	0.01		
Storage pile to auxiliary hopper	AH-002	0.00	0.01	0.01		
Auxiliary hopper to conveyor T	AH-003	0.00	0.01	0.01		
Conveyor T to conveyor U	AH-004	0.00	0.01	0.01		
Conveyor U to conveyors G1, G2	AH-005	0.00	0.01	0.01		
		5.50				
PM10 Emission Summary	<b> </b>	17.91	18.10	0.19		

#### Notes:

- 1. Actual emissions based on average of 1995 and 1996 actual fuel usage equally divided among fuel transfer points.
- 2. Future actual emissions based on 4,000,000 tpy of fuel conservatively assumed to be off-loaded from barge and then equally divided among fuel transfer points.
- 3. Future actual emissions based on 362,025 tpy of alternate fuel usage.
- 4. See Appendix B for emission calculation detail.

# **DOCUMENT II.E.6.2.a**

PM EMISSION SUMMARY AND DEMONSTRATION OF NO PREVENTION OF SIGNIFICANT DETERIORATION APPLICABILITY

DOC.II.E.6.2.a - SUMMARY OF PM EMISSION CHANGES						
<u>,                                      </u>			PM Emission			
	Emission		Future			
Emission Point Description	Point ID	Actual	Actual	Change		
Zimssion Tome Description	Tomic 1D	(tpy)	(tpy)	<del>-</del>		
		(гру)	(гру)	(tpy)		
Barge to clamshell	FH-002	0.16	0.06	-0.1		
Barge to continuous unloader	FH-003	0.16	0.06	-0.1		
Clamshell to barge unloading hopper	FH-005	0.16	0.06	-0.1		
Continuous unloader to conveyor A	FH-006	0.08	0.06	-0.02		
Conveyor A to continuous feeder	FH-007	0.08	0.06	-0.02		
Barge unloading hopper to conveyor B	FH-009	0.08	0.06	-0.02		
Conveyor B to conveyor C	FH-011	0.16	0.12	-0.04		
Conveyor C to conveyors D1, D2	FH-012	0.11	0.12	0.01		
Rail car to rail unloading hopper	FH-013	0.16	0.00	-0.16		
Rail unloading hopper to conveyor L	FH-014	0.08	0.00	-0.08		
Conveyor L to conveyors D1, D2	FH-015	0.08	0.00	-0.08		
Conveyor D1 to conveyor M1	FH-016	0.08	0.13	0.05		
Conveyor D2 to conveyor M2	FH-017	0.08	0.13	0.05		
Conveyor M1 to conveyor E1	FH-018	0.08	0.13	0.05		
Conveyor M2 to conveyor E2	FH-019	0.08	0.13	0.05		
Conveyor E1 to fuel storage pile	FH-020	0.08	0.13	0.05		
Conveyor E2 to fuel storage pile	FH-021	0.08	0.13	0.05		
Fuel storage pile	FH-022/023	0.03	0.03	0.05		
Underground reclaim to conveyor F1	FH-024	0.05	0.08	0.03		
Underground reclaim to conveyor F4	FH-025	0.05	0.08	0.03		
Underground reclaim to conveyor F3	FH-026	0.00	0.00	0.00		
Underground reclaim to conveyor F2	FH-027	0.05	0.08	0.00		
Conveyor F1 to conveyors G1, G2	FH-028	0.05	0.08	0.03		
Conveyor F4 to conveyors G1, G2	FH-028	0.05	0.08	0.03		
Conveyor F3 to conveyors G1, G2		0.00	0.00	0.00		
	FH-030 FH-031	0.05	0.08	0.00		
Conveyor F2 to conveyors G1, G2		0.03	0.08	-0.03		
Conveyor G1 to crushers Conveyor G2 to crushers	FH-032 FH-033	0.08	0.03	0.05		
			0.13			
Crushers to conveyor H1	FH-034	0.08		0.05		
Crushers to conveyor H2	FH-035	0.08	0.13	0.05		
Conveyor H1 to bunkering	FH-036/041	2.97	2.97	0.00		
Conveyor H2 to bunkering	FH-036/041	2.97	2.97	0.00		
Conveyor D1 to conveyor G1, G2	FH-042	0.00	0.00	0.00		
Conveyor D2 to conveyor G1, G2	FH-043	0.00	0.00	0.00		
Dozer operations of storage piles	FH-044	2.17	6.04	3.87		
Truck unloading - auxiliary	AH-001	0.00	0.03	0.03		
Storage pile to auxiliary hopper	AH-002	0.00	0.02	0.02		
Auxiliary hopper to conveyor T	AH-003	0.00	0.02	0.02		
Conveyor T to conveyor U	AH-004	0.00	0.02	0.02		
Conveyor U to conveyors G1, G2	AH-005	0.00	0.02	0.02		
PM Emission Summary		10.55	14.42	3.87		
T 141 DITHOSTOR SURFRINGLY		10.33	14,42	ان.د		

#### Notes:

- 1. Actual emissions based on average of 1995 and 1996 actual fuel usage equally divided among fuel transfer points.
- 2. Future actual emissions based on 4,000,000 tpy of fuel conservatively assumed to be off-loaded from barge and then equally divided among fuel transfer points.
- 3. Future actual emissions based on 362,025 tpy of alternate fuel usage.
- 4. See Appendix B for emission calculation detail.

# APPENDIX B.1

FUTURE ACTUAL PM₁₀ EMISSION CALCULATION SPREADSHEETS

#### FH-002 Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Barge to West Clamshell (Spillage) Emission Control Method(s)/ID No.(s):Dust Suppressant **Emission Point ID:** FH-002 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100 — control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 – Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Moisture Control Actual PM₁₀ Mean Wind Actual Quantity Transferred **Emission Rates** Speed Content Efficiency (mph) (ton/hr) (ton/yr) (pct) (pct) (lb/hr) 4,000,000 6.5 95.0 0.02 0.04 8.6 1,150 SOURCES OF INPUT DATA **Data Source** <u>Parameter</u> Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985. **Actual Quantity Transferred** TEC, 1997. **Material Moisture Content** Average fuel moisture content; TEC, 1994. NOTES AND OBSERVATIONS Short—term (24—hr average) dispersion modeling emissions rates assume west clamshell and continuous unloaders operating simultaneously, each at 1,150 tph for a total unloading rate of 2,300 tph. DATA CONTROL Data Collected by: A. Trbovich Date: 01/20/97

Date:

Date:

Date:

01/20/97

01/20/97

A. Trbovich

A. Trbovich

FH	14668	.WK	1

Evaluated by:

Reviewed by:

Data Entered by:

FH-	-003
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Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

EMISSION SOUNCE TITE							
MA	TERIAL TRANSFER	- FUGITIVE EMISS			Figure:		
		FACILITY AND SO	URCE DESC	RIPTION			
Emission Source	e Description:	Fuel Handling - Barge	to Continuous U	Inloader (Spillag	е)		
Emission Contro	ol Method(s)/ID No.(s):	Barge Enclosure and Du	ıst Suppressant				
Emission Point I	ID:	FH-003		Transfer Point I	D(s):		
		EMISSION ESTIN	IATION EQU	ATIONS			
Fmission (lb/hr) == 1	0 0011 x material transferre	d (tor/hr) x [(average wind s	peed (mph)/5) ^{1,3} /	moisture content (	nct)/2) ^{1.4} 1 x (100-cor	trolinet1/100)	
		(tpy) x [(average wind spee					
		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		* 1			
Source: Section	Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995.						
,							
	IN	PUT DATA AND EMI	SSIONS CAL	CULATIONS			
Mean Wind	Act	···al	Materia: Moisture	Control	Actual	ρи	
	Quantity T		Content	Efficiency	Emissio		
Speed (mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)	
7mpii)	Itonymy	(ton/yi)	фод	ipug	(ibjiii)		
8.6	1,150	4,000,000	6.5	95.0	0.02	0.04	
		SOURCES	OF INPUT DA	TA			
Pai	rameter		D	ata Source		•	
Mean Wind Spec		Tampa, FL, Climate of	the States, Third	Edition, 1985.			
Actual Quantity		TEC, 1997.					
Material Moistur	•	Average fuel moisture			- Diames CDDI In		
Control Efficience		Table 3-10, Fugitive E	missions From (	Joar-Lited Low	er Plants, EPHI, Ju	ne 1964.	
		NOTES AND	OBSERVATIO	ONS			
Sh /04	L		-4			dara anasatina	
Snort-term (24	– nr average) dispersio	n modeling emissions re	ates assume we	st ciamsneii and	continuous unioa	ders operaung	
simultaneousi	y, each at 1,150 tph fo	r a total unloading rate o	of 2,300 tph.				
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		•				•	
	_	DATA (	CONTROL				
Data Collecte	ed by:	A. Trbovich			Date: (	01/20/97	
Evaluated by	•	A. Trbovich			Date: (	01/20/97	
Data Entered	by:	A. Trbovich		•	Date:	01/20/97	
Reviewed by:	•				Date:		
	-						

Tampa Electric Company — F.J. Gannon Station

FH-005

#### EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - West Clamshell to West Hopper Emission Control Method(s)/ID No.(s):Side Enclosure and Dust Suppressant **Emission Point ID:** FH-005 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0011 x material transferred (tor/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind **Moisture** Actual PM₁₀ Control Actual Speed **Quantity Transferred** Content Efficiency **Emission Rates** (lb/hr) (ton/yr) (pct) (pct) (tpy) (mph) (ton/hr) 0.02 95.0 0.04 8.6 1,150 4,000,000 6.5 SOURCES OF INPUT DATA Data Source **Parameter** Tampa, FL, Climate of the States, Third Edition, 1985. Mean Wind Speed **Actual Quantity Transferred** TEC, 1997. **Material Moisture Content** Average fuel moisture content; TEC, 1994. Table 3-10, Fugitive Emissions From Coal-Fired Power Plants, EPRI, June 1984. **Control Efficiency** NOTES AND OBSERVATIONS Short-term (24-hr average) dispersion modeling emissions rates assume west clamshell and continuous unloaders operating simultaneously, each at 1,150 tph for a total unloading rate of 2,300 tph. DATA CONTROL Data Collected by: Date: 01/20/97 A. Trbovich Evaluated by: A. Trbovich Date: 01/20/97 Data Entered by: A. Trbovich Date: 01/20/97 Date: Reviewed by:

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

FΗ	-006
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MATE	RIAL TRANSFER	- FUGITIVE EMIS	SION SOURC	ES	Figure:	
		FACILITY AND SO	OURCE DESC	RIPTION		
Emission Source D	Description:	Fuel Handling - Contin	uous Unloader t	o Conveyor A		
Emission Control	Method(s)/ID No.(s):	Enclosure and Dust Sup	pressant			
Emission Point ID:	:	FH-006		Transfer Point II	O(s):	
		EMISSION ESTIN	IATION EQU	ATIONS		
Emission (tpy) = 0.00	11 x material transferred	d (tor/hr) x [(average wind a (tpy) x [(average wind speed landling and Storage Pi	d (mph)/5) ^{1.3} / moi	sture content (pct)/2	2) ^{1.4} ] x (100—control	ntrol[pct]/100) [pct]/100) x (1/2,000)
-			10010110101	OBI ATIONO		
	IN	PUT DATA AND EM	Material	CULATIONS		
Mean Wind	Act	ual	Moisture	Control	Actual	PM ₁₀
Speed	Quantity T	ransferred	Content	Efficiency	Emissio	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	1,150	4,000,000	6.5	95.0	0.02	0.04
	SOURCES OF INPUT DATA					
Para	meter		D	ata Source		
M W51 O1		Towns 51 Office to of	the Otense This	1 E-1:4: 100E		
Mean Wind Speed Actual Quantity Tra		Tampa, FL, Climate of TEC, 1997.	the States, Iniro	Edition, 1985.		
Material Moisture		Average fuel moisture	content: TEC. 19	94.		
Control Efficiency		Table 3-16, Fugitive E			r Plants, EPRI, Ju	ine 1984.
		NOTECAND	ODCERVATION	DAIC.		
Short-term (24-ḥ	r average) dispersio	NOTES AND n modeling emissions re	······································		continuous unloa	ders operating
simultaneously,	each at 1,150 tph fo	r a total unloading rate (	of 2,300 tph.			
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	-	-				
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_		DATA	CONTROL			
Data Collected	by:	A. Trbovich		I	Date:	01/20/97
Evaluated by:		A. Trbovich		_[	Date:	01/20/97
Data Entered b	y:	A. Trbovich		ſ	Date:	01/20/97
Reviewed by:					Date:	

Tampa Electric Company - F.J. Gannon Station

FH-007

#### EMISSION SOURCE TYPE **MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES** Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Conveyor A to Continuous Feeder Emission Control Method(s)/ID No.(s): Enclosure and Dust Suppressant Transfer Point ID(s): **Emission Point ID:** FH-007 EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x ((average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Actual PM₁₀ Mean Wind Actual Moisture Control Quantity Transferred Content Efficiency **Emission Rates** Speed (lb/hr) (mph) (ton/hr) (ton/yr) (pct) (pct) (tpy) 95.0 0.02 0.04 8.6 1,150 4,000,000 6.5 SOURCES OF INPUT DATA Data Source <u>Parameter</u> Tampa, FL, Climate of the States, Third Edition, 1985. Mean Wind Speed **Actual Quantity Transferred** TEC. 1997. Average fuel moisture content; TEC, 1994. **Material Moisture Content Control Efficiency** Table 3-16, Fugitive Emissions From Coal-Fired Power Plants, EPRI, June 1984. NOTES AND OBSERVATIONS Short-term (24-hr average) dispersion modeling emissions rates assume west clamshell and continuous unloaders operating simultaneously, each at 1,150 tph for a total unloading rate of 2,300 tph.

	DATA CONTRO	DL .	
Data Collected by:	A. Trbovich	Date:	01/20/97
Evaluated by:	A. Trbovich	Date:	01/20/97
Data Entered by:	A. Trbovich	Date:	01/20/97
Reviewed by:		Date:	

#### FH-009 Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - West Hopper to Conveyor B Emission Control Method(s)/ID No.(s): Enclosure and Dust Suppressant Transfer Point ID(s): **Emission Point ID:** FH-009 EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0011 x material transferred (tor/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5) $^{1.3}$ / moisture content (pct)/2) $^{1.4}$ ] x (100—control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Moisture Control Actual PM₁₀ Actual Speed **Quantity Transferred** Content **Efficiency Emission Rates** (ton/yr) (pct) (lb/hr) (tpy) (mph) (ton/hr) (pct) 0.04 4,000,000 95.0 0.02 8.6 1,150 6.5 SOURCES OF INPUT DATA **Parameter Data Source** Tampa, FL, Climate of the States, Third Edition, 1985. Mean Wind Speed **Actual Quantity Transferred** TEC. 1997. Average fuel moisture content; TEC, 1994. **Material Moisture Content** Control Efficiency Table 3-16, Fugitive Emissions from Coal-Fired Power Plants, EPRI, June 1984. NOTES AND OBSERVATIONS Short-term (24-hr average) dispersion modeling emissions rates assume west clamshell and continuous unloaders operating simultaneously, each at 1,150 tph for a total unloading rate of 2,300 tph. DATA CONTROL 01/20/97 Data Collected by: A. Trbovich Date:

Date:

Date:

Date:

01/20/97

01/20/97

A. Trbovich

A. Trbovich

Evaluated by:

Reviewed by:

Data Entered by:

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

FH-011

			<u> </u>			***************************************
MA ⁻	TERIAL TRANSFER	- FUGITIVE EMISS			Figure:	
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Sourc	e Description:	Fuel Handling — Convey	or B to Convey	or C		
Emission Contro	ol Method(s)/ID No.(s):	Enclosure and Dust Sup	pressant			
Emission Point	ID:	FH-011		Transfer Point II	D(s):	
		EMISSION ESTIM	IATION EQU	ATIONS		
	0.0044	ed (torylir) x [(average wind s				41541 k oo
Emission (toy) = 0	.0011 x material transferred	(tpy) x [(average wind speed	<del>peea (mpn)/3)                                   </del>	moisture content (pct)/:	2) ^{1.4} ] x (100—control)	pct]/100) x (1/2,000)
(4)			, , , ,	_	7 1	
Source: Section	n 13.2.4 – Aggregate F	landling and Storage Pil	es, AP-42, Fifti	h Edition, Januar	ry 1995.	
	IN	PUT DATA AND EMI	SSIONS CAL	CULATIONS		
			Material		,	
Mean Wind	Act	·	Moisture	Control	Actual	,-
Speed (mph)	Quantity T (ton/hr)	ransterred (ton/yr)	Content (pct)	Efficiency (pct)	Emission (lb/hr)	(tpy)
8.6	2,300	4,000,000	6.5	90.0	0.10	0.09
		SOURCES C	FINPUT DA	TA		
<u>Pa</u>	rameter		D	ata Source		
M W6-4 O	ق. ـ	Tamas El Climata ef t	ha Canana Thin	Edition 1095		
Mean Wind Spe Actual Quantity		Tampa, FL, Climate of t TEC, 1997.	ne States, Inire	Edition, 1985.		
Material Moistur		Average fuel moisture of	ontent; TEC, 19	94.		·
Control Efficience	су	Table 3-16, Fugitive E	missions From (	Coal-Fired Powe	er Plants, EPRI, Ju	ne 1984.
			•			
		NOTES AND	OBSERVATIO	DNS		
_		·				
<u>.</u>					· · · · · · · · · · · · · · · · · · ·	
	<u>-</u>					•
			-			
			CONTROL	<u></u>		
Data Collecte	ed by:	A. Trbovich			Date: (	1/20/97
Evaluated by	:	A. Trbovich			Date: (	1/20/97
Data Entered	l by:	A. Trbovich			Date: (	01/20/97
Reviewed hy	•			1	Date:	

Tampa Electric Company - F.J. Gannon Station

FH-012

		EMISSION	SOURCE TYP	Æ		*
MA	TERIAL TRANSFER	- FUGITIVE EMISS			Figure:	
		FACILITY AND SO	OURCE DESC	RIPTION		
Emission Source	e Description:	Fuel Handling - Conve	yor C to Convey	or D1/D2		
Emission Contro	ol Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	/6		
Emission Point I	ID:	FH-012		Transfer Point I	D(s):	
		EMISSION ESTIN	NATION EQU	<u>ATIONS</u>		
Emission (lb/hr) =	0.0011 x material transferre	d (ton/hr) x [(average wind s	peed (mph)/5) ^{1,3} /	moisture content (	nct)/2) ^{1.4} 1 x (100-co	ntrol[act]/100)
Emission (tpy) = 0.	.0011 x material transferred	(tpy) x [(average wind speed	d (mph)/5) ^{1.3} / moi	sture content (pct)/	2) ^{1.4} ] x (100-control	[pct]/100) x (1/2,000)
Source: Section	n 13 2 4 — Angregate h	landling and Storage Pi	les AP-42 Fift	h Fdition Janua	rv 1995	
		ianamy and otorago i		Laidoii, Valida	., 1000.	
	- N	PUT DATA AND EM	ISSIONS CAI	CHI ATIONS		
	//\	**O***DATA**AND*EMI	Material	OOLAND NO.		
Mean Wind	Act		Moisture	Control	Actual	
Speed	Quantity T		Content	Efficiency	Emissio (lb/hr)	
(mph)		(ton/yr)	(pct)	(pct)		(tpy)
8.6	2,300	4,000,000	6.5	90.0	0.10	0.09
	SOURCES OF INPUT DATA					
<u>Pa</u>	<u>rameter</u>		<u></u>	ata Source		
Mean Wind Spe	ed	Tampa, FL, Climate of	the States, Third	d Edition, 1985.		
<b>Actual Quantity</b>		TEC, 1997.				
Material Moistur Control Efficience		Average fuel moisture of Table 3.2.17-2, Workb			and Dispersion M	odeling for
Control Emclent	Cy	Fugitive Particulate So			and Dispersion in	odening for
	_		<u>-</u>	•		
		NOTES AND	OBSERVATIO	ONS		
			-			
	_					
		·				
					·	
				•		
			•			,
		DATA	CONTROL			
Data Collecte	ed by:	A. Trbovich			Date:	01/20/97
Evaluated by	:	A. Trbovich	-		Date:	01/20/97
Data Entered		A. Trbovich			Date:	01/20/97
Reviewed by:	:		<del></del>		 Date:	

EMISSION INVENTORY WORKSHEET FH-013 Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Rail Car to Hopper Emission Control Method(s)/ID No.(s): Enclosure and Dust Suppressant **Emission Point ID:** FH-013 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Moisture Control Actual PM₁₀ Actual **Emission Rates** Speed **Quantity Transferred** Content Efficiency (mph) (ton/hr) (ton/yr) (pct) (pct) (lb/hr) (tpy) 2,300 4,000,000 6.5 95.0 0.05 0.04 8.6 SOURCES OF INPUT DATA **Parameter Data Source** Tampa, FL, Climate of the States, Third Edition, 1985. Mean Wind Speed **Actual Quantity Transferred** TEC, 1997. **Material Moisture Content** Average fuel moisture content; TEC, 1994. Table 3-16, Fugitive Emissions From Coal-Fired Power Plants, EPRI, June 1984. **Control Efficiency** NOTES AND OBSERVATIONS

	·		
	DATA CONTRO	<u>IL</u>	
Data Collected by:	A. Trbovich	Date:	01/20/97
Evaluated by:	A. Trbovich	Date:	01/20/97
Data Entered by:	A. Trbovich	Date:	01/20/97
Reviewed by:		Date:	

Tampa Electric Company - F.J. Gannon Station

FH-014

#### EMISSION SOURCE TYPE **MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES** Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Hopper to Conveyor L Emission Control Method(s)/ID No.(s): Enclosure and Dust Suppressant Transfer Point ID(s): **Emission Point ID:** FH-014 EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4 x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Actual Moisture **Control** Actual PM₁₀ Speed **Quantity Transferred** Content Efficiency **Emission Rates** (pct) (lb/hr) (tpy) (mph) (ton/hr) (ton/yr) (pct) 4,000,000 95.0 0.05 0.04 8.6 2,300 SOURCES OF INPUT DATA **Parameter Data Source** Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985. Actual Quantity Transferred TEC, 1997. Average fuel moisture content; TEC, 1994. Material Moisture Content Control Efficiency Table 3-16, Fugitive Emissions From Coal-Fired Power Plants, EPRI, June 1984. NOTES AND OBSERVATIONS DATA CONTROL Data Collected by: A. Trbovich Date: 01/20/97 A. Trbovich Date: 01/20/97 Evaluated by: A. Trbovich Date: 01/20/97 Data Entered by:

Date:

Reviewed by:

FH-015 Tampa Electric Company — F.J. Gannon Station EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Conveyor L to Conveyor D1/D2 Emission Control Method(s)/ID No.(s): Enclosure and Dust Suppressant FH-015 Transfer Point ID(s): **Emission Point ID:** EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Moisture Control Actual PM₁₀ Emission Rates **Quantity Transferred** Content **Efficiency** Speed (ton/hr) (ton/yr) (pct) (pct) (lb/hr) (tpy) (mph) 2,300 4,000,000 95.0 0.05 0.04 8.6 SOURCES OF INPUT DATA **Parameter Data Source** Tampa, FL, Climate of the States, Third Edition, 1985. Mean Wind Speed TEC, 1997. Actual Quantity Transferred Material Moisture Content Average fuel moisture content; TEC, 1994. Table 3-16, Fugitive Emissions From Coal-Fired Power Plants, EPRI, June 1984. **Control Efficiency** NOTES AND OBSERVATIONS

	DATA CONTROL	L	
Data Collected by:	A. Trbovich	Date:	01/20/97
Evaluated by:	A. Trbovich	Date:	01/20/97
Data Entered by:	A. Trbovich	Date:	01/20/97
Reviewed by:		Date:	

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

FH-016

Emission (Source Description: Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant Sprays Emission (In/In) = 0.0011 x material transferred (pon/h) x [(sowrage wind speed (inph)/s)] / moisture content (pot)/s) / (100 -control) pot (100 x				SOUNCE							
Emission Control Method(a)/ID No. (e): Enclosure With Dust Suppressant Sprays  Emission Point ID: FH-016 Transfer Point ID(s):  Emission Point ID: FH-016 Transfer Point ID(s):  Emission (b)// 9 - 0.0011 x material transferred (b) x [severage wind speed (mph/l)] ** moisture content (pct/l)** 1 x (100 - control pct/l/100) x (1/2.000)  Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995.  ### Material Moisture Control Content Content Content Content Control Efficiency (mph) (mph) x [severage wind speed (mph/l)** 1 moisture Control Efficiency (mph) (mph) x (l/2.000)  ### Speed Control Content Cont	MA	TERIAL TRANSFER				Figure:					
Emission Point ID: FH-016 Transfer Point ID(e):  Emission Point ID: FH-016 Transfer Point ID(e):  Emission (bith) = 0.0011 x material transferred (both)x x ([average wind speed (mph)x)]^{1/3} moisture content (both)x 1/4 x (100-control[pot]/100) x (1/2,000)  Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995.  ### STATE OF TRANSFER OF TRANSF			FACILITY AND SC	URCE DESC	RIPTION						
Enisation (bith) = 0.0011 x material transferred (both) x [(everage wind speed (mphi/p) ¹⁻³ / moisture content (both)2 ¹⁻⁴ ] x (100-control[pot]/100) x (172.000)  Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995.    INPUT DATA AND EMISSIONS CALCULATIONS   Material Motor   Material (both)2   Material (bot	Emission Source Description: Fuel Handling - Conveyor D1 to Conveyor M1										
Emission (Bu/hr) = 0.0011 x material transferred (bon/hr) x [(average wind speed (mph)/s)]^{1.3} / moleture content (pct)/s]^{1.4}] x (100—control[pct]/100) Emission (pty) = 0.0011 x material transferred (by) x [(average wind speed (mph)/s)]^{1.3} / moleture content (pct)/s]^{1.4}] x (100—control[pct]/100) x (1/z,000)  Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995.    INPUT DATA AND EMISSIONS CALCULATIONS	Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant Sprays										
Emission (bi/hr) = 0.0011 x material transferred (bry) x [(average wind speed (mph)/s) ^{1,3} / moisture content (cdt/x) ^{1,4} ] x (100 -control[jet]/100) x (1/2,000)  Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995.    INPUT DATA AND EMISSIONS CALCULATIONS   Material Moisture   Control   Efficiency (pct)   (Ib/hr) (ton/wr)   (pct)   (pct)   (Ib/hr)   (ton/wr)   (pct)   (pct)   (Ib/hr)   (ton/wr)   (pct)   (Ib/hr)   (pct)   (Ib/hr)   (ton/wr)   (pct)   (Ib/hr)   (pct)   (	Emission Point	ID:	FH-016		Transfer Point I	D(s):					
Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995.											
Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995.											
Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995.    INPUT DATA AND EMISSIONS CALCULATIONS											
INPUT DATA AND EMISSIONS CAL CULATIONS	Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5) 1.00 / moisture content (pct)/2) 1.09 x (100 -control [pct]/100) x (1/2,000)										
INPUT DATA AND EMISSIONS CAL CULATIONS	Source: Section	n 13.2.4 – Aggregate h	landling and Storage Pi	les. AP-42. Fift	h Edition, Janua	rv 1995.					
Mean Wind Speed (mph)       Actual Quantity Transferred (ton/yr)       Moisture Content (pct)       Control Efficiency (pct)       Actual PM₁0 Emission Rates         8.6       2,300       4,000,000       6.5       90.0       0.10       0.09         SOURCES OF INPUT DATA         Parameter       Data Source         Mean Wind Speed       Tampa, FL, Climate of the States, Third Edition, 1985.         Actual Quantity Transferred       TEC, 1997.         Material Moisture Content       Average fuel moisture content; TEC, 1994.         Control Efficiency       Table 3.2.17 – 2, Workbook on Estimation of Emissions and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1981.         NOTES AND OBSERVATIONS         Short-term (24-hr average) dispersion modeling emissions rates assume both stackers operating simultaneously, each at 2,300 tph for a total rate of 4,600 tph.         DATA CONTROL         Date: 01/20/97         Data Collected by: A. Trbovich       Date: 01/20/97         Data Entered by: A. Trbovich       Date: 01/20/97	Course: Cours	ii ro.e.+ Aggrogato i	tanding and olorago v.	12, 111		., 1000.					
Mean Wind Speed (mph)       Actual Quantity Transferred (ton/yr)       Moisture Content (pct)       Control Efficiency (pct)       Actual PM₁0 Emission Rates         8.6       2,300       4,000,000       6.5       90.0       0.10       0.09         SOURCES OF INPUT DATA         Parameter       Data Source         Mean Wind Speed       Tampa, FL, Climate of the States, Third Edition, 1985.         Actual Quantity Transferred       TEC, 1997.         Material Moisture Content       Average fuel moisture content; TEC, 1994.         Control Efficiency       Table 3.2.17 – 2, Workbook on Estimation of Emissions and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1981.         NOTES AND OBSERVATIONS         Short-term (24-hr average) dispersion modeling emissions rates assume both stackers operating simultaneously, each at 2,300 tph for a total rate of 4,600 tph.         DATA CONTROL         Date: 01/20/97         Data Collected by: A. Trbovich       Date: 01/20/97         Data Entered by: A. Trbovich       Date: 01/20/97											
Mosture   Control   Efficiency   Efficien		IN	PUT DATA AND EM		CULATIONS						
Speed (mph)   Content (ton/hr)   Content (pct)   Efficiency (pct)   (b/hr)   (tpy)	A4 365 - 4	A	1		041	A _a1	D14				
Control Efficients   Control											
SOURCES OF INPUT DATA  Parameter  Tampa, FL, Climate of the States, Third Edition, 1985.  Actual Quantity Transferred Average fuel moisture content; TEC, 1994.  Control Efficiency Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1981.  **NOTES AND OBSERVATIONS**  Short-term (24-hr average) dispersion modeling emissions rates assume both stackers operating simultaneously, each at 2,300 tph for a total rate of 4,600 tph.  **DATA CONTROL**  Data Collected by: A. Tribovich Date: 01/20/97  Evaluated by: A. Tribovich Date: 01/20/97	,				-	- 1					
SOURCES OF INPUT DATA  Parameter  Data Source  Mean Wind Speed  Actual Quantity Transferred  TEC, 1997.  Material Moisture Content  Average fuel moisture content; TEC, 1994.  Control Efficiency  Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1981.  **NOTES AND OBSERVATIONS**  Short—term (24—hr average) dispersion modeling emissions rates assume both stackers operating simultaneously, each at 2,300 tph for a total rate of 4,600 tph.  **DATA CONTROL**  Data Collected by:  A. Trbovich  Date: 01/20/97  Evaluated by:  A. Trbovich  Date: 01/20/97	шри	(toli) ili	(1011/11)	(50.)	ipo./	(10/11)	(SPJ)				
Parameter Data Source  Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985.  Actual Quantity Transferred TEC, 1997.  Material Moisture Content Average fuel moisture content; TEC, 1994.  Control Efficiency Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1981.  **NOTES AND OBSERVATIONS**  Short-term (24-hr average) dispersion modeling emissions rates assume both stackers operating simultaneously, each at 2,300 tph for a total rate of 4,600 tph.  **DATA CONTROL**  Data Collected by: A. Trbovich Date: 01/20/97  Evaluated by: A. Trbovich Date: 01/20/97  Data Entered by: A. Trbovich Date: 01/20/97	8.6	2,300	4,000,000	6.5	90.0	0.10	0.09				
Mean Wind Speed  Actual Quantity Transferred  Material Moisture Content  Control Efficiency  Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1981.  **NOTES AND OBSERVATIONS**  Short—term (24—hr average) dispersion modeling emissions rates assume both stackers operating simultaneously, each at 2,300 tph for a total rate of 4,600 tph.  **DATA CONTROL**  Data Collected by:  A. Trbovich  Date: 01/20/97  Evaluated by:  A. Trbovich  Date: 01/20/97			SOURCES (								
Actual Quantity Transferred  Material Moisture Content  Average fuel moisture content; TEC, 1994.  Control Efficiency  Table 3.2.17 – 2, Workbook on Estimation of Emissions and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1981.  **NOTES AND OBSERVATIONS**  Short—term (24—hr average) dispersion modeling emissions rates assume both stackers operating simultaneously, each at 2,300 tph for a total rate of 4,600 tph.  **DATA CONTROL**  Data Collected by:  A. Tribovich  Date: 01/20/97  Data Entered by:  A. Tribovich  Date: 01/20/97	Pa	<u>rameter</u>			ata Source	·					
Actual Quantity Transferred  Material Moisture Content  Average fuel moisture content; TEC, 1994.  Control Efficiency  Table 3.2.17 – 2, Workbook on Estimation of Emissions and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1981.  **NOTES AND OBSERVATIONS**  Short—term (24—hr average) dispersion modeling emissions rates assume both stackers operating simultaneously, each at 2,300 tph for a total rate of 4,600 tph.  **DATA CONTROL**  Data Collected by:  A. Tribovich  Date: 01/20/97  Data Entered by:  A. Tribovich  Date: 01/20/97											
Material Moisture Content  Control Efficiency Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1981.  **NOTES AND OBSERVATIONS**  Short—term (24—hr average) dispersion modeling emissions rates assume both stackers operating simultaneously, each at 2,300 tph for a total rate of 4,600 tph.  **DATA CONTROL**  Data Collected by: A. Trbovich Date: 01/20/97  Evaluated by: A. Trbovich Date: 01/20/97  Data Entered by: A. Trbovich Date: 01/20/97											
Control Efficiency Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1981.  **NOTES AND OBSERVATIONS**  Short-term (24-hr average) dispersion modeling emissions rates assume both stackers operating simultaneously, each at 2,300 tph for a total rate of 4,600 tph.  **DATA CONTROL**  Data Collected by: A. Trbovich Date: 01/20/97  Evaluated by: A. Trbovich Date: 01/20/97			·								
Fugitive Particulate Sources, UARG, September 1981.  NOTES AND OBSERVATIONS  Short—term (24—hr average) dispersion modeling emissions rates assume both stackers operating simultaneously, each at 2,300 tph for a total rate of 4,600 tph.  DATA CONTROL  Data Collected by:  A. Trbovich  Date: 01/20/97  Data Entered by:  A. Trbovich  Date: 01/20/97											
Short-term (24-hr average) dispersion modeling emissions rates assume both stackers operating simultaneously, each at 2,300 tph for a total rate of 4,600 tph.    DATA CONTROL	Common Lindichoy		_ · · · · · · · · · · · · · · · · · · ·								
Short-term (24-hr average) dispersion modeling emissions rates assume both stackers operating simultaneously, each at 2,300 tph for a total rate of 4,600 tph.    DATA CONTROL					•	·					
Short-term (24-hr average) dispersion modeling emissions rates assume both stackers operating simultaneously, each at 2,300 tph for a total rate of 4,600 tph.    DATA CONTROL											
Short-term (24-hr average) dispersion modeling emissions rates assume both stackers operating simultaneously, each at 2,300 tph for a total rate of 4,600 tph.    DATA CONTROL			NATEOAND	OPCEDVATA	N/C						
each at 2,300 tph for a total rate of 4,600 tph.  DATA CONTROL  Data Collected by:  A. Trbovich  Date: 01/20/97  Evaluated by:  A. Trbovich  Date: 01/20/97  Data Entered by:  A. Trbovich  Date: 01/20/97			NOTES AND	UBSEHVATIC	JNS						
DATA CONTROL  Data Collected by: A. Trbovich Date: 01/20/97  Evaluated by: A. Trbovich Date: 01/20/97  Data Entered by: A. Trbovich Date: 01/20/97	Short-term (24-hr average) dispersion modeling emissions rates assume both stackers operating simultaneously,										
DATA CONTROL  Data Collected by: A. Trbovich Date: 01/20/97  Evaluated by: A. Trbovich Date: 01/20/97  Data Entered by: A. Trbovich Date: 01/20/97	each at 2 300 tob for a total rate of 4 600 tob										
Data Collected by:A. TrbovichDate:01/20/97Evaluated by:A. TrbovichDate:01/20/97Data Entered by:A. TrbovichDate:01/20/97											
Data Collected by:A. TrbovichDate:01/20/97Evaluated by:A. TrbovichDate:01/20/97Data Entered by:A. TrbovichDate:01/20/97											
Data Collected by:A. TrbovichDate:01/20/97Evaluated by:A. TrbovichDate:01/20/97Data Entered by:A. TrbovichDate:01/20/97											
Data Collected by:A. TrbovichDate:01/20/97Evaluated by:A. TrbovichDate:01/20/97Data Entered by:A. TrbovichDate:01/20/97											
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Data Collected by:A. TrbovichDate:01/20/97Evaluated by:A. TrbovichDate:01/20/97Data Entered by:A. TrbovichDate:01/20/97			DATA	CONTROL							
Data Entered by: A. Trbovich Date: 01/20/97	Data Collecte	ed by:				Date: (	01/20/97				
Data Entered by: A. Trbovich Date: 01/20/97			A. Trbovich			Date: (	01/20/97				
	•		A. Trbovich								
Heviewed by:	Reviewed by		-			Date:					

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

			<u>oconor::::::::::::::::::::::::::::::::::</u>			
MA [*]	TERIAL TRANSFER	- FUGITIVE EMISS			Figure:	
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source	e Description:	Fuel Handling – Convey	or D2 to Conve	yor M2		
Emission Contro	ol Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	18		
Emission Point	ID:	FH-017		Transfer Point II	D(s):	
		EMISSION ESTIM	ATION EQU	ATIONS		
Emission (lb/bs)	0 0011 v material transferse	d (ton/hr) x [(average wind s	need (mph) (5) 1.3 (	mainture content (r		drai[ad]/100)
Emission ( $tpy$ ) = 0	.0011 x material transferred	(tpy) x [(average wind speed	d (mph)/5) ^{1,3} / moi	sture content (pct)/	2) ^{1.4} ] x (100-control	pct]/100) x (1/2,000)
Source: Section	n 13.2.4 – Aggregate F	landling and Storage Pil	les, AP-42, Fiftl	n Edition, Januar	ry 1995.	
	•	•		•		
	IN	PUT DATA AND EMI	ISSIONS CAL	CULATIONS		
			Material		A - A 1	204
Mean Wind	Act		Moisture Content	Control Efficiency	Actual Emission	
Speed (mph)	Quantity T (ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	4,000,000	6.5	90.0	0.10	0.09
	-	SOURCES C	OF INPUT DA			
<u>Pa</u>	rameter		D	ata Source		
Mean Wind Spe	ed	Tampa, FL, Climate of t	the States, Third	l Edition, 1985.		
Actual Quantity Transferred TEC, 1997.						
Material Moistur		Average fuel moisture of				
Control Efficience	cy ·	Table 3.2.17-2, Workb Fugitive Particulate Sou			and Dispersion M	odeling of
		1 agrave 1 arabarate bot	<u> </u>	ptember 1001:		
		NOTES AND	ADCEDWATE	We		
Short-term (24	-hr average) dispersio	n modeling emissions re	ates assume bot	th stackers opera	ating simultaneous	sly,
each at 2,300	tph for a total rate of 4	,600 tph.				
•						
			-			
		DATA (	CONTROL			
Data Collecte	ed by:	A. Trbovich			Date: (	01/20/97
Evaluated by	•	A. Trbovich		•	Date: (	01/20/97
Data Entered	by:	A. Trbovich		ĺ	Date: (	01/20/97
Reviewed by:	:				Date:	

Tampa Electric Company - F.J. Gannon Station

		EMISSIUN	SOURCE IYE	<i>1</i> E		
MA	TERIAL TRANSFER	- FUGITIVE EMIS			Figure:	
		FACILITY AND SO	)URCE DESC	RIPTION		
Emission Source	e Description:	Fuel Handling - Conve	yor M1 to Conve	yor E1		
Emission Contro	ol Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	/s		
Emission Point	ID:	FH-018		Transfer Point I	D(s):	
		EMISSION ESTIN	MATION EQU	ATIONS		
Emission (lh/hr) =	0 0011 x material transferre	ed (torv/hr) x [(average wind s	speed (mph)/5) ^{1.3} (	moisture content (	pct)/2) ^{1,4} 1 x (100-co	ntrol[act] /100)
Emission (tpy) = 0	.0011 x material transferred	(tpy) x [(average wind speed	d (mph)/5) ^{1.3} / moi	isture content (pct)/	2) ^{1.4} ] x (100—control	[pct]/100) x (1/2,000)
Carrage Carrier	- 40.0.4	I 41:	AD 40 556	- F-3:4: 1	400F	
Source: Section	n 13.2.4 – Aggregate F	Handling and Storage Pi	ies, AP-42, Fiπ	n Edition, Janua	гу 1995.	
		PUT DATA AND EM	ISSIONS CAL Material	CULATIONS		
Mean Wind	Act	tual	Moisture	Control	Actual	PM ₁₀
Speed	Quantity T	ransferred	Content	Efficiency	Emissio	n Rates
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	4,000,000	6.5	90.0	0.10	0.09
		SOURCES	OF INPUT DA			
Pa	rameter			Data Source		
Mean Wind Spe	ed	Tampa, FL, Climate of	the States, Third	d Edition, 1985.		
	Actual Quantity Transferred TEC, 1997.					
Material Moistur		Average fuel moisture				
Control Efficiend	cy	Table 3.2.17-2, Workb			and Dispersion M	odeling of
		Tagrato Farabalate oo	4,000,07414,0	- Promoor 1001.		
		NOTES AND	OBSERVATION OF THE PROPERTY OF	ONS		
Short-term (24	hr average) dispersio	on modeling emissions re			ating simultaneous	elv
	-		ates assume po	ili stackers oper	aurig silituitarieous	×у,
each at 2,300	tph for a total rate of 4	,600 tph.				
			<del>,</del>			
			CONTROL			
Data Collecte	ed by:	A. Trbovich			Date:	01/20/97
Evaluated by	· · · · · · · · · · · · · · · · · · ·	A. Trbovich			Date:	01/20/97
Data Entered	by:	A. Trbovich			Date:	01/20/97
Reviewed by:	•				Date:	

Tampa Electric Company - F.J. Gannon Station

	EMISSION SOURCE TYPE						
MA	TERIAL TRANSFER	R - FUGITIVE EMIS			Figure:		
		FACILITY AND SO	OURCE DESC	RIPTION			
Emission Sourc	e Description:	Fuel Handling - Conve	yor M2 to Conve	yor E2			
Emission Contr	ol Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	/8		_	
Emission Point	ID:	FH-019		Transfer Point I	D(s):		
		EMISSION ESTIN	MATION EQU	<u>ATIONS</u>			
Emission (lb/br) =	0 0011 x material transferra	ed (ton/hr) x [(average wind s	speed (mph)/5)1.3	moisture content (	nct)/2) ^{1.4} 1 x (100—co	ntrol[nct]/100)	
		(tpy) x [(average wind spee					
Source: Section	n 19 2 4 Aggregate l	Handling and Storage Pi	los AP_42 Fift	h Edition Janua	n/ 1995		
Source, Section	11 13.2.4 - Aggregate i	tanding and Storage Fi	165, AF-42, FIII	ii Euluoli, Jailua	ty 1995.		
INPUT DATA AND EMISSIONS CALCULATIONS							
	INI	PUT DATA AND EM	Material	CULATIONS			
Mean Wind		tual	Moisture	Control	Actual		
Speed		ransferred	Content	Efficiency	Emissio (lb/hr)	n Rates	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)		(tpy)	
8.6	2,300	4,000,000	6.5	90.0	0.10	0.09	
		SOURCES	OF INPUT DA				
<u>Pa</u>	<u>irameter</u>		<u></u>	Data Source			
Mean Wind Spe	ed	Tampa, FL, Climate of	the States, Third	d Edition, 1985.			
	Actual Quantity Transferred TEC, 1997.  Material Moisture Content Average fuel moisture content; TEC, 1994.						
Control Efficien		Average fuel moisture of Table 3.2.17-2, Workb			and Dispersion M	lodeling of	
	-	Fugitive Particulate So	urces, UARG, S	eptember 1981.			
	·		•				
		NOTES AND	<b>OBSERVATIO</b>	ONS			
Short-term (24	-hr average) dispersio	on modeling emissions r	ates assume bo	th stackers oper	ating simultaneou	sly,	
each at 2,300	tph for a total rate of 4	,600 tph.					
-							
		·					
			CONTROL				
Data Collecte	ed by:	A. Trbovich			Date:	01/20/97	
Evaluated by	<b>/</b> :	A. Trbovich			Date:	01/20/97	
Data Entered	d by:	A. Trbovich			Date:	01/20/97	
Reviewed by	<i>'</i> :				Date:		

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

MATI	ERIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:	
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source	Description:	Fuel Handling - Convey	or E1 to Storag	e Pile		
Emission Control	Method(s)/iD No.(s):	Dust Suppressant				
Emission Point ID	):	FH020		Transfer Point II	D(s):	
		EMISSION ESTIM	ATION EQU	ations		
Emission (lb/hr) = 0. Emission (tpy) = 0.0	0011 x material transferre	d (torvhr) x [(average wind s (tpy) x [(average wind speed	peed (mph)/5) ^{1,3} /	moisture content (pct)/2	ect)/2) ^{1.4} ] x (100-control[	trol[pct]/100) pct]/100) x (1/2,000)
		landling and Storage Pil	_			
Source. Section	10.2.4 - Aggregate i	ianuming and otorage in		r Luidon, Januai	y 1995.	
	IN	PUT DATA AND EMI	SSIONS CAL	CHIATIONS		
			Material			
Mean Wind		uai	Moisture	Control	Actual	
Speed (mph)	Quantity T (ton/hr)	ransterred (ton/yr)	Content (pct)	Efficiency (pct)	Emission (lb/hr)	(tpy)
8.6	2,300	4,000,000	6.5	70.0	0.29	0.26
		SOURCES C	F INPUT DA	TA .		
Para	ameter			ata Source		
M W5-1 O	•	T	La Casa a Third	LEJMAN 100E		
Mean Wind Speed Actual Quantity T		Tampa, FL, Climate of t TEC, 1997.	ne States, Iniro	Edition, 1985.		
Material Moisture		Average fuel moisture of	ontent; TEC, 19	94.		
Control Efficiency	•	Table 3.2.17-2, Workb			and Dispersion Mo	odeling of
		Fugitive Particulate Soc	irces, UAHG, Se	eptember 1981.		
		NOTES AND	OBSERVATIO	ONS		
Short-torm (24-	br avaraga) disparsio	n modeling emissions re			ting simultaneous	ılv
			ites assume Do		tung simultaneous	y,
each at 2,300 t	ph for a total rate of 4	,600 tph.				<del></del>
			_			
		DATA	CONTROL			
Data Collected	d by:	A. Trbovich			Date: (	09/12/97
Evaluated by:	•	A. Trbovich				09/12/97
Data Entered		A. Trbovich				09/12/97
Reviewed by:				<u> </u>	 Date:	

#### FH-021 Tampa Electric Company - F.J. Gannon Station **EMISSION SOURCE TYPE** MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Conveyor E2 to Storage Pile Emission Control Method(s)/ID No.(s):Dust Suppressant **Emission Point ID:** Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Actual Moisture Controi Actual PM₁₀ **Quantity Transferred** Content Efficiency **Emission Rates** Speed (mph) (ton/hr) (ton/yr) (pct) (pct) (lb/hr) (tpy) 8.6 2.300 4,000,000 6.5 70.0 0.29 0.26 SOURCES OF INPUT DATA Parameter Data Source Tampa, FL, Climate of the States, Third Edition, 1985. Mean Wind Speed **Actual Quantity Transferred** TEC, 1997. Average fuel moisture content; TEC, 1994. **Material Moisture Content** Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of **Control Efficiency** Fugitive Particulate Sources, UARG, September 1981. NOTES AND OBSERVATIONS Short-term (24-hr average) dispersion modeling emissions rates assume oth stackers operating simultaneously, each at 2,300 tph for a total rate of 4,600 tph.

Data Collected by:	A. Trbovich	Date:	09/12/97
Evaluated by:	A. Trbovich	Date:	09/12/97
Data Entered by:	A. Trbovich	Date:	09/12/97
Reviewed by:		Date:	

#### EMISSION INVENTORY WORKSHEET FH-022 Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE STORAGE PILE WINDBLOWN FUGITIVE DUST EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION Emission Source Description: Fuel Storage - North Storage Pile Emission Control Method(s)/ID No.(s): **Application of Chemical Dust Suppressant Emission Point ID:** Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Estimates of fugitive PM10 were made using procedures contained in AP-42, Section 13.2.5, Industrial Wind Erosion. Source: Section 13,2.5 - Industrial Wind Erosion, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Threshold Friction Velocity: 1.12 m/s Control Efficiency: 21 Surface Area (m²) 70 Pile Height (m): 16,758 Pile Length (m): 215 Pile Width (m): Meteorological Friction **Emission** Affected Pile Affected Actual PM₁₀ Period Velocity **Emission Rates** Potential Surface Area Araa $(g/m^2)$ (m²) (m/s) (pct) (lb/hr) (фу) 0.0024 1.30 B 38 670.3 0.59 14 4 670.3 <0.0001 30 1.13 0.26 0,02 0.72 0.0014 **37** 1.33 7.81 4 670.3 5.34 0.0107 16 52 14 2.346.1 85 1.48 4.05 0.0081 65 1.80 43.82 4 670.3 77 1.30 6.38 4 670.3 0.59 0.0012 1.33 0.72 0.0014 7.81 4 670.3 90 9,39 Maximum Per Period N/A N/A 0.0252 Total SOURCES OF INPUT DATA **Data Source** <u>Parameter</u> Threshold Friction Velocity (m/s) Uncrusted coal pile, Table 13.2.5-2., AP-42, January 1995. Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling Control Efficiency (pct) for Fugitive Particulate Sources, UARG, September 1991. Fuel Pile Dimensions (m) Estimated: ECT, 1997. Pile Surface Area (m²) Calculated: ECT, 1997. 1986 NWS data, processed per AP-42, ECT, 1997. Meteorological Periods Friction Velocity (m/s) Equation, Section 13.2.5, AP-42, January 1995. Potential Emission (g/m²) Equation, Section 13.2.5, AP-42, January 1995. Table 13.2.5-3., Section 13.2.5, AP-42, January 1995. Affected Pile Surface Area (pct) Calculated: ECT, 1997. Affected Area NOTES AND OBSERVATIONS DATA CONTROL Date: 09/12/97 Data Collected by: A. Trbovich Date: 09/12/97 A. Trbovich Evaluated by: 09/12/97 A. Trbovich Date: Data Entered by:

Date:

Tampa Electric Company - F.J. Gannon Station

<u>|FH-0</u>23a

EMISSION SOURCE TYPE STORAGE PILE WINDBLOWN FUGITIVE DUST EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION Fuel Storage - East Portion of South Storage Pile **Emission Source Description:** Emission Control Method(s)/ID No.(s): **Application of Chemical Dust Suppressant Emission Point ID:** Transfer Point ID(s): FH-023a EMISSION ESTIMATION EQUATIONS Estimates of fugitive PM10 were made using procedures contained in AP-42, Section 13.2.5, Industrial Wind Erosion. Source: Section 13.2.5 - Industrial Wind Erosion, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Control Efficiency: Threshold Friction Velocity: 1.12 m/s 91 Pile Height (m): 21 Surface Area (m²) Pile Length (m): 170 Pile Width (m): 16,754 Actual PM₁₀ Meteorological Friction Emission Affected Pile Affected **Potential Emission Rates** Period Velocity Surface Area Area (m/s)  $(q/m^2)$ (pct) (m²) (lb/hr) (tpy) 0.0024 670.2 14 1.30 6.38 0.59 <0.0001 30 1.13 0.26 4 670.2 0.02 0.0014 37 1.33 7.81 4 670.2 0.72 65 1.48 16.52 14 2,345.5 5.34 0.0107 1.80 65 43.82 4 670.2 4.05 0.0081 0.59 0.0012 77 1.30 6.38 4 670.2 0.0014 90 1.33 7.81 670.2 0.72 Maximum Per Period 9.38 N/A N/A 0.0252 Total SOURCES OF INPUT DATA Parameter Threshold Friction Velocity (m/s) Uncrusted coal pile, Table 13.2.5-2., AP-42, January 1995. Control Efficiency (pct) Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991. Fuel Pile Dimensions (m) Estimated: ECT, 1997. Pile Surface Area (m²) Calculated: ECT, 1997. Meteorological Periods 1986 NWS data, processed per AP-42, ECT, 1997. Friction Velocity (m/s) Equation, Section 13.2.5, AP-42, January 1995. Potential Emission (g/m²) Equation, Section 13.2.5, AP-42, January 1995. Affected Pile Surface Area (pct) Table 13.2.5-3., Section 13.2.5, AP-42, January 1995. Calculated: ECT, 1997. Affected Area NOTES AND OBSERVATIONS DATA CONTROL Data Collected by: A. Trbovich Date: 09/12/97 A. Trbovich Date: 09/12/97 Evaluated by: 09/12/97 Data Entered by: A. Trbovich Date:

Date:

Date:

## EMISSION INVENTORY WORKSHEET

Source: Section 13.2.5 - Industrial Wind Erosion, AP-42, Fifth Edition, January 1995.   IMPUT DATA AND EMISSIONS CALCULATIONS   Threshold Friction Velocity: 1.12 m/s		Tamp		pany – F.J. Ga				FH-023b
Function   Source Description:   Fuel Storage - West Portion of South Storage Pile			E	MISSION SOUP	CETYPE			
Function   Source Description:   Fuel Storage - West Portion of South Storage Pile	STORAGE P	ILE WINDS	LOWN FUGITIN	E DUST FMISS	ON SOURCE	s	Figure:	
Emission Source Description: Fuel Storage - West Portion of South Storage Pile  Emission Control Method(s)/ID No.(s): Application of Chemical Dust Suppressant  Emission Point ID: FH-023b  Emission Point ID:  EMISSION ESTIMATION EQUATIONS  Estimators of fugitive PM ₁₁ , were made using procedures contained in AP-42, Section 13.2.5, industrial Wind Erosion.  Source: Section 13.2.5 - Industrial Wind Erosion, AP-42, Fifth Edition, January 1905.  Source: Section 13.2.5 - Industrial Wind Erosion, AP-42, Fifth Edition, January 1905.  Threshold Friction Velocity; 1.12 m/s Control Efficiency: 50 pct  Pile Length (m): 140 Pile Width (m): 125 Pile Height (m): 21 Surface Area (m²) 18,855  Meteorological Friction Emission Affected Pile Affected Pi	0.0.0.2						ı ıgare.	
Emission Control Method(a)/ID No.(s): Application of Chemical Dust Suppressant  Emission Point ID: FH-023b Transfer Point ID(s):  EMISSION ESTIMATION EQUATIONS  Estimates of fugitive PM ₁₀ were made using procedures contained in AP-42, Section 13.2.5, Industrial Wind Erosion.  Sourca: Section 13.2.5 – Industrial Wind Erosion, AP-42, Fifth Edition, January 1995.  INPUT DATA AND EMISSIONS CALCULATIONS  Threshold Friction Velocity: 1.12 m/s Control Efficiency: 50 pct  PPI Length (m): 140 Pite Wicth (m): 125 Pite Height (m): 21 Surface Area (m²) 18,855  Meteorological Friction Emission Affected Pile Affected Pile (m²): (pct)			······································	ARAND SOUNCE	DESCRIPTION	<u> </u>		
Entission Point ID: FH-023b Transfer Point ID(e):  EMISSION ESTIMATION EQUATIONS  Estimates of Augitive PM ₁₀ were made using procedures contained in AP-42, Section 13.2.5, Industrial Wind Erosion.  Source: Section 13.2.5 – Industrial Wind Erosion, AP-42, Fifth Edition, January 1995.    Invested Friction Velocity: 1.12 m/e	Emission Source Description:		Fuel Storage - Wes	t Portion of South St	orage Pile			
Estimates of fugitive PM ₁₀ were made using procedures contained in AP-42, Section 13.2.5, industrial Wind Erosion.  Source: Section 13.2.5 – Industrial Wind Erosion, AP-42, Fifth Edition, January 1995.    INPUT DATA AND EMISSIONS CALCULATIONS	Emission Control Method(s)/ID I	No.(s):	Application of Chem	ical Dust Suppressa	nt			
Estimates of fugilities PM _{Iss} were made using procedures contained in AP-42, Section 13.2.5, Industrial Wind Erosion.	Emission Point ID:	1	FH-023b			Transfer Point ID(	s):	
Institute			EMISS	ION ESTIMATIC	N EQUATION	S	<u> </u>	
INPUT DATA AND EMISSIONS CALCULATIONS   Threshold Friction Velocity: 1.12 m/s   Control Efficiency: 50 pct   140   Pile Wright (m): 125   Pile Height (m): 21   Surface Area (m²)   18,855	Estimates of fugitive PM ₁₀ were	made using p	rocedures containe	in AP-42, Section	13.2.5, Industrial	Wind Erosion.		<u>.</u>
Threshold Friction Velocity: 1,12 m/s	Source: Section 13.2.5 - Indus	trial Wind Ero	sion, AP-42, Fifth E	dition, January 1995	• . <u></u>			
Pile Length (m): 140   Pile Width (m): 125   Pile Height (m): 21   Surface Area (m²) 18,855			INPUT DAT	A AND EMISSIO	NS CALCULA	TIONS		
Meteorological Period   Potential (a/m²)   Surface Area (pct) (m/s)   Emission Rates (pct) (m²)   (b/hr) (tpy)	Threshold Friction Velocity:	1.12	m/s	Control Efficiency:	50	pct		
Period   Velocity (m/s)   Countries   Surface Area (m²)   (b/hy)	Pile Length (m):	140	Pile Width (m):	125	Pile Height (m):	21	Surface Area (m ² )	18,855
(m/s)	•							
14	reika	- 1						
30		prys;	G/m )	фец	/m )	(MJ/1W)	(Ψγ)	
30	14	1.30	A 38	4	754 9	0.66	0.0013	
1.33   7.81   4   754.2   0.81   0.0016								
1.48								
1.80								
Maximum Per Period   10.56   N/A								
Maximum Per Period 10.56 N/A Total N/A 0.0270  SOURCES OF INPUT DATA  Parameter Data Source  Threshold Friction Velocity (m/s) Uncrusted coal pile, Table 13.2.5-2., AP-42, January 1995. Control Efficiency (pct) Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991. Fuel Pile Dimensions (m) Estimated: ECT, 1997. Meteorological Periods 1988 NWS data, processed per AP-42, ECT, 1997. Friction Velocity (m/s) Equation, Section 13.2.5, AP-42, January 1995. Affected Pile Surface Area (pct) Table 13.2.5-3., Section 13.2.5, AP-42, January 1995. Affected Area Calculated: ECT, 1997.	77		6.38	4	754.2	0.66	0.0013	
SOURCES OF INPUT DATA  Parameter Data Source  Threshold Friction Velocity (m/s) Uncrusted coal pile, Table 13.2.5-2., AP-42, January 1995.  Control Efficiency (pct) Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991.  Fuel Pile Dimensions (m) Estimated: ECT, 1997.  Pile Surface Area (m²) Calculated: ECT, 1997.  Meteorological Periods 1986 NWS data, processed per AP-42, ECT, 1997.  Friction Velocity (m/s) Equation, Section 13.2.5, AP-42, January 1995.  Potential Emission (g/m²) Equation, Section 13.2.5, AP-42, January 1995.  Affected Area Calculated: ECT, 1997.	'				754.2	0.81	0.0016	
SOURCES OF INPUT DATA  Parameter Data Source  Threshold Friction Velocity (m/s) Uncrusted coal pile, Table 13.2.5-2., AP-42, January 1995.  Control Efficiency (pct) Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991.  Fuel Pile Dimensions (m) Estimated: ECT, 1997.  Pile Surface Area (m²) Calculated: ECT, 1997.  Meteorological Periods 1986 NWS data, processed per AP-42, ECT, 1997.  Friction Velocity (m/s) Equation, Section 13.2.5, AP-42, January 1995.  Potential Emission (g/m²) Equation, Section 13.2.5, AP-42, January 1995.  Affected Area Calculated: ECT, 1997.								
Parameter Data Source  Threshold Friction Velocity (m/s) Uncrusted coal pile, Table 13.2.5–2., AP–42, January 1995.  Control Efficiency (pct) Table 3.2.17–2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991.  Fuel Pile Dimensions (m) Estimated: ECT, 1997.  Pile Surface Area (m²) Calculated: ECT, 1997.  Meteorological Periods 1988 NWS data, processed per AP–42, ECT, 1997.  Friction Velocity (m/s) Equation, Section 13.2.5, AP–42, January 1995.  Potential Emission (g/m²) Equation, Section 13.2.5, AP–42, January 1995.  Affected Area Calculated: ECT, 1997.				Maximum Po	er Period	10.56	N/A	
Parameter Data Source  Threshold Friction Velocity (m/s) Uncrusted coal pile, Table 13.2.5-2., AP-42, January 1995.  Control Efficiency (pct) Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991.  Fuel Pile Dimensions (m) Estimated: ECT, 1997.  Pile Surface Area (m²) Calculated: ECT, 1997.  Meteorological Periods 1986 NWS data, processed per AP-42, ECT, 1997.  Friction Velocity (m/s) Equation, Section 13.2.5, AP-42, January 1995.  Potential Emission (g/m²) Equation, Section 13.2.5, AP-42, January 1995.  Affected Area Calculated: ECT, 1997.					Total	N/A	0.0270	
Parameter Data Source  Threshold Friction Velocity (m/s) Uncrusted coal pile, Table 13.2.5-2., AP-42, January 1995.  Control Efficiency (pct) Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991.  Fuel Pile Dimensions (m) Estimated: ECT, 1997.  Pile Surface Area (m²) Calculated: ECT, 1997.  Meteorological Periods 1986 NWS data, processed per AP-42, ECT, 1997.  Friction Velocity (m/s) Equation, Section 13.2.5, AP-42, January 1995.  Potential Emission (g/m²) Equation, Section 13.2.5, AP-42, January 1995.  Affected Area Calculated: ECT, 1997.				OUDOES OF IN	DUTDATA			
Threshold Friction Velocity (m/s)  Uncrusted coal pile, Table 13.2.5-2., AP-42, January 1995.  Control Efficiency (pct)  Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991.  Fuel Pile Dimensions (m)  Estimated: ECT, 1997.  Pile Surface Area (m²)  Calculated: ECT, 1997.  Meteorological Periods  1986 NWS data, processed per AP-42, ECT, 1997.  Friction Velocity (m/s)  Equation, Section 13.2.5, AP-42, January 1995.  Potential Emission (g/m²)  Equation, Section 13.2.5, AP-42, January 1995.  Affected Pile Surface Area (pct)  Table 13.2.5-3., Section 13.2.5, AP-42, January 1995.  Calculated: ECT, 1997.	D		<u> </u>	DUHCES OF IN		S		
Control Efficiency (pct)  Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991.  Fuel Pile Dimensions (m)  Estimated: ECT, 1997.  Pile Surface Area (m²)  Calculated: ECT, 1997.  Meteorological Periods  1986 NWS data, processed per AP-42, ECT, 1997.  Friction Velocity (m/s)  Equation, Section 13.2.5, AP-42, January 1995.  Potential Emission (g/m²)  Equation, Section 13.2.5, AP-42, January 1995.  Affected Pile Surface Area (pct)  Table 13.2.5-3., Section 13.2.5, AP-42, January 1995.  Affected Area  Calculated: ECT, 1997.	<u>Parameter</u>				Data	Source		
Control Efficiency (pct)  Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991.  Fuel Pile Dimensions (m)  Estimated: ECT, 1997.  Pile Surface Area (m²)  Calculated: ECT, 1997.  Meteorological Periods  1986 NWS data, processed per AP-42, ECT, 1997.  Friction Velocity (m/s)  Equation, Section 13.2.5, AP-42, January 1995.  Potential Emission (g/m²)  Affected Pile Surface Area (pct)  Table 13.2.5-3., Section 13.2.5, AP-42, January 1995.  Affected Area  Calculated: ECT, 1997.	Though ald Stickion Volcaite (m/s)		I learned and will	T-LI- 1225 - 2 A	D . 42 Innuent 16			
for Fugitive Particulate Sources, UARG, September 1991.  Fuel Pile Dimensions (m) Estimated: ECT, 1997.  Pile Surface Area (m²) Calculated: ECT, 1997.  Meteorological Periods 1986 NWS data, processed per AP-42, ECT, 1997.  Friction Velocity (m/s) Equation, Section 13.2.5, AP-42, January 1995.  Potential Emission (g/m²) Equation, Section 13.2.5, AP-42, January 1995.  Affected Pile Surface Area (pct) Table 13.2.5-3., Section 13.2.5, AP-42, January 1995.  Affected Area Calculated: ECT, 1997.		j						
Fuel Pile Dimensions (m)  Estimated: ECT, 1997.  Pile Surface Area (m²)  Calculated: ECT, 1997.  Meteorological Periods  1986 NWS data, processed per AP-42, ECT, 1997.  Friction Velocity (m/s)  Equation, Section 13.2.5, AP-42, January 1995.  Potential Emission (g/m²)  Equation, Section 13.2.5, AP-42, January 1995.  Affected Pile Surface Area (pct)  Table 13.2.5-3., Section 13.2.5, AP-42, January 1995.  Affected Area  Calculated: ECT, 1997.	Control Elliciency (pct)				•	-		
Pile Surface Area (m²)  Calculated: ECT, 1997.  Meteorological Periods  1986 NWS data, processed per AP-42, ECT, 1997.  Friction Velocity (m/s)  Equation, Section 13.2.5, AP-42, January 1995.  Potential Emission (g/m²)  Equation, Section 13.2.5, AP-42, January 1995.  Affected Pile Surface Area (pct)  Affected Area  Calculated: ECT, 1997.	Fuel Pile Dimensions (m)				September 1891.	·		
Meteorological Periods  1986 NWS data, processed per AP-42, ECT, 1997.  Friction Velocity (m/s)  Equation, Section 13.2.5, AP-42, January 1995.  Potential Emission (g/m²)  Equation, Section 13.2.5, AP-42, January 1995.  Affected Pile Surface Area (pct)  Table 13.2.5-3., Section 13.2.5, AP-42, January 1995.  Affected Area  Calculated: ECT, 1997.								
Friction Velocity (m/s) Equation, Section 13.2.5, AP-42, January 1995.  Potential Emission (g/m²) Equation, Section 13.2.5, AP-42, January 1995.  Affected Pile Surface Area (pct) Table 13.2.5-3., Section 13.2.5, AP-42, January 1995.  Affected Area Calculated: ECT, 1997.					ECT 1997		·	·
Potential Emission (g/m²) Equation, Section 13.2.5, AP-42, January 1995.  Affected Pile Surface Area (pct) Table 13.2.5-3., Section 13.2.5, AP-42, January 1995.  Affected Area Calculated: ECT, 1997.								
Affected Pile Surface Area (pct) Table 13.2.5-3., Section 13.2.5, AP-42, January 1995.  Affected Area Calculated: ECT, 1997.								
Affected Area Calculated: ECT, 1997.		<del>-</del>						
					, wallow y 1550.	<u> </u>		
	MID-UDU PI DU		·					· · · · · · · · · · · · · · · · · · ·
		North Charles and a second control		<b>****</b>		andria de la companya		
· · · · · · · · · · · · · · · · · · ·				<u>-</u>				
				DATA CONT	ROL			
DATA CONTROL	Data Collected by:		A. Trbovich				Date:	09/12/97
			A. Trbovich				Date:	09/12/97
	Data Entered by:		A. Trbovich					09/12/97

FH-024 Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling — Underground Reclaim System to Conveyor F1 Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant **Emission Point ID:** FH-024 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Actual PM₁₀ Mean Wind Actual Moisture Control Speed **Quantity Transferred** Content **Efficiency Emission Rates** (ton/hr) (ton/yr) (pct) (pct) (lb/hr) (tpy) <u>(mph)</u> 400 4.000.000 85.0 0.03 0.13 6.5 8.6 SOURCES OF INPUT DATA <u>Parameter</u> Data Source Tampa, FL, Climate of the States, Third Edition, 1985. Mean Wind Speed **Actual Quantity Transferred** TEC, 1997. **Material Moisture Content** Average fuel moisture content; TEC, 1994. Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of **Control Efficiency** Fugitive Particulate Sources, UARG, September 1981. NOTES AND OBSERVATIONS Short-term (24-hr average) dispersion modeling emissions rates assume 4 relaimers operating simultaneously, each at 400 tph for a total rate of 1,600 tph.

Data Collected by:	A. Trbovich	Date:	09/12/97
Evaluated by:	A. Trbovich	Date:	09/12/97
Data Entered by:	A. Trbovich	Date:	09/12/97
Reviewed by:		Date:	

#### FH-025 Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Underground Reclaim System to Conveyor F4 Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant Transfer Point ID(s): **Emission Point ID:** FH-025 EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Actual Moisture Control Actual PM₁₀ Speed **Quantity Transferred** Content Efficiency **Emission Rates** (lb/hr) (tpy) (mph) (ton/hr) (ton/yr) (pct) (pct) 4,000,000 85.0 0.03 400 6.5 0.13 8.6 SOURCES OF INPUT DATA Data Source **Parameter** Tampa, FL, Climate of the States, Third Edition, 1985. Mean Wind Speed **Actual Quantity Transferred** TEC, 1997. Average fuel moisture content; TEC, 1994. **Material Moisture Content** Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of **Control Efficiency** Fugitive Particulate Sources, UARG, September 1981. NOTES AND OBSERVATIONS Short-term (24-hr average) dispersion modeling emissions rates assume 4 relaimers operating simultaneously, each at 400 tph for a total rate of 1,600 tph. DATA CONTROL Data Collected by: A. Trbovich Date: 09/12/97

A. Trbovich

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Evaluated by:

Reviewed by:

Data Entered by:

Tampa Electric Company — F.J. Gannon Station

EMISSION SOURCE TYPE

MATER	RIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:	
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source De	escription:	Fuel Handling - Underg	round Reclaim	System to Conve	eyor F3	
Emission Control M	ethod(s)/ID No.(s):	Enclosure With Dust Su	ppressant		<u> </u>	
Emission Point ID:		FH-026		Transfer Point II	D(s):	
		EMISSION ESTIM	IATION EQU	ATIONS		
Emission (lb/hr) = 0.00	11 x material transferre	ed (ton/hr) x [(average wind s	peed (mph)/5) ^{1.3} /	moisture content (	oct)/2) ^{1.4} ] x (100-co	ntrol[pct]/100)
Emission (tpy) = 0.001	1 x material transferred	(tpy) x [(average wind speed	d (mph)/5) ^{1,3} / moi	isture content (pct)/	2) ^{1.4} ] x (100-contro	[pct]/100) x (1/2,000)
Source: Section 13	1 2 4 – Aggregate i	landling and Storage Pil	es AP-42 Fift	h Edition, Januar	ry 1995	
	riggiogato i	ianaming and otorago in		The Landson, Garda		
			COLONICOAL	*ALUEATIANA		
	IN	PUT DATA AND EMI	Material	CULATIONS		
Mean Wind	Act	tual	Moisture	Control	Actua	PM ₁₀
Speed	Quantity T		Content	Efficiency		n Rates
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	400	4,000,000	6.5	85.0	0.03	0.13
-		SOURCES C	F INPUT DA			
Paran	<u>neter</u>			Data Source		
Mean Wind Speed		Tampa, FL, Climate of t	the States. Third	d Edition, 1985.		
Actual Quantity Tra	nsferred	TEC, 1997.				
Material Moisture C	ontent	Average fuel moisture of				
Control Efficiency		Table 3.2.17-2, Workb Fugitive Particulate Sou			and Dispersion M	lodeling of
		r ugitive r ai liculate soc	arces, OAIIG, O	eptember 1301.		
		NOTES AND	OBSERVATIO	ONS		
Sh 404 h-					ilt	
Short-term (24-hr	average) dispersio	n modeling emissions ra	ates assume 4 i	elaimers operaul	ng simunaneousiy	· ·
each at 400 tph fo	or a total rate of 1,6	600 tph				
				•		
		•				
				<u> </u>		
			<u> </u>			
		DATA	CONTROL			
Data Collected I	by:	A. Trbovich			Date:	09/12/97
Evaluated by:		A. Trbovich			Date:	09/12/97
Data Entered by	<b>/</b> :	A. Trbovich		_	Date:	09/12/97
Reviewed by:					Date:	

Tampa Electric Company - F.J. Gannon Station

FH-027 EMISSION SOURCE TYPE

MA	TERIAL TRANSFER	- FUGITIVE EMIS	SION SOURC	ES	Figure:	
		FACILITY AND SO	<u>URCE DESC</u>	RIPTION		
Emission Sourc	e Description:	Fuel Handling - Underg	ground Reclaim	System to Conv	eyor F2	
Emission Contro	ol Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant			
Emission Point	ID:	FH-027		Transfer Point I	D(s):	
		EMISSION ESTIN	<u>IATION EQU</u>	ATIONS		
Emission (tpy) = 0	.0011 x material transferred	d (ton/hr) x [(average wind a (tpy) x [(average wind speed	d (mph)/5) ^{1.3} / mo	isture content (pct)/	2) ^{1.4} ] x (100—control	
	181		ICCIONIC CAI	*AUI*ATIONS		
	įN.	PUT DATA AND EM	Material	COLATIONS	i i	
Mean Wind	Act	ual	Moisture	Control	Actua	PM ₁₀
Speed	Quantity T	ransferred	Content	Efficiency	Emissio	n Rates
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	400	4,000,000	6.5	85.0	0.03	0.13
	-	SOURCES (	OF INPUT DA			
Pa	<u>rameter</u>		<u>L</u>	ata Source		
Mean Wind Spe	ed	Tampa, FL, Climate of	the States, Third	d Edition, 1985.		
Actual Quantity		TEC, 1997.		· · · · · · · · · · · · · · · · · · ·		
Material Moisture Content Average fuel moisture content; TEC, 1994.						
Control Efficien	су	Table 3.2.17-2, Workb			and Dispersion M	lodeling of
		Fugitive Particulate So	urces, UAHG, S	eptember 1981.		
		NOTES AND	ORSERVATION	วพร		
				<u></u>		
Short-term (24	-hr average) dispersio	n modeling emissions r	ates assume 4 r	elaimers operati	ng simultaneously	<u>'.                                    </u>
each at 400 t	oh for a total rate of 1,6	600 tph.				
		DATA	CONTROL			
Data Collecte	ed by:	A. Trbovich			Date:	09/12/97
Evaluated by	<i>r</i> :	A. Trbovich			Date:	09/12/97
Data Entered		A. Trbovich			Date:	09/12/97
Reviewed by	:		_		Date:	

Tampa Electric Company - F.J. Gannon Station

FH-028

	rampa Ele	ecine Company – F				111-020
		EMISSION	SOURCE TYI	PE		
MATE	RIAL TRANSFER	- FUGITIVE EMIS	SION SOURC	ES	Figure:	
		FACILITY AND SC				
					***************************************	<u> </u>
Emission Source [	Description:	Fuel Handling - Conve	yor F1 to Conve	yor G1/G2		
Emission Control I	Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	/8		
Emission Point ID:		FH-028		Tononfor Boint	D(a).	
Emission Foint ID:		EMISSION ESTIN	ATION EOU	Transfer Point	D(8):	
		EMISSICIT ESTIN	AN ION BUO	HIIIONIG		
Emission (lb/hr) = 0.0	011 x material transferre	ed (ton/hr) x ((average wind a	peed (mph)/5) ^{1,3}	moisture content (	pct)/2) ^{1.4} ] x (100-co	ntrolipeti/100)
		(tpy) x ((average wind spee				
Source: Section 1	3.2.4 - Aggregate I	landling and Storage Pi	<u>les, AP</u> -42, Fift	h Edition, Janua	ry 1995.	
		PUT DATA AND EM	ICCIONIC ON	CHEATIONS		
		ROI DAIA AND EM	Material	OULA HONS		
Mean Wind	Act	tual	Moisture	Control	Actual	PM ₁₀
Speed	Quantity T	ransferred	Content	Efficiency	Emissio	n Rates
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	400	4,000,000	6.5	90.0	0.02	0.09
		SOURCES	OF INPUT DA	TA		I .
Para	meter			Data Source		
Mean Wind Speed		Tampa, FL, Climate of	the States, Third	d Edition, 1985.		
Actual Quantity Tra		TEC, 1997.				
Material Moisture	Content	Average fuel moisture				
Control Efficiency		Table 3.2.17-2, Workb			and Dispersion M	loaeling of
		rugiuve Particulate So	uices, UANG, S	eptember 1301.		
	•	•	•			
		NOTES AND	OBSERVATION	ONS		
Short-term (24-h	r average) dispersio	n modeling emissions r	ates assume 4 r	elaimers operati	na simultaneously	,
•						•
each at 400 tph	for a total rate of 1,6	600 tph.				
				•		-
				•		
-						
		DATA	CONTROL			_
Data Collected	by:	A. Trbovich			Date:	01/20/97
Evaluated by:		A. Trbovich			Date:	01/20/97
Data Entered b		A. Trbovich			Date:	 01/20/97

Date:

Tampa Electric Company - F.J. Gannon Station

FH-029

		EMISSION	SOURCE TY	P <u>E</u>		
MAT	TERIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:	
-		FACILITY AND SO	OURCE DESC	RIPTION		
Emission Source	Description:	Fuel Handling - Conve	yor F4 to Conve	yor G1/G2		
Emission Contro	ol Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	ys		
Emission Point I	D:	FH-029		Transfer Point I	D(s):	
		EMISSION ESTIN	MATION EQU	ATIONS		
Emission (lb/br) = (	0 0011 v material transferre	d (ton/hr) x [(average wind s	meed (mph)/5)1.3	/ moisture content (r	oct)/2\ ^{1.4} 1 x (100-co	ntrollocti(100)
		(tpy) x [(average wind spee				
Source: Section	1924 – Aggregate h	landling and Storage Pi	les AP-42 Fift	h Edition Januar	rv 1995	
Cource: Cocuon	1 TO.2.4 - Aggregate i	iditioning and oronago i	100,711 42,1111	iii Laidoii, Gailda	., 1000.	·
		PUT DATA AND EM	ICCIONIC ON	CHIATIONS		
	// //	DATA AND LM	Material	COLATIONS		
Mean Wind	Act		Moisture	Control	Actual	• •
Speed (mph)	Quantity T	ransferred (ton/yr)	Content (pct)	Efficiency (pct)	(lb/hr)	n Rates (tpy)
8.6	400	4,000,000	6.5	90.0	0.02	0.09
	•	SOURCES (	OF INPUT DA			
Pai	rameter			Data Source		
Mean Wind Spec	ed	Tampa, FL, Climate of	the States, Thir	d Edition, 1985.		
Actual Quantity		TEC, 1997.		004		
Material Moisture Control Efficience		Average fuel moisture			and Dispersion M	lodeling of
		Fugitive Particulate So				
		NOTES AND	<b>OBSERVATI</b>	ONS		
Short-term (24-	-hr average) dispersio	n modeling emissions r	ates assume 4 i	relaimers operati	ng simultaneously	/ <u>•</u>
each at 400 tp	h for a total rate of 1,6	600 tph.				
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			<u>.                                      </u>			
			CONTROL			
Data Collecte	ed by:	A. Trbovich			Date:	01/20/97
Evaluated by	:	A. Trbovich			Date:	01/20/97
Data Entered	by:	A. Trbovich			Date:	01/20/97

Date:

Tampa Electric Company – F.J. Gannon Station

FH-030

	•	EMISSION	SOURCE TYP	PE .		
MA [·]	TERIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:	
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Sourc	e Description:	Fuel Handling - Conve	yor F3 to Conve	yor G1/G2		
Emission Contro	oi Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	/s		
Emission Point	ID:	FH-030		Transfer Point II	D(s):	
		EMISSION ESTIN	ATION EQU	ATIONS		
			13		14	
Emission (lb/hr) = 0	0.0011 x material transferred	d (ton/hr) x [(average wind s (tpy) x [(average wind speed	:peed (mph)/5)*** / d (mph)/5) ^{1,3} / moi	moisture content (pct)/	(100-coi	ntro([pct]/100) [pct]/100) x (1/2.000)
Δ(Φ)		141) = (4-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1			, , , , , , , , , , , , , , , , , , , ,	
Source: Section	n 13.2.4 – Aggregate l	landling and Storage Pi	les, AP-42, F <u>ift</u>	h Edition, Januai	y 1995.	
		PUT DATA AND EM	ISSIONS CAL	CULATIONS		
			Material			
Mean Wind	Act		Moisture	Control	Actual	• •
Speed (mph)	Quantity T (ton/hr)	ransterred (ton/yr)	Content (pct)	Efficiency (pct)	Emissio (lb/hr)	n Hates (tpy)
8.6	400	4,000,000	6.5	90.0	0.02	0.09
0.0	100					
	<b>-</b>	SOURCES (	DF INPUT DA			
Pa	<u>rame</u> ter		<u>L</u>	ata Source		
Mean Wind Spe	ed	Tampa, FL, Climate of	the States, Third	d Edition, 1985.		
Actual Quantity	Transferred	TEC, 1997.				
Material Moistu		Average fuel moisture			and Dinnersian M	
Control Efficien	су	Table 3.2.17-2, Workb			and Dispersion M	odeling of
-		rugino i andalato co	<u></u>	<u> </u>		
		NOTES AND	ORSERVATIO	าพร		
			<u> </u>			
Short-term (24	hr average) dispersio	n modeling emissions re	ates assume 4 r	elaimers operatii	ng simultaneously	•
each at 400 t	ph for a total rate of 1,6	600 tph.				
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		DATA	CONTROL			
Data Collect	ed by:	A. Trbovich	<u></u>		Date:	01/20/97
Evaluated by	<i>y</i> :	A. Trbovich			Date:	01/20/97
Data Entered	d by:	A. Trbovich			Date:	01/20/97

Date:

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

MATER	RIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:	
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source Description: Fuel Handling - Conveyor F2 to Conveyor G1/G2						
Emission Control M	ethod(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray			
Emission Point iD:		FH-031		Transfer Point I	D(c):	
Chinasion Fount 10.		EMISSION ESTIN	ATION FOLL		υ(s).	
		**************************************	<u> </u>			, <u></u>
		d (ton/hr) x [(average wind s				
Emission (tpy) = 0.001	x material transferred	(tpy) x [(average wind speed	d (mph)/5) ^{1.3} / moi	sture content (pct)/	2) ^{1.4} ] x (100 – control	[pct]/100) x (1/2,000)
Source: Section 19	24 - Aggregate F	landling and Storage Pil	les AP-42 Fifti	h Edition Janua	rv 1995	
Cource: Cecuon 10	.z.+ Aggregato i	tariding and Otorago i ii	72, 111	r Luiton, varia		
T T	<u>IN</u>	<u>PUT DATA AND EMI</u>	SSIONS CAL	CULATIONS		
Mean Wind	Act	นล่	Moisture	Control	Actual	PM ₄₀
Speed	Quantity T		Content	Efficiency	Emissio	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	400	4,000,000	6.5	90.0	0.02	0.09
L		SOURCES C	F INPUT DA	TA		
Param	neter		D	ata Source		
Mean Wind Speed		Tampa, FL, Climate of	the States, Third	Edition, 1985.		
Actual Quantity Trai		TEC, 1997.				
Material Moisture C Control Efficiency	ontent	Average fuel moisture of Table 3.2.17-2, Workb			and Disparsion M	odeling of
Control Enliciency		Fugitive Particulate So			and Dispersion M	odeling of
		NOTES AND	ORSERVATIO	ONS .		
Short-term (24-hr	average) dispersio	n modeling emission rat	les assume 4 re	aimers operatin	g simultaneously,	
each at 400 tph fo	or a total rate of 1,6	00 tph.				
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			O'ONTE O			
			CONTROL			
Data Collected b	oy:	A. Trbovich			Date:	01/20/97
Evaluated by:		A. Trbovich			Date:	01/20/97
Data Entered by	:	A. Trbovich			Date:	01/20/97
Reviewed by:					Date:	

Tampa Electric Company - F.J. Gannon Station

			SOUNCE IYI			
MATERIAL TRANSFER – FUGITIVE EMISSION SOURCES FACILITY AND SOURCE DESCRIPTION				Figure:	·	
		FACILITY AND SO	OURCE DESC	<u>HIPTION</u>		
Emission Source	e Description:	Fuel Handling - Convey	yor G1 to Hamm	ermill Crusher 1	·	
Emission Contro	ol Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant			
Emission Point	ID:	FH-032		Transfer Point I	D(s):	
		EMISSION ESTIN	MATION EQU	ATIONS		
Emission (lb/bs) —	0 0011 v material transferse	d (ton/hr) x [(average wind s	need (mph)/5)1.3	moieture contant (	net\/2\1.41 v (100	etralia et l (100)
Emission (tpy) = 0	.0011 x material transferred	(tpy) x [(average wind speed	d (mph)/5) ^{1.3} / moi	sture content (pct)/	2) ^{1.4} ] x (100—control	[pct]/100) x (1/2,000)
Source: Section	n 13.2.4 – Aggregate F	landling and Storage Pi	les, AP-42, Fift	h Edition, Janua	ry 1995.	
			_			
	IN	PUT DATA AND EM		CULATIONS		
Mean Wind	Act		Material Moisture	Control	Actual	PM .
Speed	Quantity T		Content	Efficiency	Emissio	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	800	4,000,000	6.5	90.0	0.03	0.09
,		SOURCES	OF INPUT DA	TA		
Pa	rameter		<u>_</u>	ata Source	·	
Mean Wind Spe	ad	Tampa, FL, Climate of	the States Thir	Fdition 1985		
Actual Quantity		TEC, 1997.	die States, Time	Landon, 1305.		
Material Moistur		Average fuel moisture			<u> </u>	
Control Efficience	су	Table 3.2.17-2, Workb			and Dispersion M	odeling of
_		Fugitive Particulate So	urces, UANG, S	eptember 1961.		
		NOTES AND	ORSERVATIO	DNS		
		NOILUAND	ODOLINAIN	<i>.</i> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
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		DATA	CONTROL			_
Data Collecte	ed by:	A. Trbovich			Date:	01/20/97
Evaluated by		A. Trbovich			Date:	01/20/97
Data Entered		A. Trbovich			· · · · · · · · · · · · · · · · · · ·	01/20/97
Reviewed by					Date:	·

<u> Tampa Electric Company – F.J. Gannon Station</u>

FH-033

#### EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Conveyor G2 to Hammermill Crusher 2 Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant Emission Point ID: FH-033 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Actual Moisture **Control** Actual PM₁₀ **Emission Rates** Quantity Transferred Speed Content **Efficiency** (lb/hr) (tpy) (mph) (ton/hr) (ton/yr) (pct) (pct) 90.0 0.03 0.09 800 4,000,000 6.5 8.6 SOURCES OF INPUT DATA **Data Source** <u>Parameter</u> Tampa, FL, Climate of the States, Third Edition, 1985. Mean Wind Speed **Actual Quantity Transferred** TEC, 1997. Material Moisture Content Average fuel moisture content; TEC, 1994. Control Efficiency Table 3,2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Fugitive Particulate Sources, UARG, September 1981. NOTES AND OBSERVATIONS DATA CONTROL 01/20/97 Data Collected by: A. Trbovich Date:

Date:

Date:

Date:

01/20/97

01/20/97

A. Trbovich

A. Trbovich

Evaluated by:

Reviewed by:

Data Entered by:

FH-034 Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Hammermill Crusher 1 to Conveyor H1 Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant Sprays **Emission Point ID:** FH-034 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Actual Moisture Control Actual PM₁₀ **Emission Rates Quantity Transferred** Content **Efficiency** Speed (mph) (ton/hr) (ton/yr) (pct) (pct) (lb/hr) (tpy) 0.09 8.6 800 4,000,000 6.5 90.0 0.03 SOURCES OF INPUT DATA <u>Parameter</u> Data Source Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985. Actual Quantity Transferred TEC, 1997. Average fuel moisture content; TEC, 1994. Material Moisture Content Control Efficiency Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Fugitive Particulate Sources, UARG, September 1981. NOTES AND OBSERVATIONS DATA CONTROL

Date:

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Date:

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01/20/97

A. Trbovich

A. Trbovich

A. Trbovich

FH466B.W	/K1

Data Collected by:

Data Entered by:

Evaluated by:

Tampa Electric Company - F.J. Gannon Station

FH-035

		EMISSION	SOURCE TY	PE		
MA [*]	TERIAL TRANSF	ER - FUGITIVE EMIS	SION SOURC	CES	Figure:	
		FACILITY AND SO	OURCE DESC	RIPTION		
Emission Sourc	e Description:	Fuel Handling - Hamm	ermill Crusher 2	2 to Conveyor H2	!	
Emission Contro	ol Method(s)/ID No.(	s):Enclosure With Dust Su	ıppressant			
Emission Point	ID:	FH-035		Transfer Point I	D(s):	
		EMISSION ESTII	NATION EQU	ATIONS		
Emission (lb (lb)	0.0011	arred floorfloor will declare a wind.	(	/ maisture contont (	net /21.41 × /100_00	
Emission (tb/tr) =	.0011 x material transfer	erred (ton/hr) x [(average wind red (tpy) x [(average wind spec	ed (mph)/5) ^{1.3} / ma	/ moisture content (pct)/ pisture content (pct)/	2) ^{1.4} ] x (100—control	[pet]/100) x (1/2,000)
Source: Section	n 13.2.4 – Aggregat	e Handling and Storage P	iles, AP-42, Fif	th Edition, Janua	ry 1995.	
		INPUT DATA AND EM	ISSIONS CA	LCULATIONS		
			Material			
Mean Wind		Actual	Moisture	Control	Actual	
Speed (mph)	Quantit (ton/hr)	y Transferred (ton/yr)	Content (pct)	Efficiency (pct)	Emissio (lb/hr)	n Hates (tpy)
(mpin)	<u>(tonyni)</u>	(ton/yt)	(peg	ред	(10/111)	
8.6	80	4,000,000	6.5	90.0	0.03	0.09
		SOURCES	OF INPUT DA	TA		
Pa	rameter			Data Source		
Mean Wind Spe		Tampa, FL, Climate of	the States, Thir	d Edition, 1985.		
Actual Quantity		TEC, 1997.		004		
Material Moistur Control Efficien		Average fuel moisture Table 3.2.17-2, Workl			and Dispersion M	odeling of
	-,	Fugitive Particulate So				
		NOTES AND	OBSERVATI	ONS		
	•					
				<del></del>		
			•			
		DATA	CONTROL			
Data Collecte	ed by:	A. Trbovich	······		Date:	01/20/97
Evaluated by	<u>-</u>	A. Trbovich			Date:	01/20/97
Data Entered		A. Trbovich				01/20/97

Date:

Tampa Electric - F.J. Gannon Station

EMISSION SOURCE TYPE

FH-036-FH-041

MATERIAL TRANS	FER - CON	TROLLED EI	MISSION SOUP	RCES	Figure:	
	FAC	ILITY AND S	OURCE DESCR	RIPTION		
Emission Source Description:	F	Fuel Handling -	Conveyors H1/H2	2 to Conveyors J1/	J2, Conveyors J1/.	J2 to Bunkers
Emission Control Method(s)/ID N	o.(s): F	s): Rotoclones 1 through 6				
Emission Point ID:		FH -036 through FH~041 Transfer Point ID				
	EM	ISSION EST	MATION EQUA	TIONS		
Emission (lb/hr) = Flow Rate (scfm) $\times$ (gr Emission (tpy) = Flow Rate (scfm) $\times$ (gr				s (hrs/yr) x (1 ton/2,00	O lib)	
Source: ECT, 1997.						
Source. Ec1, 1997.						
	MOUT					
Operating Hours: 24	<i>INPUI D</i> 4 Hrs/Day		<i>MISSIONS CAL</i> Days/Wk	EULATIONS 8,760 F	łrs/Yr	
Operating Flows.	+ 1115/Day	•	Dayo, WK	0,700 1		
		Transfer	Exhaust	Exit Grain	Actual	
Transfer Points Control		Point	Flow Rate	Loading	Emission	
By Common Control De	vice	ID No.	(scfm)	(gr/scf)	(lb/hr)	(фу)
Unit 1 Fuel Bunker Loading			9,600	0.0023	0.19	0.99
Unit 2 Fuel Bunker Loading			9,600	0.0023	0.19	0.99
Unit 3 Fuel Bunker Loading			9,600	0.0023	0.19	0.99
Unit 4 Fuel Bunker Loading Unit 5 Fuel Bunker Loading			9,600 5,400	0.0023 0.0041	0.19	0.99
Unit 6 Fuel Bunker Loading			9,600	0.0023	0.19	0.99
		SOURCES	OF INPUT DAT			
<u>Parameter</u>			<u>Dat</u>	ta Source		
L						
Operating Hours	TEC, 1997.					
Exhaust Flow Rate	TEC, 1997.		) D 'A N A O O O	050140		
Exit Grain Loading	1EC, 1997.	Based on FUER	Permit No. AO29	-250140.		
		NOTES AND	OBSERVATIO	)NS		
80.5 700000000000000000000000000000000000		TIOTEC /UIL	"CDOLIIIVAINO	,,, <u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>		
All Rotoclones are conservatively	assumed to be	operating whe	never any bunkeri	ing occurs.		
			<u> </u>			
		DATA	CONTROL			
Data Collected by:	A. Trbovich	1		Date:	01/20/97	
Evaluated by:	A. Trbovich	1		Date:	01/20/97	
Data Entered by:	A. Trbovich	1		Date:	01/20/97	
Reviewed by:				Date:		

	Tampa Electric Company – F.J. Gannon Station   FH-042					
EMISSION SOURCE TYPE						
MA [·]	MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure:					
		FACILITY AND SO	OURCE DESC	RIPTION		
Emission Sourc	e Description:	Fuel Handling - Conve	yor D1 to Conve	yor G1/G2 (By-	Pass Storage)	
Emission Contro	ol Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	<b>'</b> S		
Emission Point	ID:	FH-042		Transfer Point II	D(s):	
		EMISSION ESTIN	MATION EQU	<u>ATIONS</u>		
F-t-t- at a.	0.0044	d (ton/hr) x [(average wind s				-115
Emission (lb/hr) = $0$	0.0011 x material transferred	d (tolynr) x [(average wind spee	d (mph)/5) ^{1,3} / moi	moisture content (j sture content (pct)/	2) ^{1.4} ] x (100–control	(pet]/100) (pet]/100) x (1/2 000)
(4)) = 0		( <del>4)) = ((================================</del>	<u> </u>		27 12 (100 0011201	<u> </u>
Source: Section	n 13.2.4 – Aggregate H	landling and Storage Pi	les, AP42, Fift	h Edition, Janua	ry 1995.	
			IOOIONIO ONI	OFFERTION		
	INI	PUT DATA AND EM	Material	CULATIONS		
Mean Wind	Act	ual	Moisture	Control	Actual	PM ₁₀
Speed	Quantity T	ransferred	Content	Efficiency	Emissio	••
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	4,000,000	6.5	90.0	0.10	0.09
I		SOURCES (	OF INPUT DA	TA		
Pa	rameter			ata Source		
Mean Wind Spe		Tampa, FL, Climate of	the States, Third	Edition, 1985.		
<b>Actual Quantity</b>	Transferred	TEC, 1997.				
Material Moistu		Average fuel moisture				
Control Efficien	су	Table 3.2.17-2, Workb			and Dispersion M	odeling of
		Fugitive Particulate So	urces, UANG, S	eptember 1961.		
		NOTES AND	OBSERVATIO	DNS		
If the fuel stack	ers and fuel stacker by	passes are operated sin	nultaneously, the	e total amount of	f fuel handled will	
not exceed 4,	600 toh.					
	<u> </u>					
			•	-		
	•					
	-					
		DATA	CONTROL			
Data Collecte	ed by:	A. Trbovich			Date:	01/20/97
Evaluated by	<i>r</i> :	A. Trbovich			Date:	01/20/97
Data Entered	i by:	A. Trbovich			Date:	01/20/97

Date:

FH-043

Tampa Electric Company – F.J. Gannon Station

MA ⁻	TERIAI TRANSFER	I – FUGITIVE EMIS	SION SOURC		Figure:	
MA	ILINAL MAROI EN	FACILITY AND SC			rigure.	
Emission Source	e Description:	Fuel Handling - Conve			Pass Storage)	
Emission Contro	ol Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	/S		
Emission Point	ID:	FH-043		Transfer Point i	D(s):	
		EMISSION ESTIN	MATION EQU			
Emission (lb/lv) =	0.0011 x material transferre	ed (ton/hr) x [(average wind s	peed (mph)/5) ^{1.3} /	moisture content (	pct)/2) ^{1.4} ] x (100-cor	trol[pct]/100)
Emission (tpy) = 0.	.0011 x material transferred	(tpy) x [(average wind spee	d (mph)/5) ^{1.3} / moi	sture content (pct)/	2) ^{1.4} ] x (100-control	pct]/100) x (1/2,000)
Source: Section	n 13.2.4 – Aggregate F	landling and Storage Pi	les, AP-42, Fift	h Edition, Janua	ry 1995.	
	IN	PUT DATA AND EM	ISSIONS CAL Material	CULATIONS		
Mean Wind	Act	tual	Materiai Moisture	Control	Actual	PM40
Speed	Quantity T		Content	Efficiency	Emission Rates	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	4,000,000	6.5	90.0	0.10	0.09
		SOURCES	OF INPUT DA	TA		
Pa	<u>rameter</u>			ata Source		
Mean Wind Spe		Tampa, FL, Climate of	the States, Third	d Edition, 1985.		
Actual Quantity  Material Moistur		TEC, 1997.  Average fuel moisture	content: TEC 16	004		
Control Efficient		Table 3.2.17-2, Workb			and Dispersion Me	odelina of
	-,	Fugitive Particulate So				<b>g</b>
•						
	•		•			
		NOTES AND	OBSERVATIO	ONS		
If the fuel stacks	ers and fuel stacker by	passes are operated sin	nultaneously, the	e total amount o	f fuel handled will	
not exceed 4,	600 tph.					
	<u> </u>					
					-	
				,		
	· .					
		DATA	CONTROL			
Data Collecte	ed by:	A. Trbovich			Date:	01/20/97
Evaluated by	•	A. Trbovich		_	Date:	01/20/97
Data Entered	by:	A. Trbovich			Date:	01/20/97
Reviewed by	<b>:</b>				Date:	

Tampa Electric Company - F.J. Gannon Station

			<u> </u>	ION SOURC	ETYPE				
VEHIC	ULAR TRAFF	IC ON UNPA	ED ROADS	- FUGITIVE	EMISSIC	N SOUR	CES	Figure:	
			FACILITY AN	D SOURCE	DESCRIP	PTION			
Emission Sc	Emission Source Description: Fuel Handling - Storage Pile Maintenance								
Emission C	ontrol Method(s)	)/ID No.(s):	Dust Suppressa	nt Sprays					
Emission Po	oint ID:		FH-044						
			EMISSION E	STIMATION	EQUATI	ONS			
Emission (b/t	v) = 0.36 x 5.9 x (s	/12) x (S/30) x (W/3)	0.7 × (4)0.5 × ((3	65n)/365) x veh	icle miles pe	r hour MMTA	v) x (100-co	ntrol[nct]/100)	
		s/12) x (S/30) x (W/							-control[pct]/100)
•					•				
Source: Se	ction 13.2.2 - L	Inpaved Roads,	AP-42, Fifth Ed	ition, January	1995.				
									·
	Santana and an				0000	a nicka tera kesta kirk	<b>~</b> 0.00000000000000000000000000000000000		
Operating H	loire.		<i>JT DATA AND</i> Hrs/Day		S CALCL Days/Wk	ILATION		5,824	Hrs/Vr
Operating :			, ii O, Duy	•	ouyo, w			0,024	
s	S	w	w	p	Vehicle	Miles	Control	Act	uai PM ₁₀
Silt Content	Vehicle Speed	Vehicle Weight	No. of Wheels	Rainfall Days	Trave	elled	Efficiency	Emis	sion Rates
(pct)	(mph)	(ton)			(VMT/hr)	(VMT/yr)	(pct)	(lb/hr)	(tpy)
8.4	2.5	48	6	107	10.0	58,240	50.0	3.73	10.86
			SOURC	ES OF INPU	JT DATA				
Para	ameter				Data So	urce			
Operating F	lours	ECT, 1997. Est	timated.						
Silt Content	i, s	Table 13.2.2-1	, Section 13.2.2	, AP-42, Janu	ary 1995.				
Vehicle Spe	ed, S	TEC, 1997. Av	erage value.						
Vehicle Wei		TEC, 1997. Av							
No. of Whee		TEC, 1997. Av							•
Rainfall Day			States, Third Edi	ition, 1985. Da	ita for Tam	pa, FL.			
Vehicle Mile		ECT, 1997. Est	umated. ., Workbook on i			and Diamore	ion Modeli	na for Eugiti	va Particulata
Control Effi	ciency		i, Workbook on i i, September 19		missions a	ina Dispers	sion Modeli	ng ior rugiu	ve Farticulate
		Sources, OANG	i, September 13	<u>01.</u>					
		I	NOTES	AND OBSER	VATION.	S			
		-							namentary and a second of the
Estimate of	vehicle miles tra	aveled based on	the use of four	bulldozers on 1	the storage	piles.			
									·
			D	ATA CONTR	OL				
Data Coll	ected by:	A. Trbovich						Date:	09/12/97
Evaluated	i by:	A. Trbovich						Date:	09/12/97
Data Ente	ered by:	A. Trbovich						Date:	09/12/97
Reviewed	hw:							Date:	

<u> Tampa Electric Company – F.J. Gannon Station</u>

EMISSION SOURCE TYPE

Α	Н	 0	0	1

#### MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Auxiliary Handling - Truck Unloading Emission Control Method(s)/ID No.(s):Dust Supressant **Emission Point ID:** AH-001 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Actual Moisture Control Actual PM₁₀ Quantity Transferred **Emission Rates** Content **Efficiency** Speed (ton/yr) (tpy) (mph) (ton/hr) (pct) (pct) 0.03 8.6 400 362,025 6.5 85.0 0.01 SOURCES OF INPUT DATA **Parameter Data Source** Tampa, FL, Climate of the States, Third Edition, 1985. Mean Wind Speed **Actual Quantity Transferred** TEC, 1997. Material Moisture Content TEC, 1997. Average fuel moisture content. Control Efficiency TEC, 1997. NOTES AND OBSERVATIONS Annual quantity transferred based on Units 1 through 4 firing an 80/20 coal/TDF blend at maximum capacity for 8,760 hrs/yr. 5,989 MMBtu/hr x 0.2 / 14,492 Btu/lb TDF x 8,760 hrs/yr x 1 ton/2,000 lb = 362,025 tpy Alternate fuel includes TDF and WDF. The actual annual quantity of TDF and WDF transferred may vary, but the actual total quantity of alternate fuel transferred will not exceed 362,025 tpy. DATA CONTROL Date: 01/08/97 Data Collected by: A. Trbovich 01/08/97 Evaluated by: A. Trbovich Date: Data Entered by: A. Trbovich Date: 01/08/97

Date:

Tampa Electric Company - F.J. Gannon Station

|AH-002

#### EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION Emission Source Description: Auxiliary Handling - Storage Pile to Hopper Emission Control Method(s)/ID No.(s): Enclosure and Dust Suppressant **Emission Point ID:** AH-002 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Actual Moisture Control Actual PM₁₀ **Quantity Transferred Emission Rates** Speed Content **Efficiency** (mph) (ton/hr) (ton/yr) (pct) (pct) (lb/hr) (tpy) 8.6 400 362,025 6.5 90.0 0.02 0.01 SOURCES OF INPUT DATA Data Source <u>Parameter</u> Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985. **Actual Quantity Transferred** TEC, 1997. TEC, 1997. Average fuel moisture content. **Material Moisture Content Control Efficiency** Table 3-16, Fugitive Emission from Coal-Fired Power Plants, EPRI, June 1984. NOTES AND OBSERVATIONS Annual quantity transferred based on Units 1 through 4 firing an 80/20 coal/TDF blend at maximum capacity for 8,760 hrs/yr. 5,989 MMBtu/hr x 0.2 / 14,492 Btu/lb TDF x 8,760 hrs/yr x 1 ton/2,000 lb = 362,025 tpy Alternate fuel includes TDF and WDF. The actual annual quantity of TDF and WDF transferred may vary, but the actual total quantity of alternate fuel transferred will not exceed 362,025 tpy. DATA CONTROL 01/08/97 Data Collected by: A. Trbovich Date: 01/08/97 Evaluated by: A. Trbovich Date:

Date:

Date:

01/08/97

A. Trbovich

Data Entered by:

Tampa Electric Company - F.J. Gannon Station

AH-003

		EMISSION	SOURCE IY	PE		
MA_	TERIAL TRANSFER	I - FUGITIVE EMIS			Figure:	
		FACILITY AND SO	OURCE DESC	RIPTION	<u> </u>	
Emission Source	e Description:	Auxiliary Handling - Ho	opper to Convey	or T		
Emission Contr	ol Method(s)/ID No.(s):	Enclosure and Dust Sup	pressant			
Emission Point	ID:	AH-003		Transfer Point	D(s):	
		EMISSION ESTIN	MATION EQU	ATIONS		
Emission (lb/hr) =	0.0011 x material transferre	ed (ton/hr) x [(average wind s	speed (mph)/5) ^{1.3}	moisture content (	pct)/2) ^{1.4} ] x (100-cor	ntrol(pct)/100)
		(tpy) x [(average wind spee				
Source: Section	n 13 2 4 - Aggregate i	dandling and Storage Pi	les AP-42 Fift	h Edition Janua	ry 1995	
	7,93,09					
		PUT DATA AND EM	ISSIONS CAI	CITIATIONS		
		I O I DATA AND LIM	Material	COLATIONS		7,500
Mean Wind	Act	tual	Moisture	Control	Actual	PM ₁₀
Speed	Quantity T	ransferred	Content	Efficiency	<u>Emission</u>	n Rates
<u>(mph)</u>	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	400	362,025	6.5	90.0	0.02	0.01
		SOURCES (	OF INPUT DA			
Pa	<u>rameter</u>			ata Source_		
Mean Wind Spe		Tampa, FL, Climate of	the States, Third	d Edition, 1985.		
Actual Quantity Material Moistu		TEC, 1997. TEC, 1997. Average fu	ial maistura can	tont		
Control Efficien		Table 3-16, Fugitive E			Plants, EPRI, June	e 1984.
		NOTES AND	OBCERVATION	ONC.		
		Jnits 1 through 4 firing a			mum capacity for	8,760 hrs/yr.
5,989 MMBtu/	/hr x 0.2 / 14,492 Btu/lb	TDF x 8,760 hrs/yr x 1	ton/2,000   b = 3	62,025 tpy		
Alternate fuel in	cludes TDF and WDF.	The actual annual quan	tity of TDF and	WDF transferred	may vary, but the	actual total
quantity of alter	rnate fuel transferred w	ill not exceed 362,025 tp	by.			
				,		
		DATA	CONTROL			
Data Collecte	ed by:	A. Trbovich			Date: (	01/08/97
Evaluated by		A. Trbovich				01/08/97
						01/08/97
Data Entered		A. Trbovich				71/00/37
Reviewed by	:				Date:	

Tampa Electric Company – F.J. Gannon Station

AH-004

EMISSION SOURCE TYPE

### MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES

Figure:

**Emission Source Description:** 

Auxiliary Handling - Conveyor T to Conveyor U

FACILITY AND SOURCE DESCRIPTION

Emission Control Method(s)/ID No.(s): Enclosure and Dust Suppressant

**Emission Point ID:** 

AH-004

Transfer Point ID(s):

#### EMISSION ESTIMATION EQUATIONS

Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) x (1/2,000)

Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995.

	IN	PUT DATA AND EM	ISSIONS CAL	CULATIONS		
			Material			
Mean Wind	Act	tual	Moisture	Control		PM ₁₀
Speed	Quantity Transferred		Content	Efficiency	Emissio	n Rates
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	400	362,025	6.5	90.0	0.02	0.01

	SOURCES OF INPUT DATA
Parameter	Data Source
Mean Wind Speed	Tampa, FL, Climate of the States, Third Edition, 1985.
Actual Quantity Transferred	TEC, 1997.
Material Moisture Content	TEC, 1997. Average fuel moisture content.
Control Efficiency	Table 3-16, Fugitive Emission from Coal-Fired Power Plants, EPRI, June 1984.

### NOTES AND OBSERVATIONS

Annual quantity transferred based on Units 1 through 4 firing an 80/20 coal/TDF blend at maximum capacity for 8,760 hrs/yr.

5,989 MMBtu/hr x 0.2 / 14,492 Btu/lb TDF x 8,760 hrs/yr x 1 ton/2,000 lb = 362,025 tpy

Alternate fuel includes TDF and WDF. The actual annual quantity of TDF and WDF transferred may vary, but the actual total

quantity of alternate fuel transferred will not exceed 362,025 tpy.

Data Collected by:	A. Trbovich	Date:	01/08/97
Evaluated by:	A. Trbovich	Date:	01/08/97
Data Entered by:	A. Trbovich	Date:	01/08/97

Tampa Electric Company - F.J. Gannon Station

AH-005

#### EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Auxiliary Handling - Conveyor U to Conveyors H1 and H2 Emission Control Method(s)/ID No.(s): Enclosure and Dust Suppressant **Emission Point ID:** AH-005 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Actual Moisture Control Actual PM₁₀ **Emission Rates Quantity Transferred** Content Efficiency Speed (ton/hr) (ton/yr) (lb/hr) (tpy) (mph) (pct) (pct) 362,025 90.0 0.02 0.01 8.6 400 6.5 SOURCES OF INPUT DATA <u>Parameter</u> <u>Data Source</u> Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985. **Actual Quantity Transferred** TEC, 1997. **Material Moisture Content** TEC, 1997. Average fuel moisture content. Control Efficiency Table 3-16, Fugitive Emission from Coal-Fired Power Plants, EPRI, June 1984. NOTES AND OBSERVATIONS Annual quantity transferred based on Units 1 through 4 firing an 80/20 coal/TDF blend at maximum capacity for 8,760 hrs/yr. 5,989 MMBtu/hr x 0.2 / 14,492 Btu/lb TDF x 8,760 hrs/yr x 1 ton/2,000 lb = 362,025 tpy Alternate fuel includes TDF and WDF. The actual annual quantity of TDF and WDF transferred may vary, but the actual total quantity of alternate fuel transferred will not exceed 362,025 tpy. DATA CONTROL Date: 01/08/97 Data Collected by: A. Trbovich 01/08/97 A. Trbovich Date: Evaluated by: Data Entered by: A. Trbovich Date: 01/08/97

Date:

# **APPENDIX B.2**

ACTUAL PM₁₀ EMISSION CALCULATION SPREADSHEETS

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

ζ

MATE	ERIAL TRANSFER	- FUGITIVE EMIS	SION SOURC	ES	Figure:	
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source	Description:	Fuel Handling - Barge	to West Clamsh	ell (Spillage)		_
Emission Control	Method(s)/ID No.(s):	Barge Enclosure				
Emission Point ID	:	FH-002		Transfer Point II	D(s):	
		EMISSION ESTIN	ATION EQU	ATIONS		
	<u> </u>		13.		n.m14	
Emission (lb/nr) = $0.0$	0011 x material wansferred	d (tor/hr) x [(average wind s (tpy) x [(average wind spee	peea (mpn)/5)*** / d (mph)/5) ^{1.3} / moi	moisture content (pct)/:	2) ^{1.4} ] x (100—cor 2) ^{1.4} ] x (100—control)	reti/100) x (1/2.000)
X+7/						
Source: Section	13.2.4 – Aggregate F	landling and Storage Pi	les, AP-42, Fift	h Edition, Janua	ry 1995.	
<del></del>						
	IN	PUT DATA AND EM	ISSIONS CAL	CULATIONS		
			Material			-
Mean Wind	Act Quantity T		Moisture Content	Control Efficiency	Actual PM ₁₀ Emission Rates	
Speed (mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
		992 691	6.5	50.0	0.25	0.09
8.6	1,150	882,681	6.5	50.0	0.25	0.09
	-	SOURCES (	DE INPUT DA			
<u> Para</u>	ımeter	<u> </u>		ata Source		
Mean Wind Speed	1	Tampa, FL, Climate of	the States, Third	Edition, 1985.		
Actual Quantity To		TEC, 1997.				
Material Moisture		Average fuel moisture				707 1 11
Control Efficiency ECT, 1997. Set at 50 pct to conservatively minimize actual emissions for PSD evaluation Permitted control efficiency is 0 pct.					PSD evaluation.	
	_	7 emilied conduct emer	ency is o pet.		·	
				•		
		NOTES AND	OPSERVATIO	)NC		
Actual PM ₁₀ emis	sions based on 2,648	3,044 tpy of fuel used. A	ctual fuel use is	the average of	the 1995 and 1996	actual fuel
used, 2,528,33	4 tons and 2,767,753	tons, respectively.				
Actual fuel delive	ry was assumed to be	equally divided among	the barge clam	shell, barge con	tinuous, and rail u	nloading
systems, or 882	2,681 tons per system	<b>1.</b>				
Actual short-term	n emissions based or	clamshell and continue	ous unloading sy	stems operating	simultaneously a	t 1,150 tph, each
			•			
		DATA	CONTROL			
Data Collected	i by:	A. Trbovich			Date:	09/16/97
Evaluated by:		A. Trbovich			Date:	09/16/97
Data Entered I	by:	A. Trbovich			Date:	09/16/97
Reviewed by:					Date:	

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

FH-003

#### MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION Emission Source Description: Fuel Handling - Barge to Continuous Unloader (Spillage) Emission Control Method(s)/ID No.(s): Barge Enclosure **Emission Point ID:** Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5) $^{1.3}$ / moisture content (pct)/2) $^{1.4}$ ] x (100—control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Actual PM₁₀ Mean Wind Actual Moisture Control **Emission Rates Quantity Transferred** Content **Efficiency** Speed (lb/hr) (tpy) (ton/hr) (ton/yr) (pct) (pct) (mph) 882,681 50.0 0.25 0.09 8.6 6.5 1,150 SOURCES OF INPUT DATA **Parameter Data Source** Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985. Actual Quantity Transferred TEC, 1997. Average fuel moisture content; TEC, 1994. **Material Moisture Content** ECT, 1997. Set at 50 pct to conservatively minimize actual emissions for PSD evaluation. Control Efficiency Permitted control efficiency is 0 pct. NOTES AND OBSERVATIONS Actual PM $_{10}$ emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively. Actual fuel delivery was assumed to be equally divided among the barge clamshell, barge continuous, and rail unloading systems, or 882,681 tons per system. Actual short—term emissions based on clamshell and continuous unloading systems operating simultaneously at 1,150 tph, each DATA CONTROL Data Collected by: A. Trbovich Date: 09/16/97 Date: 09/16/97 Evaluated by: A. Trbovich 09/16/97 Data Entered by: A. Trbovich Date:

Date:

FH-005 Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - West Clamshell to West Hopper Emission Control Method(s)/ID No.(s): Side Enclosure **Emission Point ID:** Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Actual Moisture Control Actual PM₁₀ **Emission Rates Quantity Transferred** Content **Efficiency** Speed (ton/yr) (pct) (lb/hr) (tpy) (mph) (ton/hr) (pct) 1,150 882,681 85.0 0.07 0.03 SOURCES OF INPUT DATA **Parameter Data Source** Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985. TEC. 1997. **Actual Quantity Transferred** Average fuel moisture content; TEC, 1994. Material Moisture Content Control Efficiency ECT, 1997. Set at 85 pct to conservatively minimize actual emissions for PSD evaluation. Permitted control efficiency is 25 pct. NOTES AND OBSERVATIONS Actual PM $_{10}$  emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively. Actual fuel delivery was assumed to be equally divided among the barge clamshell, barge continuous, and rail unloading systems, or 882,681 tons per system. Actual short-term emissions based on clamshell and continuous unloading systems operating simultaneously at 1,150 tph, each DATA CONTROL

Data Collected by:	A. Trbovich	Date:	09/16/97
Evaluated by:	A. Trbovich	Date:	09/16/97
Data Entered by:	A. Trbovich	Date:	09/16/97
Reviewed by:	•	Date:	

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

FH-0	Ю	6
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MATE	RIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:		
		FACILITY AND SO	URCE DESC	RIPTION			
Emission Source De	escription:	Fuel Handling - Continu	uous Unioader t	o Conveyor A			
Emission Control M	lethod(s)/ID No.(s):	Enclosure					
Emission Point ID:		FH-006		Transfer Point II	D(s):		
		EMISSION ESTIM	IATION EQU	ATIONS			
Emission (lb/hr) = 0.00	11 x material transferre	ed (ton/hr) x [(average wind s	peed (mph)/5) ^{1.3} /	moisture content (p	et)/2) ^{1.4} ] x (100—cor	strol[pet]/100)	
Emission (tpy) = 0.001	1 x material transferred	(tpy) x [(average wind speed	f (mph)/5) ^{1.3} / moi	sture content (pct)/:	2) ^{1.4} ] x (100—control	pct]/100) x (1/2,000)	
Source: Section 13	3.2.4 – Aggregate ł	dandling and Storage Pil	es. AP-42. Fift	 h Edition. Januar	v 1995.		
	i Ni	PUT DATA AND EMI	SSIONS CAL	CHI ATIONS			
	11.1	CIEDATA AND LINI	Material	COLATIONS		<u> </u>	
Mean Wind		tual	Moisture	Control	Actual		
Speed	Quantity T		Content	Efficiency	Emissio		
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)	
8.6	1,150	882,681	6.5	85.0	0.07	0.03	
D		SOURCES	OF INPUT DA			:	
<u>Paran</u>	neter			ata Source			
Mean Wind Speed		Tampa, FL, Climate of t	the States, Third	Edition, 1985.			
Actual Quantity Tra	nsferred	TEC, 1997.		_			
Material Moisture C	ontent	Average fuel moisture of				DCD	
Control Efficiency		ECT, 1997. Set at 85 pct to conservatively minimize actual emissions for PSD evaluation.  Permitted control efficiency is 25 pct.					
		NOTES AND	OBSERVATIO	DNS			
Actual PM ₁₀ emissi	ons based on 2.648	3,044 tpy of fuel used. A	ctual fuel use is	s the average of	the 1995 and 1996	actual fuel	
	tons and 2,767,753						
Actual fuel delivery	was assumed to be	e equally divided among	the barge clam	shell, barge con	tinuous, and rail u	nioading	
systems, or 882,6	581 tons per system	1.					
Actual short-term	emissions based or	n clamshell and continuo	us unloading s	ystems operating	simultaneously a	t 1,150 tph, each	
		•					
		DATA	CONTROL				
Data Collected	by:	A. Trbovich			Date:	09/16/97	
Evaluated by:		A. Trbovich			Date:	09/16/97	
Data Entered by	<b>/</b> :	A. Trbovich			Date:	09/16/97	
Reviewed by:					Date:		

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

		ZMIOOIOI	SCONCE	•		<u> </u>	
MA	TERIAL TRANSFER	- FUGITIVE EMISS			Figure:		
Emission Source	e Description:	Fuel Handling – Convey					
	www.destrood(s)/ID No.(s):					_	
Emission Point I	D:	FH-007		Transfer Point II	D(s):		
		EMISSION ESTIM	IATION EQU	ATIONS			
Emission (lb/hr) =	0.0011 x material transferre	d (ton/hr) x [(average wind s	peed (mph)/5) ^{1.3} /	moisture content (r	et)/2) ^{1.4} ] x (100—cor	trol[pct]/100)	
Emission (tpy) = 0.	.0011 x material transferred	(tpy) x [(average wind speed	d (mph)/5) ^{1.3} / moi	sture content (pct)/	2) ^{1.4} ] x (100-control	[pct]/100) x (1/2,000)	
Source: Section	n 13.2.4 – Aggregate i	landling and Storage Pil	es, AP-42, Fiftl	n Edition, Januar	ry 1995.		
		·					
	IN	PUT DATA AND EMI	SSIONS CAL	CULATIONS			
Mean Wind	Act	ual	Material Moisture	Control	Actual	PM	
Speed	Quantity T	-	Content	Efficiency	Actual PM ₁₀ Emission Rates		
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)	
8.6	1,150	882,681	6.5	85.0	0.07	0.03	
De	SOURCES OF INPUT DATA						
Pa	rameter		<u> L</u>	ata Source			
Mean Wind Spe	ed	Tampa, FL, Climate of	the States, Third	Edition, 1985.			
Actual Quantity		TEC, 1997.					
Material Moistur Control Efficience		Average fuel moisture of ECT, 1997. Set at 85 p			tual emissions for	PSD evaluation.	
	,	Permitted control efficient					
		NOTES AND	OBSERVATIO	ONS			
Actual PM ₁₀ em	issions based on 2,648	3,044 tpy of fuel used. A	ctual fuel use is	the average of	the 1995 and 1996	actual fuel	
	34 tons and 2,767,753						
Actual fuel deliv	ery was assumed to be	equally divided among	the barge clam	shell, barge con	tinuous, and rail u	nloading	
	82,681 tons per system				·	<u> </u>	
	<u> </u>	n ciamsheil and continuo	ous unloading sy	stems operating	simultaneously a	t 1,150 tph, each	
				·	· · · · · · · · · · · · · · · · · · ·	<u> </u>	
		DATA (	CONTROL				
Data Collecte	ed by:	A. Trbovich			Date:	09/16/97	
Evaluated by	:	A. Trbovich			Date:	09/16/97	
Data Entered	l by:	A. Trbovich			Date:	09/16/97	
Reviewed by	:				Date:		

FH-009

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

······································			<u></u>		***************************************	<u></u>
MA	TERIAL TRANSFER	- FUGITIVE EMISS		-	Figure:	·
		FACILITY AND SO	OURCE DESC	RIPTION		
Emission Sourc	e Description:	Fuel Handling – West H	lopper to Conve	yor B		
Emission Contro	ol Method(s)/ID No.(s):	Enclosure				
Emission Point	ID:	FH-009		Transfer Point I	D(s):	
		EMISSION ESTIN	NATION EQU			_
			1.0		- 14	
		d (ton/hr) x [(average wind s (tpy) x [(average wind speed				
			<u>- (p),                                </u>			posp 100/ 2 (1/2,000)
Source: Section	n 13.2.4 – Aggregate h	landling and Storage Pi	les, AP-42, Fiftl	h Edition, Janua	ry 1995.	
	IN	PUT DATA AND EM		CULATIONS		
Mean Wind	Act	n al	Material Moisture	Control	Actual	PM
Speed Speed	Quantity T		Content	Efficiency	Emissio	• -
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	1,150	882,681	6.5	85.0	0.07	0.03
		SOURCES	OF INPUT DA	TA		
Pa	rameter			ata Source		
Mean Wind Spe Actual Quantity		Tampa, FL, Climate of TEC, 1997.	the States, Third	Edition, 1985.	_	
Material Moistu		Average fuel moisture	content; TEC, 19	994.		
Control Efficien	Control Efficiency ECT, 1997. Set at 85 pct to conservatively minimize actual emissions for PSD evaluation.  Permitted control efficiency is 50 pct.					PSD evaluation.
		_	•			
		NOTES AND	OBSERVATIO	ONS		
Actual PM ₁₀ em	issions based on 2,648	3,044 tpy of fuel used.	Actual fuel use is	the average of	the 1995 and 1996	actual fuel
	334 tons and 2,767,753					
		equally divided among	the berge clem	shell barge con	tinuous and rail :	ınloading
	82,681 tons per system		the bailye ciam		andous, and run c	·
•		n clamshell and continue	nus unloading e	vetemė operation	ı simultaneouely a	t 1.150 tnh .each
	THE DESERT SHOUSERING OF	i ciamsnell and continuo	· · · · · · · · · · · · · · · · · · ·	seme oheranić	j amiunaneousiy e	t 1,100 thii, each
		DATA	CONTROL			
Data Collecto	ed by:	A. Trbovich			Date:	09/16/97
Evaluated by		A. Trbovich			Date:	09/16/97
Data Entered		A. Trbovich			Date:	09/16/97
	_ <b>-</b>					

FH-011

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

MAT	MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure:					
		FACILITY AND SO	OURCE DESC	RIPTION		
Emission Source	Description:	Fuel Handling – Conve	yor B to Convey	or C		
Emission Contro	l Method(s)/ID No.(s):	Enclosure				
Emission Point II	D:	FH-011		Transfer Point i	D(s):	
		EMISSION ESTIN	NATION EQU	ATIONS		
Emission (lb/hr) = 0	).0011 x material transferre	d (ton/hr) x [(average wind s	speed (mph)/5) ^{1.3} /	moisture content (	pct)/2) ^{1.4} ] x (100–cor	ntrol[pct]/100)
Emission (tpy) = 0.0	0011 x material transferred	(tpy) x [(average wind spee	d (mph)/5) 1.3 / moi	sture content (pct)/	2) ^{1.4} ] x (100-control	[pct]/100) x (1/2,000)
Source: Section	13 2 4 Aggregate F	landling and Storage Pi	les AP-42 Fift	h Edition Janua	rv 1995	
Odice. Oecuon	10.2.4 - Aggregate i	Raiding and olorage ri	168, AI - 42, I III	ii Edidoii, Janua	19 1330.	
			ICCIONIC CAI	OUI ATIONO		
	INI	PUT DATA AND EM	Material	CULATIONS		
Mean Wind	Act	ual	Moisture	Control	Actual	PM ₁₀
Speed	Quantity T		Content	Efficiency	Emissio	n Rates
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	1,765,362	6.5	85.0	0.15	0.06
		SOURCES	OF INPUT DA			
<u>Par</u>	rameter			ata Source		
Mean Wind Spee	ed.	Tampa, FL, Climate of	the States. Third	d Edition, 1985.		
Actual Quantity		TEC, 1997.				
Material Moisture		Average fuel moisture				
Control Efficienc	ey .	ECT, 1997. Set at 85 p Permitted control effici		vely minimize ac	ctual emissions for	PSD evaluation.
	•					
		NOTES AND	OBSERVATION	ONS		
Actual PM ₁₀ emi	ssions based on 2,648	,044 tpy of fuel used.	Actual fuel use is	s the average of	the 1995 and 1996	actual fuel
	34 tons and 2,767,753					
, , , , ,					Ai and sail	
	<u> </u>	equally divided among	the barge claim	sneil, barge con	unuous, and rail u	nioading
systems, or 88	2,681 tons per system	<b>.</b>				
				_		
			00.17001			
			CONTROL			
Data Collecte	d by:	A. Trbovich			Date:	09/16/97
Evaluated by:	:	A. Trbovich	_		Date:	09/16/97
Data Entered	by:	A. Trbovich		_	Date:	09/16/97
Reviewed by:					Date:	

Tampa Electric Company - F.J. Gannon Station

FH-012

#### EMISSION SOURCE TYPE **MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES** Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Conveyor C to Conveyor D1/D2 Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant Sprays Transfer Point ID(s): **Emission Point ID:** FH-012 EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Moisture **Control** Actual PM₁₀ Actual **Emission Rates** Quantity Transferred Content **Efficiency** Speed (ton/hr) (ton/yr) (pct) (lb/hr) (tpy) (mph) (pct) 2,300 1,765,362 90.0 0.10 0.04 SOURCES OF INPUT DATA **Parameter Data Source** Tampa, FL, Climate of the States, Third Edition, 1985. Mean Wind Speed **Actual Quantity Transferred** TEC, 1997. **Material Moisture Content** Average fuel moisture content; TEC, 1994. Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling for **Control Efficiency** Fugitive Particulate Sources, UARG, September 1981. NOTES AND OBSERVATIONS Actual PM $_{10}$ emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively.

Actual fuel delivery was assumed to be equally divided among the barge clamshell, barge continuous, and rail unloading

systems, or 882,681 tons per system.

A. Trbovich	Date:	05/23/97
A. Trbovich	Date:	05/23/97
A. Trbovich	Date:	05/23/97
	A. Trbovich	A. Trbovich Date:

Tampa Electric Company - F.J. Gannon Station

FH-013 **EMISSION SOURCE TYPE** 

Figure:

## MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES

FACILITY AND SOURCE DESCRIPTION

**Emission Source Description:** 

Fuel Handling - Rail Car to Hopper

Emission Control Method(s)/ID No.(s): Partial Enclosure

**Emission Point ID:** 

Transfer Point ID(s):

### EMISSION ESTIMATION EQUATIONS

Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4 x (100-control[pct]/100) x (1/2,000)

Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995.

INPUT DATA AND EMISSIONS CALCULATIONS						
			Material			
Mean Wind	Ac	tuai	Moisture	Control	Actual	PM ₁₀
Speed	Quantity Transferred		Content	Efficiency	Emissio	n Rates
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
111111111	11011/111/	101911				

0.0	2,300	002,001	0.5	05.0	0.13	0.00	
	1	SOURCES	OF INPUT DA	TA			
Pa	rameter			ata Source			
Mean Wind Spe	eed	Tampa, FL, Climate of	the States, Thir	d Edition, 1985.			
Actual Quantity	Actual Quantity Transferred TEC, 1997.						
Material Moistu	Material Moisture Content Average fuel moisture content; TEC, 1994.						
Control Efficier	псу	ECT, 1997. Set at 85 pct to conservatively minimize actual emissions for PSD evaluation.					
		Permitted control effic	iency is 40 pct.				

### NOTES AND OBSERVATIONS

Actual PM₁₀ emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel

used, 2,528,334 tons and 2,767,753 tons, respectively.

Actual fuel delivery was assumed to be equally divided among the barge clamshell, barge continuous, and rail unloading

systems, or 882,681 tons per system.

	DATA CONTRO	<u> </u>	
Data Collected by:	A. Trbovich	Date:	09/16/97
Evaluated by:	A. Trbovich	Date:	09/16/97
Data Entered by:	A. Trbovich	Date:	09/16/97
Reviewed by:		Date:	

Tampa Electric Company - F.J. Gannon Station

FH-014

09/16/97

Date:

Date:

***************************************	ranipa Li	cure Company - r				111-014
		EMISSION	SOURCE TYP	<u>PE</u>		
MAT	ERIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:	
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source	Description:	Fuel Handling - Hoppe	r to Conveyor L			
Emission Control	Method(s)/ID No.(s):	Enclosure				
Emission Point II	D:	FH-014		Transfer Point II		
		EMISSION ESTIN	ATION EQU	ATIONS		
		ed (ton/hr) x [(average wind s I (tpy) x [(average wind spee				
Emission (tpy) ≈ 0.0	N11 X material transferred	(tpy) x ((average wind spee	a (mpn)/5) *** / moi	sture corkers (pcg/2	2)***] X (100—control	(1/2,000)
Source: Section	13.2.4 – Aggregate i	landling and Storage Pi	les, AP-42, Fiftl	n Edition, Januar	y 1995.	· · · · · · · · · · · · · · · · · · ·
		· · · · · · · · · · · · · · · · · · ·		_		
	141	DUT*DATA*AND*EN	ICCIÓNIC CAL	CHIATIONS		
	IN	PUT DATA AND EM	Material	COLATIONS		
Mean Wind	Act	tual	Moisture	Control	Actual	PM ₁₀
Speed	Quantity T	ransferred	Content	Efficiency	Emissio	n Rates
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	882,681	6.5	85.0	0.15	0.03
		SOURCES	OF INPUT DA	11 111111111111111111111111111111111111		
Par	ameter		D	ata Source		
		F. 61.		. 5.111 4005		
Mean Wind Spee Actual Quantity T		Tampa, FL, Climate of TEC, 1997.	the States, I hird	<u>Edition, 1985.</u>		
Material Moisture		Average fuel moisture	content; TEC, 19	394.		
Control Efficience	у	ECT, 1997. Set at 85 p			tual emissions for	PSD evaluation.
		Permitted control effici	ency is 50 pct.			
		NOTES AND	OBSERVATIO	ONS		
Actual PM a emis	ssions based on 2.648	3,044 tpy of fuel used. A	ctual fuel use is	the average of	the 1995 and 1996	6 actual fuel
	34 tons and 2,767,753					
				-hall barns ass	Vieweye and rail .	-looding
Actual ruel delive	ery was assumed to be	e equally divided among	the barge clam	sneit, barge con	unuous, and rail (	moading
systems, or 88	2,681 tons per system	1	_			
				•		
			•			
		DATA	CONTROL			
Data Collecte	d by:	A. Trbovich		ا	Date:	09/16/97
Evaluated by:		A. Trbovich			Date:	09/16/97
		_				

A. Trbovich

Data Entered by:

FH-015

Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Conveyor L to Conveyor D1/D2 Emission Control Method(s)/ID No.(s): Enclosure FH-015 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS

Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) x (1/2,000)

INPUT DATA AND EMISSIONS CALCULATIONS

Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995.

Mean Wind Speed	Act Quantity T		Material Moisture Content	Control Efficiency	Actual P	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	882,681	6.5	90.0	0.10	0.02
-		SOURCES O	F INPUT DA	TA		
<u>Paran</u>	neter		D	ata Source		
Mean Wind Speed		Tampa, FL, Climate of t	the States, Third	f Edition, 1985.	<u>_</u>	
Actual Quantity Trai	nsferred	TEC, 1997				
Material Moisture C	ontent	Average fuel moisture c	ontent; TEC, 19	994		
Control Efficiency		Table 3.2.17-2, Workbo	ook on Estimati	on of Emissions a	ınd Dispersion Mod	leling for
Fugitive Particulate Sources, UARG, September 1981.						

### NOTES AND OBSERVATIONS

Actual PM₁₀ emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively.

Actual fuel delivery was assumed to be equally divided among the barge clamshell, barge continuous, and rail unloading

systems, or 882,681 tons per system.

**Emission Point ID:** 

	DATA CONTRO	<u>L</u>	
Data Collected by:	A. Trbovich	Date:	05/23/97
Evaluated by:	A. Trbovich	_ Date:	05/23/97
Data Entered by:	A. Trbovich	Date:	05/23/97
Reviewed by:		Date:	

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

<u> </u>		Emicolor	OUDITUE TIT	e <del></del> :::::::::::::::::::::::::::::::		
MA	TERIAL TRANSFER	- FUGITIVE EMIS	SION SOURC	ES	Figure:	
		FACILITY AND SC	OURCE DESC	RIPTION		
Emission Source Description: Fuel Handling — Conveyor D1 to Conveyor M1						
Emission Contro	ol Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	/8		
Emission Point	ID:	FH-016		Transfer Point II	D(s):	
		EMISSION ESTIN	NATION EQU	ATIONS		
Emission (Ib/Ib)	0.0011 w makerial transferse	ed (ton/hr) x [(average wind s	(			
		(tpy) x [(average wind spec				
					<del> </del>	
Source: Section	n 13.2.4 – Aggregate I	landling and Storage Pi	les, AP-42, Fift	h Edition, Janua	ry 1995.	
						-
	IN.	PUT DATA AND EM	ISSIONS CAL	CULATIONS		
			Material	· ·		
Mean Wind	Act		Moisture	Control	Actual	
Speed	Quantity T		Content	Efficiency	Emissio	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	1,324,022	6.5	90.0	0.10	0.03
		SOURCES (	OF INPUT DA			
<u>Pa</u>	rameter			ata Source		
Maan Wind Sno	a.d	Tampa El Climata of	the States. This	d Edition 1985		
Mean Wind Spe Actual Quantity		Tampa, FL, Climate of TEC, 1997.	the States, Third	1 Edition, 1965.		-
Material Moistur		Average fuel moisture	content; TEC, 19	994.		
Control Efficience	су	Table 3.2.17-2, Workb			and Dispersion M	odeling for
		Fugitive Particulate So	urces <u>, UARG, S</u>	eptember 1981.		
l						
	_					
		NOTES AND	OBSERVATION	ONS		
Actual PM ₁₀ em	issions based on 2,648	3,044 tpy of fuel used.	Actual fuel use is	s the average of	the 1995 and 1996	actual fuel
	334 tons and 2,767,753				•	
		•				
Actual fuel deliv	ery was assumed to be	equally divided between	en conveyors D1	and D2, or 1,32	24,022 tons per co	nveyor.
				• •		
					<u> </u>	
		DATA	CONTROL			
Data Collecte	ed by:	A. Trbovich			Date:	05/23/97
Evaluated by	<b>/:</b>	A. Trbovich	<u> </u>		Date:	05/23/97
Data Entered	l by:	A. Trbovich			Date:	05/23/97
Reviewed by			_		Date:	

Figure:

EMISSION SOURCE TYPE

FACILITY AND SOURCE DESCRIPTION

**Emission Source Description:** 

Fuel Handling - Conveyor D2 to Conveyor M2

Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant Sprays

**Emission Point ID:** 

FH-017

Transfer Point ID(s):

### EMISSION ESTIMATION EQUATIONS

Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100)

Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) x (1/2,000)

Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995.

	IN	PUT DATA AND EM	ISSIONS CAL	CULATIONS		
			Material			
Mean Wind	Act	ual	Moisture	Control	Actual	
Speed	Quantity T	ransferred	Content	Efficiency	Emissio	n Rates
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	1,324,022	6.5	90.0	0.10	0.03

	SOURCES OF INPUT DATA
Parameter	Data Source
Mean Wind Speed	Tampa, FL, Climate of the States, Third Edition, 1985.
Actual Quantity Transferred	TEC, 1997.
Material Moisture Content	Average fuel moisture content; TEC, 1994.
Control Efficiency	Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of
_	Fugitive Particulate Sources, UARG, September 1981.

### NOTES AND OBSERVATIONS

Actual PM₁₀ emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel

used, 2,528,334 tons and 2,767,753 tons, respectively.

Actual fuel delivery was assumed to be equally divided between conveyors D1 and D2, or 1,324,022 tons per conveyor.

	DATA CONTRO	<u>DL</u>	
Data Collected by:	A. Trbovich	Date:	05/23/97
Evaluated by:	A. Trbovich	Date:	05/23/97
Data Entered by:	A. Trbovich	Date:	05/23/97
Reviewed by:		Date:	

FH-018

### Tampa Electric Company – F.J. Gannon Station EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Conveyor M1 to Conveyor E1 Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant Sprays FH-018 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS

Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4 x (100-control[pct]/100) x (1/2,000)

Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995.

Mean Wind Speed	Actual Quantity Trans	sferred	Material Moisture Content	Control Efficiency	Actual   Emission	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	1,324,022	6.5	90.0	0.10	0.08
		SOURCES O	F INPUT DAT	TA .		
Parar	meter		D	ata Source		

Parameter	Data Source
Mean Wind Speed	Tampa, FL, Climate of the States, Third Edition, 1985.
Actual Quantity Transferred	TEC, 1997.
Material Moisture Content	Average fuel moisture content; TEC, 1994.
Control Efficiency	Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of
	Fugitive Particulate Sources, UARG, September 1981.

### NOTES AND OBSERVATIONS

Actual PM₁₀ emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively.

Actual fuel delivery was assumed to be equally divided between conveyors M1 and M2, or 1,324,022 tons per conveyor.

Data Collected by:	A. Trbovich	_ Date:	05/23/97
Evaluated by:	A. Trbovich	Date:	05/23/97
Data Entered by:	A. Trbovich	Date:	05/23/97

**Emission Point ID:** 

Tampa Electric Company - F.J. Gannon Station

		<u>EMISSION</u>	SOURCENY	? <u>E</u>		
MATERIA	L TRANSFER	- FUGITIVE EMIS			Figure:	
		FACILITY AND SC	OURCE DESC	RIPTION		
Emission Source Desc	ription:	Fuel Handling - Convey	yor M2 to Conve	eyor E2		
Emission Control Meth	od(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	/s		
Emission Point ID:		FH-019		Transfer Point I	D(s):	
		EMISSION ESTIN	IATION EQU	ATIONS		
Emission (lb/hr) = 0.0011 x	material transferre	d (ton/hr) x [(average wind s	peed (mph)/5) ^{1.3} /	moisture content (	pct)/2) ^{1.4} 1 x (100-co	ntrol[act]/100)
Emission (tpy) = 0.0011 x i	material transferred	(tpy) x [(average wind spee	d (mph)/5) ^{1.3} / moi	sture content (pct)/	2) ^{1.4} ] x (100-control	[pct]/100) x (1/2,000)
Source: Section 13.2	4 - Aggregate F	landling and Storage Pi	los AP42 Fift	h Edition Janua	rv 1995	
000100. 000001 10.2.	T Aggregate 1	and otorage i	100, At = 42, The	ir Edidon, Janua	19 1000.	
			ICCIONIC CAL	CHINATIONS		
		PUT DATA AND EM	Material	COLATIONS		
Mean Wind	Act		Moisture	Control	Actual	
Speed	Quantity T		Content	Efficiency	Emissio	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	1,324,022	6.5	90.0	0.10	0.03
		SOURCES (	OF INPUT DA			
<u>Paramet</u>	<u>er                                    </u>			ata Source	<u> </u>	
Mean Wind Speed		Tampa, FL, Climate of	the States, Third	Edition, 1985.		
Actual Quantity Transfe		TEC, 1997.				
Material Moisture Cont Control Efficiency	ent	Average fuel moisture of Table 3.2.17-2, Workb			and Dispersion M	odeling of
,		Fugitive Particulate So			•	
		NOTES AND	OBSERVATIO	ONS		
Actual PM ₁₀ emissions	based on 2,648	3,044 tpy of fuel used.	Actual fuel use is	s the average of	the 1995 and 199	6 actual fuel
used, 2,528,334 ton	s and 2,767,753	tons, respectively.				
Actual fuel delivery wa	e assumed to be	e equally divided between	en conveyors M	and M2 or 1.3	24 022 tons per co	DOVENO
Actual luci delivery wa	assumed to be	s equally divided between	on conveyors in	. a.a	24,022 tollo per et	, integral
				•	_	
		<u>DATA</u>	CONTROL			
Data Collected by:		A. Trbovich			Date:	05/23/97
Evaluated by:		A. Trbovich			Date:	05/23/97
Data Entered by:		A. Trbovich			Date:	05/23/97

Tampa Electric Company - F.J. Gannon Station

FH-020

	_	<u>EMISSION</u>	SOURCE TY	<u>PE</u>		
MATE	RIAL TRANSFER	- FUGITIVE EMISS			Figure:	
		FACILITY AND SO	OURCE DESC	RIPTION		
Emission Source	Description:	Fuel Handling - Conve	yor E1 to Storaç	je Pile		
Emission Control	Method(s)/ID No.(s):	Dust Suppressant				
Emission Point ID	:	FH-020		Transfer Point I	D(s):	
		EMISSION ESTIN	AATION EQU	ATIONS		
Emission (lb/hr) = 0.0	 0011 x material transferre	ed (ton/hr) x [(average wind s	speed (mph)/5) ^{1.3}	/ moisture content (	nct)/2) ^{1.4} 1 x (100—co	etrol[pct]/100)
		(tpy) x [(average wind spee				
Source: Section 1	13.2.4 - Aggregate h	landling and Storage Pi	les. AP~42. Fift	h Edition. Janua	rv 1995.	
	IN	PUT DATA AND EM	ISSIONS CAI	CULATIONS	•	
			Material			
Mean Wind Speed		ransferred	Moisture Content	Control Efficiency	Actual Emissio	PM ₁₀ on Rates
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	1,324,022	6.5	70.0	0.29	0.08
		SOURCES (	OF INPUT DA			
Para	meter			Data Source		
Mean Wind Speed		Tampa, FL, Climate of	the States, Thir	d Edition, 1985.		
Actual Quantity Tr		TEC, 1997.				
Material Moisture Control Efficiency		Average fuel moisture of ECT, 1997. Set at 70 p			ctual emissions fo	r PSD evaluation.
		Permitted control effici	ency is 0 pct.			
		NOTES AND	OCCEDIVATO	- ·		
		NOTES AND				
Actual PM ₁₀ emiss	sions based on 2,648	3,044 tpy of fuel used. A	Actual fuel use i	s the average of	the 1995 and 1990	6 actual fuel
used, 2,528,33	4 tons and 2,767,753	tons, respectively.				
Actual fuel deliver	y was assumed to be	e equally divided betwee	en conveyors E	and E2, or 1,32	4,022 tons per co	nveyor.
		<del>-</del>	,			
	-	DATA	CONTROL			
Data Collected	l by:	A. Trbovich			Date:	09/16/97
Evaluated by:		A. Trbovich	_		Date:	09/16/97
Data Entered b		A. Trbovich	_			09/16/97
	.,.				Date:	,,
Reviewed by:					Date.	

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

		<u> </u>	SCONCE 111			
MA	TERIAL TRANSFER	- FUGITIVE EMISS			Figure:	***************************************
Emission Source	e Description:	FACILITY AND SC				
		Fuel Handling - Convey	yor E2 to Storag	<del>                                     </del>		
	ol Method(s)/ID No.(s):	Dust Suppressant				
Emission Point	ID:	FH-021 EMISSION ESTIN	AATION FOLL	Transfer Point I	D(s):	
	·					
Emission (lb/hr) =	0.0011 x material transferred	d (ton/hr) x [(average wind s (tpy) x [(average wind spee	speed (mph)/5) ^{1.3} /	moisture content (	pct)/2) ^{1.4} ] x (100–cor	htrol[pct]/100)
спамон (фу) — с		(this) x [favorage mind spec-	<u> </u>	sure corkers (pcg/	2) ] X (100-control	perj/100) x (1/2,000)
Source: Section	n 13.2.4 – Aggregate i	landling and Storage Pi	ies, AP <u>-42, Fift</u>	h Edition, Janua	ry 1995.	
	· .					
	IN	PUT DATA AND EM	ISSIONS CAL Material	CULATIONS		
Mean Wind	Act	tual	Moisture	Control	Actual	PM ₁₀
Speed	Quantity T		Content	Efficiency	Emissio	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	1,324,022	6.5	70.0	0.29	0.08
		SOURCES (	OF INPUT DA	_		
Pa	<u>irameter</u>		<u>_</u>	ata Source		
Mean Wind Spe	ed	Tampa, FL, Climate of	the States, Third	Edition, 1985.		
Actual Quantity Material Moistu		TEC, 1997.  Average fuel moisture	contont: TEC 10			
Control Efficien		ECT, 1997. Set at 70 p			ctual emissions for	PSD evaluation.
	<u> </u>	Permitted control effici	ency is 0 pct.			
		NOTES AND	ORSERVATIO	าพร		
A - 4 - 1 DM					Ab - 4005 4 400	\4  <b>&amp;</b>
		3,044 tpy of fuel used. A	Actual Tuel Use &	s the average of	the 1995 and 1990	actual fuel
used, 2,528,	334 tons and 2,767,753	tons, respectively.				
Actual fuel deli	very was assumed to be	equally divided between	en conveyors E1	and E2, or 1,32	4,022 tons per co	nveyor.
					•	
		DAT <u>A</u>	CONTROL			
Data Collect	ed by:	A. Trbovich			Date:	09/16/97
Evaluated by	<b>/</b> :	A. Trbovich			Date:	09/16/97
Data Entered	d by:	A. Trbovich			Date:	09/16/9 <b>7</b>
Reviewed by					Date:	

#### EMISSION INVENTORY WORKSHEET Tampa Electric Company - F.J. Gannon Station FH-022 EMISSION SOURCE TYPE STORAGE PILE WINDBLOWN FUGITIVE DUST EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Storage - North Storage Pile Emission Control Method(s)/ID No.(s): **Application of Chemical Dust Suppressant Emission Point ID:** FH-022 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Estimates of fugitive PM₁₀ were made using procedures contained in AP-42, Section 13.2.5, Industrial Wind Erosion. Source: Section 13.2.5 - Industrial Wind Erosion, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Threshold Friction Velocity: 1.12 m/s Control Efficiency: Pile Width (m): Pile Length (m): 215 70 Pile Height (m): 21 Surface Area (m²) 16,758 Meteorological Friction **Emission** Affected Pile Affected Actual PM₁₀ Period Velocity **Potential Emission Rates** Surface Area Area (m²) (m/s) $(g/m^2)$ (pct) (b/w) (фу) 1,30 14 6.38 670.3 0.59 0.0024 30 1.13 0.26 4 670.3 0.02 < 0.0001 37 1.33 7.81 4 670.3 0.0014 0.72 65 1.48 16.52 14 2,346.1 5.34 0.0107 65 1.80 43.82 670.3 4.05 0.0081 4 77 1.30 6.38 4 670.3 0.59 0.0012 90 1.33 670.3 0.0014 7.81 4 0.72 Maximum Per Period 9.39 N/A 0.0252 N/A SOURCES OF INPUT DATA Parameter **Data Source** Threshold Friction Velocity (m/s) Uncrusted coal pile, Table 13.2.5-2., AP-42, January 1995. Control Efficiency (pct) Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991. Fuel Pile Dimensions (m) Estimated: ECT, 1997. Pile Surface Area (m²) Calculated: ECT, 1997. Meteorological Periods 1986 NWS data, processed per AP-42, ECT, 1997. Friction Velocity (m/s) Equation, Section 13.2.5, AP-42, January 1995. Potential Emission (g/m²) Equation, Section 13.2.5, AP-42, January 1995. Affected Pile Surface Area (pct) Table 13.2.5-3., Section 13.2.5, AP-42, January 1995. Calculated: ECT, 1997. Affected Area NOTES AND OBSERVATIONS DATA CONTROL Data Collected by: 09/12/97 A. Trbovich Date: 09/12/97 Evaluated by: A. Trbovich Date: Data Entered by: 09/12/97 A. Trbovich Date:

Date:

#### EMISSION INVENTORY WORKSHEET FH-023a Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE STORAGE PILE WINDBLOWN FUGITIVE DUST EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Storage - East Portion of South Storage Pile Emission Control Method(s)/ID No.(s): **Application of Chemical Dust Suppressant** Emission Point ID: FH-023a Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Estimates of fugitive PM $_{10}$ were made using procedures contained in AP-42, Section 13.2.5, Industrial Wind Erosion. Source: Section 13.2.5 - Industrial Wind Erosion, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Threshold Friction Velocity: 1.12 m/s Control Efficiency: Pile Width (m): 16,754 91 Pile Height (m): 21 Surface Area (m²) Pile Length (m): 170 Actual PM₁₀ Meteorological Friction Emission Affected Pile Affected Emission Rates Potential Period Velocity Surface Area Area (m/s) $(a/m^2)$ (m²) (pct) (lb/hr) (tpy) 670.2 0.59 0.0024 1.30 6.38 30 1.13 0.26 4 670.2 0.02 <0.0001 4 670.2 0.0014 37 7.81 0.72 1.33 1,48 16.52 14 2,345.5 5.34 0.0107 65 0.0081 65 1.80 43.82 4 **670.2** 4.05 6.38 0.59 0.0012 4 670.2 1.30 77 1.33 7.81 670.2 0.72 0.0014 90 N/A Maximum Per Period 9.38 0.0252 N/A Total SOURCES OF INPUT DATA Data Source <u>Parameter</u> Threshold Friction Velocity (m/s) Uncrusted coal pile, Table 13.2.5-2., AP-42, January 1995. Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling Control Efficiency (pct) for Fugitive Particulate Sources, UARG, September 1991. Fuel Pile Dimensions (m) Estimated: ECT, 1997. Pile Surface Area (m²) Calculated: ECT, 1997. Meteorological Periods 1986 NWS data, processed per AP-42, ECT, 1997. Friction Velocity (m/s) Equation, Section 13.2.5, AP-42, January 1995. Potential Emission (g/m²) Equation, Section 13.2.5, AP-42, January 1995. Affected Pile Surface Area (pct) Table 13.2.5-3., Section 13.2.5, AP-42, January 1995. Affected Area Calculated: ECT, 1997. NOTES AND OBSERVATIONS DATA CONTROL Data Collected by: A. Trbovich Date: 09/12/97 Date: 09/12/97 Evaluated by: A. Trbovich 09/12/97 Date: Data Entered by: A. Trbovich

Date:

#### EMISSION INVENTORY WORKSHEET FH-023b Tampa Electric Company - F.J. Gannon Station **EMISSION SOURCE TYPE** STORAGE PILE WINDBLOWN FUGITIVE DUST EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION Emission Source Description: Fuel Storage - West Portion of South Storage Pile Emission Control Method(s)/ID No.(s): **Application of Chemical Dust Suppressant** Emission Point ID: FH-023b Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Estimates of fugitive PM₁₀ were made using procedures contained in AP-42, Section 13.2.5, Industrial Wind Erosion. Source: Section 13.2.5 - Industrial Wind Erosion, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS 1.12 m/s Threshold Friction Velocity: Control Efficiency: 50 pct 18,855 140 Pile Width (m): 125 Pile Height (m): 21 Surface Area (m²) Pile Length (m): Actual PM₁₀ Meteorological Friction **Emission** Affected Pile Affected Period Velocity Potential Surface Area **Emission Rates** Area (m/s) $(g/m^2)$ (m²) (pct) (lb/hr) (tpy) 0.0013 6.38 0.66 1.30 754.2 30 1.13 0.26 4 754.2 0.03 <0.0001 4 37 1.33 7.81 754.2 0.81 0.0016 65 1.48 16.52 14 2,639.6 6.01 0.0120 65 1.80 43.82 4 754.2 4.55 0.0091 0.0013 1.30 6.38 754.2 0.66 77 4 1.33 4 0.81 0.0016 90 7.81 754.2 Maximum Per Period 10.56 N/A N/A 0.0270 Total SOURCES OF INPUT DATA <u>Parameter</u> Data Source Threshold Friction Velocity (m/s) Uncrusted coal pile, Table 13.2.5-2., AP-42, January 1995. Control Efficiency (pct) Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991. Fuel Pile Dimensions (m) Estimated: ECT, 1997. Pile Surface Area (m²) Calculated: ECT, 1997. Meteorological Periods 1986 NWS data, processed per AP-42, ECT, 1997. Friction Velocity (m/s) Equation, Section 13.2.5, AP-42, January 1995. Potential Emission (g/m²) Equation, Section 13.2.5, AP-42, January 1995. Affected Pile Surface Area (pct) Table 13.2.5-3., Section 13.2.5, AP-42, January 1995. Affected Area Calculated: ECT, 1997. NOTES AND OBSERVATIONS DATA CONTROL Data Collected by: A. Trbovich Date: 09/12/97 09/12/97 A. Trbovich Date: Evaluated by: 09/12/97 A. Trbovich Date: Data Entered by:

Date:

Tampa Electric Company — F.J. Gannon Station

EMISSION SOURCE TYPE

FH-024

#### MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION Emission Source Description: Fuel Handling - Underground Reclaim System to Conveyor F1 Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant **Emission Point ID:** FH-024 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Actual PM₁₀ Mean Wind Actual Moisture Control Speed **Quantity Transferred** Content Efficiency **Emission Rates** (mph) (ton/hr) (ton/yr) (pct) (pct) (lb/hr) (tpy) 8.6 552 882,681 6.5 85.0 0.04 0.03 SOURCES OF INPUT DATA Parameter Data Source Tampa, FL, Climate of the States, Third Edition, 1985. Mean Wind Speed **Actual Quantity Transferred Material Moisture Content** Average fuel moisture content; TEC, 1994. Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Control Efficiency Fugitive Particulate Sources, UARG, September 1981. NOTES AND OBSERVATIONS Actual PM $_{10}$ emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively. Actual fuel reclaiming was assumed to be equally divided among the reclaimers F1, F2, and F4, or 882,681 tons per reclaimer. Actual short-term emissions based on reclaimers F1, F2, and F4 operating simultaneously at 533 tph, each. DATA CONTROL Data Collected by: Date: 09/16/97 A. Trbovich A. Trbovich Date: 09/16/97 Evaluated by: A. Trbovich Date: 09/16/97 Data Entered by: Date: Reviewed by:

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

FACILITY AND SOURCE DESCRIPTION

MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES		
MATERIAL INANGEER – EUGITIVE EMIGGIUN GUURGEG	SOURCES	MATERIAL TRANSFER – FUGITIVE

Figure:

FH-025

**Emission Source Description:** 

Fuel Handling - Underground Reclaim System to Conveyor F4

Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant

**Emission Point ID:** 

FH-025

Transfer Point ID(s):

### EMISSION ESTIMATION EQUATIONS

Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100)

Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) x (1/2,000)

Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995.

	IN	PUT DATA AND EM	IISSIONS CAL	CULATIONS		
Mean Wind Speed		tuai ransferred	Materiai Moisture Content	Control Efficiency	Actual Emissio	PM ₁₀ on Rates
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	553	882,681	6.5	85.0	0.04	0.03

	SOURCES OF INPUT DATA
Parameter	Data Source
Mean Wind Speed	Tampa, FL, Climate of the States, Third Edition, 1985.
Actual Quantity Transferred	TEC, 1997.
Material Moisture Content	Average fuel moisture content; TEC, 1994.
Control Efficiency	Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of
	Fugitive Particulate Sources, UARG, September 1981.

### NOTES AND OBSERVATIONS

Actual PM₁₀ emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel

used, 2,528,334 tons and 2,767,753 tons, respectively.

Actual fuel reclaiming was assumed to be equally divided among the reclaimers F1, F2, and F4, or 882,681 tons per reclaimer.

Actual short-term emissions based on reclaimers F1, F2, and F4 operating simultaneously at 533 tph, each.

Data Collected by:	A. Trbovich	Date:	09/16/97
Evaluated by:	A. Trbovich	Date:	09/16/97
Data Entered by:	A. Trbovich	Date:	09/16/97

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

#### **MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES** Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Underground Reclaim System to Conveyor F2 Emission Control Method(s)/ID No.(s); Enclosure With Dust Suppressant Transfer Point ID(s): **Emission Point ID:** FH-027 EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Materiai Moisture Actual PM₁₀ Mean Wind Actual Control **Emission Rates Quantity Transferred** Content Efficiency Speed (ton/yr) (lb/hr) (tpy) (mph) (ton/hr) (pct) (pct) 85.0 0.04 0.03 8.6 553 882,681 6.5 SOURCES OF INPUT DATA **Data Source** <u>Parameter</u> Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985. **Actual Quantity Transferred** TEC, 1997. **Material Moisture Content** Average fuel moisture content; TEC, 1994. Control Efficiency Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Fugitive Particulate Sources, UARG, September 1981. NOTES AND OBSERVATIONS Actual PM₁₀ emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively. Actual fuel reclaiming was assumed to be equally divided among the reclaimers F1, F2, and F4, or 882,681 tons per reclaimer. Actual short-term emissions based on reclaimers F1, F2, and F4 operating simultaneously at 533 tph, each. DATA CONTROL 09/16/97 A. Trbovich Date: Data Collected by: A. Trbovich Date: 09/16/97 Evaluated by: A. Trbovich Date: 09/16/97 Data Entered by: Date: Reviewed by:

Tampa Electric Company – F.J. Gannon Station FH – U28										
EMISSION SOURCE TYPE										
MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure:										
FACILITY AND SOURCE DESCRIPTION										
Emission Source Description: Fuel Handling - Conveyor F1 to Conveyor G1/G2										
Emission Control Method(s)/ID No.(s):Enclosure With Dust Suppressant Sprays										
Emission Point II	Emission Point ID: FH-028 Transfer Point ID(s):									
EMISSION ESTIMATION EQUATIONS										
		× × × × × × × × × × × × × × × × × × ×	<u> </u>	0.0.0.4						
		d (ton/hr) x [(average wind s								
Emission (tpy) = 0.0	011 x material transferred	(tpy) x [(average wind speed	d (mph)/5) ^{1.3} / moi	isture content (pct)/	2) ^{1.4} ] x (100—control	[pct]/100) x (1/2,000)				
0	40.04	1	AD 40 EW	L []	4005					
Source: Section	13.2.4 – Aggregate r	landling and Storage Pil	ies, AP-42, Fiπ	n Edition, Januai	у 1995.					
	IN	PUT DATA AND EMI	ISSIONS CAL	CULATIONS						
			Material							
Mean Wind	Act		Moisture	Control	Actual					
Speed (mph)	Quantity T (ton/hr)	ransterred (ton/yr)	Content (pct)	Efficiency (pct)	(lb/hr)	n Rates (tpy)				
(inpin)			(pcų	(pct)	(ID/III)	(10)				
8.6	553	882,681	6.5	90.0	0.02	0.02				
		SOURCES C	OF INPUT DA	TA						
Par	ameter		1,,,, 1 , ,,,,,,,,,,,,,,,,,,,	ata Source						
		1								
Mean Wind Spee		Tampa, FL, Climate of	the States, Thire	d Edition, 1985.						
Actual Quantity T		TEC, 1997.								
Material Moisture Control Efficience		Average fuel moisture content; TEC, 1994.  Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of								
Control Emerency	,	Fugitive Particulate So			and Dispersion is	odemig of				
***************************************										
		NOTES AND	<u>OBSERVATIO</u>	JNS						
Actual PM ₁₀ emis	ssions based on 2,648	3,044 tpy of fuel used. A	ctual fuel use is	s the average of	the 1995 and 199	8 actual fuel				
used, 2.528.33	34 tons and 2,767,753	tons, respectively.								
			•							
Actual fuel reclai	ming was assumed to	be equally divided amo	ng the reclaime	ors F1, F2, and F	4, or 882,68 <u>1</u> tons	per reclaimer.				
Actual short—ter	m emissions based or	reclaimers F1, F2, and	F4 operating si	muitaneously at	533 tph, each.					
-			• -							
			·							
		DATA	CONTROL							
Data Collecte	d by:	A. Trbovich			Date:	05/23/97				
			•							
Evaluated by:		A. Trbovich			Date:	05/23/97				
Data Entered	by:	A. Trbovich			Date:	05/23/97				
Reviewed by:	Reviewed by: Date:									

Tampa Electric Company – F.J. Gannon Station

FH-029

#### EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION Emission Source Description: Fuel Handling - Conveyor F4 to Conveyor G1/G2 Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant Sprays **Emission Point ID:** Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5) $^{1.3}$ / moisture content (pct)/2) $^{1.4}$ ] x (100—control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Actual PM₁₀ Mean Wind Moisture Control Actual Speed **Quantity Transferred** Content Efficiency **Emission Rates** (ton/hr) (pct) (lb/hr) (tpy) (mph) (ton/yr) (pct) 90.0 0.02 0.02 553 882,681 8.6 6.5 SOURCES OF INPUT DATA **Data Source** Parameter Parameter Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985. Actual Quantity Transferred TEC, 1997. Average fuel moisture content; TEC, 1994. Material Moisture Content Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Control Efficiency Fugitive Particulate Sources, UARG, September 1981. NOTES AND OBSERVATIONS Actual PM $_{10}$ emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively. Actual fuel reclaiming was assumed to be equally divided among the reclaimers F1, F2, and F4, or 882,681 tons per reclaimer. Actual short-term emissions based on reclaimers F1, F2, and F4 operating simultaneously at 533 tph, each. DATA CONTROL Data Collected by: A. Trbovich Date: 05/23/97 A. Trbovich Date: 05/23/97 Evaluated by:

Date:

Date:

05/23/97

A. Trbovich

Data Entered by:

	Tampa Ele	ctric Company – F			,	FH-031
		EMISSION	SOURCE TYP	<u>'E</u>		
MA	TERIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:	
		FACILITY AND SC	URCE DESC	RIPTION		
Emission Sourc	e Description:	Fuel Handling - Conve	yor F2 to Conve	yor G1/G2		
Emission Contro	ol Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	/s		
Emission Point	ID:	FH-031		Transfer Point II	O(s):	
		EMISSION ESTIN	NATION EQU	ATIONS		
	_					
	0.0011 x material transferre					
Emission (tpy) = 0	0.0011 x material transferred	(tpy) x [(average wind spee	d (mph)/5) ' .~ / moi	sture content (pct)/2	z)'''] x (100—control	[pct]/100) x (1/2,000)
Source: Section	n 13.2.4 – Aggregate F	landling and Storage Pi	les. AP-42. Fifti	h Edition. Januar	v 1995.	
			<u>, , , , , , , , , , , , , , , , , , , </u>	<u></u>	,	_
					-	
	IN	PUT DATA AND EM		CULATIONS		
M Wi	<b>A</b> - 4	4	Material Majatura	Control	A -4	DM
Mean Wind	Act	'	Moisture Content	Control Efficiency	Actual Emissio	
Speed (mph)	Quantity T (ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
(mpn)	(toryin)	(tot/yi)	(pct)	(pc)	<u> (IDJIN)</u>	<u>0P71</u>
8.6	553	882,681	6.5	90.0	0.02	0.02
		SOURCES	DE INPUT DA	TA		
Pa	rameter			ata Source		
Mean Wind Spe		Tampa, FL, Climate of		_		
<b>Actual Quantity</b>	Transferred	TEC, 1997.			<u> </u>	
Material Moistu	re Content	Average fuel moisture	content; TEC, 19	994.		
Control Efficien	су	Table 3.2.17-2, Workb	ook on Estimati	on of Emissions	and Dispersion M	lodeling of
		Fugitive Particulate So	urces, UARG, S	eptember 1981.		
		NOTES AND	OBSERVATIO	ONS		
A -4 I DM	ii bd 0.649	044 to a of final mond.	Satural final mand	is the success of	itha 1005 and 10	De actual final
Actual PM ₁₀ em	nissions based on 2,648	,044 tpy of fuel used. A	Actual luel used	is the average of	me 1995 and 19	actual fuel
used, 2,528,3	34 tons and 2,767,753	tons, respectively.				
Actual fuel reals	aiming was assumed to	be equally divided amo	na rologimoro E	1 F2 and F4 or	882 681 tone po	rooleimor
Actual luel recit	auming was assumed to	be equally divided and	ong reicalmers r	1, F2, and F4, O	002,001 tons per	reciainer.
Actual short—te	erm emissions based or	reclaimers F1, F2, and	F4 operating si	multaneously at	533 tph, each.	
		•		•		
-			•			
	•					
		DATA	CONTROL			
Data Collecte	ed by:	A. Trbovich			Date:	05/23/97

A. Trbovich

A. Trbovich

Date:

Date:

Date:

05/23/97

05/23/97

Evaluated by:

Reviewed by:

Data Entered by:

Tampa Electric Company - F.J. Gannon Station

FH-032

EMISSION SOURCE TYPE

### MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES

Figure:

Emission Source Description:

FACILITY AND SOURCE DESCRIPTION

Fuel Handling - Conveyor G1 to Hammermill Crusher 1

Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant

**Emission Point ID:** 

FH-032

Transfer Point ID(s):

#### EMISSION ESTIMATION EQUATIONS

Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5) $^{1.3}$  / moisture content (pct)/2) $^{1.4}$ ] x (100—control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5) $^{1.3}$  / moisture content (pct)/2) $^{1.4}$ ] x (100—control[pct]/100) x (1/2,000)

Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995.

	IN	PUT DATA AND EM	ISSIONS CAL	CULATIONS.		
			Material			
Mean Wind	Act	tual	Moisture	Control	Actual	PM ₁₀
Speed	Quantity T	ransferred	Content	Efficiency	Emissio	n Rates
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	800	1,324,022	6.5	90.0	0.03	0.03

•	1	1.1	7	$\sim$	$c \cap$	<b>C</b> 1	MIDI	IT	$\mathbf{n}$	TA
>	U	u	n	UE	s o	m# I	NEL	<i>,</i>	UM	1.74

Parameter	Data Source
-	
Mean Wind Speed	Tampa, FL, Climate of the States, Third Edition, 1985.
Actual Quantity Transferred	TEC, 1997.
Material Moisture Content	Average fuel moisture content; TEC, 1994.
Control Efficiency	Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of
· ·	Fugitive Particulate Sources, UARG, September 1981.

### NOTES AND OBSERVATIONS

Actual PM₁₀ emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel

used, 2,528,334 tons and 2,767,753 tons, respectively.

Actual fuel reclaiming was assumed to be equally divided between conveyors G1 and G2, or 1,324,022 tons per conveyor.

#### DATA CONTROL

Data Collected by:

A. Trbovich

Date: 05/23/97

Evaluated by:

A. Trbovich

Date: 05/23/97

Data Entered by:

A. Trbovich

Date: 05/23/97

Reviewed by: Date:

#### FH-033 Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION Emission Source Description: Fuel Handling - Conveyor G2 to Hammermill Crusher 2 Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant **Emission Point ID:** FH-033 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Actual PM₁₀ Mean Wind Moisture **Control** Actual **Emission Rates** Speed **Quantity Transferred** Content Efficiency (mph) (pct) (lb/hr) (ton/hr) (ton/yr) (pct) (tpy) 800 1,324,022 6.5 90.0 0.03 0.03 86 SOURCES OF INPUT DATA **Parameter Data Source** Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985. **Actual Quantity Transferred** TEC, 1997. Average fuel moisture content; TEC, 1994. **Material Moisture Content** Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Control Efficiency Fugitive Particulate Sources, UARG, September 1981. NOTES AND OBSERVATIONS Actual PM₁₀ emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively. Actual fuel reclaiming was assumed to be equally divided between conveyors G1 and G2, or 1,324,022 tons per conveyor.

	DATA CONTRO	<u>L</u>	
Data Collected by:	A. Trbovich	Date:	05/23/97
Evaluated by:	A. Trbovich	Date:	05/23/97
Data Entered by:	A. Trbovich	Date:	05/23/97
Reviewed by:		Date:	

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

ı	H	Н	_	0	34	4

#### MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Hammermill Crusher 1 to Conveyor H1 Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant Sprays **Emission Point ID:** FH-034 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Actual Moisture Control Actual PM₁₀ **Emission Rates Quantity Transferred** Content **Efficiency** Speed (lb/hr) (mph) (ton/hr) (ton/yr) (pct) (pct) (tpy) 800 90.0 0.03 0.03 8.6 1,324,022 6.5 SOURCES OF INPUT DATA Data Source **Parameter** Tampa, FL, Climate of the States, Third Edition, 1985. Mean Wind Speed Actual Quantity Transferred TEC, 1997. Material Moisture Content Average fuel moisture content; TEC, 1994. Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of **Control Efficiency** Fugitive Particulate Sources, UARG, September 1981. NOTES AND OBSERVATIONS Actual PM₁₀ emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively. Actual fuel reclaiming was assumed to be equally divided between conveyors H1 and H2, or 1,324,022 tons per conveyor. DATA CONTROL 05/23/97 Data Collected by: A. Trbovich Date: Date: 05/23/97 A. Trbovich Evaluated by: Date: 05/23/97 Data Entered by: A. Trbovich Date: Reviewed by:

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

FACILITY AND SOURCE DESCRIPTION

MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES

Figure:

FH-035

Emission Source Description:

Fuel Handling - Hammermill Crusher 2 to Conveyor H2

Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant

**Emission Point ID:** 

FH-035

Transfer Point ID(s):

### EMISSION ESTIMATION EQUATIONS

Emission (lb/hr) = 0.0011 x material transferred (tor/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0011 x material transferred (tpy) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) x (1/2,000)

Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995.

Mana Wind		<i>PUT DATA AND EM</i> tual	Material Moisture	Control		DM
Mean Wind Speed		ransferred	Content	Efficiency	Actual Emissio	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	800	1,324,022	6.5	90.0	0.03	0.03

	SOURCES OF INPUT DATA
Parameter	Data Source
Mean Wind Speed	Tampa, FL, Climate of the States, Third Edition, 1985.
Actual Quantity Transferred	TEC, 1997.
Material Moisture Content	Average fuel moisture content; TEC, 1994.
Control Efficiency	Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of
•	Fugitive Particulate Sources, UARG, September 1981.

### NOTES AND OBSERVATIONS

Actual  $PM_{10}$  emissions based on 2,648,044 tpy of fuel used. Actual fuel used is the average of the 1995 and 1996 actual fuel

used, 2,528,334 tons and 2,767,753 tons, respectively.

Actual fuel reclaiming was assumed to be equally divided between conveyors H1 and H2, or 1,324,022 tons per conveyor.

Data Collected by:	A. Trbovich	Date:	05/23/97
Evaluated by:	A. Trbovich	Date:	05/23/97
Data Entered by:	A. Trbovich	Date:	05/23/97

Tampa Electric - F.J. Gannon Station

FH-036-FH-041

EMISSION SOURCE TYPE

MATERIAL TRAN	SFER - CO	ONTROLLED EI	MISSION SOUR	CES	Figure:	
	F	ACILITY AND S	OURCE DESCR	IPTION		
Emission Source Description:		Fuel Handling -	- Conveyors H1/H2	to Conveyors J1/J	2, Conveyors J1/J	2 to Bunkers
Emission Control Method(s)/ID	lo.(s):	Rotoclones 1 th	rough 6			
Emission Point ID:		FH -036 throug	jh FH-041	Transfer Point ID		_
	L	EMISSION EST	IMATION EQUA	TIONS		
Emission (lb/hr) = Flow Rate (scfm) x	(grain/scf) x (1	b/7,000 grain) x (60 m	nin/hr)			
Emission (tpy) = Flow Rate (scfm) x (g	rain/scf) x (1 lb	/7,000 grain) x (60 mir	n/hr) x Operating Hours	(hrs/yr) x (1 ton/2,000	lb)	
Source: ECT, 1997.						
			MISSIONS CAL			
Operating Hours: 2	24 Hrs/Day		Days/Wk	8,760 H	rs/Yr	
		Transfer	Exhaust	Exit Grain	Actual I	- Mag
Transfer Points Control	Med	Point	Flow Rate	Loading	Emission	
By Common Control De		ID No.	(scfm)	(gr/scf)	(lb/hr)	(tpy)
by common conserva-		10 110.		(3.755.7	(12/12/	
Unit 1 Fuel Bunker Loading			9,600	0.0023	0.19	0.83
Unit 2 Fuel Bunker Loading Unit 3 Fuel Bunker Loading			9,600 9,600	0.0023	0.19	0.83
Unit 4 Fuel Bunker Loading	•	<del>-</del>	9,600	0.0023	0.19	0.83
Unit 5 Fuel Bunker Loading			5,400	0.0023	0.19	0.83
Unit 6 Fuel Bunker Loading			9,600	0.0023	0.19	0.83
		SOURCES	OF INPUT DAT	Ä		
Parameter			Data	a Source		
Operating Hours	TEC, 199	7.				
Exhaust Flow Rate	TEC, 199	7. Vendor data.				
Exit Grain Loading	TEC, 199	7. Based on FDER	Permit No. AO29-	-250140.		
		NOTES AND	OBSERVATION	NS .		
All Batantana and an all and						-
All Rotociones are conservatively	y assumed to	be operating whe	enever any bunkerii	ng occurs.		
						_
•			1		· · ·	<del></del> :
		DATA	CONTROL			
Data Collected by:	A. Trbov		CONTROL	Date:	01/20/97	
-						_
Evaluated by:	A. Trbov			Date:	01/20/97	
Data Entered by:	A. Trbov	<u>'icn</u>		Date:	01/20/97	
Reviewed by:				Date:		

Tampa Electric Company - F.J. Gannon Station FH-044 EMISSION SOURCE TYPE VEHICULAR TRAFFIC ON UNPAVED ROADS - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION Emission Source Description: Fuel Handling - Storage Pile Maintenance Emission Control Method(s)/ID No.(s): **Dust Suppressant Sprays Emission Point ID:** FH-044 EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.36 x 5.9 x (a/12) x (S/30) x (W/3) $^{0.7}$  x (w/4) $^{0.5}$  x ((365-p)/365) x vehicle miles per hour (VMT/hr) x (100-control[pct]/100) Emission (ton/yr) = 0.36 x 5.9 x (s/12) x (S/30) x (W/3)^{0.7} x (w/4)^{0.5} x ((365-p)/365) x vehicle miles per year (VMT/yr) x (1 ton/ 2,000 lb) x (100-control[pct]/100) Source: Section 13.2.2 - Unpaved Roads, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS 7 Days/Wk 5,824 Hrs/Yr Operating Hours: 16 Hrs/Day Actual PM₁₀ Vehicle Miles Control W Silt Content Vehicle Speed | Vehicle Weight No. of Wheels | Rainfall Days Travelled Efficiency **Emission Rates** (VMT/hr) (VMT/yr) (pct) (mph) (pct) (lb/hr) 8.4 2.5 48 10.0 58,240 50.0 3.73 10.86 SOURCES OF INPUT DATA **Parameter Data Source** Operating Hours ECT, 1997. Estimated. Silt Content, s Table 13.2.2-1, Section 13.2.2, AP-42, January 1995. TEC, 1997. Average value. Vehicle Speed, S Vehicle Weight, W TEC, 1997. Average value. No. of Wheels TEC, 1997. Average value. Climate of the States, Third Edition, 1985. Data for Tampa, FL. Rainfall Days Vehicle Miles Traveled ECT, 1997. Estimated. Table 3.2.15-2. Workbook on Estimation of Emissions and Dispersion Modeling for Fugitive Particulate Control Efficiency Sources, UARG, September 1981. NOTES AND OBSERVATIONS Estimate of vehicle miles traveled based on the use of four bulldozers on the storage piles. DATA CONTROL Date: 09/12/97 Data Collected by: A. Trbovich

Date:

Date:

Date:

09/12/97

09/12/97

Evaluated by:

Reviewed by:

Data Entered by:

A. Trbovich

A. Trbovich

# **APPENDIX B.3**

FUTURE ACTUAL PM EMISSION CALCULATION SPREADSHEETS

Tampa Electric Company - F.J. Gannon Station

		EMISSIUN	SOURCE IYE	<u>16.                                      </u>		<u> </u>		
MA	TERIAL TRANSFER	- FUGITIVE EMISS			Figure:			
		FACILITY AND SO	URCE DESC	RIPTION				
Emission Source	e Description:	Fuel Handling - Barge	to West Clamsh	ell (Spillage)		_		
Emission Contr	ol Method(s)/ID No.(s):	Dust Suppressant						
Emission Point	ID:	FH-002		Transfer Point II	D(s):			
		EMISSION ESTIN	IATION EQUI	ATIONS				
Emission (lb/hr) =	0.0032 x material transferre	d (ton/hr) x [(average wind s	peed (mph)/5) ^{1.3} /	moisture content (p	ct)/2) ^{1.4} 1 x (100-cor	trol[act]/100)		
Emission (tpy) = 0	.0032 x material transferred	nd (ton/hr) x [(average wind s (tpy) x [(average wind speed	d (mph)/5) ^{1.3} / moi	sture content (pct)/2	2) ^{1.4} ] x (100—control	[pct]/100) x (1/2,000)		
Source: Section	n 13.2.4 – Aggregate I	 landling and Storage Pil	les. AP-42. Fift	h Edition. Januar	v 1995.			
		imigining and otologo in		.,	,			
	I N	PUT DATA AND EMI	ISSIONIS CAL	CHIATIONS				
	//N	FOI DATA AND EMI	Material	COLATIONS				
Mean Wind	Act	tual	Moisture	Control	Actua	ıl PM		
Speed	Quantity T		Content	Efficiency	Emissio	n Rates		
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)		
8.6	1,150	4,000,000	6.5	95.0	0.07	0.12		
SOURCES OF INPUT DATA								
Pa	rameter	-		ata Source				
Mean Wind Spe	ned .	Tampa, FL, Climate of t	the States Third	d Edition, 1985.				
Actual Quantity		TEC, 1997.						
Material Moistur		Average fuel moisture	content; TEC, 19	994.				
	,		00000000	240	N100100-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-	00000000000000000000000000000000000000		
		NOTES AND	<u>OBSERVATIO</u>	JNS				
			_					
•		<del> </del>		· 	-			
				-				
			CONTROL					
Data Collecte	ed by:	A. Trbovich				08/07/97		
Evaluated by	<b>/</b> :	A. Trbovich			Date:	08/07/97		
Data Entered	d by:	A. Trbovich			Date:	08/07/97		
Reviewed by	<i>r</i> :			1	Date:			

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

MATE	RIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:	
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source D	Description:	Fuel Handling — Barge t	o Continuous L	Inloader (Spillag	е)	
Emission Control	Method(s)/ID No.(s):	Barge Enclosure and Du	st Suppressant	<del></del>		
Emission Point ID:		FH~003		Transfer Point I	D(s):	
		EMISSION ESTIM	ATION EQU	ATIONS		
Emission (lb/hr) = 0.0	032 x material transferre	ed (ton/hr) x [(average wind s	peed (mph)/5) ^{1.3} /	moisture content (	pct)/2) ^{1.4} ] x (100–co	ntrol[pct]/100)
Emission (tpy) = 0.00	32 x material transferred	(tpy) x [(average wind speed	(mph)/5) ^{1.3} / mo	isture content (pct)/	2) ^{1.4} ] x (100-contro	[pct]/100) x (1/2,000)
Source: Section 1	3.2.4 – Aggregate i	landling and Storage Pil	es, AP-42, Fift	h Edition, Janua	ry 1995.	
	IN	PUT DATA AND EMI	SSIONS CAL	CULATIONS		
Mean Wind	A	tual	Material Moisture	Control	Aatu	al PM
Speed		ransferred	Content	Efficiency		on Rates
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	1,150	4,000,000	6.5	95.0	0.07	0.12
		SOURCES	F INPUT DA	TA		
Para	meter			ata Source		
Mana Mind Coast		Tamas El Olimata ef	ha States This	d Edikiaa 400E		
Mean Wind Speed Actual Quantity Tra		Tampa, FL, Climate of to TEC, 1997.	ne States, Third	a Edition, 1965.		
Material Moisture		Average fuel moisture	ontent; TEC, 1	994.		
Control Efficiency		Table 3-10, Fugitive E	missions F <u>rom</u>	Coal-Fired Pow	er Plants, EPRI, J	une 1984.
		•				
		NOTES AND	OBSERVATIO	ONS		
					_	
	-	DATA	CONTROL			
Data Collected	by:	A. Trbovich				08/07/97
Evaluated by:	-	A. Trbovich			Date:	08/07/97
Data Entered b	y:	A. Trbovich			Date:	08/07/97
Reviewed by:	-		-		Date:	_

400000000000000000000000000000000000000	Tampa Ele	ectric Company – F				FH-005
MA	TEDIAL TRANSFER	R – FUGITIVE EMIS	SOURCE TYPE		Eiguro.	
MA	TENIAL TRANSPER	FACILITY AND SC			Figure:	
Emission Source	ce Description:	Fuel Handling - West (			<u></u>	udus antari britandaudentetta <u>tuent (k. list. is.</u>
_		Side Enclosure and Dus		- поррог	_	
			or Onbhiesemir		54	
Emission Point	IU:	FH-005  EMISSION ESTIM	MATION EQU	Transfer Point I	D(s):	
		ed (ton/hr) x [(average wind a l (tpy) x [(average wind spee				
спиний (фу)	v.ooz A material dansier ou	I (thy) x [(average wind spec	d (mpin/o) / mo	state corkerk (pcq)	<u></u>	(1/2,000)
Source: Section	on 13.2.4 – Aggregate I	Handling and Storage Pi	iles, AP-42, Fift	h Edition, Janua	ry 1995.	
						•
	IN	PUT DATA AND EM	ISSIONS CAL Material	CULATIONS	T	
Mean Wind	Act	tual	Materiai Moisture	Control	Actua	al PM
Speed	Quantity T	ransferred	Content	Efficiency	Emissio	n Rates
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	1,150	4,000,000	6.5	95.0	0.07	0.12
	I .	SOURCES	OF INPUT DA		! 	I
Pa	arameter		<u>C</u>	oata Source		
Mean Wind Spe	eed	Tampa, FL, Climate of	the States, Third	d Edition, 1985.		
Actual Quantity		TEC, 1997.				
Material Moistu Control Efficien		Average fuel moisture Table 3-10, Fugitive E			er Plants EPRI J	une 1984
CONTO LINCIE		Table 0 - 10, 1 agitive L		<u> </u>		
		NOTES AND	OBSERVATION	ONS		
		-			_	
		_			<u> </u>	
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		DATA	CONTROL			
Data Collect	ed by:	A. Trbovich			Date:	08/07/97
Evaluated by	y:	A. Trbovich			Date:	08/07/97

Date:

Date:

08/07/97

A. Trbovich

Data Entered by:

	Tampa Ele	ectric Company – F				FH-006	
		EMISSION	SOURCE TYP	<u>PE</u>		73	
MAT	TERIAL TRANSFER	- FUGITIVE EMIS			Figure:		
		FACILITY AND SC	OURCE DESC	RIPTION			
Emission Source	Description:	Fuel Handling - Contin	uous Unloader t	o Conveyor A			
Emission Contro	l Method(s)/ID No.(s):	Enclosure and Dust Sup	pressant				
Emission Point l	D:	FH-006		Transfer Point II	D(s):		
		EMISSION ESTIN	AATION EQU	<u>ATIONS</u>	<u> </u>		
Emission (lb/hr) = (	).0032 x material transferre	ed (ton/hr) x [(average wind s	peed (mph)/5) ^{1.3} /	moisture content (r	ct)/2) ^{1.4} 1 x (100—co	entralineti(100)	
		(tpy) x [(average wind spee					
Sauran Santian	4004	!	I AD 40 EW	h Falkina Innun	1005	<u> </u>	
Source: Section	i 13.2.4 – Aggregate i	landling and Storage Pi	ies, AP-42, Fiπ	n Edition, Januai	у 1995.		
	<u> IN</u>	PUT DATA AND EM	ISSIONS CAL Material	CULATIONS			
Mean Wind	Act	tual	Moisture	Control	Actu	at PM	
Speed	Quantity T	ransferred	Content	Efficiency	Emission	n Rates	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)	
8.6	1,150	4,000,000	6.5	95.0	0.07	0.12	
		SOURCES (	OF INPUT DA				
<u>Par</u>	<u>rameter</u>			ata Source			
Mean Wind Spee	ed	Tampa, FL, Climate of	the States. Third	l Edition, 1985.		•	
Actual Quantity		TEC, 1997.					
Material Moistur		Average fuel moisture content; TEC, 1994.					
Control Efficience	У	Table 3-16, Fugitive E	missions From (	Coal-Fired Powe	er Plants, EPRI, J	une 1984.	
			00000000	~***	0,0000000000000000000000000000000000000	1000u000auu doodaatabuta, Nu 111001 W.	
		NOTES AND	OBSERVATIO	INS			
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		DATA	CONTROL				
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A. Trbovich

A. Trbovich

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Evaluated by:

Reviewed by:

Data Entered by:

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

	DIAL TRANSFER					<u> </u>	
MAIL	HIAL IHANSFEH	- FUGITIVE EMISS			Figure:		
_		FACILITY AND SO					
Emission Source D	Description:	Fuel Handling - Convey	or A to Continu	ous Feeder			
Emission Control A	Method(s)/ID No.(s):	Enclosure and Dust Sup	pressant				
Emission Point ID:		FH-007		Transfer Point IC	)(s):		
		EMISSION ESTIM	ATION EQU		•		
			10	_			
		d (ton/hr) x [(average wind s (tpy) x [(average wind speed					
Emission (фу) ~ 0.00	32 A Mederica dansieried	(ψy) x [(average wind speed	(mpn)/3) / mor	SURE CORER (PC)/2	)   X (100-conigor)	ped/100) x (1/2,000)	
Source: Section 1	3.2.4 – Aggregate I	landling and Storage Pil	es, AP-42, Fiftl	h Edition, Januar	y 1995.		
	IN	PUT DATA AND EMI	SSIONS CAL	CULATIONS			
			Material				
Mean Wind		ual	Moisture	Control	Actua		
Speed (mph)	Quantity T (ton/hr)	ransterred (ton/yr)	Content (pct)	Efficiency (pct)	Emission (lb/hr)	(tpy)	
8.6	1,150	4,000,000	6.5	95.0	0.07	0.12	
		SOURCES C	F INPUT DA				
<u>Parai</u>	meter	_	<u>D</u>	ata Source			
Mean Wind Speed		Tampa, FL, Climate of t	ha States Third	Edition 1985			
Actual Quantity Tra		TEC, 1997.	me States, Time	1 Edition, 1965.	_		
Material Moisture		Average fuel moisture content; TEC, 1994.					
Control Efficiency		Table 3-16, Fugitive E	missions From (	Coal-Fired Powe	er Plants, EPRI, Ju	ne 1984.	
			0000014474			00000000000000000000000000000000000000	
		NOTES AND	OBSERVATIO	INS			
				_			
		-					
		ΠΑΤΑΙ	CONTROL				
Data Collected	hv:	A. Trbovich			Date:	08/07/97	
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Data Entered b	y:	A. Trbovich			Date:	08/07/97	
Reviewed by:				ı	Date:		

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

MATE	RIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:		
		FACILITY AND SO	URCE DESC	RIPTION			
Emission Source D	escription:	Fuel Handling - West H	opper to Conve	yor B			
Emission Control M	lethod(s)/ID No.(s):	Enclosure and Dust Sup	pressant				
Emission Point ID:	_	FH-009	-	Transfer Point II			
		EMISSION ESTIM	ATION EQU				
Emission (lb/kr) — 0.00	122 × material transfers	d (ton/hr) x [(average wind s	nood (mph)/5)1.3 /	mointure contant (r		tral (not) (100)	
Emission (tpy) = $0.003$	2 x material transferred	(tpy) x [(average wind speed	l (mph)/5) ^{1.3} / moi	sture content (pct)/	2) ^{1.4} ] x (100 – control)	pct]/100) x (1/2,000)	
Courses Castian 15	2.2.4 Assessed to	landing and Stages Dil	oo AD 42 5561	h Edition Januar	n. 1005		
Source. Section 18	5.2.4 – Aggregate F	landling and Storage Pil	es, AF-42, Fill	ii Editoli, Janual	y 1993.		
		PUT DATA AND EMI	CCIONICOAL	CHRATIONS			
	JINI	PUI DATA AND EMI	Material Material	COLATIONS			
Mean Wind	Act		Moisture	Control	Actua		
Speed (mph)	Quantity T (ton/hr)	ransferred (ton/yr)	Content (pct)	Efficiency (pct)	Emissior (lb/hr)	n Rates (tpy)	
	•						
8.6	1,150	4,000,000	6.5	95.0	0.07	0.12	
Paran	notor	SOURCES C		<i>TA</i> Pata Source			
<u> </u>	<u>neter</u>			ata Source		s	
Mean Wind Speed		Tampa, FL, Climate of t	he States, Third	Edition, 1985.			
Actual Quantity Tra		TEC, 1997.	TEO 44	204			
Material Moisture C Control Efficiency	ontent	Average fuel moisture content; TEC, 1994.  Table 3-16, Fugitive Emissions from Coal-Fired Power Plants, EPRI, June 1984.					
					,		
		NOTES AND	OBSERVATIO	ONS			
	<u> </u>						
		DATA (	CONTROL				
Data Collected	by:	A. Trbovich			Date: (	08/07/97	
Evaluated by:		A. Trbovich			Date:	08/07/97	
Data Entered by	<b>/</b> :	A. Trbovich			Date:	08/07/97	
Reviewed by:					Date:		

Tampa Electric Company - F.J. Gannon Station FH-011 EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Conveyor B to Conveyor C Emission Control Method(s)/ID No.(s): Enclosure and Dust Suppressant FH-011 Transfer Point ID(s): **Emission Point ID:** EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0032 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Actual Moisture Control Actual PM Mean Wind **Emission Rates Quantity Transferred** Content Efficiency Speed (ton/yr) (lb/hr) (tpy) (mph) (ton/hr) (pct) (pct) 4,000,000 90.0 0.29 0.25 8.6 2,300 6.5 SOURCES OF INPUT DATA **Parameter** Data Source Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985. Actual Quantity Transferred TEC, 1997. Average fuel moisture content; TEC, 1994. **Material Moisture Content** Table 3-16, Fugitive Emissions From Coal-Fired Power Plants, EPRI, June 1984. Control Efficiency NOTES AND OBSERVATIONS

	DATA CONTRO	<u>L</u>	
ata Collected by:	A. Trbovich	Date:	08/07/97
Evaluated by:	A. Trbovich	Date:	08/07/97
Data Entered by:	A. Trbovich	Date:	08/07/97
Reviewed by:	•	Date:	

Tampa Electric Company - F.J. Gannon Station

FH-012

		EMISSION	SOURCE TYP	PE		
MA [*]	TERIAL TRANSFER	- FUGITIVE EMIS			Figure:	
		FACILITY AND SC	OURCE DESC	RIPTION		
Emission Sourc	e Description:	Fuel Handling - Conve	yor C to Convey	or D1/D2		
Emission Contro	ol Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	/s		· 
Emission Point	ID:	FH012		Transfer Point ID	)(s):	
		EMISSION ESTIN	NATION EQU	ATIONS		
Emission (lb/hr) =	0.0032 x material transferre	d (ton/hr) x [(average wind s	peed (mph)/5) 1.3 /	moisture content (p	ct)/2) ^{1.4} ] x (100—cod	 ntrol[pct]/100)
Emission (tpy) = 0	.0032 x material transferred	(tpy) x [(average wind spee	d (mph)/5) ^{1.3} / moi	sture content (pct)/2	) ^{1.4} ] x (100—control	[pct]/100) x (1/2,000)
Source: Section	n 13.2.4 – Aggregate i	landling and Storage Pi	les, AP-42, Fiftl	h Edition, Januar	y 1995.	
	IN.	PUT DATA AND EM	ISSIONS CAL	CULATIONS		
			Material		a rac — m. , francis racing state and se	
Mean Wind	Act		Moisture	Control Efficiency	Actual PM Emission Rates	
Speed (mph)	Quantity T (ton/hr)	(ton/yr)	Content (pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	4,000,000	6.5	90.0	0.29	0.25
		SOURCES (	OF INPUT DA	TA		
Pa	rameter	,		ata Source		
Mean Wind Spe	ed	Tampa, FL, Climate of	the States Thire	I Edition 1985		
Actual Quantity	_	TEC, 1997.	the otates, Time	- Laidon, 1000.	,	
Material Moistur		Average fuel moisture	content; TEC, 1	994.		
Control Efficience	су	Table 3.2.17-2, Workb			and Dispersion M	odeling for
		r agitive i aracaiate co	uices, onita, o	premoer root.		
						•
		NOTES AND	OBSERVATIO	ONS		
					_	
			CONTROL			
Data Collecte	ed by:	A. Trbovich			Date:	08/07/97
Evaluated by	<b>":</b>	A. Trbovich			Date:	08/07/97
Data Entered	l by:	A. Trbovich		1	Date:	08/07/97

Date:

Tampa Electric Company - F.J. Gannon Station

FMISSION SOURCE TYPE

		LMIOOIOI	SUUNUE III	- <del> </del>		
MA	TERIAL TRANSFER	- FUGITIVE EMISS			Figure:	
		FACILITY AND SO	OURCE DESC	RIPTION		
Emission Sourc	e Description:	Fuel Handling - Rail Ca	r to Hopper		·	· .
Emission Contr	ol Method(s)/ID No.(s):	Enclosure and Dust Sup	pressant			
Emission Point	ID:	FH-013		Transfer Point I	D(s):	
		EMISSION ESTIN	IATION EQU	ATIONS		
Emission (lb/hr) =	0.0032 x material transferre	ed (ton/hr) x [(average wind s	peed (mph)/5) ^{1.3} /	moisture content (	oct)/2) ^{1.4} 1 x (100-co	ntrolipet1/100)
		(tpy) x [(average wind speed				
Source: Section	n 19 2 A — Aggregate l	- 		h Edition Janua	n/ 1995	
Cource. Gecut	II 10.2.4 - Aggregate i	and otorage ri	165, AI - 72, FHE	ii Edidoii, Janua	iy 1990.	
******************************			ICCIONIC®O AL	CHEATIONS:		Spiritou di recordadissimoni uno im.
	IN	PUT DATA AND EMI	Material	CULATIONS		
Mean Wind		tual	Moisture	Control	Actua	. •
Speed		ransferred	Content	Efficiency	Emissio	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	4,000,000	6.5	95.0	0.14	0.12
	-	SOURCES C	OF INPUT DA			
Pa	rameter			<u> Source</u>		
Mean Wind Spe	ed	Tampa, FL, Climate of	the States, Third	d Edition, 1985.		
<b>Actual Quantity</b>		TEC, 1997.				
Material Moistu		Average fuel moisture				
Control Efficien	су	Table 3-16, Fugitive E	missions From	Coal-Fired Pow	er Plants, EPKI, Ju	ine 1984.
•		NOTES AND	ORSERVATION	ONS		
		NOILSAND	ODSLITYATIO	<u> </u>		sevenetry existraterescounts, visit in the
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		-				
		DATA	CONTROL			
Data Collect	ed by:	A. Trbovich			Date:	08/07/97
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Data Entered	i by:	A. Trbovich	-	_	Date:	08/07/97
Reviewed by	•	-			Date:	

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

MATE	RIAL TRANSFER	- FUGITIVE EMIS	SION SOURC	ES	Figure:	
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source D	escription:	Fuel Handling - Hoppe	r to Conveyor L			
Emission Control &	Method(s)/ID No.(s):	Enclosure and Dust Sup	pressant			
Emission Point ID:		FH-014		Transfer Point	D(s):	
		EMISSION ESTIN	IATION EQU	ATIONS		
		d (ton/hr) x [(average wind s				
Emission (tpy) = 0.003	32 x material transferred	(tpy) x [(average wind speed	d (mph)/5) ^{1.3} / moi	isture content (pct)	(2) ^{1.4} ] x (100—control)	[pet]/100) x (1/2,000)
Source: Section 1	3.2.4 – Aggregate I	landling and Storage Pi	les, AP-42, Fift	h Edition, Janua	ry 1995.	
		-		· ··		
	IN	PUT DATA AND EM	ISSIONS CAL	CULATIONS		
Mean Wind	Act		Material Moisture	Control	Actua	I DA4
Speed	Quantity T		Content	Efficiency	Emission	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	4,000,000	6.5	95.0	0.14	0.12
-		SOURCES	OF INPUT DA	TA		
Parar	meter			ata Source		
M W5-4 C4		Tamas El Olimata of	the Canana This	4 Falkina 1085		
Mean Wind Speed Actual Quantity Tra	ansferred	Tampa, FL, Climate of TEC, 1997.	the States, Third	1 Edition, 1985.		
Material Moisture C		Average fuel moisture	content; TEC, 19	994.		
Control Efficiency		Table 3-16, Fugitive E	missions From (	Coal-Fired Pow	er Plants, EPRI, Ju	ine 1984.
						wroscia, 20000011010000, 1000,
		NOTES AND	OBSERVATIO	INS		
		DATA	CONTROL			
Data Collected	by:	A. Trbovich			Date:	08/07/97
Evaluated by:		A. Trbovich			Date:	08/07/97
Data Entered b	y:	A. Trbovich			Date:	08/07/97
Reviewed by:					Date:	

Tampa Electric Company - F.J. Gannon Station

FMISSION SOURCE TYPE

FH	-01	5
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		<u> </u>	SOUNCE			
MA	TERIAL TRANSFER	- FUGITIVE EMISS			Figure:	
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source	e Description:	Fuel Handling - Conve	yor L to Convey	or D1/D2		·
Emission Contr	ol Method(s)/ID No.(s):	Enclosure and Dust Sup	pressant			·
Emission Point	ID:	FH-015	,	Transfer Point II	D(s):	
		EMISSION ESTIM	AATION EQU	ATIONS		
		d (ton/hr) x [(average wind s				
Emission (tpy) = 0	0.0032 x material transferred	(tpy) x [(average wind speed	d (mph)/5) ^{1.3} / moi	sture content (pct)/	2) ^{1.4} ] x (100—control	[pct]/100) x (1/2,000)
Source: Sectio	n 13.2.4 – Aggregate F	landling and Storage Pi	les, AP-42, Fiftl	h Edition, Janua	ry 1995.	
	1.1	DUTENATA AND EM	ICCIONIC CAL	CHRATIONS		
	IIN	PUT DATA AND EMI	Material	COLATIONS		
Mean Wind	Act	ual	Moisture	Control	Actua	I PM
Speed	Quantity T	ransferred	Content	Efficiency	Emissio	n Rates
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	4,000,000	6.5	95.0	0.14	0.12
		SOURCES C	OF INPUT DA		'	
Pa	ırameter			ata Source		
		T 51 01 4 4	O Th'	. F.J.W 4005		
Mean Wind Spe Actual Quantity		Tampa, FL, Climate of TEC, 1997.	the States, Iniro	Edition, 1985.		
Material Moistu		Average fuel moisture	content: TEC. 19	994.		
Control Efficien		Table 3-16, Fugitive E			er Plants, EPRI, Ju	ine 1984.
		NOTES AND	OBSERVATIO	ONS		
			<u> </u>			
						•
		•				
	· · · · · · · · · · · · · · · · · · ·	DATA	CONTROL			
Data Collect	ed by:	A. Trbovich	<u> </u>	<u>andhabi</u>	Date:	08/07/97
Evaluated by	<del></del>	A. Trbovich			Date:	08/07/97
Data Entered		A. Trbovich				08/07/97
Reviewed by	•		_	-	Date:	

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

			SOUNCE IN			
MA`	IERIAL TRANSFER	- FUGITIVE EMISS			Figure:	00.00.00 00.000
		FACILITY AND SC	OHCE DESC	HIPTION		
Emission Source	e Description:	Fuel Handling - Conve	yor D1 to Conve	yor M1		
Emission Contro	ol Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	18		
Emission Point I	D:	FH-016		Transfer Point I	D(s):	
		EMISSION ESTIN	AATION EQU	ATIONS		
Eminal at a	0.0020	4 A A	mand (1 m.1 % -	- Alabara		
		d (ton/tr) x [(average wind s (tpy) x [(average wind spee				
Source: Section	n 13.2.4 – Aggregate F	landling and Storage Pi	les, AP-42, Fift	h Edition, Janua	ry 1995.	
					•	
	INI	PUT DATA AND EM		CULATIONS		
Marr Mr.	•	···al	Material	Ca-41		/ DM
Mean Wind Speed	Act		Moisture Content	Control Efficiency	Actua Emission	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	4,000,000	6.5	90.0	0.29	0.25
		SOURCES	OF INPUT DA	TA		
Pa	rameter			ata Source		
M Mg- : 0		T 51 OII	Aba Chata Ta	1 Ediki - 4005		
Mean Wind Special Actual Quantity		Tampa, FL, Climate of TEC, 1997.	the States, Third	z <u>editio</u> n, 1985.		
Material Moistur		Average fuel moisture	content; TEC, 19	994.		
Control Efficience	cy	Table 3.2.17-2, Workb			and Dispersion M	odeling for
		Fugitive Particulate So	urces, UARG, Se	eptember 1981.		
			000000			(500) 8.07.000000 NOVO *** 4.15
		NOTES AND	OBSERVATIO	JNS		
Short-term (24	<u>-hr average) dispersio</u>	n modeling emissions r	ates assume bot	th stackers oper	ating simultaneous	sly,
each at 2,300	tph for a total rate of 4	,600 tph.				
<del></del>						
		DATA	CONTROL			
Data Collecte	ed by:	A. Trbovich			Date:	08/07/97
Evaluated by	:	A. Trbovich			Date:	08/07/97
Data Entered	by:	A. Trbovich			Date:	08/07/97
Reviewed by	:				Date:	

Tampa Electric Company – F.J. Gannon Station

		EMISSICIA	SOUNCE	<b>E</b>		
MATE	RIAL TRANSFER	- FUGITIVE EMIS	_	-	Figure:	
		FACILITY AND SC	OURCE DESC	RIPTION		
Emission Source I	Description:	Fuel Handling - Conve	yor D2 to Conve	yor M2		
Emission Control	Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	8		
Emission Point ID:	:	FH-017		Transfer Point I	D(s):	
		EMISSION ESTIN	NATION EQU	ATIONS		
Emission (lb/hr) = 0.0	0032 x material transferre	d (ton/hr) x [(average wind s	peed (mph)/5) ^{1.3} /	moisture content (	pct)/2) ^{1.4} ] x (100—cor	trol[pct]/100)
		(tpy) x [(average wind spee				
Source: Section 1	3.2.4 Aggregate H	landling and Storage Pi	_ les, AP-42, Fiftl	n Edition, Janua	ry 1995.	
						·
	IN	PUT DATA AND EM	ISSIONS CAL	CULATIONS		
			Material			
Mean Wind	Act	uai	Moisture	Control	Actua	I PM
Speed	Quantity T	ransferred	Content	Efficiency	Emissio	n Rates
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	4,000,000	6.5	90.0	0.29	0.25
		SOURCES (	OF INPUT DA			
<u>Para</u>	meter			ata Source		=
Mean Wind Speed		Tampa, FL, Climate of	the States, Third	Edition, 1985.		
Actual Quantity Tr		TEC, 1997.	•			
Material Moisture	Content	Average fuel moisture	content; TEC, 19	94.		
Control Efficiency		Table 3.2.17-2, Workb			and Dispersion Me	odeling of
		Fugitive Particulate So	urces, DANG, Se	eptember 1901.		
		NOTES AND	OBSERVATIO	DNS		
			<u> </u>		*	a consequence and a second of the
_		<u>-</u>				
					_	
	<del></del>					
		DATA	CONTROL			
Data Collected	by:	A. Trbovich			Date: (	08/07/97
Evaluated by:		A. Trbovich			Date: (	08/07/97
Data Entered b	py:	A. Trbovich	•		Date: (	08/07/97
Reviewed by:	-				Date:	

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

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П	_	u	ıc

		LMICCICIA	300nol III			
MA	TERIAL TRANSFER	- FUGITIVE EMIS			Figure:	
		FACILITY AND SO	UHUE DESC	HIPTION		
Emission Source	e Description:	Fuel Handling - Conve	yor M1 to Conve	yor E1		
Emission Contro	ol Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	<b>'</b> 8		
Emission Point	ID:	FH-018		Transfer Point II	D(s):	
		EMISSION ESTIN	AATION EQU	ATIONS		
			13.		14	
		ed (ton/hr) x [(average wind s   (tpy) x [(average wind spee				
( <b>4</b> )	TOOL A HALO MI GUIDOF G	( (p)) x [(availe with about	- Timprijroj 7 tilos	Start Contain (pog)	Ly JA (100 COMBON	(172, <u>000)</u>
Source: Section	n 13.2.4 – Aggregate I	landling and Storage Pi	les, AP-42, Fifti	h Edition, Janua	ry 1995.	
	IN	PUT DATA AND EM	ISSIONS CAL	CULATIONS		
		_	Material			
Mean Wind		tual	Moisture Content	Control	Actua Emissio	
Speed (mph)	(ton/hr)	ransferred (ton/yr)	(pct)	Efficiency (pct)	(lb/hr)	(tpy)
8.6	2,300	4,000,000	6.5	90.0	0.29	0.25
		SOURCES (	DE INPUT DA			
Pa	rameter		<u>D</u>	ata Source		
Mean Wind Spe	ed	Tampa, FL, Climate of	the States, Third	Edition, 1985.		
Actual Quantity		TEC, 1997.				
Material Moistu		Average fuel moisture				
Control Efficien	cy	Table 3.2.17-2, Workb			and Dispersion M	odeling of
		1 ugiuve i articulate co	dices, Carra, C	ptember 1301.		
		NOTES AND	OBSERVATIO	DNG		888800 29 000 0A, UAN 20 11 11
		NOTES AND	OBSERVALIE	)NS		08/36 (800) (80/4 )
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				-		
	_					
		DATA	CONTROL			
Data Collect	ed by:	A. Trbovich			Date:	08/07/97
Evaluated by	<b>/</b> :	A. Trbovich			Date:	08/07/97
Data Entered		A. Trbovich			Date:	08/07/97
Reviewed by		_			Date:	

Tampa Electric Company - F.J. Gannon Station

Pt V.	TEDIAL TRANSFER				<b></b>	
MA	ICHIAL IMANOPEK	- FUGITIVE EMISS			Figure:	
Emission Source	a Description:	Fuel Handling - Convey				ou o iconocom <u>eneración douvinaria (14)</u>
				<u>-                                      </u>		
Emission Contro		Enclosure With Dust Su	ppressant Spray	<b>'S</b>		
Emission Point	ID:	FH-019	ATION COS	Transfer Point I	D(s):	5, fentouennooden eine seest sch
		EMISSION ESTIN	MATIONEQUI	ATIONS		<u> </u>
		d (ton/hr) x [(average wind s				
Emission (tpy) = 0	.0032 x material transferred	(tpy) x [(average wind speed	d (mph)/5) ^{1.3} / moi	sture content (pct)/	2) ^{1.4} ] x (100—control)	pct]/100) x (1/2,000)
Source: Section	n 13.2.4 – Aggregate F	landling and Storage Pi	les, AP-42, Fift	h Edition, Janua	ry 1 <b>99</b> 5.	•
				<u> </u>		
	INI	PUT DATA AND EM	SSIONS CAL	CULATIONS		
Moon Wind			Material		Actua	I PM
Mean Wind Speed	Act Quantity T		Moisture Content	Control Efficiency	Emission	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	4,000,000	6.5	90.0	0.29	0.25
1		SOURCES	OF INPUT DA			
<u>Pa</u>	<u>rameter</u>		D	ata Source		
Mean Wind Spe	ed	Tampa, FL, Climate of	the States, Third	Edition, 1985.		
<b>Actual Quantity</b>		TEC, 1997.				
Material Moistur		Average fuel moisture of Table 3.2.17-2, Workb			and Dispossion M	adoling of
Control Efficiend	cy	Fugitive Particulate So			and Dispersion M	odening of
			_			
		NOTES AND	OBSERVATIO	ONS		
	<del>-</del>					
					_	
			CONTROL			
Data Collecte	ed by:	A. Trbovich			Date:	08/07/97
Evaluated by	:	A. Trbovich			Date:	08/07/97
Data Entered	l by:	A. Trbovich		_	Date:	08/07/97
Reviewed by	•				Date:	

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

FH-020

MAT	ERIAL TRANSFER	- FUGITIVE EMIS	SION SOURC	ES	Figure:	
		FACILITY AND SO			<u> </u>	
Emission Source	Description:	Fuel Handling - Conve	yor E1 to Storag	e Pile		
Emission Control	Method(s)/ID No.(s):	Dust Suppressant				
Emission Point II	D:	FH-020		Transfer Point II	O(s):	
		EMISSION ESTIM	IATION EQUI	ations		_
		d (ton/hr) x [(average wind s				
Source: Section	13.2.4 – Aggregate i	landling and Storage Pi	les, AP-42, Fiftl	h Edition, Januar	y 1995.	
	IN	PUT DATA AND EM	ISSIONS CAL	CI II ATIONS		
Mean Wind Speed	Act Quantity T	ual	Material Moisture Content	Control Efficiency	Actua Emissio	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	4,000,000	6.5	70.0	0.86	0.75
		SOURCES	OF INPUT DA			
Par	<u>ameter</u>			ata Source		
Mean Wind Spee	d	Tampa, FL, Climate of	the States, Third	Edition, 1985.		
Actual Quantity 1		TEC, 1997.				
Material Moisture		Average fuel moisture				
Control Efficience	у	Table 3.2.17-2, Workb			and Dispersion M	odeling of
						·
_		NOTES AND	OBSERVATIO	ONS		
			-			
<del>-</del>						
		<u>-</u>	_			
			_			
-						
		DATA	CONTROL			
Data Collecte	d by:	A. Trbovich			Date:	09/16/97
Evaluated by:		A. Trbovich			Date:	09/16/97
Data Entered	by:	A. Trbovich			Date:	09/16/97

Date:

FH-021

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

MATE	RIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:	_
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source D	escription:	Fuel Handling – Convey	or E2 to Storag	e Pile		
Emission Control N	lethod(s)/ID No.(s):	Dust Suppressant				_
Emission Point ID:	Ī	FH-021		Transfer Point II	D(s):	
		EMISSION ESTIM	IATION EQU			
Emission (tpy) = 0.003	2 x material transferred	d (ton/hr) x [(average wind s (tpy) x [(average wind speed landling and Storage Pil	1 (mph)/5) ^{1.3} / moi	sture content (pct)/2	2) ^{1.4} ] x (100—control[p	
	INI	PUT DATA AND EMI	SSIONS CAL	CULATIONS		
			Material			
Mean Wind	Act Quantity T		Moisture Content	Control Efficiency	Actual Emission	
Speed (mph)	(ton/hr)	ransterred (ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	4,000,000	6.5	70.0	0.86	0.75
		SOURCES	OF INPUT DA	TA		
Parar	neter	COONCECC		ata Source		00.00000000000000000000000000000000000
	iloto.			W61m		
Mean Wind Speed		Tampa, FL, Climate of t	the States, Third	Edition, 1985.		
Actual Quantity Tra		TEC, 1997.				
Material Moisture C	ontent	Average fuel moisture of			and Dispersion Mo	doling of
Control Efficiency		Table 3.2.17-2, Workberrich Sound Fugitive Particulate Sound			and Dispersion Mo	deling of
		Tagrave Faracarate con	<u> </u>	prombor 1001.		
		NOTES AND	OBSERVATIO	DNS		
,						
					***	
				•		
		DATA	CONTROL		_	
Data Collected	hv:	A. Trbovich	<u> </u>	**************************************	Date: 0	9/16/97
Evaluated by:	_ <del></del>	A. Trbovich				9/16/97
Data Entered by		A. Trbovich				9/16/97
Reviewed by:	<u>, -</u>				Date:	

#### EMISSION INVENTORY WORKSHEET FH-022 Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE STORAGE PILE WINDBLOWN FUGITIVE DUST EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Storage - North Storage Pile Emission Control Method(s)/ID No.(s): **Application of Chemical Dust Suppressant Emission Point ID:** FH-022 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Estimates of fugitive PM were made using procedures contained in AP-42, Section 13.2.5, Industrial Wind Erosion. Source: Section 13.2.5 - Industrial Wind Erosion, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Control Efficiency: Threshold Friction Velocity: 1.12 m/s 215 Pile Width (m): 70 Pile Height (m): 21 Surface Area (m²) 16,758 Pile Length (m): Affected Pile **Actual PM** Meteorological Friction Emission Affected Potential Surface Area **Emission Rates** Period Velocity Area $(g/m^2)$ (m²) (m/s) (pct) (lb/hr) (tpy) 14 1.30 6 38 670.3 1.18 0.0024 30 0.26 4 670.3 0.05 < 0.0001 1.13 37 1.33 7.81 4 670.3 1,44 0.0029 10.68 0.0214 2.346.1 65 1.48 16.52 14 43.82 8.09 0.0162 65 1.80 4 670.3 77 1.30 6.38 4 670.3 1.18 0.0024 90 1.33 7.81 4 670.3 1.44 0.0029 Maximum Per Period 18.77 N/A 0.0480 SOURCES OF INPUT DATA **Parameter** Data Source Threshold Friction Velocity (m/s) Uncrusted coal pile, Table 13.2.5-2., AP-42, January 1995. Control Efficiency (pct) Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991. Fuel Pile Dimensions (m) Estimated: ECT, 1997. Pile Surface Area (m²) Calculated: ECT, 1997. Meteorological Periods 1986 NWS data, processed per AP-42, ECT, 1997. Friction Velocity (m/s) Equation, Section 13.2.5, AP-42, January 1995. Potential Emission $(g/m^2)$ Equation, Section 13.2.5, AP-42, January 1995. Affected Pile Surface Area (pct) Table 13.2.5-3., Section 13.2.5, AP-42, January 1995. Affected Area Calculated: ECT, 1997. NOTES AND OBSERVATIONS

DATA CONTROL

A. Trbovich

A. Trbovich

A. Trbovich

Date:

Date:

Date:

Date:

09/16/97

09/16/97

09/16/97

Data Collected by:

Data Entered by:

Evaluated by:

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

FH-023a

STORAGE PILE WINDBLOWN FUGITIVE DUST EMISSION SOURCES  FACILITY AND SOURCE DESCRIPTION  FRANCISTORY - East Portion of South Storage Pile  Emission Control Method(e)/ID No.(e): Application of Chemical Dust Suppressant  Emission Point ID: FH-023a  Transfer Point ID(e):  Estimates of fugitive PM were made using procedures contained in AP-42, Section 13.2.5, Industrial Wind Erosion.  Source: Section 13.2.5 - Industrial Wind Erosion, AP-42, Fifth Edition, January 1905.  Source: Section 13.2.5 - Industrial Wind Erosion, AP-42, Fifth Edition, January 1905.  INPUT DATA AND EMISSIONS CALCULATIONS  Threshold Friction Velocity: 1.12 we Control Efficiency: 50 pct  Pile Length (m): 170 Pile Width (m): 91 Pile Height (m): 21 Surface Area (m²) 16,  Meteorological Friction Emission Affected Pile Affected Pile Emission Rates (galm²) (pct) (file)  14 1.30 6.38 4 670.2 1.18 0.0024  14 1.30 6.38 4 670.2 1.18 0.0024  30 1.13 0.20 4 670.2 1.18 0.0024  30 1.13 7.81 4 670.2 1.14 0.0029  30 1.33 7.81 4 670.2 1.14 0.0029  46 1.40 1.52 14 2.345.5 10.46 0.0021  47 1.30 4.32 4 670.2 1.14 0.0029  48 670.2 1.14 0.0024  90 1.33 7.81 4 670.2 1.14 0.0029  Mactimum Per Period 18.77 N/A  Freshold Friction Velocity (m/s)  Uncrusted coal pile, Table 13.2.5-2, AP-42, January 1905.  Total Pile Dimensions (m) Equition, Section 13.2.5, AP-42, January 1905.  Foreit Pile Dimensions (m) Equition, Section 13.2.5, AP-42, January 1905.  Hotelor Pile Surface Area (m²)  Mincted Pile Surface Area			ı	MISSION SOU	RCE TYPE			
Emission Source Description: Emission Control Method(s)/ID No.(s): Application of Chemical Dust Suppressant Emission Point ID: FH-023a  Emission Point ID: FH-023a  Emission Point ID: FH-023a  Emission Point ID: Emission Point ID: FH-023a  Emission Point ID: Emission AP-42, Section 13.2.5, Industrial Wind Erosion.  INPUT DATA AND Emission SCALCULATIONS  INPUT DATA AND Emission Review (m²) 90 pct  Insurance Area (m²) Pie Height (m): 2 1 Surface Area (m²) 18,  Input Data And Emission Review (m²) 18,  Input Data And And Emission Review (m²) (Bh/hr) (toy)  Input Data Scalculation Scalculation and Dispersion Modeling Sof Fugither Period Net Scalculation and Dispersion Modeling Sof Fugither Period Scalculation Emission (m²) Estimated ECT, 1997.  Intelled Piel Dimensions (m²) Estimated ECT, 1997.  Intelled Piel Dimensions (m²) Equition, Section 13.2.5, AP-42, January 1995.  Intelled Piel Dimensions (m²) Equition, Section 13.2.5, AP-42, January 1995.  Intelled Piel Dimensions (m²) Equition, Section 13.2.5, AP-42, January 1995.  Intelled Area Calculated ECT, 1997.  Intelled Area Ca	STORAGE F	PILE WINDE	LOWN FUGITI	VE DUST EMISS	SION SOURCES		Figure:	
Image			FACILI	TY AND SOURC	E DESCRIPTIO	N		
Emission Point ID:	mission Source Description:		Fuel Storage — Eas	t Partian of South S	lorage Pile			
Emission Point ID:	mission Control Method(s)/ID	No.(s):	Application of Chen	nical Dust Suppress	ant			
### Editional Control   Friction   Period   Pile Holght (m):   1.12 m/s   Control Efficiency:   50 pct	<u> </u>							
Estimates of fugitive PM were made using procedures contained in AP – 42, Section 13.2.5, Industrial Wind Erosion.	:mission Point ID;			NON FOTH ATU			s):	
Description   13.2.5 - Inclustrial Wind Erosion, AP-42, Fifth Edition, January 1995.		<u> </u>	EMISS	ION ESTIMATIC	DNEQUATIONS	<u> </u>		
Description   13.2.5 - Inclustrial Wind Erosion, AP-42, Fifth Edition, January 1995.	stimates of fugitive PM were m	ade using pro	cedures contained	in AP-42. Section 1	3.2.5. Industrial Win	d Frosion.		
INPUT: DATA AND EMISSIONS CALCULATIONS   Treshold Friction Velocity:   1.12 m/s   Control Efficiency:   50 pct								
Threshold Friction Velocity:   1.12 m/s   Control Efficiency:   50 pct	Source: Section 13.25 — Indu	striel Wind Eros	sion, AP-42, Fifth E	dition, January 199	5.		<del>-</del>	_
Threshold Friction Velocity:   1.12 m/s   Control Efficiency:   50 pct			INPUT DAT	A AND FMISSIO	NS CALCULAT	IONS		
Meteorological Period   Friction   Emission Velocity (m/s)   Potential (g/m²)   Affected Pile   Affected   Area (m²)   (b/hr)   (b/hr)   (b/hr)	Threshold Friction Velocity:	1.12						
Period   Velocity   Potential   Surface Area   Area   Emission Rates   (g/m²)   (tpt)   (tpt)	Pile Length (m):	170	Pile Width (m):	91	Pile Height (m):	21	Surface Area (m²)	16,7
Period   Velocity   Potential   Surface Area   Area   Emission Rates   (g/m²)   (tpt)		F-1-41	F11	A# 4 - 4 D7 -		A - 4-		
(m/s)	· ·							
14	raio	- 1			_			
1.13   0.26   4   670.2   0.05   <0.0001								
1.33   7.81   4   670.2   1.44   0.0029								
1.48   16.52   14   2,345.5   10.68   0.0214								
Maximum Per Period   18.77   N/A   0.0024								
Maximum Per Period 18.77 N/A Total N/A 0.0480  SOURCES OF INPUT: DATA  Parameter Data Source  Threshold Friction Velocity (m/s) Uncrusted coal pile, Table 13.2.5-2, AP-42, January 1995. Control Efficiency (pct) Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991. Fuel Pile Dimensions (m) Estimated: ECT, 1997. Reteorological Periods 1998 NWS data, processed per AP-42, ECT, 1997. Friction Velocity (m/s) Equation, Section 13.2.5, AP-42, January 1995. Uffected Pile Surface Area (pct) Table 13.2.5-3, Section 13.2.5, AP-42, January 1995. Calculated: ECT, 1997. Calculated: ECT, 1997.								
Maximum Per Period 18.77 N/A  Total N/A 0.0480  SOURCES:OF INPUT DATA  Parameter Data Source  Threshold Friction Velocity (m/s) Control Efficiency (pct) Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991.  Fuel Pile Dimensions (m) Estimated: ECT, 1997.  Calculated: ECT, 1997.  Aeteorological Periods 1996 NWS data, processed per AP-42, ECT, 1997.  Firetion Velocity (m/s) Equation, Section 13.2.5, AP-42, January 1995.  Triction Velocity (m/s) Equation, Section 13.2.5, AP-42, January 1995.  Vifected Pile Surface Area (pct) Table 13.2.5-3., Section 13.2.5, AP-42, January 1995.  Calculated: ECT, 1997.	<del>-</del>							
SOURCES: OF INPUT: DATA  Parameter  Data Source  Threshold Friction Velocity (m/s)  Uncrusted coal pile, Table 13.2.5-2., AP-42, January 1995.  Control Efficiency (pct)  Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991.  Euel Pile Dimensions (m)  Estimated: ECT, 1997.  Meteorological Periods  Table 13.2.5-1, AP-42, January 1995.  Potential Emission (g/m²)  Equation, Section 13.2.5, AP-42, January 1995.  Vifected Pile Surface Area (pct)  Table 13.2.5-3, Section 13.2.5, AP-42, January 1995.  Vifected Area  Calculated: ECT, 1997.	90	1.33	7.81	4	670.2	1.44	0.0029	
SOURCES: OF INPUT: DATA  Parameter  Data Source  Threshold Friction Velocity (m/s)  Uncrusted coal pile, Table 13.2.5-2., AP-42, January 1995.  Control Efficiency (pct)  Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991.  Fuel Pile Dimensions (m)  Pile Surface Area (m²)  Calculated: ECT, 1997.  Weteorological Periods  1986 NWS data, processed per AP-42, ECT, 1997.  Friction Velocity (m/s)  Potential Emission (g/m²)  Equation, Section 13.2.5, AP-42, January 1995.  Affected Pile Surface Area (pct)  Table 13.2.5-3., Section 13.2.5, AP-42, January 1995.  Vifected Area  Calculated: ECT, 1997.								
Parameter  Data Source  Threshold Friction Velocity (m/s)  Uncrusted coal pile, Table 13.2.5-2., AP-42, January 1995.  Control Efficiency (pct)  Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991.  Fuel Pile Dimensions (m)  Estimated: ECT, 1997.  Meteorological Periods  Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991.  Estimated: ECT, 1997.  Meteorological Periods  Table 13.2.5, AP-42, January 1995.  Potential Emission (g/m²)  Equation, Section 13.2.5, AP-42, January 1995.  Affected Pile Surface Area (pct)  Table 13.2.5-3., Section 13.2.5, AP-42, January 1995.  Affected Area  Calculated: ECT, 1997.				Maximum P	er Period	18.77	N/A	
Parameter Data Source  Threshold Friction Velocity (m/s)  Uncrusted coal pile, Table 13.2.5-2., AP-42, January 1995.  Control Efficiency (pct)  Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991.  Fuel Pile Dimensions (m)  Estimated: ECT, 1997.  Pile Surface Area (m²)  Calculated: ECT, 1997.  Meteorological Periods  1986 NWS data, processed per AP-42, ECT, 1997.  Friction Velocity (m/s)  Equation, Section 13.2.5, AP-42, January 1995.  Potential Emission (g/m²)  Affected Area  Calculated: ECT, 1997.					Total	N/A	0.0480	
Parameter  Data Source  Uncrusted coal pile, Table 13.2.5-2., AP-42, January 1995.  Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991.  Fuel Pile Dimensions (m)  Estimated: ECT, 1997.  Calculated: ECT, 1997.  Meteorological Periods  1986 NWS data, processed per AP-42, ECT, 1997.  Friction Velocity (m/s)  Equation, Section 13.2.5, AP-42, January 1995.  Potential Emission (g/m²)  Table 13.2.5-3., Section 13.2.5, AP-42, January 1995.  Affected Area  Calculated: ECT, 1997.				0110050:05:44				
Threshold Friction Velocity (m/s)  Uncrusted coal pile, Table 13.2.5-2., AP-42, January 1995.  Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991.  Fuel Pile Dimensions (m)  Estimated: ECT, 1997.  Calculated: ECT, 1997.  Meteorological Periods  1986 NWS data, processed per AP-42, ECT, 1997.  Friction Velocity (m/s)  Equation, Section 13.2.5, AP-42, January 1995.  Potential Emission (g/m²)  Equation, Section 13.2.5, AP-42, January 1995.  Affected Area  Calculated: ECT, 1997.  Calculated: ECT, 1997.	Parameter		s	OUNCES OF IN		COURCE		
Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991.  Fuel Pile Dimensions (m)  Estimated: ECT, 1997.  Calculated: ECT, 1997.  Meteorological Periods  1986 NWS data, processed per AP-42, ECT, 1997.  Friction Velocity (m/s)  Equation, Section 13.2.5, AP-42, January 1995.  Potential Emission (g/m²)  Equation, Section 13.2.5, AP-42, January 1995.  Meteorological Periods  Calculated: ECT, 1997.  Calculated: ECT, 1997.	<u>r urumetet</u>					704.00		
for Fugitive Particulate Sources, UARG, September 1991.  Fuel Pile Dimensions (m)  Estimated: ECT, 1997.  Calculated: ECT, 1997.  Meteorological Periods  1986 NWS data, processed per AP-42, ECT, 1997.  Friction Velocity (m/s)  Equation, Section 13.2.5, AP-42, January 1995.  Potential Emission (g/m²)  Equation, Section 13.2.5, AP-42, January 1995.  Meteored Pile Surface Area (pct)  Table 13.2.5-3., Section 13.2.5, AP-42, January 1995.  Calculated: ECT, 1997.	Threshold Friction Velocity (m/s	)	Uncrusted coal pile	e, Table 13.25-2., /	NP-42, January 199	<b>95.</b>		•
Fuel Pile Dimensions (m)  Estimated: ECT, 1997.  Calculated: ECT, 1997.  Meteorological Periods  1986 NWS data, processed per AP-42, ECT, 1997.  Friction Velocity (m/s)  Equation, Section 13.2.5, AP-42, January 1995.  Potential Emission (g/m²)  Equation, Section 13.2.5, AP-42, January 1995.  Meteored Pile Surface Area (pct)  Table 13.2.5-3., Section 13.2.5, AP-42, January 1995.  Calculated: ECT, 1997.	Control Efficiency (pct)		•		•	Modeling		
Calculated: ECT, 1997.  Meteorological Periods  1986 NWS data, processed per AP-42, ECT, 1997.  Friction Velocity (m/s)  Equation, Section 13.2.5, AP-42, January 1995.  Potential Emission (g/m²)  Equation, Section 13.2.5, AP-42, January 1995.  Meteod Pile Surface Area (pct)  Table 13.2.5-3., Section 13.2.5, AP-42, January 1995.  Calculated: ECT, 1997.	Fuel Dile Dimensione (m)				i, September 1991.			
Meteorological Periods  1986 NWS data, processed per AP-42, ECT, 1997.  Equation, Section 13.2.5, AP-42, January 1995.  Potential Emission (g/m²)  Equation, Section 13.2.5, AP-42, January 1995.  Meteod Pile Surface Area (pct)  Table 13.2.5-3., Section 13.2.5, AP-42, January 1995.  Calculated: ECT, 1997.								
Potential Emission (g/m²) Equation, Section 13.2.5, AP-42, January 1995.  Wifected Pile Surface Area (pct) Table 13.2.5-3., Section 13.2.5, AP-42, January 1995.  Calculated: ECT, 1997.					, ECT, 1997.			
Affected Pile Surface Area (pct) Table 13.2.5-3., Section 13.2.5, AP-42, January 1995. Calculated: ECT, 1997.								
Affected Area Calculated: ECT, 1997.								
					2, January 1995.			
NOTES AND OBSERVATIONS	diction recta		OGGANIEU. LOT, I	341.				
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				DATA CON	TROL			
DATA CONTROL	Data Collected by:		A. Trbovich				Date:	09/16/97
•	Evaluated by:		A. Trbovich				Date:	09/16/97
	Data Entered by:		A. Trbovich				Date:	09/16/97
Data Collected by: A. Trbovich Date: 09/16/97 Evaluated by: A. Trbovich Date: 09/16/97		·				-		<u> </u>
Data Collected by: A. Trbovich Date: 09/16/97  Evaluated by: A. Trbovich Date: 09/16/97  Data Entered by: A. Trbovich Date: 09/16/97	Reviewed by:					_	Date:	

#### EMISSION INVENTORY WORKSHEET FH-023b Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE STORAGE PILE WINDBLOWN FUGITIVE DUST EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION Emission Source Description: Fuel Storage - West Portion of South Storage Pile Emission Control Method(s)/ID No.(s): **Application of Chemical Dust Suppressant Emission Point ID:** FH-023b Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Estimates of fugitive PM were made using procedures contained in AP-42, Section 13.2.5, Industrial Wind Erosion. Source: Section 13.2.5 - Industrial Wind Erosion, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS **Control Efficiency:** Threshold Friction Velocity: 1.12 m/s 50 pct Pile Height (m): 21 Surface Area (m²) 140 Pile Width (m): 125 18,855 Pile Length (m): Meteorological Friction **Emission Affected Pile** Affected **Actual PM** Period Velocity **Potential** Surface Area Emission Rates Area (m²) (m/s) $(g/m^2)$ (pct) (lb/hr) (DY) 6.38 0.0027 14 1.30 754.2 1.33 0.0001 1.13 0.26 4 754.2 0.05 1.62 37 1.33 7.81 4 754.2 0.0032 65 1.48 16.52 2,639.6 12.01 0.0240 14 65 1.80 43.82 4 754.2 9.11 0.0182 6.38 4 0.0027 77 1.30 754.2 1.33 90 1.33 4 754.2 1.62 0.0032 7.81 Maximum Per Period 21.12 N/A N/A 0.0541 SOURCES OF INPUT DATA <u>Parameter</u> Data Source Threshold Friction Velocity (m/s) Uncrusted coal pile, Table 13.2.5-2., AP-42, January 1995. Control Efficiency (pct) Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991. Fuel Pile Dimensions (m) Estimated: ECT, 1997. Pile Surface Area (m²) Calculated: ECT, 1997. 1986 NWS data, processed per AP-42, ECT, 1997. Meteorological Periods Friction Velocity (m/s) Equation, Section 13.2.5, AP-42, January 1995. Equation, Section 13.2.5, AP-42, January 1995. Potential Emission (g/m²) Affected Pile Surface Area (pct) Table 13.2.5-3., Section 13.2.5, AP-42, January 1995. Affected Area Calculated: ECT, 1997. NOTES AND OBSERVATIONS DATA CONTROL Data Collected by: Date: 09/16/97 A. Trbovich Date: 09/16/97 Evaluated by: A. Trbovich Data Entered by: A. Trbovich Date: 09/16/97

Date:

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

		EMISSICIA	SOUNCE IT	<b>_</b>		
MAT	TERIAL TRANSFER	- FUGITIVE EMIS			Figure:	
		FACILITY AND SC	OURCE DESC	RIPTION		
Emission Source	Description:	Fuel Handling – Underg	ground Reclaim	System to Conv	eyor F1	
Emission Contro	l Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant			
Emission Point I	D:	FH-024		Transfer Point I	D(s):	
		EMISSION ESTIN	NATION EQU	ATIONS		
Emission (lb/hr) = (	0.0032 x material transferre	d (ton/hr) x [(average wind s	speed (mph)/5) ^{1,3} /	moisture content (	pct)/2) ^{1.4} ] x (100–cor	ntrol[pct]/100)
		(tpy) x [(average wind spee				
Source: Section	13.2.4 – Aggregate I	landling and Storage Pi	les, AP-42, Fift	h Edition, Janua	ry 1995.	
	-		ionionio ori	OUT TONO		20,00,000000000000000000000000000000000
	IN	PUT DATA AND EM	Material	CULATIONS		
Mean Wind	Act	ual	Moisture	Control	Actua	ıl PM
Speed	Quantity T	ransferred	Content	Efficiency	Emissio	n Rates
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	400	4,000,000	6.5	85.0	0.07	0.37
		SOURCES	OF INPUT DA			
Par	<u>rameter</u>		<u></u>	ata Source		
Mean Wind Spec	ed	Tampa, FL, Climate of	the States, Third	d Edition, 1985.		
Actual Quantity		TEC, 1997.	<del>-</del>			
Material Moisture		Average fuel moisture				
Control Efficience	<b>y</b>	Table 3.2.17-2, Workb			and Dispersion M	odeling of
	v					
		NOTES AND	OBSERVATION	ons		
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		ΠΔΤΔ	CONTROL			
Data Collecte	ed by:	A. Trbovich	~~/*:// <b>/</b>		Date:	- 09/16/97
Evaluated by		A. Trbovich				09/16/97
Data Entered		A. Trbovich				09/16/97
Reviewed by:			<del>_</del>	_	Date:	

Tampa Electric Company - F.J. Gannon Station

FH-025

		EMISSION	SOURCE TYI	PE		
· MA ⁻	TERIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:	
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source	e Description:	Fuel Handling – Underg	round Reclaim	System to Conve	yor F4	
Emission Contro	ol Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant			
Emission Point	ID:	FH-025		Transfer Point II	D(s):	
		EMISSION ESTIN	IATION EQU	ATIONS		
Emission (lb/hr) =	0.0032 x material transferre	d (ton/hr) x [(average wind s	peed (mph)/5) ^{1.3}	/ moisture content (;	ct)/2) ^{1.4} ] x (100-co	ntrol[pct]/100)
		(tpy) x [(average wind speed				
Source: Section	n 13.2.4 – Aggregate h	landling and Storage Pil	es. AP-42. Fift	h Edition. Januar	v 1995.	
		PUT DATA AND EMI	SSIONS CAL	CILIATIONS		
	· · · · · · · · · · · · · · · · · · ·		Material	OODATIONO	•	<u></u>
Mean Wind	Act	ual	Moisture	Control	Actua	al PM
Speed	Quantity T	ransferred	Content	Efficiency	Emissio	n Rates
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(ib/hr)	(tpy)
8.6	400	4,000,000	6.5	85.0	0.07	0.37
		SOURCES	F INPUT DA			
Pa	rameter	<u> </u>		Data Source		
Mean Wind Spe	ed	Tampa, FL, Climate of	the States, Third	d Edition, 1985.		
Actual Quantity		TEC, 1997.	-			
Material Moistur	re Content	Average fuel moisture				
Control Efficiend	су	Table 3.2.17-2, Workb			and Dispersion M	odeling of
		NOTES AND	OBSERVATION	ONS	_	
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					_	
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		DATA	CONTROL			
Data Collecte	ed by:	A. Trbovich			Date:	09/16/97
Fvaluated by	y•	A Trbovich		ı	Date:	09/16/97

Date:

Date:

09/16/97

A. Trbovich

Data Entered by:

Tampa Electric Company - F.J. Gannon Station

FH-026

		<u>EMISSION</u>	SOURCE TYP	?E		
MAT	TERIAL TRANSFER	- FUGITIVE EMISS			Figure:	
-		FACILITY AND SO	OURCE DESC	RIPTION		
Emission Source	e Description:	Fuel Handling - Underg	ground Reclaim	System to Conv	eyor F3	
Emission Contro	Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant			
Emission Point I	iD:	FH-026_		Transfer Point I	D(s):	
		EMISSION ESTIN	NATION EQU	ATIONS		
Emission (lb/hr) = (	0.0032 x material transferre	ed (ton/hr) x [(average wind s	speed (mph)/5) ^{1.3} /	/ moisture content (	pct)/2) ^{1.4} ] x (100-co	ntrol[pct]/100)
		(tpy) x [(average wind spee				
Source: Section	n 13.2.4 – Aggregate I	landling and Storage Pi	les. AP-42, Fift	h Edition, Janua	rv 1995.	
			100,111			
	IN	PUT DATA AND EM	ISSIONS CAI	CUI ATIONS		
		OI DAIA AIID LIII.	Material	.OULAIJONO		
Mean Wind	Act		Moisture	Control	Actus	
Speed	Quantity T		Content	Efficiency	Emissio	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	400	4,000,000	6.5	85.0	0.07	0.37
		SOURCES (	OF INPUT DA			
Pai	rameter			<u> Data Source</u>		
Mean Wind Spec	ed	Tampa, FL, Climate of	the States, Third	d Edition, 1985.		
Actual Quantity		TEC, 1997.				
Material Moisture		Average fuel moisture			and Diamenian M	
Control Efficience	<b>Ey</b>	Table 3.2.17-2, Workb			and Dispersion M	odeling of
						•
		NOTES AND	OBSERVATION	ONS		
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		DATA	CONTROL			
Data Collecte	ed by:	A. Trbovich			Date:	09/16/97
Evaluated by	:	A. Trbovich			Date:	09/16/97

Date:

Date:

09/16/97

A. Trbovich

Data Entered by:

	Tampa Ele	ectric Company – F.				FH-027	
		EMISSION S	SOURCE TYP	<i>'E</i>			
MA'	MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure:						
		FACILITY AND SO	URCE DESC	RIPTION			
Emission Source	e Description:	Fuel Handling – Underg	round Reclaim	System to Conve	eyor F2		
Emission Contr	ol Method(s)/ID No.(s):	Enclosure With Dust Sup	ppressant				
Emission Point	Emission Point ID: FH-027 Transfer Point ID(s):						
		EMISSION ESTIM	IATION EQU	ATIONS			
	a annual manufacture	d (ton/hr) x [(average wind s	(b) (5) 1.3			-4-17-41400)	
		d (tor/hr) x [(average wind s (tpy) x [(average wind speed					
						poop (	
Source: Sectio	n 13.2.4 – Aggregate H	landling and Storage Pil	es, AP-42, Fift	h Edition, Janua	ry 1995.		
				•			
	- INI	PUT DATA AND EMI	SSIONS CAL	CULATIONS			
			Material				
Mean Wind	Act		Moisture	Control		al PM	
Speed (mph)	Quantity To (ton/hr)	ransferred (ton/yr)	Content (pct)	Efficiency (pct)	Emissio (lb/hr)	n Rates	
[wbin		(ton/yr)	(peu	(peg	(ID/III)	(tpy)	
8.6	400	4,000,000	6.5	85.0	0.07	0.37	
		SOURCES C	OF INPUT DA				
Pa	rameter	-		<u> Data Source</u>			
Mean Wind Spe	and land	Tampa FI Climate of t	the States. Third	d Edition, 1985.			
Actual Quantity		Tampa, FL, Climate of the States, Third Edition, 1985. TEC, 1997.					
Material Moistu		Average fuel moisture of					
Control Efficien	icy	Table 3.2.17-2, Workb			and Dispersion M	lodeling of	
		Fugitive Particulate Sou	urces, UARG, Se	eptember 1981.			
		NOTES AND	OBSERVATIO	ONS			
		DATA (	CONTROL				
Data Collect	ed by:	A. Trbovich			Date:	09/16/97	

A. Trbovich

A. Trbovich

Date:

Date:

Date:

09/16/97

09/16/97

Evaluated by:

Reviewed by:

Data Entered by:

FH-028 Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION Emission Source Description: Fuel Handling - Conveyor F1 to Conveyor G1/G2 Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant Sprays **Emission Point ID:** FH-028 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0032 x material transferred (tor/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100–control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Moisture **Actual PM** Mean Wind Actual Control **Emission Rates Quantity Transferred** Content **Efficiency** Speed (mph) (ton/hr) (ton/yr) (pct) (pct) (tpy) 8.6 400 4,000,000 6.5 90.0 0.05 0.25 SOURCES OF INPUT DATA Data Source **Parameter** Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985. **Actual Quantity Transferred** TEC, 1997. **Material Moisture Content** Average fuel moisture content; TEC, 1994. **Control Efficiency** Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Fugitive Particulate Sources, UARG, September 1981. NOTES AND OBSERVATIONS DATA CONTROL A. Trbovich Date: 08/07/97 Data Collected by:

Date:

Date:

Date:

08/07/97

08/07/97

A. Trbovich

A. Trbovich

Evaluated by:

Reviewed by:

Data Entered by:

Tampa Electric Company - F.J. Gannon Station FH-029 EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Conveyor F4 to Conveyor G1/G2 Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant Sprays **Emission Point ID:** FH-029 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0032 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Actual Moisture Control Actual PM **Emission Rates Quantity Transferred** Content **Efficiency** Speed (mph) (ton/hr) (ton/yr) (pct) (pct) (ib/hr) (tpy) 8.6 400 4,000,000 6.5 90.0 0.05 0.25 SOURCES OF INPUT DATA **Data Source Parameter** Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985. **Actual Quantity Transferred** TEC, 1997. **Material Moisture Content** Average fuel moisture content; TEC, 1994. **Control Efficiency** Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Fugitive Particulate Sources, UARG, September 1981. NOTES AND OBSERVATIONS

	DATA CONTROL		_
Data Collected by:	A. Trbovich	Date:	08/07/97
Evaluated by:	A. Trbovich	Date:	08/07/97
Data Entered by:	A. Trbovich	Date:	08/07/97
Reviewed by:		Date:	

#### EMISSION INVENTORY WORKSHEET FH-030 Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Conveyor F3 to Conveyor G1/G2 Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant Sprays **Emission Point ID:** FH-030 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0032 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Moisture **Actual PM** Control Actual Speed **Quantity Transferred** Content Efficiency **Emission Rates** (mph) (ton/hr) (ton/yr) (pct) (lb/hr) (tpy) (pct) 0.25 400 4,000,000 6.5 90.0 0.05 8.6 SOURCES OF INPUT DATA **Parameter Data Source** Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985. **Actual Quantity Transferred** TEC, 1997. Material Moisture Content Average fuel moisture content; TEC, 1994. Control Efficiency Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Fugitive Particulate Sources, UARG, September 1981. NOTES AND OBSERVATIONS

	DATA CONTRO	)L	
Data Collected by:	A. Trbovich	Date:	08/07/97
Evaluated by:	A. Trbovich	Date:	08/07/97
Data Entered by:	A. Trbovich	Date:	08/07/97
Reviewed by:		Date:	

Tampa Electric Company – F.J. Gannon Station

J. Gannon Station FH-031

		EMISSIUN	SUUNUE ITT	<u> </u>					
МА	TERIAL TRANSFER	R - FUGITIVE EMIS			Figure:				
		FACILITY AND SC	OURCE DESC	RIPTION					
Emission Source	Emission Source Description: Fuel Handling — Conveyor F2 to Conveyor G1/G2								
Emission Contr	ol Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	/s					
Emission Point	Emission Point ID: FH-031 Transfer Point ID(s):								
		EMISSION ESTIN	MATION EQU	ATIONS					
Emission (lb/br) =	0 0032 x material transferre	ed (ton/hr) x [(average wind s	need (mph)/5)1.3	moisture content (	net)/2) ^{1.4} 1 x (100—cor	atralinati (100)			
Emission (tpy) = (	0.0032 x material transferred	(tpy) x [(average wind spee	d (mph)/5) ^{1.3} / mo	isture content (pct)/	2) ^{1.4} ] x (100—control	[pct]/100) x (1/2,000)			
		landling and Storage Pi							
	i N	PUT DATA AND EM	ISSIONS CAL	CHIATIONS					
	//N	FOI DAIA AND EMI	Material	COLATIONS		21.000000000000000000000000000000000000			
Mean Wind	Act	tual	Moisture	Control	Actua	l PM			
Speed	Quantity T	ransferred	Content	Efficiency	Emissio	n Rates			
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)			
8.6	400	4,000,000	6.5	90.0	0.05	0.25			
		SOURCES	OF INPUT DA	TA					
Pa	ırameter		Data Source						
Mean Wind Spe	ed	Tampa, FL, Climate of	the States, Third	d Edition, 1985.					
<b>Actual Quantity</b>	Transferred	TEC, 1997.							
Material Moistu		Average fuel moisture content; TEC, 1994.							
Control Efficien	су	Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Fugitive Particulate Sources, UARG, September 1981.							
		Fugitive Particulate So	urces, UAHG, S	eptember 1981.		•			
		NOTES AND	<b>OBSERVATIO</b>	ONS					
			<u> </u>			-			
	_								
				<u>-</u>					
	•	ΠΑΤΔ	CONTROL						
Data Collect	ed by:	A. Trbovich		en e	Date:	08/07/97			
Evaluated by		A. Trbovich	_	_	Date:	08/07/97			
Data Entered	d by:	A. Trbovich			Date:	08/07/97			
Reviewed by	<u></u>				Date:				

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

on Station FH-032

MATE	RIAL TRANSFER	- FUGITIVE EMISS			Figure:	
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source D	escription:	Fuel Handling - Convey	or G1 to Hamm	ermill Crusher 1	<del></del>	
Emission Control M	Method(s)/ID No.(s):	Enclosure With Dust Su	pressant			
Emission Point ID:		FH-032		Transfer Point II	D(s):	
	_	EMISSION ESTIM	IATION EQU	ATIONS		
Emission (Ib (bs) 0 00	022 -	d (ton/hr) x [(average wind s		/		4-15-41 (400)
		(tpy) x [(average wind speed				
Source: Section 1	3.2.4 – Aggregate H	landling and Storage Pil	es, AP-42, Fift	h Edition, Januar	ry 1995.	
	INI	PUT DATA AND EMI		CULATIONS		
Mean Wind	Act	ual	Material Moisture	Control	Actua	I PM
Speed	Quantity T		Content	Efficiency	Emission	
(mph)	(ton/hr)	" (ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	800	4,000,000	6.5	90.0	0.10	0.25
l		SOURCES C	F INPUT DA	TA		
Para	meter			ata Source		
M . MT . 101		T 51 011	t Otata Thin	1 F.J.: - 100E		
Mean Wind Speed Actual Quantity Tra	ansferred	Tampa, FL, Climate of t TEC, 1997.	ne States, Iniro	1 Edition, 1985.		
Material Moisture (		Average fuel moisture of	ontent; TEC, 19	994.		
Control Efficiency		Table 3.2.17-2, Workb			and Dispersion Mo	odeling of
		Fugitive Particulate Sou	ices, oand, o	eptember 1901.		
		NOTES AND	OBSERVATIO	ONS		
						-
		<del></del>				
-						
		DATA	CONTROL			
Data Collected	by:	A. Trbovich			Date:	08/07/97
Evaluated by:		A. Trbovich			Date:	08/07/97
Data Entered b	y:	A. Trbovich			Date:	08/07/97
Reviewed by:					Date:	

Tampa Electric Company – F.J. Gannon Station

		EMISSICIV	SOUHUE ITT			Sa tagatitanan diganur			
MATE	ERIAL TRANSFER	- FUGITIVE EMIS			Figure:				
		FACILITY AND SO	OURCE DESC	RIPTION					
Emission Source	Emission Source Description: Fuel Handling — Conveyor G2 to Hammermill Crusher 2								
Emission Control	Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant			-			
Emission Point ID	:	FH-033		Transfer Point I	D(s):				
		EMISSION ESTIN	MATION EQU	ATIONS					
Emission (lb/hr) = 0.	0032 x material transferre	d (ton/hr) x [(average wind s	speed (mph)/5) ^{1,3} /	moisture content (	pct)/2) ^{1.4} ] x (100cor	strol[pct]/100)			
		(tpy) x [(average wind spee							
Source: Section	13.2.4 – Aggregate l	landling and Storage Pi	les, AP-42, Fift	h Edition, Janua	ry 1995.				
					•				
	IN	PUT DATA AND EM		CULATIONS					
Mean Wind	Act	tual	Material Moisture	Control	Actua	I PM			
Speed	Quantity T		Content	Efficiency	Emission				
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)			
8.6	800	4,000,000	6.5	90.0	0.10	0.25			
	SOURCES OF INPUT DATA								
Para	ameter			ata Source					
Maco Wind Share		Temps El Climate of	the States This	d Edition 1985					
Mean Wind Speed Actual Quantity To		Tampa, FL, Climate of TEC, 1997.	the States, Third	2 Luition, 1985.					
Material Moisture		Average fuel moisture	content; TEC, 19	994.					
Control Efficiency	•	Table 3.2.17-2, Workb			and Dispersion M	odeling of			
		Fugitive Particulate So	urces, UARG, S	eptember 1981.					
		NOTES AND	OBSERVATIO	DNS					
		NO LO AND	<u>ODOLII VAIR</u>		r sinde gjogbyke oddyddine eegys ou u han ar en	: fara xxx xxx xxx xx f			
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				<u></u>					
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			•	<u> </u>					
		DATA	CONTROL						
Data Collected	d by:	A. Trbovich	<u> </u>	r — koosoooloogija, saariid a 1999a siif	Date: (	08/07/97			
Evaluated by:	-	A. Trbovich			Date:	08/07/97			
Data Entered I	by:	A. Trbovich	-		Date:	08/07/97			
Reviewed by:	_				Date:				

FH-034 Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE **MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES** Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Hammermill Crusher 1 to Conveyor H1 Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant Sprays **Emission Point ID:** FH-034 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0032 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4 x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Actual Moisture Control **Actual PM** Speed Quantity Transferred Content **Efficiency Emission Rates** (mph) (ton/hr) (ton/yr) (pct) (pct) (lb/hr) (tpy) 8.6 800 4,000,000 6.5 90.0 0.10 0.25 SOURCES OF INPUT DATA **Parameter** Data Source Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985. **Actual Quantity Transferred** TEC, 1997. **Material Moisture Content** Average fuel moisture content; TEC, 1994. Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Control Efficiency Fugitive Particulate Sources, UARG, September 1981. NOTES AND OBSERVATIONS

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		<b>₽</b> 0.00.000	00000000000000000000000000000000000000
Data Collected by:	DATA CONTROL A. Trbovich	L Date:	08/07/97
Evaluated by:	A. Trbovich	Date:	08/07/97
ata Entered by:	A. Trbovich	Date:	08/07/97
leviewed by:		Date:	,

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

Gannon Station FH-035

		<u></u>		***		<u> </u>	
MAT	ERIAL TRANSFER	- FUGITIVE EMISS			Figure:		
		FACILITY AND SO	URCE DESC	RIPTION			
Emission Source	Description:	Fuel Handling - Hamme	ermill Crusher 2	to Conveyor H2			
Emission Control	Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant			<u>.</u>	
Emission Point II	D:	FH-035	,	Transfer Point II	D(s):		
		EMISSION ESTIM	IATION EQU	ATIONS			
Emission (lb/hr) = 0	10032 v meterial transferre	ed (ton/hr) x [(average wind s	need (mph)/5)1.3	moisture content (r	xt)/2)1.41 x (100-co	etaliadi(100)	
		(tpy) x [(average wind speed					
Source: Section	13.2.4 – Aggregate I	landling and Storage Pil	es, AP-42, Fift	h Edition, Janua	ry 1995.		
	IN	PUT DATA AND EMI	SSIONS CAL	CULATIONS			
	_		Material				
Mean Wind Speed	Act Quantity T		Moisture Content	Control Efficiency	Actua Emissio		
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)	
			•				
8.6	800	4,000,000	6.5	90.0	0.10	0.25	
		SOURCES C	F INPUT DA				
	<u>ameter</u>			ata Source			
Mean Wind Spee Actual Quantity 1	<u> </u>	Tampa, FL, Climate of t TEC, 1997.	the States, Third	d Edition, 1985.			
Material Moisture		Average fuel moisture of	content: TEC. 1	994.			
Control Efficience		Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of					
		Fugitive Particulate Soc	urces, UARG, S	eptember 1981.			
	•						
	•	•					
		NOTES AND	OBSERVATIO	ONS			
		DATA (	CONTROL				
Data Collecte	d by:	A. Trbovich			Date:	08/07/97	
Evaluated by:		A. Trbovich			Date:	08/07/97	
Data Entered	by:	A. Trbovich		<u>_</u>	Date:	 08/07/97	
Reviewed by:					Date:		

FH-041 Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE **MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES** Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Conveyors H1/H2 to Conveyors J1/J2, Conveyors J1/J2 to Bunkers 1-6 Emission Control Method(s)/ID No.(s):Rotoclones 1 through 6 **Emission Point ID:** FH-036 through FH-041 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0032 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4 x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Actual Moisture Control **Actual PM** Quantity Transferred **Emission Rates** Speed Content **Efficiency** (mph) (ton/hr) (ton/yr) (pct) (pct) (lb/hr) (tpy) 2.8 1,600 4,000,000 75.0 0.12 0.14 SOURCES OF INPUT DATA **Parameter Data Source** Typical Indraft Velocity for Coal Bunkers, ECT 1994. Mean Wind Speed **Actual Quantity Transferred** TEC, 1997. Average fuel moisture content; TEC, 1994. **Material Moisture Content Control Efficiency** Control Equipment Vendor Data AAF, 1960. NOTES AND OBSERVATIONS

	DATA CONTRO	OL .	
Data Collected by:	A. Trbovich	Date:	08/07/97
Evaluated by:	A. Trbovich	Date:	08/07/97
Data Entered by:	A. Trbovich	Date:	08/07/97
Reviewed by:		Date:	

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

FH-042

MAT	ERIAL TRANSFER	- FUGITIVE EMISS			Figure:	
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source	Description:	Fuel Handling - Convey	or D1 to Conve	yor G1/G2 (By-	Pass Storage)	
Emission Control	Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	<u>'8</u>		
Emission Point ID	):	FH-042		Transfer Point I	D(s):	1
		EMISSION ESTIM	ATION EQU	ATIONS		
Emission (lh/hr) — 0	0032 v material transfers	d (ton/hr) x [(average wind s	need (mph)/5\1.3 /	enciature content (r		-t1(t) (100)
		(tpy) x [(average wind speed				
<u> </u>	VOL A HALCHAN GUIDION CO	(ф)) x [[average with speci	2 (p.1)/0) / 11101	sale correix (pcg/	2) ] x (100 contact	(1/2,000)
Source: Section	13.2.4 – Aggregate F	landling and Storage Pil	es, AP-42, Fiftl	h Edition, Janua	ry 1995.	
						_
<del>-1</del>	IN	PUT DATA AND EMI		CULATIONS		
Maan Wind	And		Material	Control	Actua	J. DNA
Mean Wind Speed	Act Quantity T		Moisture Content	Control Efficiency	Emissio	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
(VII)	(toti) iii	(1017)		AP-3	(.57)	<u> </u>
8.6	2,300	4,000,000	6.5	90.0	0.29	0.25
		SOURCES C	F INPUT DA	ATTE TO THE STATE OF THE STATE		
Para	ameter	Data Source				
Mean Wind Speed	d	Tampa, FL, Climate of t	the States, Third	Edition, 1985.		
Actual Quantity T		TEC, 1997.				
Material Moisture	Content	Average fuel moisture of				
Control Efficiency	1	Table 3.2.17-2, Workb			and Dispersion M	odeling of
		Fugitive Particulate Sou	ırces, UARG, Se	eptember 1981.		
						•
		NOTES AND	OBSERVATIO	ONS		
If the fuel stacker	s and fuel stacker by	passes are operated sim	iuitaneousiy, the	total amount of	r tuei nandied will	
not exceed 4,60	00 tph.					
	-	_		_		
	•					
		DATA	CONTROL			
Data Collected	d by:	A. Trbovich			Date:	08/07/97
Evaluated by:		A. Trbovich			Date:	08/07/97
Data Entered I	by:	A. Trbovich			Date:	08/07/97

Date:

Tampa Electric Company - F.J. Gannon Station

FH-043

		<u>EMISSION</u>	SOURCE TYP	<u>'E</u>		BPN 10 strains related to 11 . 1	
MAT	TERIAL TRANSFER	R - FUGITIVE EMISS			Figure:		
		FACILITY AND SO	URCE DESC	RIPTION			
Emission Source	e Description:	Fuel Handling - Convey	yor D2 to Conve	yor G1/G2 (By-	Pass Storage)	·	
Emission Contro	ol Method(s)/ID No.(s):	Enclosure With Dust Suj	ppressant Spray	/8			
Emission Point I	ID:	FH-043		Transfer Point II	D(s):		
		EMISSION ESTIM	ATION EQU			######################################	
			13		14		
		ed (ton/hr) x [(average wind s I (tpy) x [(average wind speed					
списион (фу) — о.	JOOL A HALLOWING GENERAL CO.	(this) x liavorabe must shoot	2 (mpn//5) / mo.	sure content (pcg/s	- 1 x (100 - control	pet/100/ x (1/2,000)	
Source: Section	13.2.4 – Aggregate F	Handling and Storage Pil	les, AP-42, Fift	h Edition, Januar	у 1995.		
	INI	PUT DATA AND EMI	SSIONS CAL	CULATIONS			
			Material				
Mean Wind	Act		Moisture	Control	Actua Emissio		
Speed (mph)	Quantity To (ton/hr)	(ton/yr)	Content (pct)	Efficiency (pct)	(lb/hr)	(tpy)	
	,						
8.6	2,300	4,000,000	6.5	90.0	0.29	0.25	
		SOURCES C	OF INPUT DA				
	rameter			ata Source			
Mean Wind Spec		Tampa, FL, Climate of t	the States, Third	l Edition, 1985.			
Actual Quantity Material Moisture		TEC, 1997.  Average fuel moisture content; TEC, 1994.					
Control Efficience		Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of					
		Fugitive Particulate Sources, UARG, September 1981.					
				•			
			_				
		NOTES AND	<u>OBSERVATIO</u>	DNS			
If the fuel stacks	ers and fuel stacker by	passes are operated sim	nultaneously, the	e total amount of	fuel handled will		
not exceed 4,6	600 toh	_					
1101 020004 4,6							
					_		
		:					
				50000000 100000000	······	00000000000000000000000000000000000000	
			CONTROL		<u> </u>		
Data Collecte	ed by:	A. Trbovich _			Date: 0	08/07/97	
Evaluated by	:	A. Trbovich			Date: (	08/07/97	
Data Entered	by:	A. Trbovich			Date: 0	08/07/97	

Date:

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

VEHIC	ULAR TRAFF	IC ON UNPA	VED ROADS	- FUGITIVE	EMISSIC	ON SOUF	RCES	Figure:	
			FACILITY AN	D SOURCE	DESCRI	PTION			
Emission S	ource Descriptio	on:	Fuel Handling -	Storage Pile	Maintenand	:ө			
Emission C	ontrol Method(s	)/ID No.(s):	Dust Suppressa	nt Sprays					
Emission P	oint ID:		FH-044						
			EMISSION E	STIMATION	EQUAT	ONS			
Emission (ton	/yr) = 5.9 x (s/12) x	(S/30) x (W/3) ^{0.7} x x (S/30) x (W/3) ^{0.7} x Unpaved Roads,	(w/4) ^{0.5} x ((365-p	)/365) <u>x</u> vehicle n	niles per year	(VMT/hr) x (1 r (VMT/yr) x (	00-control(pc 1 ton/ 2,000 lb	et]/100) ) x (100—cont	rol[pct]/100)
		INP	UT DATA AND	ENISSION	SCALCI	HATION	S		
Operating h	lours:		Hrs/Day		Days/Wk	LAHON		5,824	Hrs/Yr
5	S Vehicle Speed	w	w p Vel	p Vehicle Miles Contr		Control Efficiency	Ac	tual PM sion Rates	
(pct)	(mph)	(ton)			(VMT/hr)	(VMT/yr)	(pct)	(lb/hr)	(tpy)
8.4	2.5	48	6	107	10.0	58,240	50.0	10.38	30.21
			SOURC	CES OF INP	UT DATA	l			
Par	ameter				Data So	urce			
Operating I	lours	ECT, 1997. Es	timated.						
Sift Content	t, s	Table 13.2.2-1	, Section 13.2.2	, AP-42, Janu	ary 1995.				
Vehicle Spe	ed, S	TEC, 1997. Av	erage value.						
Vehicle We		TEC, 1997. Av							
No. of Whe		TEC, 1997. Av							
Rainfall Day			States, Third Ed	ition, 1985. De	ata for Tam	pa, FL.			
Vehicle Mile		ECT, 1997. Es						,	
Control Effi	ciency	1	2, Workbook on 3, September 19		missions i	and Disper	sion Modelii	ng for Fugiti	ve Particulate
	*************************								
			NOTES	AND OBSER	RVATION	<u>s</u>			
Estimate of	vehicle miles tr	aveled based on	the use of four	bulldozers on	the storage	e piles.			
									_
									_
				•					
			D	ATA CONTE	ROL				
Data Coll	ected by:	A. Trbovich						Date:	09/16/97
Evaluated	i by:	A. Trbovich						Date:	09/16/97
Data Ente	ered by:	A. Trbovich						Date:	09/16/97
Reviewed	l by:							Date:	

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

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MA1	TERIAL TRANSFER	- FUGITIVE EMISS			Figure:			
		FACILITY AND SO		HIPTION				
Emission Source	e Description:	Auxiliary Handling - Tru	ick Unloading	_				
Emission Contro	oi Method(s)/ID No.(s):	Dust Supressant						
Emission Point I	Emission Point ID: AH-001 Transfer Point ID(s):							
		EMISSION ESTIM	IATION EQU	ATIONS				
Emission (lb/hr) = (	0.0032 x material transferre	ed (ton/hr) x [(average wind s	peed (mph)/5) ^{1.3} /	moisture content (s	oct)/2) ^{1.4} ] x (100-conf	rollocti/100)		
		(tpy) x ((average wind speed						
Course Postin	1904 A	landing and Stages Di	AD 40 EM	h Edition Jones	100E			
Source: Section	1 13.2.4 ~ Aggregate r	landling and Storage Pil	98, AP-42, FIRE	n Edition, Januar	у 1995.			
	IN	PUT DATA AND EMI	SSIONS CAL Material	CULATIONS				
Mean Wind	Act	ual	Moisture	Control	Actual	РМ		
Speed	Quantity T		Content	Efficiency	Emission			
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)		
8.6	400	362,025	6.5	85.0	0.07	0.03		
		SOURCES C	F INPUT DA					
	<u>rameter</u>			ata Source				
Mean Wind Spec		Tampa, FL, Climate of t	the States, Third	d Edition, 1985.				
Actual Quantity  Material Moisture		FEC, 1997. FEC, 1997. Average fuel moisture content.						
Control Efficience		TEC, 1997.						
	•							
	•	•						
		NOTES AND	OBSERVATIO	ONS				
Annual quantity	transferred based on l	Jnits 1 through 4 firing a	n 80/20 coal/TD	OF blend at maxir	num capacity for 8	,760 hrs/yr.		
5,989 MMBtu/l	hr x 0.2 / 14,492 Btu/ib	TDF x 8,760 hrs/yr x 1 t	on/2,000 lb = 3	62,025 tpy				
Alternate fuel inc	cludes TDF and WDF.	The actual annual quan	tity of TDF and	WDF transferred	may vary, but the	actual total		
		ill not exceed 362,025 tp						
quantity of alteri	nate idei dansierred w	iii not exceed 302,023 tp	·y•					
				· <u>-</u>				
		DATA (	CONTROL					
Data Collecte	ed by:	A. Trbovich			Date: 0	8/07/97		
Evaluated by	<b>:</b>	A. Trbovich		l	Date: 0	8/07/97		
Data Entered	by:	A. Trbovich			Date: 0	8/07/97		
Reviewed by:								

#### AH - 002Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE **MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES** Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Auxiliary Handling - Storage Pile to Hopper Emission Control Method(s)/ID No.(s): Enclosure and Dust Suppressant **Emission Point ID:** AH-002 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0032 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind **Actual PM** Actual Moisture Control Speed **Quantity Transferred** Content Efficiency **Emission Rates** (mph) (ton/hr) (ton/yr) (pct) (pct) (lb/hr) (tpy) 8.6 400 362.025 6.5 90.0 0.05 0.02 SOURCES OF INPUT DATA **Data Source** <u>Parameter</u> Tampa, FL, Climate of the States, Third Edition, 1985. Mean Wind Speed **Actual Quantity Transferred** TEC, 1997. **Material Moisture Content** TEC, 1997. Average fuel moisture content. **Control Efficiency** Table 3-16, Fugitive Emission from Coal-Fired Power Plants, EPRI, June 1984. NOTES AND OBSERVATIONS Annual quantity transferred based on Units 1 through 4 firing an 80/20 coal/TDF blend at maximum capacity for 8,760 hrs/yr. 5,989 MMBtu/hr x 0.2 / 14,492 Btu/lb TDF x 8,760 hrs/yr x 1 ton/2,000 lb = 362,025 tpy Alternate fuel includes TDF and WDF. The actual annual quantity of TDF and WDF transferred may vary, but the actual total quantity of alternate fuel transferred will not exceed 362,025 tpy. DATA CONTROL A. Trbovich Date: 08/07/97 Data Collected by:

Date:

Date:

Date:

08/07/97

08/07/97

A. Trbovich

A. Trbovich

Evaluated by:

Reviewed by:

Data Entered by:

Tampa Electric Company - F.J. Gannon Station

AH-003

#### EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Auxiliary Handling - Hopper to Conveyor T Emission Control Method(s)/ID No.(s): Enclosure and Dust Suppressant **Emission Point ID:** AH-003 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0032 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Actual PM Mean Wind Actual Moisture Control **Quantity Transferred** Content **Efficiency Emission Rates** Speed (ton/hr) (ton/yr) (pct) (lb/hr) (tpy) (mph) (pct) 400 90.0 0.05 0.02 362,025 8.6 6.5 SOURCES OF INPUT DATA Data Source Parameter Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985. TEC, 1997. Actual Quantity Transferred **Material Moisture Content** TEC, 1997. Average fuel moisture content. Table 3-16, Fugitive Emission from Coal-Fired Power Plants, EPRI, June 1984. Control Efficiency NOTES AND OBSERVATIONS Annual quantity transferred based on Units 1 through 4 firing an 80/20 coal/TDF blend at maximum capacity for 8,760 hrs/yr. 5,989 MMBtu/hr x 0.2 / 14,492 Btu/lb TDF x 8,760 hrs/yr x 1 ton/2,000 lb = 362,025 tpy Alternate fuel includes TDF and WDF. The actual annual quantity of TDF and WDF transferred may vary, but the actual total quantity of alternate fuel transferred will not exceed 362,025 tpy. DATA CONTROL Data Collected by: A. Trbovich Date: 08/07/97 A. Trbovich Date: 08/07/97 Evaluated by: Date: 08/07/97

Date:

A. Trbovich

Data Entered by:

Tampa Electric Company - F.J. Gannon Station

MISSION SOURCE TYPE

<u>AH</u>-004

		EMISSION	SOUNCE	<b>.</b>			
MA	MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure:						
	FACILITY AND SOURCE DESCRIPTION						
Emission Source	e Description:	Auxiliary Handling – Co	onveyor T to Cor	nveyor U			
Emission Contr	ol Method(s)/ID No.(s):	Enclosure and Dust Sur	pressant				
Emission Point	ID:	AH-004		Transfer Point I	D(s):		
		EMISSION ESTIN	MATION EQU				
Emission (lb/hr) =	0.0032 x material transferre	d (ton/hr) x [(average wind s	speed (mph)/5) ^{1.3} /	moisture content (	pct)/2) ^{1.4} ] x (100cor	trol[pct]/100)	
		(tpy) x [(average wind spee					
Source: Section	n 1924 — Aggregate k	landling and Storage Pi	les AP-42 Fift	h Edition Jenue	ny 1995		
Jource. Secuo	ii 10.2.7 — Aggregate i	ianding and olorage Fi	ies, Ar – 42, i iit	ii Edidon, Janua	iy 1993.	-	
		-	_				
	IN	PUT DATA AND EM		CULATIONS			
			Material				
Mean Wind		rual .	Moisture	Control	Actua		
Speed		ransferred	Content	Efficiency	Emissio		
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)	
8.6	400	362,025	6.5	90.0	0.05	0.02	
	-1	SOURCES (	OF INPUT DA				
	<u>irameter</u>			ata Source			
Mean Wind Spe		Tampa, FL, Climate of	the States, Third	d Edition, 1985.			
Actual Quantity		TEC, 1997.				1	
Material Moistu		TEC, 1997. Average fuel moisture content.  Table 3-16, Fugitive Emission from Coal-Fired Power Plants, EPRI, June 1984.					
Control Efficien	icy	Table 3-10, Tugitive L	inission noin oc	Jai-Tiled Tower	riants, Erm, our	e 1304.	
						•	
						•	
		NOTES AND	ORSERVATIO	ONS			
Annual quantity	transferred based on l	Jnits 1 through 4 firing			mum capacity for	8 760 hrs/vr	
					- Capabily for	5,7 00 1110, y 1.	
5,989 MMBtu	/nr x 0.2 / 14,492 Btu/Ib	TDF x 8,760 hrs/yr x 1	ton/2,000 lb = 3	162,025 tpy	<del>_</del>		
Alternate fuel in	ncludes TDF and WDF.	The actual annual quan	itity of TDF and	WDF transferred	may vary, but the	actual total	
quantity of alte	rnate fuel transferred w	ill not exceed 362,025 t	py.				
				, 			
		•					
		DATA	CONTROL				
Data Collect	ed by:	A. Trbovich			Date:	08/07/97	
Evaluated by	y:	A. Trbovich			Date:	08/07/97	
Data Entered	d by:	A. Trbovich			Date:	08/07/97	
Reviewed by	<i>r</i> :	•			Date:		

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

AH.	-005
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#### **MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES** Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Auxiliary Handling - Conveyor U to Conveyors H1 and H2 Emission Control Method(s)/ID No.(s): Enclosure and Dust Suppressant **Emission Point ID:** AH-005 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0032 x material transferred (ton/hr) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Moisture **Actual PM** Actual Control **Quantity Transferred Emission Rates** Content **Efficiency** Speed (mph) (ton/hr) (ton/yr) (pct) (pct) (lb/hr) (tpy) 0.05 400 362,025 90.0 0.02 SOURCES OF INPUT DATA **Data Source Parameter** Tampa, FL, Climate of the States, Third Edition, 1985. Mean Wind Speed **Actual Quantity Transferred** TEC, 1997. Material Moisture Content TEC, 1997. Average fuel moisture content. Table 3-16, Fugitive Emission from Coal-Fired Power Plants, EPRI, June 1984. Control Efficiency NOTES AND OBSERVATIONS Annual quantity transferred based on Units 1 through 4 firing an 80/20 coal/TDF blend at maximum capacity for 8,760 hrs/yr. 5,989 MMBtu/hr x 0.2 / 14,492 Btu/lb TDF x 8,760 hrs/yr x 1 ton/2,000 lb = 362,025 tpy Alternate fuel includes TDF and WDF. The actual annual quantity of TDF and WDF transferred may vary, but the actual total quantity of alternate fuel transferred will not exceed 362,025 tpy. DATA CONTROL Data Collected by: A. Trbovich Date: 08/07/97 08/07/97 Evaluated by: A. Trbovich Date: 08/07/97 A. Trbovich Date: Data Entered by: Reviewed by: Date:

# **APPENDIX B.4**

ACTUAL PM EMISSION CALCULATION SPREADSHEETS

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE							
MA ⁻	MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure:						
		FACILITY AND SO	OURCE DESC	RIPTION			
Emission Source	e Description:	Fuel Handling — Barge	to West Clamsh	ell (Spillage)		_	
Emission Contro	ol Method(s)/ID No.(s):	Barge Enclosure				_	
Emission Point I	ID:	FH-002		Transfer Point I	D(s):		
		EMISSION ESTIN	IATION EQU	ATIONS			
Emission (lb/hr) = (	0.0032 x material transferre	d (ton/hr) x [(average wind s	peed (mph)/5) ^{1.3} /	moisture content (	oct)/2) ^{1.4} ] x (100-co	trol[pct]/100)	
Emission (tpy) = 0.	.0032 x material transferred	(tpy) x [(average wind speed	d (mph)/5) ^{1.3} / moi	sture content (pct)/	2) ^{1.4} ] x (100—control	(pet]/100) x (1/2,000)	
Source: Section	n 13.2.4 <u>– Aggregate i</u>	landling and Storage Pil	les, AP-42, Fift	h Edition, Janua	ry 1995.		
						·	
	IN	PUT DATA AND EM		CULATIONS		(3)	
Mean Wind	Act	laur	Material Moisture	Control	Actua	JPM	
Speed	Quantity T		Content	Efficiency	Emissio		
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)	
8.6	1,150	882,681	6.5	50.0	0.72	0.27	
		SOURCES C	OF INPUT DA				
Pai	<u>rameter</u>			ata Source			
Mean Wind Spe	ed	Tampa, FL, Climate of	the States, Third	d Edition, 1985.			
Actual Quantity		TEC, 1997.					
Material Moistur		Average fuel moisture					
Control Efficiend	<b>cy</b>	ECT, 1997. Set at 50 p Permitted control efficient		vely minimize ac	tual emissions for	PSD evaluation.	
			•				
				•			
		NOTES AND	OBSERVATIO	ONS			
Actual PM emiss	sions based on 2,648,0	944 tpy of fuel used. Act	tual fuel use is t	he average of th	e 1995 and 1996 a	ctual fuel	
used, 2,528,3	334 tons and 2,767,753	tons, respectively.					
Actual fuel deliv	ery was assumed to be	e equally divided among	the barge clam	shell, barge con	tinuous, and rail u	nloading	
systems, or 88	82,681 tons per system	ı <b>.</b>					
Actual short-term emissions based on clamshell and continuous unloading systems operating simultaneously at 1,150 tph, each							
		DATA	CONTROL				
Data Collecte	ed by:	A. Trbovich			Date:	09/16/97	
Evaluated by	:	A. Trbovich			Date:	09/16/97	
Data Entered	by:	A. Trbovich		·	Date:	09/16/97	
Reviewed by	:				Date:		

Tampa Electric Company - F.J. Gannon Station

FH-003

EMISSION SOURCE TYPE

Figure:

**Emission Source Description:** 

FACILITY AND SOURCE DESCRIPTION

Fuel Handling - Barge to Continuous Unloader (Spillage)

Emission Control Method(s)/ID No.(s): Barge Enclosure

**Emission Point ID:** 

FH-003

Transfer Point ID(s):

#### EMISSION ESTIMATION EQUATIONS

Emission (lb/hr) = 0.0032 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) x (1/2,000)

Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995.

	IN	PUT DATA AND EM	//SSIONS CAL Material	CULATIONS		
Mean Wind Speed	d Actual Quantity Transferred		Moisture Content	Control Efficiency	Actual PM Emission Rates	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	1,150	882,681	6.5	50.0	0.72	0.27

	SOURCES OF INPUT DATA
Parameter	Data Source
Mean Wind Speed	Tampa, FL, Climate of the States, Third Edition, 1985.
Actual Quantity Transferred	TEC, 1997.
Material Moisture Content	Average fuel moisture content; TEC, 1994.
Control Efficiency	ECT, 1997. Set at 50 pct to conservatively minimize actual emissions for PSD evaluation.
·	Permitted control efficiency is 0 pct.
	· ·

#### NOTES AND OBSERVATIONS

Actual PM emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel

used, 2,528,334 tons and 2,767,753 tons, respectively.

Actual fuel delivery was assumed to be equally divided among the barge clamshell, barge continuous, and rail unloading

systems, or 882,681 tons per system.

Actual short-term emissions based on clamshell and continuous unloading systems operating simultaneously at 1,150 tph, each

7.	DATA CONTRO	L	
Data Collected by:	A. Trbovich	Date:	09/16/97
Evaluated by:	A. Trbovich	Date:	09/16/97
Data Entered by:	A. Trbovich	Date:	09/16/97
Reviewed by:		Date:	

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

FH-005

MATERIAL TRANSFER – FUGITIVE EMISSION SOURCES Figure:

FACILITY AND SOURCE DESCRIPTION

Emission Source Description: Fuel Handling - West Clamshell to West Hopper

Emission Control Method(s)/ID No.(s):Side Enclosure

Emission Point ID: FH-005 Transfer Point ID(s):

#### EMISSION ESTIMATION EQUATIONS

Emission (lb/hr) = 0.0032 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100)

Emission (tpy) = 0.0032 x material transferred (tpy) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) x (1/2,000)

Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995.

INPUT DATA AND EMISSIONS CALCULATIONS							
			Material				
Mean Wind	ean Wind Actual Speed Quantity Transferred		Moisture	Control	Actual PM Emission Rates		
Speed			Content	Efficiency			
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)	
8.6	1,150	882,681	6.5	85.0	0.21	0.08	

~~~	$D \cap C \cap C$	~	0.4 TO 10 TO 10 A TO 40
		- INP	UT DATA
		和数 14 186	oi pain

<u>Parameter</u>	Data Source		
Mean Wind Speed	Tampa, FL, Climate of the States, Third Edition, 1985.		
Actual Quantity Transferred	TEC, 1997.		
Material Moisture Content	Average fuel moisture content; TEC, 1994.		
Control Efficiency	ECT, 1997. Set at 85 pct to conservatively minimize actual emissions for PSD evaluation.		
	Permitted control efficiency is 25 pct.		

#### NOTES AND OBSERVATIONS

Actual PM emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel

used, 2,528,334 tons and 2,767,753 tons, respectively.

Actual fuel delivery was assumed to be equally divided among the barge clamshell, barge continuous, and rail unloading

systems, or 882,681 tons per system.

Actual short-term emissions based on clamshell and continuous unloading systems operating simultaneously at 1,150 tph, each

	D	4T	4 C	ON	ITR	OL

Data Collected by: A. Trbovich Date: 09/16/97

Evaluated by: A. Trbovich Date: 09/16/97

Data Entered by: A. Trbovich Date: 09/16/97

Reviewed by: Date:

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

FΗ	-0	106
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### MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Continuous Unloader to Conveyor A Emission Control Method(s)/ID No.(s): Enclosure **Emission Point ID:** Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0032 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4 x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Moisture Control Actual PM **Quantity Transferred** Content **Efficiency Emission Rates** Speed (lb/hr) (mph) (ton/hr) (ton/yr) (pct) (pct) 1.150 882,681 85.0 0.21 0.08 8.6 SOURCES OF INPUT DATA <u>Parameter</u> **Data Source** Tampa, FL, Climate of the States, Third Edition, 1985. Mean Wind Speed **Actual Quantity Transferred** TEC, 1997. Average fuel moisture content; TEC, 1994. **Material Moisture Content** ECT, 1997. Set at 85 pct to conservatively minimize actual emissions for PSD evaluation. Control Efficiency Permitted control efficiency is 25 pct. NOTES AND OBSERVATIONS Actual PM emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively. Actual fuel delivery was assumed to be equally divided among the barge clamshell, barge continuous, and rail unloading systems, or 882,681 tons per system. Actual short-term emissions based on clamshell and continuous unloading systems operating simultaneously at 1,150 tph, each DATA CONTROL Data Collected by: A. Trbovich Date: 09/16/97 09/16/97 Evaluated by: A. Trbovich Date: Date: 09/16/97 Data Entered by: A. Trbovich Date:

#### FH-007 Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Conveyor A to Continuous Feeder Emission Control Method(s)/ID No.(s): Enclosure Transfer Point ID(s): **Emission Point ID:** FH-007 EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0032 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Actual PM Mean Wind Actual Moisture Control **Quantity Transferred Emission Rates** Speed Content Efficiency (mph) (ton/hr) (ton/yr) (pct) (pct) (lb/hr) (tpy) 8.6 1.150 882.681 6.5 85.0 0.21 80.0 SOURCES OF INPUT DATA <u>Parameter</u> **Data Source** Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985. Actual Quantity Transferred TEC, 1997. Average fuel moisture content; TEC, 1994. **Material Moisture Content** ECT, 1997. Set at 85 pct to conservatively minimize actual emissions for PSD evaluation. Control Efficiency Permitted control efficiency is 50 pct. NOTES AND OBSERVATIONS Actual PM emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively. Actual fuel delivery was assumed to be equally divided among the barge clamshell, barge continuous, and rail unloading systems, or 882,681 tons per system. Actual short—term emissions based on clamshell and continuous unloading systems operating simultaneously at 1,150 tph, each DATA CONTROL Data Collected by: A. Trbovich Date: 09/16/97

Date:

Date:

09/16/97 09/16/97

A. Trbovich

A. Trbovich

Evaluated by:

Reviewed by:

Data Entered by:

Tampa Electric Company - F.J. Gannon Station

FH-009

EMISSION SOURCE TYPE							
MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure:							
	FACILITY AND SOURCE DESCRIPTION						
Emission Source	e Description:	Fuel Handling - West H	lopper to Conve	yor B			
Emission Contro	ol Method(s)/ID No.(s):						
Emission Point	ID:	FH-009		Transfer Point ID	)(s):		
EMISSION ESTIMATION EQUATIONS							
Emission (Ib (bs)	0.0000 v material transferre	d (ton/hr) x (average wind s			-N/m1.41 (400		
Emission (tpy) = 0	0.0032 x material transferred	(tpy) x [(average wind spee	d (mph)/5) ^{1,3} / mo	moisture content (pct)/2	et <i>j/2)</i>	[pct]/100) x (1/2,000)	
	_	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\					
Source: Sectio	n 13.2.4 – Aggregate F	landling and Storage Pi	les, AP-42, Fift	h Edition, Januar	y 1995.		
	INI	PUT DATA AND EM	ISSIONS CAL	CULATIONS			
			Material	011	<b>A</b> - <b>A</b>	- L Date	
Mean Wind Speed	Act Quantity T		Moisture Content	Control Efficiency	Actual PM Emission Rates		
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)	
8.6	1,150	882,681	6.5	85.0	0.21	0.08	
	SOURCES OF INPUT DATA						
Pa	rameter			ata Source			
Mean Wind Spe		Tampa, FL, Climate of	the States, Thire	d Edition, 1985.			
Actual Quantity  Material Moistu		TEC, 1997.  Average fuel moisture	content: TEC. 1				
Control Efficien		ECT, 1997. Set at 85 p			tual emissions for	PSD evaluation.	
		Permitted control effici	ency is 50 pct.				
		NOTES AND	OBSERVATION	ONS			
Actual PM emis	sions based on 2,648,0	944 tpy of fuel used. Ac	tual fuel use is t	he average of the	1995 and 1996 a	actual fuel	
used, 2,528,	334 tons and 2,767,753	tons, respectively.				_	
Actual fuel deli	very was assumed to be	e equally divided among	the barge clam	shell, barge cont	inuous, and rail u	ınloading	
systems, or 8	82,681 tons per system	1.					
Actual short-te	erm emissions based or	n clamshell and continue	ous unloading s	ystems operating	simultaneously a	ıt 1,150 tph, each	
					<u>-</u>		
		DATA	CONTROL				
Data Collect	ed by:	A. Trbovich		ַ	Date:	09/16/97	
Evaluated by	<b>/</b> :	A. Trbovich			Date:	09/16/97	
Data Entered	d by:	A. Trbovich		I	Date:	09/16/97	

Date:

FH-011 Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION Fuel Handling - Conveyor B to Conveyor C **Emission Source Description:** Emission Control Method(s)/ID No.(s): Enclosure **Emission Point ID:** Transfer Point ID(s): FH-011 EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0032 x material transferred (ton/hr) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4 x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Actual Moisture Control **Actual PM Quantity Transferred** Content Efficiency **Emission Rates** Speed (mph) (ton/hr) (ton/yr) (pct) (pct) (lb/hr) 2.300 1,765,362 6.5 85.0 0.43 0.16 8.6 SOURCES OF INPUT DATA **Parameter** Data Source Tampa, FL, Climate of the States, Third Edition, 1985. Mean Wind Speed Actual Quantity Transferred Average fuel moisture content; TEC, 1994. **Material Moisture Content** ECT, 1997. Set at 85 pct to conservatively minimize actual emissions for PSD evaluation. Control Efficiency Permitted control efficiency is 50 pct. NOTES AND OBSERVATIONS Actual PM emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively. Actual fuel delivery was assumed to be equally divided among the barge clamshell, barge continuous, and rail unloading systems, or 882,681 tons per system.

	DATA CONTRO	DL	
Data Collected by:	A. Trbovich	Date:	09/16/97
Evaluated by:	_A. Trbovich	Date:	09/16/97
Data Entered by:	A. Trbovich	Date:	09/16/97
Reviewed by:		Date:	

#### FH-012 Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE **MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES** Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Conveyor C to Conveyor D1/D2 Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant Sprays **Emission Point ID:** FH-012 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0032 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x ((average wind speed (mph)/5) 1.3 / moisbure content (pct)/2) 1.4 x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Moisture Control **Actual PM** Actual **Quantity Transferred Emission Rates** Speed Content Efficiency (mph) (ton/hr) (ton/yr) (pct) (pct) (lb/hr) (tpy) 1,765,362 90.0 0.29 0.11 8.6 2,300 6.5 SOURCES OF INPUT DATA **Parameter** Data Source Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985. **Actual Quantity Transferred** TEC, 1997. **Material Moisture Content** Average fuel moisture content; TEC, 1994. Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling for Control Efficiency Fugitive Particulate Sources, UARG, September 1981. NOTES AND OBSERVATIONS Actual PM emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively. Actual fuel delivery was assumed to be equally divided among the barge clamshell, barge continuous, and rail unloading systems, or 882,681 tons per system. DATA CONTROL Date: 08/07/97 Data Collected by: A. Trbovich

Date:

Date:

Date:

08/07/97

08/07/97

A. Trbovich

A. Trbovich

FH	AC6	BT	W	K1

Evaluated by:

Reviewed by:

Data Entered by:

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

FH-013

MATE	RIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:	
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source D	escription:	Fuel Handling - Rail Ca	r to Hopper			· 
Emission Control N	lethod(s)/ID No.(s):	Partial Enclosure				
Emission Point ID:		FH-013		Transfer Point II	O(s):	
		EMISSION ESTIN	IATION EQUA	NTIONS		
Emission (tpy) = 0.003	32 x material transferred	d (ton/hr) x [(average wind s (tpy) x [(average wind speed landling and Storage Pil	d (mph)/5) ^{1.3} / moi	sture content (pct)/2	2) ^{1.4} ] x (100—control	ntrol[pet]/100) [pet]/100) x (1/2,000)
			,···		,	_
	IN	PUT DATA AND EMI	SSIONS CAL	CULATIONS		
Mean Wind Speed	Act Quantity T	rual ransferred	Material Moisture Content	Control Efficiency	Actua Emissio	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	882,681	6.5	85.0	0.43	0.08
used, 2,528,334 Actual fuel delivery	nsferred Content ns based on 2,648,0 tons and 2,767,753	e equally divided among	the States, Third content; TEC, 19 ct to conservative ency is 40 pct.  OBSERVATION tual fuel use is the	ONS  he average of the	e 1995 and 1996 a	ictual fuel
Data Callages			CONTROL		Date:	09/16/97
Data Collected		A. Trbovich		_		
Evaluated by:		A. Trbovich		_		09/16/97
Data Entered by	y:	A. Trbovich			Date:	09/16/97
Reviewed by:					Date:	

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

FH-014

#### **MATERIAL TRANSFER -- FUGITIVE EMISSION SOURCES** Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Hopper to Conveyor L Emission Control Method(s)/ID No.(s): Enclosure **Emission Point ID:** Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0032 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Actual PM Mean Wind Actual Moisture Control Quantity Transferred **Emission Rates** Speed Content Efficiency (ton/yr) (lb/hr) (tpy) (ton/hr) (pct) (pct) (mph) 85.0 0.43 8.6 2,300 6.5 0.08 882,681 SOURCES OF INPUT DATA Parameter Parameter Data Source Tampa, FL, Climate of the States, Third Edition, 1985. Mean Wind Speed **Actual Quantity Transferred** TEC, 1997. **Material Moisture Content** Average fuel moisture content; TEC, 1994. ECT, 1997. Set at 85 pct to conservatively minimize actual emissions for PSD evaluation. **Control Efficiency** Permitted control efficiency is 50 pct. NOTES AND OBSERVATIONS Actual PM emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively. Actual fuel delivery was assumed to be equally divided among the barge clamshell, barge continuous, and rail unloading systems, or 882,681 tons per system. DATA CONTROL A. Trbovich Date: 09/16/97 Data Collected by: A. Trbovich Date: 09/16/97 Evaluated by: 09/16/97 Data Entered by: A. Trbovich Date: Date:

## FH-015 Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Conveyor L to Conveyor D1/D2 Emission Control Method(s)/ID No.(s): Enclosure **Emission Point ID:** Transfer Point ID(s): FH-015 EMISSION ESTIMATION EQUATIONS Emission (lb/lv) = 0.0032 x material transferred (ton/lv) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4 x (100 -control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Actual Moisture Control Actual PM **Quantity Transferred** Content **Emission Rates** Speed Efficiency (ton/yr) (mph) (ton/hr) (pct) (pct) (lb/hr) (tpy) 882,681 90.0 0.29 0.05 8.6 2.300 SOURCES OF INPUT DATA Data Source **Parameter** Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985. Actual Quantity Transferred TEC, 1997. Average fuel moisture content; TEC, 1994. **Material Moisture Content** Table 3-16, Fugitive Emissions From Coal-Fired Power Plants, EPRI, June 1984. **Control Efficiency** NOTES AND OBSERVATIONS Actual PM emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively. Actual fuel delivery was assumed to be equally divided among the barge clamshell, barge continuous, and rail unloading systems, or 882,681 tons per system.

Data Collected by:	A. Trbovich	Date:	09/16/97
Evaluated by:	A. Trbovich	Date:	09/16/97
Data Entered by:	A. Trbovich	Date:	09/16/97
Reviewed by:		Date:	

Tampa Electric Company - F.J. Gannon Station

FH-016

#### EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Conveyor D1 to Conveyor M1 Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant Sprays **Emission Point ID:** FH-016 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0032 x material transferred (ton/hr) x [(average wind speed (mph)/5) $^{1.3}$ / moisture content (pct)/2) $^{1.4}$ ] x (100—control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Actual Moisture Control **Actual PM Quantity Transferred** Content **Efficiency Emission Rates** Speed (ton/yr) (lb/hr) (mph) (ton/hr) (pct) (pct) (tpy) 8.6 0.29 80.0 2.300 1,324,022 6.5 90.0 SOURCES OF INPUT DATA **Data Source Parameter** Tampa, FL, Climate of the States, Third Edition, 1985. Mean Wind Speed **Actual Quantity Transferred** TEC, 1997. Average fuel moisture content; TEC, 1994. **Material Moisture Content** Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling for Control Efficiency Fugitive Particulate Sources, UARG, September 1981. NOTES AND OBSERVATIONS Actual PM emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively. Actual fuel delivery was assumed to be equally divided between conveyors D1 and D2, or 1,324,022 tons per conveyor. DATA CONTROL Data Collected by: 08/07/97 A. Trbovich Date: Evaluated by: A. Trbovich Date: 08/07/97

A. Trbovich

Date:

Date:

08/07/97

Data Entered by:

Tampa Electric Company - F.J. Gannon Station

FH-017

#### EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION Emission Source Description: Fuel Handling - Conveyor D2 to Conveyor M2 Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant Sprays **Emission Point ID:** FH-017 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0032 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4 x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind **Actual PM** Actual Moisture **Control** Speed **Quantity Transferred** Content **Efficiency Emission Rates** (ton/hr) (ton/yr) (pct) (lb/hr) (tpy) (mph) (pct) 6.5 90.0 0.29 0.08 8.6 2,300 1,324,022 SOURCES OF INPUT DATA **Parameter Data Source** Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985. TEC, 1997. **Actual Quantity Transferred Material Moisture Content** Average fuel moisture content; TEC, 1994. Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Control Efficiency Fugitive Particulate Sources, UARG, September 1981. NOTES AND OBSERVATIONS Actual PM emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively. Actual fuel delivery was assumed to be equally divided between conveyors D1 and D2, or 1,324,022 tons per conveyor. DATA CONTROL Data Collected by: A. Trbovich Date: 08/07/97 Evaluated by: A. Trbovich Date: 08/07/97

A. Trbovich

Date:

Date:

08/07/97

Data Entered by:

Tampa Electric Company - F.J. Gannon Station

FH-018

		EMISSION -	SOURCE TYP	PE		
MA	TERIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:	
		FACILITY AND SO	URCE DESC	RIPTION		5.75
Emission Sourc	e Description:	Fuel Handling - Convey	yor M1 to Conve	yor E1		
Emission Contro	ol Method(s)/ID No.(s):	Enclosure With Dust Sup	ppressant Spray	/8		
Emission Point	ID:	FH-018		Transfer Point II	D(s):	
		EMISSION ESTIM	AATION EQUA	ATIONS		
Emission (lb/hr) =	0.0032 x material transferre	d (ton/hr) x [(average wind s	peed (mph)/5) ^{1.3} /	moisture content (r	oct)/2) ^{1.4} ] x (100-co	ntrol[pct]/100)
Emission (tpy) = 0	.0032 x material transferred	(tpy) x [(average wind speed	d (mph)/5) ^{1.3} / moi	sture content (pct)/i	2) ^{1.4} ] x (100-control	[pct]/100) x (1/2,000)
Source: Section	n 13 2 4 – Aggregate k	landling and Storage Pil	les AP-42 Fifti	h Edition Januar	ny 1995	
Source. Secuoi	1 13.2.4 - Aggregate n	anding and Storage Fil	168, AF - 42, Filti	n Edition, Januar	y 1993.	
	•		10010110001	0.00		
	<u>INI</u>	PUT DATA AND EMI	ISSIONS CAL Material	CULATIONS		
Mean Wind	Act	ual	Moisture	Control	Actua	al PM
Speed	Quantity T	ransferred	Content	Efficiency	Emissio	n Rates
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	1,324,022	6.5	90.0	0.29	0.08
		SOURCES	OF INPUT DA	TA		
Pa	rameter			ata Source		
Mean Wind Spe	ed	Tampa, FL, Climate of	the States, Third	d Edition, 1985.		
<b>Actual Quantity</b>	Transferred	TEC, 1997.				
Material Moistur	e Content	Average fuel moisture				
Control Efficience	cy	Table 3.2.17-2, Workb			and Dispersion M	odeling of
		Fugitive Particulate Sou	urces, UANG, Se	sptember 1961.		
		NOTES AND	ORSERVATIO	ONG		
Actual PM emiss	sions based on 2,648,0	44 tpy of fuel used. Act	lual fuel use is t	he average of the	a 1995 and 1996 a	ictual fuel
used, 2,528,3	334 tons and 2,767,753	tons, respectively.				
Actual fuel deliv	ery was assumed to be	equally divided between	en conveyors M1	and M2, or 1,32	24,022 tons per co	nveyor.
•						
		DATA	CONTROL			
Data Collecte	ed by:	A. Trbovich		ı	Date:	08/07/97
Evaluated by	<b>':</b>	A. Trbovich		_1	Date:	08/07/97
				08/07/97		

Date:

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

FH-019

#### **MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES** Figure: FACILITY AND SOURCE DESCRIPTION Emission Source Description: Fuel Handling - Conveyor M2 to Conveyor E2 Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant Sprays Emission Point ID: FH-019 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0032 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x ((average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Actual PM Mean Wind Actual Moisture Control **Quantity Transferred** Content **Efficiency Emission Rates** Speed (mph) (ton/hr) (ton/yr) (pct) (pct) (tpy) 8.6 2,300 1,324,022 90.0 0.29 0.08 SOURCES OF INPUT DATA **Data Source Parameter** Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985. Actual Quantity Transferred TEC, 1997. Average fuel moisture content; TEC, 1994. Material Moisture Content Control Efficiency Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Fugitive Particulate Sources, UARG, September 1981. NOTES AND OBSERVATIONS Actual PM emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively. Actual fuel delivery was assumed to be equally divided between conveyors M1 and M2, or 1,324,022 tons per conveyor. DATA CONTROL Date: 08/07/97 Data Collected by: A. Trbovich 08/07/97 Evaluated by: A. Trbovich Date: Data Entered by: A. Trbovich Date: 08/07/97

Date:

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

FH-020

MATE	RIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:	
·		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source D	escription:	Fuel Handling - Conve	yor E1 to Storag	e Pile		
Emission Control N	Method(s)/ID No.(s):	Dust Suppressant				
Emission Point ID:		FH-020		Transfer Point II	D(s):	
		EMISSION ESTIN	IATION EQU	ATIONS		
		d (ton/hr) x [(average wind s (tpy) x [(average wind speed				
Source: Section 1	3.2.4 – Aggregate F	landling and Storage Pi	les, AP-42, Fift	h Edition, Januar	y 1 <u>995.</u>	
	INI	PUT DATA AND EM		CULATIONS		
Mean Wind	Act	n.al	Material Moisture	Control	Actua	J. DM
Speed	Quantity T		Content	Efficiency	Emissio	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	1,324,022	6.5	70.0	0.86	0.25
		SOURCES	OF INPUT DA	TA		
Parar	meter			ata Source_		
				_		
Mean Wind Speed		Tampa, FL, Climate of	the States, Third	d Edition, 1985.		
Actual Quantity Tra Material Moisture C		TEC, 1997.  Average fuel moisture	content: TEC 19	994		
Control Efficiency	, onton	ECT, 1997. Set at 70 p	ct to conservati	_	tual emissions for	PSD evaluation.
			,		_	
		NOTES AND	OPCEDIATIO	ONC		
Actual PM emission	ns based on 2,648,0	44 tpy of fuel used. Act			1995 and 1996 a	ctual fuel
used, 2,528,334	tons and 2,767,753	tons, respectively.				
Actual fuel delivery	was assumed to be	e equally divided between	en convevors E1	and E2. or 1.324	1.022 tons per cor	nvevor.
						,
			· ·	·		
			CONTROL			
Data Collected	by:	A. Trbovich	**************************************	[	Date:	09/16/97
Evaluated by:		A. Trbovich		-		09/16/97
Data Entered b		A. Trbovich	<u> </u>			09/16/97
Reviewed by:	•				 Date:	-

## FH-021 Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Conveyor E2 to Storage Pile Emission Control Method(s)/ID No.(s):Dust Suppressant **Emission Point ID:** FH-021 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0032 x material transferred (ton/hr) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Actual Moisture Control Actual PM Emission Rates **Quantity Transferred** Content **Efficiency** Speed (mph) (ton/hr) (ton/yr) (pct) (pct) (ib/hr) (tpy) 2,300 70.0 0.86 0.25 8.6 1,324,022 SOURCES OF INPUT DATA <u>Parameter</u> **Data Source** Tampa, FL, Climate of the States, Third Edition, 1985. Mean Wind Speed **Actual Quantity Transferred** TEC, 1997. **Material Moisture Content** Average fuel moisture content; TEC, 1994. Control Efficiency ECT, 1997. Set at 70 pct to conservatively minimize actual emissions for PSD evaluation. Permitted control efficiency is 0 pct. NOTES AND OBSERVATIONS Actual PM emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively. Actual fuel delivery was assumed to be equally divided between conveyors E1 and E2, or 1,324,022 tons per conveyor.

	DATA CONTRO	L	
Data Collected by:	A. Trbovich	Date:	09/16/97
Evaluated by:	A. Trbovich	Date:	09/16/97
Data Entered by:	A. Trbovich	Date:	09/16/97
Reviewed by:		Date:	

Tampa Electric Company – F.J. Gannon Station

FH-022 EMISSION SOURCE TYPE STORAGE PILE WINDBLOWN FUGITIVE DUST EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION Emission Source Description: Fuel Storage - North Storage Pile Emission Control Method(s)/ID No.(s): **Application of Chemical Dust Suppressant** Emission Point ID: Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Estimates of fugitive PM were made using procedures contained in AP-42, Section 13.2.5, Industrial Wind Erosion. Source: Section 13.2.5 - Industrial Wind Erosion, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS 1,12 m/s Control Efficiency: Threshold Friction Velocity: Pile Width (m): Pile Height (m): 21 Surface Area (m²) 16,758 215 Pile Length (m): 70 Meteorological Affected Pile Actual PM Friction Affected Emission Period Velocity Potential Surface Area **Emission Rates** Area (m²)  $(q/m^2)$ (m/s) (pct) (b/hr) (py) 670.3 1.18 0.0024 1.30 6.38 < 0.0001 670.3 0.05 30 1.13 0.26 4 1.33 4 670.3 1.44 0.0029 37 7.81 65 1.48 16.52 14 2,346.1 10,68 0.0214 0.0162 65 1.80 43.82 4 670.3 8.09 1.30 6.38 1.18 0.0024 670.3 77 4 670.3 1.44 0.0029 90 1.33 7.81 Maximum Per Period 18.77 N/A N/A 0.0480 SOURCES OF INPUT DATA **Data Source** <u>Parameter</u> Uncrusted coal pile, Table 13.2.5-2., AP-42, January 1995. Threshold Friction Velocity (m/s) Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling Control Efficiency (pct) for Fugitive Particulate Sources, UARG, September 1991. Fuel Pile Dimensions (m) Estimated: ECT, 1997. Pile Surface Area (m²) Calculated: ECT, 1997. 1986 NWS data, processed per AP-42, ECT, 1997. Meteorological Periods Equation, Section 13.2.5, AP-42, January 1995. Friction Velocity (m/s) Potential Emission (g/m²) Equation, Section 13.2.5, AP-42, January 1995. Affected Pile Surface Area (pct) Table 13.2.5-3., Section 13.2.5, AP-42, January 1995. Affected Area Calculated: ECT, 1997. NOTES AND OBSERVATIONS DATA CONTROL Date: 09/16/97 Data Collected by: A. Trbovich 09/16/97 Evaluated by: A. Trbovich Date: Data Entered by: A. Trbovich Date: 09/16/97

Date:

Tampa Electric Company - F.J. Gannon Station

FH-023a

		l	MISSION SOU	RCE TYPE			
STORAGE F	PILE WINDS	BLOWN FUGITI	VE DUST EMISS	ION SOURCES		Figure:	
		FACILI	TY AND SOURC	E DESCRIPTION	1		
Emission Source Description:		Fuel Storage — Eas	t Portion of South SI	orage Pile			
Emission Control Method(s)/ID	No.(s):	Application of Chen	nical Dust Suppress	ant .			
Emission Point ID:		FH-023a		1	ransfer Point ID(	s):	
		EMISS	ION ESTIMATIO			•	
					· · · · · ·		
Estimates of fugitive PM were m	nade using pro	cedures contained	n AP-42, Section 13	3.2.5, Industrial Wind	Erosion.		•
Source: Cartion 13.2 5 Indus	- -	-ion AD_42 Ei8h E	dition leavent 100f	•			
Source: Section 13.2.5 - Indus	PERMIT WHILE CLO	5001, AP -42, FBU1 C	COUCH, CERTAIN 1865	<u> </u>			
		INPUT DAT	A AND EMISSIC	NS CALCULATI	ONS		
Threshold Friction Velocity:	1.12		Control Efficiency:	50 pc	<b>*</b>		
Pile Length (m):	170	Pile Width (m):	91	Pile Height (m):	21	Surface Area (m ² )	16,754
Meteorological	Friction	Emission	Affected Pile	Affected		al PM	
Period	Velocity	Potential (g/m²)	Surface Area	Area (m²)		on Rates	
	(m/s)	(g/m ⁻ )	(pct)	(m-)	(lb/hr)	<u>(fb)</u>	
14	1.30	6.38	4	670.2	1.18	0.0024	
30	1.13	0.26	4	670.2	0.05	<0.0001	
37	1.33	7.81	4	670.2	1.44	0.0029	
65	1.48	16.52	14	2,345.5	10,68	0.0214	1.
65	1.80 1.30	43.82 6.38	- 4	670.2 670.2	8,09 1,18	0.0162 0.0024	
90	1.33	7.81	4	670.2	1,44	0.0029	
		7.0.	*,	5.5			
1			Maximum P		18.77	N/A	
		Ļ		Total	NA	0.0480	
			OURCES OF IN	PITTOATA	_	l	
Parameter			0011020.0	Data S	ource		
			N.		•	•	
Threshold Friction Velocity (m/s	s)		e, Table 13.2.5-2, /			<u>_</u> .	•
Control Efficiency (pct)		_	orkbook on Estimati	•	lodeling		•
Fuel Pile Dimensions (m)		Estimated: ECT, 19	late Sources, UARG	, September 1991.	<u> </u>		
Pile Surface Area (m ² )		Calculated: ECT, 1				<u> </u>	
Meteorological Periods			rocessed per AP-42	, ECT, 1997.			
Friction Velocity (m/s)		Equation, Section	13.2.5, AP-42, Janu	ary 1995.			
Potential Emission (g/m²)			13.2.5, AP-42, Janu				•
Affected Pile Surface Area (pct)	<u> </u>	<del></del>	ection 13.2.5, AP-4	2, January 1995.	<u> </u>	•	
Affected Area	•	Calculated; ECT, 1	997.			<del></del>	· · · · · · · · · · · · · · · · · · ·
		N	TES AND OBS	ERVATIONS			
	s after the second of the second of the second of						
		· · · · · · · · · · · · · · · · · · ·					
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		.,.,.,.			200000000000000000000000000000000000000		
			DATA CON	TROL			
Data Collected by:		A. Trbovich	<u> </u>			Date:	09/16/97
Evaluated by:		A. Trbovich				Date:	09/16/97
Data Entered by:		A. Trbovich				Date:	09/16/97
Reviewed by:						Date:	

#### EMISSION INVENTORY WORKSHEET FH-023b Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE STORAGE PILE WINDBLOWN FUGITIVE DUST EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Storage - West Portion of South Storage Pile Emission Control Method(s)/ID No.(s): Application of Chemical Dust Suppressant Emission Point ID: Transfer Point ID(s): FH-0236 EMISSION ESTIMATION EQUATIONS Estimates of fugitive PM were made using procedures contained in AP-42, Section 13.2.5, Industrial Wind Erosion. Source: Section 13.2.5 - Industrial Wind Erosion, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS 1.12 m/s Threshold Friction Velocity: Control Efficiency: 140 Pile Width (m): 125 Pile Height (m): 21 Surface Area (m²) Pile Length (m): 18,855 Meteorological Friction **Emission** Affected Pile Affected Actual PM Velocity **Potential Emission Rates** Period Surface Area (m/s) (g/m²) (pct) (m²) (lb/hr) (DA) 1.30 6.38 754.2 1.33 0.0027 30 1.13 0.26 754.2 0.05 0.0001 754.2 0.0032 37 1.33 7.81 4 1.62 65 1.48 16.52 12.01 0.0240 14 2,639.6 1.80 65 43.82 4 754.2 9.11 0.0182 1.33 0.0027 77 1.30 6.38 4 754.2 0.0032 90 1.33 7.81 754.2 1.62 Maximum Per Period 21.12 N/A N/A 0.0541 SOURCES OF INPUT DATA <u>Parameter</u> Data Source Threshold Friction Velocity (m/s) Uncrusted coal pile, Table 13.2.5-2., AP-42, January 1995. Control Efficiency (pct) Table 3.2.17-2, Workbook on Estimation and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1991. Fuel Pile Dimensions (m) Estimated: ECT, 1997. Pile Surface Area (m2) Calculated: ECT, 1997. 1986 NWS data, processed per AP-42, ECT, 1997. Meteorological Periods Friction Velocity (m/s) Equation, Section 13.2.5, AP-42, January 1995. Potential Emission (g/m²) Equation, Section 13.2.5, AP-42, January 1995. Affected Pile Surface Area (pct) Table 13.2.5-3., Section 13.2.5, AP-42, January 1995. Affected Area Calculated: ECT, 1997. NOTES AND OBSERVATIONS DATA CONTROL Data Collected by: A. Trbovich Date: 09/16/97 09/16/97 Evaluated by: A. Trbovich Date: 09/16/97 Data Entered by: A. Trbovich Date: Reviewed by: Date:

FH-024

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

MATER	RIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:	
FACILITY AND SOURCE DESCRIPTION				RIPTION	-	
Emission Source De	escription:	Fuel Handling - Underg	round Reclaim	System to Conve	eyor F1	
Emission Control M	ethod(s)/ID No.(s):	Enclosure With Dust Sup	ppressant	<u> </u>		_
Emission Point ID:		FH-024		Transfer Point I	D(s):	
		EMISSION ESTIM	IATION EQU	ATIONS		
Emission (Ib Ba) — 0.00	00	4 4 - 4 3 - 1/2				-4-45-414400
		d (ton/hr) x [(average wind s (tpy) x [(average wind speed				
Source: Section 13	3.2.4 - Aggregate I	landling and Storage Pil	es, AP-42, Fifti	h Edition, Janua	ry 1995.	_
	<del></del>		_			
	INI	PUT DATA AND EMI	SSIONS CAL	CULATIONS		
			Material			
Mean Wind	Act		Moisture Content	Control Efficiency	Actua Emissio	
Speed (mph)	Quantity T (ton/hr)	(ton/vr)	(pct)	(pct)	(lb/hr)	(tpy)
	<del>-</del>					
8.6	552	882,681	6.5	85.0	0.10	0.08
		SOURCES	FINPUT DA	TA		
<u>Param</u>	neter		· D	ata Source		
Mean Wind Speed		Tampa, FL, Climate of t	the States Third	l Edition 1985		
Actual Quantity Trai	nsferred	TEC, 1997.	are otates, rime	Landon, 1000.		
Material Moisture C		Average fuel moisture of	content; TEC, 19	994.		,
Control Efficiency		Table 3.2.17-2, Workb			and Dispersion M	odeling of
		Fugitive Particulate Soc	irces, UAHG, Se	eptember 1981.		
			0000000			
		NOTES AND	<u>OBSERVATIO</u>	<u>)NS</u>		
Actual PM emission	s based on 2,648,0	44 tpy of fuel used. Act	ual fuel use is t	he average of th	e 1995 and 1996 a	ictual fuel
used, 2,528,334 t	tons and 2,767,753	tons, respectively.				
		<u> </u>			4 000 001 1	
Actual fuel reclaimi	ng was assumed to	be equally divided amo	ng the reclaime	rs F1, F2, and F	4, or 882,681 tons	per reciaimer.
Actual short-term	emissions based or	reclaimers F1, F2, and	F4 operating si	multaneously at	533 tph, each.	
		DATA	CONTROL			
			CONTROL			
Data Collected I	by:	A. Trbovich			Date:	09/16/97
Evaluated by:		A. Trbovich			Date:	09/16/97
Data Entered by	r:	A. Trbovich			Date:	09/16/97
Reviewed by:					Date:	

Tampa Electric Company — F.J. Gannon Station

FH-025 EMISSION SOURCE TYPE

#### MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Underground Reclaim System to Conveyor F4 Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant **Emission Point ID:** FH-025 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0032 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Moisture **Actual PM Actual** Control **Quantity Transferred Emission Rates** Speed Content **Efficiency** (lb/hr) (mph) (ton/hr) (ton/yr) (pct) (pct) (tpy) 553 882,681 85.0 0.10 0.08 SOURCES OF INPUT DATA **Parameter** Data Source Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985. TEC, 1997. Actual Quantity Transferred Average fuel moisture content; TEC, 1994. **Material Moisture Content** Control Efficiency Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Fugitive Particulate Sources, UARG, September 1981. NOTES AND OBSERVATIONS Actual PM emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively. Actual fuel reclaiming was assumed to be equally divided among the reclaimers F1, F2, and F4, or 882,681 tons per reclaimer. Actual short-term emissions based on reclalmers F1, F2, and F4 operating simultaneously at 533 tph, each. DATA CONTROL Date: 09/16/97 Data Collected by: A. Trbovich A. Trbovich Date: 09/16/97 Evaluated by: 09/16/97 Date: Data Entered by: A. Trbovich Reviewed by: Date:

Tampa Electric Company - F.J. Gannon Station

FH	I-(	)27
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09/16/97

Date:

Date:

#### EMISSION SOURCE TYPE **MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES** Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Underground Reclaim System to Conveyor F2 Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant **Emission Point ID:** Transfer Point ID(s): FH-027 EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0032 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100—control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Moisture Actual PM Mean Wind Actual **Control** Speed **Quantity Transferred** Content Efficiency **Emission Rates** (mph) (ton/hr) (ton/yr) (pct) (pct) (lb/hr) (tpy) 553 85.0 0.10 0.08 8.6 882,681 6.5 SOURCES OF INPUT DATA **Data Source Parameter** Tampa, FL, Climate of the States, Third Edition, 1985. Mean Wind Speed **Actual Quantity Transferred** TEC, 1997. Average fuel moisture content; TEC, 1994. **Material Moisture Content** Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Control Efficiency Fugitive Particulate Sources, UARG, September 1981. NOTES AND OBSERVATIONS Actual PM emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively. Actual fuel reclaiming was assumed to be equally divided among the reclaimers F1, F2, and F4, or 882,681 tons per reclaimer. Actual short—term emissions based on reclaimers F1, F2, and F4 operating simultaneously at 533 tph, each. DATA CONTROL Date: 09/16/97 Data Collected by: A. Trbovich Date: 09/16/97 Evaluated by: A. Trbovich

A. Trbovich

Data Entered by:

Tampa Electric Company – F.J. Gannon Station

FH-028

		EMISSION	SUUHUE ITI			Mile the explane segment is	
MAT	ERIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:		
		FACILITY AND SO	URCE DESC	RIPTION			
Emission Source	Description:	Fuel Handling – Convey	or F1 to Conve	yor G1/G2			
Emission Contro	i Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	ys			
Emission Point II	D:	FH-028		Transfer Point I	D(s):		
		EMISSION ESTIM	IATION EQU	ATIONS			
		d (ton/hr) x [(average wind s					
Emission (tpy) = 0.0	0032 x material transferred	(tpy) x [(average wind speed	1 (mph)/5) 1.0 / moi	isture content (pct)/	2) ' · · · ] x (100—control	[pct]/100) x (1/2,000)	
Source: Section	13.2.4 – Aggregate F	landling and Storage Pil	es. AP-42. Fift	h Edition. Janua	rv 1995.		
	1.00	<u> </u>			.,		
	IN	PUT DATA AND EMI		CULATIONS			
Mean Wind	Act	nual .	Material Moisture	Control	Actua	at PM	
Speed	Quantity T		Content	Efficiency	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	n Rates	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)	
8.6	553	882,681	6.5	90.0	0.07	0.05	
		SOURCES C	F INPUT DA	TA			
Par	ameter			Data Source			
Mean Wind Spee		Tampa, FL, Climate of the States, Third Edition, 1985.					
Actual Quantity 1 Material Moisture		TEC, 1997.  Average fuel moisture content; TEC, 1994.					
Control Efficienc	· · · · · · · · · · · · · · · · · · ·	Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of					
	•	Fugitive Particulate Sou			,	J	
		NOTES AND	ORCEDVATIO	ONG			
		NOILSAND	<u>OBSLIEVALIC</u>	<i>7,</i> 4 <i>5</i>		HAR TERMINA	
Actual PM emiss	ions based on 2,648,0	44 tpy of fuel used. Act	ual fuel use is t	he average of th	e 1995 and 1996 a	actual fuel	
used, 2,528,3	34 tons and 2,767,753	tons, respectively.					
Actual tuel reclai	iming was assumed to	be equally divided amo	ng the reclaime	ers F1, F2, and F	4, or 882,681 tons	per reclaimer.	
Actual short-ter	m emissions based or	reclaimers F1, F2, and	F4 operating si	multaneously at	533 tph, each.		
				•			
		DATA (	CONTROL				
Data Collecte	d by:	A. Trbovich			Date:	08/07/97	
Evaluated by:		A. Trbovich			Date:	08/07/97	
Data Entered	bv:	A. Trbovich			Date:	08/07/97	

Date:

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

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#### **MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES** Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Conveyor F4 to Conveyor G1/G2 Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant Sprays Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0032 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x ((average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4 (100-control [pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Mean Wind Actual Moisture Control **Actual PM Quantity Transferred Emission Rates** Speed Content Efficiency (pct) (lb/hr) (mph) (ton/hr) (ton/yr) (pct) 882,681 90.0 0.07 0.05 553 6.5 8.6 SOURCES OF INPUT DATA **Data Source** <u>Parameter</u> Tampa, FL, Climate of the States, Third Edition, 1985. Mean Wind Speed **Actual Quantity Transferred** TEC, 1997. Average fuel moisture content; TEC, 1994. **Material Moisture Content** Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Control Efficiency Fugitive Particulate Sources, UARG, September 1981. NOTES AND OBSERVATIONS Actual PM emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively. Actual fuel reclaiming was assumed to be equally divided among the reclaimers F1, F2, and F4, or 882,681 tons per reclaimer. Actual short—term emissions based on reclaimers F1, F2, and F4 operating simultaneously at 533 tph, each. DATA CONTROL Data Collected by: A. Trbovich Date: 08/07/97 Date: 08/07/97 Evaluated by: A. Trbovich 08/07/97 Data Entered by: A. Trbovich Date: Reviewed by: Date:

Tampa Electric Company - F.J. Gannon Station

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# EMISSION SOURCE TYPE

## MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES

Figure:

**Emission Source Description:** 

FACILITY AND SOURCE DESCRIPTION Fuel Handling - Conveyor F2 to Conveyor G1/G2

Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant Sprays

**Emission Point ID:** 

FH-031

Transfer Point ID(s):

## EMISSION ESTIMATION EQUATIONS

Emission (lb/hr) = 0.0032 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) x (1/2,000)

Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995.

	INI	PUT DATA AND EM	ISSIONS CAL	CULATIONS		
			Material			
Mean Wind	Act	rua <b>i</b>	Moisture	Control	Actua	aiPM
Speed	Quantity T	ransferred	Content	Efficiency	Emissio	n Rates
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)_	(tpy)
8.6	553	882,681	6.5	90.0	0.07	0.05

	SOURCES OF INPUT DATA
Parameter	Data Source
Mean Wind Speed	Tampa, FL, Climate of the States, Third Edition, 1985.
Actual Quantity Transferred	TEC, 1997.
Material Moisture Content	Average fuel moisture content; TEC, 1994.
Control Efficiency	Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of
	Fugitive Particulate Sources, UARG, September 1981.

## NOTES AND OBSERVATIONS

Actual PM emissions based on 2,648,044 tpy of fuel used. Actual fuel used is the average of the 1995 and 1996 actual fuel

used, 2,528,334 tons and 2,767,753 tons, respectively.

Actual fuel reclaiming was assumed to be equally divided among relcaimers F1, F2, and F4, or 882,681 tons per reclaimer.

Actual short-term emissions based on reclaimers F1, F2, and F4 operating simultaneously at 533 tph, each.

Data Collected by:	A. Trbovich	Date:	08/07/97
Evaluated by:	A. Trbovich	Date:	08/07/97
Data Entered by:	A. Trbovich	Date:	08/07/97

Tampa Electric Company – F.J. Gannon Station

FH-032

		EMISSICIA	SUUNUE	<u>1 =                                   </u>			
MAT	ERIAL TRANSFER	- FUGITIVE EMISS			Figure:		
		FACILITY AND SO	URCE DESC	RIPTION			
Emission Source	Description:	Fuel Handling - Convey	or G1 to Hamm	ermill Crusher 1	_		
Emission Contro	l Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant				
Emission Point I	D:	FH-032_		Transfer Point ID	)(s):		
		EMISSION ESTIM	IATION EQU	ATIONS			
		d (ton/hr) x [(average wind s					
Emission (tpy) $\approx 0$ .	0032 x material transferred	(tpy) x [(average wind speed	d (mph)/5) ^{1.3} / moi	sture content (pct)/2	) ^{1.4} ] x (100-control	[pct]/100) x (1/2,000)	
Source: Section	13.2.4 – Aggregate l	landling and Storage Pi	es, AP-42, Fift	h Edition, Januar	y 1995.		
•	<del> </del>			_			
	<u></u>	PUT DATA AND EM		CULATIONS			
Mean Wind	Act	tual	Material Moisture	Control	Actual PM		
Speed	Quantity T	ransferred	Content	Efficiency	Emissio	n Rates	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)	
8.6	. 800	1,324,022	6.5	90.0	0.10	0.08	
SOURCES OF INPUT DATA							
<u>Par</u>	rameter	Data Source					
Mass Wind Spee		Tampa El Climata ef	the States This	d Edition 1095			
Mean Wind Special Actual Quantity		Tampa, FL, Climate of the States, Third Edition, 1985. TEC, 1997.					
Material Moisture		Average fuel moisture content; TEC, 1994.					
Control Efficience	y	Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of					
		Fugitive Particulate Sources, UARG, September 1981.					
		NOTES AND	OBSERVATIO	ONS			
Actual PM emiss	ions based on 2,648,0	044 tpy of fuel used. Act	tual fuel use is t	he average of the	1995 and 1996 a	ctual fuel	
used, 2,528,3	34 tons and 2,767,753	tons, respectively.					
Actual fuel recla	iming was assumed to	be equally divided betw	reen conveyors	G1 and G2, or 1,	324,022 tons per	conveyor.	
		DATA	CONTROL	\$\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	· 2		
Data Collecte	ed by:	A. Trbovich	<u> </u>	<u> </u>	Date:	08/07/97	
Evaluated by	-	A. Trbovich				08/07/97	
Data Entered		A. Trbovich				08/07/97	
Reviewed by:		11001011			Date:	,,	
neviewed by:					Jaie.		

Tampa Electric Company - F.J. Gannon Station

FH-033

EMISSION SOURCE TYPE							
MA [*]	TERIAL TRANSFER	- FUGITIVE EMISS			Figure:		
		FACILITY AND SO	URCE DESC	RIPTION			
Emission Source	e Description:	Fuel Handling - Convey	or G2 to Hamm	nermill Crusher 2			
Emission Contro	ol Method(s)/ID No.(s):	Enclosure With Dust Sup	pressant	-			
Emission Point I	ID:	FH-033		Transfer Point I	D(s):		
	EMISSION ESTIMATION EQUATIONS						
Emission (lb/tv) =	0.0032 x material transferre	d (ton/hr) x [(average wind s	peed (mph)/5) ^{1.3}	moisture content (	oct)/2) ^{1.4} l x (100–co	ntrol[pct]/100)	
Emission (tpy) = 0	.0032 x material transferred	(tpy) x [(average wind speed	(mph)/5) ^{1.3} / mo	isture content (pct)/	2) ^{1.4} ] x (100-control	[pct]/100) x (1/2,000)	
Source: Section	n 13.2.4 – Aggregate F	landling and Storage Pil	es. AP-42. Fift	h Edition. Januar	rv 1995.		
	IN.	PUT DATA AND EMI	CCIONIC/OAI	CHIATIONS			
	<u></u>	FOI DATA AND EMI	Material	COLATIONS		NEBER MERIGINDE INC. 1971 J.	
Mean Wind	Act	tual	Moisture	Control	Actua	ы PM	
Speed	Quantity T		Content	Efficiency	Emissio		
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)	
8.6	800	1,324,022	6.5	90.0	0.10	0.08	
		SOURCES C					
<u>Pa</u>	<u>rameter</u>		<u> </u>	ata Source			
Mean Wind Spe	ed	Tampa, FL, Climate of t	he States, Third	d Edition, 1985.			
Actual Quantity		TEC, 1997.					
Material Moistur		Average fuel moisture content; TEC, 1994.					
Control Efficiend	cy	Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Fugitive Particulate Sources, UARG, September 1981.					
		- Egiato i di acciato coc	<u></u>				
					•		
		NOTES AND	OBSERVATION	ONS			
Actual PM emiss	sions based on 2 648 0	44 tpy of fuel used. Act	ual fuel use is t	he average of th	e 1995 and 1996 a	actual fuel	
	_						
	334 tons and 2,767,753	<u> </u>	<u> </u>				
Actual fuel recla	iming was assumed to	be equally divided betw	een conveyors	G1 and G2, or 1	,324,022 tons per	conveyor.	
			-	-			
		DATA (	CONTROL				
Data Collecte	ed by:	A. Trbovich			Date:	08/07/97	
Evaluated by	:	A. Trbovich			Date:	08/07/97	
Data Entered	bv:	A. Trbovich			Date:	08/07/97	

Date:

#### FH-034 Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Hammermill Crusher 1 to Conveyor H1 Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant Sprays **Emission Point ID:** FH-034 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/hr) = 0.0032 x material transferred (ton/hr) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4 x (100-control[pct]/100) Emission (tpy) = 0.0032 x material transferred (tpy) x [(average wind speed (mph)/5) $^{1.3}$ / moisture content (pct)/2) $^{1.4}$ ] x (100—control[pct]/100) x (1/2,000) Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Material Actual PM Mean Wind Actual Moisture Control **Emission Rates** Speed **Quantity Transferred** Content Efficiency (tpy) (mph) (ton/hr) (ton/yr) (pct) (pct) (lb/hr) 800 1,324,022 6.5 90.0 0.10 80.0 8.6 SOURCES OF INPUT DATA **Data Source Parameter** Tampa, FL, Climate of the States, Third Edition, 1985. Mean Wind Speed Actual Quantity Transferred Average fuel moisture content; TEC, 1994. **Material Moisture Content** Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of **Control Efficiency** Fugitive Particulate Sources, UARG, September 1981.

## NOTES AND OBSERVATIONS

Actual PM emissions based on 2,648,044 tpy of fuel used. Actual fuel use is the average of the 1995 and 1996 actual fuel

used, 2,528,334 tons and 2,767,753 tons, respectively.

Actual fuel reclaiming was assumed to be equally divided between conveyors H1 and H2, or 1,324,022 tons per conveyor.

	DATA CONTROL		
Data Collected by:	A. Trbovich	Date:	08/07/97
Evaluated by:	A. Trbovich	Date:	08/07/97
Data Entered by:	A. Trbovich	Date:	08/07/97
Reviewed by:		Date:	

Tampa Electric Company - F.J. Gannon Station

FH-035

			SOURCE				
<u> </u>	ERIAL TRANSFER	- FUGITIVE EMISS			Figure:		
		FACILITY AND SO	URCE DESC	RIPTION			
Emission Source	Description:	Fuel Handling - Hamme	ermill Crusher 2	to Conveyor H2			
Emission Control	Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant				
Emission Point ID	<b>)</b> :	FH-035		Transfer Point II	O(s):		
	EMISSION ESTIMATION EQUATIONS						
Entirity (N.S.)			14 12m13	• • • • • • •	14		
Emission (lb/hr) = $0.0$	0032 x material transferred	od (ton/hr) x [(average wind s   (tpy) x [(average wind speed	peed (mph)/5) · · · / d (mph)/5) ^{1 ,3} / moi	moisture content (pct)/	x(100-cor	ntrol[pct]/100) [pct]/100) v /1/2 000)	
						(1,2,000)	
Source: Section	13.2.4 – Aggregate I	landling and Storage Pil	es, AP-42, Fift	h Edition, Januar	y 1995.	,	
	IN	PUT DATA AND EM	SSIONS CAL	CULATIONS			
			Material		-		
Mean Wind		tual	Moisture	Control	Actua		
Speed (mph)	(ton/hr)	ransferred (ton/yr)	Content (pct)	Efficiency (pct)	Emissio (lb/hr)	n Hates (tpy)	
		*	***				
8.6	800	1,324,022	6.5	90.0	0.10	0.08	
		SOURCES	OF INPUT DA	TA			
	ameter			ata Source			
Mean Wind Speed		Tampa, FL, Climate of the States, Third Edition, 1985.					
Actual Quantity T Material Moisture		TEC, 1997.  Average fuel moisture content; TEC, 1994.					
Control Efficiency		Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of					
	_	Fugitive Particulate Sources, UARG, September 1981.					
		NOTES AND	OBSERVATIO	ONS			
Actual PM emissi	ons based on 2,648,0	044 tpy of fuel used. Act	tual fuel used is	the average of t	ne 1995 and 1996	actual fuel	
	1 4 1 0 767 750	A					
used, 2,528,334	4 tons and 2,767,753	tons, respectively.					
Actual fuel reclair	ming was assumed to	be equally divided betw	veen conveyors	H1 and H2, or 1,	324,022 tons per	conveyor.	
	<u>-</u>				-		
		DATA	CONTROL				
Data Collected	d by:	A. Trbovich			Date:	08/07/97	
Evaluated by:		A. Trbovich		ı	Date:	08/07/97	
Data Entered	by:	A. Trbovich		ı	Date:	08/07/97	

Date:

FH-036-FH-041

Tampa Electric Company – F.J. Gannon Station

8443	TERLAL TRANSFER		OCONOL TO		<u></u>		
MA	IERIAL IRANSFER	- FUGITIVE EMISS FACILITY AND SC			Figure:	ner a rolla Pisir kesaliju. I	
						3 (1965 Beleven) <u>A</u>	
Emission Source	e Description:	Fuel Handling - Conve	yors H1/H2 to C	onveyors J1/J2,	Conveyors J1/J2 to	o Bunkers 1−6	
Emission Contro	ol Method(s)/ID No.(s):	Rotoclones 1 through 6					
Emission Point I	D:	FH-036 through FH-04	41	Transfer Point II	D(s):		
		EMISSION ESTIN	NATION EQU	ATIONS			
Emission (lb/hr) = (	0.0032 x material transferre	d (ton/hr) x {(average wind s	speed (mph)/5) ^{1.3} /	moisture content (r	et)/2) ^{1.4} ] x (100—con	trol[pct]/100)	
		(tpy) x [(average wind spee					
Source: Section	n 13.2.4 – Aggregate F	landling and Storage Pi	les, AP-42, Fift	h Edition, Janua	ry 1995.		
	IN	PUT DATA AND EM	ISSIONS CAI	CHIATIONS	200m 14m 9 KC (2000000000000000000000000000000000000	500m Transfer St. (20	
		OI DATA AND EM	Material	COLATIONS	<u> </u>	evita a men man iri	
Mean Wind	Act	ual	Moisture	Control	Actua	I PM	
Speed	Quantity T	ransferred	Content	Efficiency	Emission	n Rates	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)	
2.8	1,600	2,648,044	6.5	75.0	0.12	0.10	
		SOURCES	OF INPUT DA				
	<u>rameter</u>	Data Source					
Mean Wind Spec		Typical Indraft Velocity for Coal Bunkers, ECT 1994.					
Actual Quantity Material Moisture		TEC, 1997.  Average fuel moisture content; TEC, 1994.					
Control Efficience		Control Equipment Vendor Data AAF, 1960.					
2	,						
		NOTES AND	OBSERVATIO	ONS			
					L 4005 - 4400		
Actual PM emiss	sions based on 2,648,0	44 tpy of fuel used. Ac	tuai tuei used is	the average of t	ne 1995 and 1996	actual fuel	
used, 2,528,33	34 tons and 2,767,753	tons, respectively.				-	
	·			<del>-</del>			
· · · · · · · · · · · · · · · · · · ·			-		,		
		DATA	CONTROL				
Data Collecte	ed by:	A. Trbovich			Date: (	08/07/97	
Evaluated by	:	A. Trbovich			Date: (	08/07/97	
Data Entered		A. Trbovich		-	Date: (	08/07/97	
Reviewed by:		-			Date:		

Tampa Electric Company - F.J. Gannon Station

FH-044

Date:

EMISSION SOURCE TYPE VEHICULAR TRAFFIC ON UNPAVED ROADS - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION Fuel Handling - Storage Pile Maintenance Emission Source Description: Emission Control Method(s)/ID No.(s): **Dust Suppressant Sprays Emission Point ID:** FH-044 **EMISSION ESTIMATION EQUATIONS** Emission (lb/hr) = 5.9 x (s/12) x (S/30) x (W/3)^{0.7} x (w/4)^{0.5} x ((365-p)/365) x vehicle miles per hour (MAT/hr) x (100-control[pct]/100) Emission (ton/yr) = 5.9 x (s/12) x (S/30) x (W/3)^{0.7} x (w/4)^{0.5} x ((365-p)/365) x vehicle miles per year (VMT/yr) x (1 ton/ 2,000 lb) x (100-control[pct]/100) Source: Section 13.2.2 - Unpaved Roads, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Operating Hours: 16 Hrs/Day 7 Days/Wk 5,824 Hrs/Yr Vehicle Miles Control Actual PM Rainfall Days Travelled Efficiency **Emission Rates** Silt Content Vehicle Speed Vehicle Weight No. of Wheels (VMT/hr) (VMT/yr) (pct) (lb/hr) (mph) (ton) 58,240 8.4 2.5 48 107 10.0 50.0 10.38 30.21 SOURCES OF INPUT DATA **Parameter Data Source** Operating Hours ECT, 1997. Estimated. Table 13.2.2-1, Section 13.2.2, AP-42, January 1995. Silt Content, s Vehicle Speed, S TEC, 1997. Average value. Vehicle Weight, W TEC, 1997. Average value. No. of Wheels TEC, 1997. Average value. Climate of the States, Third Edition, 1985. Data for Tampa, FL. Rainfall Days Vehicle Miles Traveled ECT, 1997. Estimated. Table 3.2.15-2, Workbook on Estimation of Emissions and Dispersion Modeling for Fugitive Particulate Control Efficiency Sources, UARG, September 1981. NOTES AND OBSERVATIONS Estimate of vehicle miles traveled based on the use of four bulldozers on the storage piles. DATA CONTROL Data Collected by: Date: 09/16/97 A. Trbovich Date: 09/16/97 Evaluated by: A. Trbovich Date: 09/16/97 Data Entered by: A. Trbovich

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BUREAU OF AIR REGULATION

Department of Environmental Protection Division of Air Resources Management Bureau of Air Regulation, NSRS 2600 Blair Stone Road, MS 5505 Tallahassee, Florida 32399-2400



# Department of Environmental Protection

Lawton Chiles Governor Twin Towers Office Building 2600 Blair Stone Road Tallahassee, Florida 32399-2400

Virginia B. Wetherell Secretary

August 17, 1998

## CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. R. Douglas Neeley, Chief Air and Radiation Technology Branch U.S. Environmental Protection Agency, Region IV Atlanta Federal Center 61 Forsyth Street Atlanta, Georgia 30303-8960

Re: Tampa Electric Company Gannon Station

Pollution Control Project Applicability Determination

Dear Mr. Neeley:

The Florida Department of Environmental Protection has made a Preliminary Determination that use of low Btu, high moisture coal constitutes a Pollution Control Project (PCP) for nitrogen oxides (NO_X) emissions control at the Tampa Electric Company (TEC) Gannon Station, Hillsborough County. The determination is in accordance with the PCP definition and rules at 40CFR52.21(b)(32) and 40CFR52.21(b)(2)(iii)(h).

The TEC project involves using low Btu, high moisture fuels such as Powder River Basin and Indonesian coal. TEC has demonstrated that its cyclone and wet bottom units can approach the Phase II NO_X limits required by the Acid Rain Rules using these types of fuels together with various combustion modifications and projects to resolve problems inherent in switches to different types of coals and coal blends.

Because the new coal has a heating value of roughly 9,000 Btu versus 12,000 for the historical coal, TEC has requested relaxation of the 2.85 million ton per year coalyard throughput limit to 3.305 million tons per year. Various projects associated with the coalyard will be treated as activities in support of a PCP. We will impose a "heat throughput" limit that will insure that the boilers served by the coalyard are not inadvertently "debottlenecked." This effectively limits the plant to approximately 66 percent annual availability.

The details are in the attached Preliminary Determination. We will provide you with a copy of the public notice when it is prepared. If you have any questions, please call me or Al Linero at 850/488-0114.

Sincerely,

C. H. Fancy, Chief

Bureau of Air Regulation

, CHF/aal

Attachment

cc: Charles Black, V.P., TEC

Bill Thomas, DEP

Ivan Choronenko, EPCHC

# PRELIMINARY DETERMINATION POLLUTION CONTROL PROJECT AND PSD APPLICABILITY REVIEW TAMPA ELECTRIC GANNON COAL PROJECT

## BACKGROUND

Tampa Electric Company (TEC) operates the Gannon power plant and coal yard in Tampa, Hillsborough County. In June, 1997, TEC applied to increase the permitted coal throughput at the coal yard from 2.85 million tons per year (mmTPY) to 3.77 mmTPY. An addendum submitted in June, 1998 revised the throughput requirement to 3.305 mmTPY. The reason for the increase is that TEC has been progressively using more high moisture/low heat content coals to comply with nitrogen oxides (NO_X) requirements for Phase II units pursuant to the Title IV Acid Rain requirements of the Clean Air Act.

Unless a throughput increase is permitted, use of the lower heat content coals will limit the electrical power production of the Gannon Plant compared to use of high heat content coal. Historically this has not been a problem since the coalyard throughput limit was compatible with use of high heat content fuel and demand. However, with growing electrical demand, lower statewide electrical reserve capacity, and use of low heat content coal, the throughput limit has become an actual restriction on the overall plant availability. This maximum availability of the plant is approximately 66 percent when burning historical coals, but would be reduced to 57 percent if high moisture, low Btu coals are used while the mass throughput limit is maintained.

TEC maintains that "the coalyard and steam generating units are separate entities with respect to existing operating permits and that the fuel yard permit conditions apply only to the fuel yard, not to the entire facility." Under this view, the coalyard throughput increase would be permitted separately without regard to any emissions changes that might occur from the boilers. Without conceding that the coalyard and steam generating unit permit conditions are mutually applicable, TEC has presented information in subsequent submittals in support of its contention that the project is exempt from the rules for the Prevention of Significant Deterioration (PSD) as a Pollution Control Project."

## REGULATIONS

Presuming that the coalyard and the steam units comprise a single facility, an increase in coalyard throughput would result in emissions increases of at least nitrogen oxides ( $NO_X$ ), sulfur dioxide ( $SO_2$ ), and particulate matter ( $PM/PM_{10}$ ). There could also be increases in carbon monoxide (CO) and sulfuric acid mist (SAM).

The change in the coalyard throughput limit is a relaxation of a federally enforceable limitation on the capacity of the facility and is therefore a modification. As such, the PSD requirements in Rule 62-212.400, F.A.C. may apply as described in Rule 62-212.400(2)(g), F.A.C. Modifications to Major Facilities are those that result in a *significant net emissions increase* as described in Rule 62-212.400(2)(d)4.a(ii) and 62-212.400(2), F.A.C.

Per Rule 62-212.400(5)(c), F.A.C.:

The proposed facility or modification shall apply Best Available Control Technology (BACT) for each pollutant subject to preconstruction review requirements as set forth in Rule 62-212.400(2)(f), F.A.C.

It is obvious that the definitions and applicability of facility, modification, and any exemptions are of key importance in this review.

A pollution control project (PCP) is defined at 40CFR52.21(b)(32) as:

Any activity or project undertaken at an existing electric steam generating unit for purposes of reducing emissions from such unit. Such activities and projects are limited to:

- (I) The installation of conventional or innovative pollution control technology, including but not limited to advanced flue gas desulfurization, sorbent injection for sulfur dioxide control and nitrogen oxides control and electrostatic precipitators;
- (2) An activity or project to accommodate switching to a fuel which is less polluting than the fuel in use prior to the activity or project, including, but not limited to natural gas or coal reburning, or the co-firing of natural gas and other fuel for the purpose of controlling emissions;
- (3) A permanent clean coal technology demonstration project conducted under title II, Section 101(d) of the Further Continuing Appropriations Act of 1985.....; or
- (4) A permanent clean coal technology demonstration project that constitutes a repowering project.

The above definition is not specifically listed in the State Rules in Chapter 62, F.A.C. However it is obvious that it is the intent of the State to abide by the Federal definition. Per Rule 62-212.400(2)(a)2., F.A.C., Pollution Control Project Exemption:

A pollution control project that is being added, replaced, or used at an existing electric utility steam generating unit and that meets the requirements of 40CFR52.21(b)(2)(iii)(h) shall not be subject to the preconstruction requirements of this rule.

According to 40CFR52.21(b)(2)(iii)(h), one of the exemptions from review for PSD is:

The addition, replacement or use of a pollution control project at an existing electric utility steam generating unit, unless the Administrator determines such addition, replacement, or use renders the unit less environmentally beneficial, or except (1) When the Administrator has reason to believe that the pollution control project would result in a significant net increase in representative actual annual emissions of any criteria pollutant over levels used for that source in the most recent air quality impac: analysis in the area conducted for the purpose of title I if any, and (2) The Administrator determines the increase will cause or contribute to a violation of any national ambient air quality standard or PSD increment, or visibility limitation.

A fuel switch is not actually included in the definition of PCP nor is it listed as an activity in support of a PCP. However, it is not excluded. Furthermore, according to the EPA rule analysis at FR Vol. 57, No. 140, Pages 32320-32321:

"Thus EPA is today adopting revisions to its PSD and nonattainment regulations for the addition, replacement or use at an electric steam generating unit of any system or device whose primary function is the reduction of pollutants (including the switching to a less-polluting fuel where the primary purpose of the switch is the reduction of air pollutants)."

If it is established that the primary purpose of the switch is to reduce emissions, then it can be evaluated for qualification as a PCP. Even if there is an increase in a PSD pollutant associated with the project, it is not necessarily precluded from consideration as a PCP. Per the EPA analysis:

Therefore, the criteria which the Department must follow are clear. The collateral increase in any PSD pollutant should be small and the decrease in one or more PSD pollutants should be substantial. The increases in any pollutant should not cause or contribute to violation of an ambient air quality standard or PSD increment.

## **DESCRIPTION OF PROJECT**

The project is the use of Powder River Basin (PRB) coal in Units 1-4. According to TEC, there has been a marked reduction in  $NO_X$  emissions from using PRB coal at Units 1-4. This has resulted in emissions reductions approaching the "Phase II"  $NO_X$  limit of 0.86 pounds per million Btu heat input (lb/mmBtu) at Units 3 and 4 without physical modification of the wet bottom cyclone units. TEC has also experimented with high moisture/low heat content Indonesian coal. For reference following is a comparison of various coals used at the Gannon Plant.

Table 1 - Comparison of 1994 TEC Gannon Coal with 1997 Indonesian and PRB Coals

	Gannon Coal ¹	Indonesian Coal ²	PRB Coal ³
Sulfur (%)	1.13	0.35	0.43
Heating Value (Btu/lb)	12,773	9,614	8,720
Ash (%)	6.99	1.44	5.29
Moisture (%)	<10	>25	314

The choice of dates and data for comparison purposes was made by the Department and not TEC. In 1993, TEC imported no Indonesian coal. Receipts of Indonesian coal were 0.147, 0.349, 0.808, and 0.741 mmTPY for 1994, 95, 96, and 97, respectively. In 1994 use of PRB coal by TEC was insignificant. In 1996 and 1997 receipts of PRB coal by TEC (presumably for use at Gannon) were 0.591 and 0.971 mmTPY respectively. The above data indicate that:

- 1. Use of PRB and Indonesian coals is a recent and increasing practice by TEC.
- 2. PRB and Indonesian coals have lower sulfur content and lower ash content indicating at least an initial potential for reductions of some pollutants.
- 3. PRB and Indonesian coals have lower heat content indicating that it is necessary to use more of these coals to achieve the same heat input or electrical power production as achieved with lesser quantities of historical coal used at TEC Gannon.
- 4. PRB and Indonesian coals have higher moisture content. If NO_X emissions are reduced by the higher moisture content (and presumably some adjustments in combustion practices), then PRB and Indonesian coals have a potential for reductions in NO_X emissions.

## EFFECT OF HIGH MOISTURE COAL ON $NO_X$ EMISSIONS

Following the establishment of the above criteria, the Department requested on August 10, 1998 that TEC provide reasonable assurance that high moisture coals do in fact result in  $NO_X$  reductions.⁵ The Department specifically requested the Sargent & Lundy⁶ study and any other information that TEC has to indicate that the actual reason high moisture coal will be used is to reduce  $NO_X$  emissions.

TEC promptly provided the Sargent & Lundy Report on August 11 as well as a report submitted to the Public Service Commission (PSC) on  $NO_X$  controls⁷, a Memorandum of Understanding (MOU) with Hillsborough County on  $NO_X$  reductions⁸, and an internal summary of  $NO_X$  compliance activities⁹.

According to the 1998 Compliance Activities document:

TEC's cyclone units have shown a reduction in  $NO_X$  close to the rule requirements as a result of burning high moisture western coals. However, there are significant penalties as a result and TEC is continuing to investigate other reasonable options......To continually use this fuel will require changes in the coal preparation to reduce operating difficulties. This work will be complete in 1999.

## According to the MOU:

Whereas the Tampa Electric Company has already taken the initiative to reduce the nitrogen oxide emissions from some of the individual affected units by more than 20 percent, resulting in an overall reduction of over 10,000 tons from the 1995 levels; Whereas the EPC believes the modifications and fuel switching proposed by the Tampa Electric Company will address the secondary environmental impacts associated with nitrogen oxides emissions in the Tampa Bay area........

Regarding Gannon 1-4, the May 1997 document submitted to the PSC stated:

A blend of Powder River Basin (PRB) and Western Kentucky coal has been used in the cyclone units. The PRB is a low BTU, high moisture, low sulfur coal. The original blend of 75% PRB has been reduced to 70% in order to minimize the problems associated with this fuel. Problems associated with this coal blend include: load restrictions due to low BTU value of the PRB, high fly ash LOI [loss on ignition], slag tank problems (tapping and explosions), fuel switching problems and fires due to spontaneous combustion of the PRB.  $NO_X$  was reduced to the 0.8-0.95 lb./MMBTU for a short period of time. It has not been demonstrated that a higher percentage of PRB in the blend will further lower the  $NO_X$  emissions rate.

A series of solutions to the problems were described. Of note is one that clearly associates the purpose of the crusher/grinder project to the problems caused by the use of PRB coal. If the use of high moisture coal is a PCP, then the crusher/grinder project can be a project in support of a PCP. Specifically the document states:

Fly ash LOI appears to be controllable by improving the grind of the coal. To meet the required grind, an increase in coalfield crusher operation and maintenance of up to \$600,000 per year may be necessary along with probable crusher upgrades which could cost up to \$2,500,000.

The summary of conclusions in the document to the PSC states that:

TEC has concluded that combustion modification of its Riley Turbo Furnace boilers (Gannon Units 5 and 6) can achieve significant reductions in  $NO_X$  emissions but only at the expense of incurring significant capital and O&M costs ............. Furthermore, TEC has concluded that **significant**  $NO_X$  emission reductions on its cyclone boilers (Gannon Units 1-4) can only be reasonably obtained through fuel switching to a low btu, high moisture fuel with the resulting expense and risk of sole sourcing these units fuel supply.

An independent corroboration of the possible reduction of  $NO_X$  by use of PRB coal at the Gannon Plant exists in an inspection report. The letter states:

..... $NO_X$  emissions from two cyclone units, at or below the proposed EPA limits of 0.94 lb/mmBtu (operation was near full load).......... During my visit I noted that these units had recently switched to Powder River Basin coal. During a visit on August 16, a representative from Hillsborough County noted that  $NO_X$  emissions from the two wet bottom turbo units [Units 5 and 6] at the Gannon station were below the proposed levels of 0.86 lb/mmBtu...........Can you confirm if fuel switching for  $SO_2$  allowances have a co-benefit of reducing  $NO_X$ ?

### It is clear from the record that:

- 1. TEC has a recent history of using the high moisture fuels
- 2. NO_x reduction through use of high moisture, low Btu fuels has been demonstrated.
- 3. The use of high moisture, low Btu fuels is in fact the primary strategy employed by TEC at Gannon Units 3 and 4 to comply with the requirements of the Phase II Rules for NO_X control pursuant to Title IV, Acid Rain, Clean Air Act.
- 4. Additional projects are needed to facilitate the switch to low Btu, high moisture coals.

### OTHER CONSIDERATIONS

Based on the application and initial information submitted by TEC, the EPCHC and some Department staff expressed various concerns about the ability of the project to qualify as a PCP. These concerns are:

- 1. Significant collateral increases of SO₂. 11
- 2. Possible impacts on ambient SO₂ concentrations.
- 3. The possibility that increased annual power generation from the Gannon Plant is the actual reason that greater throughput is needed.
- 4. The possibility that use of PRB coal is being implemented for economic rather than environmental reasons.
- 5. Lack of detailed analysis on the collateral increase or decreases of particulate matter, fluorides, and other PSD pollutants.
- 6. Doubts that it is the use of high moisture coals that causes the lower  $NO_X$  emissions.

TEC fully disclosed in its final information submittal that SO₂ emissions may indeed increase. However, it is clear that on balance, the use of PRB coal will actually lower SO2 emissions. TEC stated that the increase is related to the use of a scrubber at Big Bend units 1 and 2 will result in substantial reductions in SO₂ emissions at Big Bend and on a corporate-wide basis as required by Title IV of the Clean Air Act. TEC's reduction at Big Bend will result in available SO₂ allowances, some of which might be sold or possibly used at the Gannon Plant. The emissions are not collateral with the use of high moisture PRB coal, but rather incidental and mostly unrelated.

Any negative impacts on ambient SO₂ concentrations are not related to the use of PRB coal. The subject is being reviewed under Title V permitting. The Department and TEC are working out ways to insure that emission limits are set in the Title V permit to avoid exceedances of the Florida Ambient Air Quality Standard for SO₂.

The electrical generation capacity in the State has fallen below the minimum reserve requirements. Usage of quite a number of plants and even peaking units has increased. Increases in generation due to system-wide growth in demand are normally left out of the calculations for determining increases and decreases in emissions due to modifications at existing power plants. TEC actually left in the future emissions increases attributable to increased growth in demand as well as the unrelated increases due to the scrubber project at Big Bend 1 and 2.

Obviously TEC will ultimately be limited by the coalyard throughput whether it uses high Btu or low Btu fuel. However the use of the low Btu fuel is for reduction of emissions. A compensating increase in allowable coal throughput is a logical way to encourage the use of a less polluting type of coal, while insuring that it does not inadvertently "debottleneck" the rest of the plant.

The Department has seen no evidence that the motivation for using PRB coal is to stimulate demand. Based on the DOE data, the cost of PRB coal delivered to the company's Davant. Louisiana Transfer Station is about the same as other fuels used by TEC. When forwarded to Florida, the cost could be greater than the other fuels because of the low Btu value. As documented above, there is actually a risk related to sole-sourcing the fuel for the Gannon Units using PRB coal. Additionally a host of potential problems were identified by the company that are being progressively solved. The main economic incentive appears to be minimization of the cost to achieve the required NO_X reductions. There appears to be no appreciable economic advantage

to using PRB coal that would result in increased unit availability.

TEC submitted estimates on the collateral increases and decreases in particulate emissions. These appear small and controllable. The low sulfur in PRB coal can actually reduce electrostatic precipitator performance. TEC has sulfur trioxide injection systems that can be adjusted to correct for drops in particulate collection efficiency. The Department did not specifically require TEC to document possible small collateral increases and decreases in other PSD pollutants. The changes are difficult to quantify and there is no reason to expect any significant differences attributable to the use of the PRB coal.

The reduction in  $NO_X$  at Gannon Units 1-4 has clearly been documented and is attributable to the use of low moisture coals such as PRB coal. Obviously some relatively inexpensive associated fuel system, ash handling and boiler modifications, as well as combustion optimization contribute to the reduction.

Following are the required emissions reductions that TEC must achieve from the units actually covered by the NO_X Acid Rain requirements:

Table 2 - Comparison of NO_X Emissions From Gannon Units 3-6 Before and After Control Projects and Fuel Use Strategies (pounds per million Btu)

	1995	Future
Gannon Unit 3	1.29	0.86
Gannon Unit 4	1.34	0.86
Gannon Unit 5	0.95	0.84
Gannon Unit 6	1.15	0.84

In its application, TEC assumed that Units 3 and 4 would be required to meet 0.95 pounds of  $NO_X$  per million Btu (lb/mmBtu) while Units 5 and 6 will have to meet 0.85. A recent Court decision upheld EPA's final determination on the emissions allowed for these units. Therefore TEC will actually have to achieve somewhat greater  $NO_X$  reductions than given in the application. Though not regulated by Phase II Rules, Units 1 and 2 will also achieve some  $NO_X$  emissions reductions due to the use of high moisture, low Btu fuel.

### CONCLUSION

Based on the foregoing analysis, the Department's Preliminary Determination is that TEC's use of high moisture, low Btu coals such as Indonesian and Powder River Basin coals constitutes a Pollution Control Project per Department and EPA regulations. Additionally the coal yard modifications and the installation of new crusher/grinders constitute projects and activities to accommodate switching to a fuel that is less polluting than the fuel in use prior to the project.

To insure that the increase in permitted coal throughput does not result in emissions increases, limits will be set for "total annual heating value throughput." In this manner, the increase in physical throughput will only compensate for the decrease in fuel heating value. Assuming a conservative heating value of 12,250 Btu per pound from the higher Btu coals exclusively used before 1996, the Department estimates that the required heat throughput is 6.98 x 10⁷ mmBTU per year. This limit should be incorporated into the coalyard permit or adjusted in accordance with more detailed information submitted by TEC. For reference, according to the EPA's Acid Rain

database, the heat input to the Gannon Plant in 1995 and 1996 was 6.69 and  $6.89 \times 10^7$  mmBtu respectively. 12

The Southwest District is directed to process the permit for the coal yard modifications. Although the actual coalyard projects are to accommodate the use of a PCP, emissions should still be minimized. TEC should also describe to the District its plans to minimize any collateral particulate and carbon monoxide increases from the boilers. This Preliminary Determination may be public noticed in conjunction with the coalyard permit Intent or separately at an earlier date. The details of the notice may be finalized between TEC and the District.

### REFERENCES

Ţ,

Department of Energy. Receipts and Average Cost of Coal by Type, Electric Utility, and Plant (TEC Gannon), 1994

Department of Energy. Receipts, Quality, and Average Delivered Cost of Imported Coal (TEC Davant Transfer - Indonesian Coal), 1997.

Department of Energy. Receipts of Western Region Coal (TEC), 1997.

Babcock and Wilcox Analysis of Campbell County, Wyoming Subbituminous C.

⁵ Telecon. Linero, A.A., DEP with Watley, T.J., TEC. August 10, 1998. Need for substantiation of properties of high moisture coals with respect to NO_X controls.

⁶ Carnot/Sargent & Lundy. "Nitrogen Oxide Limitation Study prepared for Tampa Electric company." March 15, 1996.

⁷ Tampa Electric Company. "Evaluation of NO_X Controls for Tampa Electric Company's Group II Wet Bottom and Cyclone Boilers." May, 1997.

⁸ TEC and EPCHC. "Memorandum of Understanding Nitrogen Oxides Emissions Rate Reductions." October 29, 1997.

⁹ TEC. "Tampa Electric Company NOX Compliance Activities." Undated.

Letter from Costello, M., DEP to Ho, P., TEC. Request for Information. October 9, 1996.

Memorandum from Anderson, L., DEP to Linero, A., DEP. TEC's Coal Modification Project. August 11, 1998.

www.epa.gov/acidrain/ardhome.html. Data summarized in Tables accompanying Reference 11 above.

### **MEMORANDUM**

TO:

Al Linero, P.E.

FROM:

Lennon Anderson

DATE:

August 11, 1998

SUBJECT:

TEC's Coal Modification Project

This memo is being provided as requested on August 4, 1998. Tables 1 through 12 address the Tampa Electric (TEC) F.J. Gannon Station's Coal Yard Modification Project. The objective of the study is to evaluate SO₂ and NO_x emissions based on an increase in the coalyard's annual throughput due to the switching of the coal to a low Btu heat content coal known as Powder River Basin (PRB) coal.

At the current permitted feed rate for the boilers, the boilers can burn 4,299,408 tons of coal annually with a corresponding heat input of 105,741,960 MMBtu/yr. With the coalyard limited to a throughput of 2.85 million tons of coal, the facility is therefore limited to 66.3 percent. Moreover, the SO₂ emissions rate for each boiler is 2.4 lbs/MMBtu. From all six boilers, the total annual SO₂ emissions is 126,890 tons. However, all six boilers are collectively limited to 92,856 tons/yr. Please see Table 1.

According to EPA's database, Tables 2 through 5 show that the heat input to the plant from 1985 to 1996 increased, which is accompanied with an increase in SO₂ emissions and an increase in coal usage. In 1996, the coal usage was 47,711 tons shy of the 2.85 million tons permitted.

Table 6 through 10, however, are based on data submitted by TEC to the Department in its Annual Operating Report (AOR). The years examined were, 1990 and 1994-1997. Furthermore, TEC began using PRB coal in 1996. As a result, Tables 9 and 10 show that  $NO_x$  emissions decreased (18,034 tons) while  $SO_2$  emissions increased (6,759 tons).

Tables 11 and 12 show the  $SO_2$  and  $NO_x$  emissions at the coalyard's current throughput limit (2.85 million tons) and proposed throughput limit (3.30 million tons). With TEC's traditional, standard coal, the  $SO_2$  and  $NO_x$  emissions are estimated to be 63,212 and 47,357 tons, respectively. For the proposed project, however, the annual projected  $SO_2$  and  $NO_x$  emissions are 65,253 and 31,852 tons, respectively. Clearly, there

is a reduction in  $NO_x$  emissions, 15,505 tons; but, there is an increase in  $SO_2$  emissions, 2,041 tons which is greater than the significant emissions rate of 40 TPY.

Table 1. SO2 Potential Emissions

Unit No.	Coal Feed Rate	Heat Input	Heat Input	Calorific Value	SO2 based on 2.4 lbs/MMBtu	Max. Coal usage
	(tons/hr)	(MMBtu/hr)	MMBtu/yr	(Btu/lb)	(tons/yr)	(tons/yr)
1	50	1,257	11,011,320	12,570	13,213.6	438,000
2	51	1,257	11,011,320	12,324	13,213.6	446,760
3	65	1,599	14,007,240	12,300	16,808.7	569,400
4	80	1,876	16,433,760	11,725	19,720.5	700,800
5	93.4	2,284	20,007,840	12,227	24,009.4	818,184
6	151.4	3,798	33,270,480	12,543	39,924.6	1,326,264
Totals or Average	490.8	12,071	105,741,960	12,281	126,890.4	4,299,408

Collectively, the SO2 emissions for all six units, based on 10.6 tons/hr, is 92,856 tons/yr.

Table 2. SO2 Actual Emissions (1985) (epa)

Unit No.	Heat Input	eat Input SO2		Estimated Coal	
				Usage	
	(MMBtu)	(tons)	(Percent)	(tons/yr)	
1	2,169,220	1,613	19.7	86,285.6	
2	4,262,360	3,628	38.7	172,935.8	
3	7,803,180	6,998	55.7	317,202.4	
4	10,095,310	9,009	61.4	430,503.6	
5	11,420,980	10,246	57.1	467,040.1	
6	18,684,710	16,385	56.2	744,830.2	
			·		
Totals or Average	54,435,760	47,879	51.5	2,218,797.8	

Table 3. SO2 Actual Emissions (1990) (epa)

Unit No.	Heat Input	SO2	Operating at	Estimated Coal
				Usage
	(MMBtu)	(tons)	(Percent)	(tons/yr)
. 1	6,550,489	5,554	59.5	260,560.4
2	6,870,044	5,386	62.4	278,736.9
3	8,718,355	7,359	62.2	354,404.7
4	9,837,571	8,286	59.9	419,512.6
5	15,033,343	12,838	75.1	614,761.0
6	9,253,838	7,930	27.8	368,886.5
Totals or Average	56,263,640	47,353	53.2	2,296,862.2

Table 4. SO2 Actual Emissions (1995) (epa)

Unit No.	Heat Input	SO2	Operating at	Estimated Coal
				Usage
	(MMBtu)	(tons)	(Percent)	(tons/yr)
1	5,102,353	4,435	46.3	202,957.6
2	4,916,064	4,252	44.6	199,458.4
3	6,613,134	5,694	47.2	268,826.6
4	12,217,925	11,229	74.3	521,020.3
5	13,838,203	11,435	69.2	565,888.0
6	24,252,933	20,350	72.9	966,796.7
Totals or Average	66,940,612	57,395	63.3	2,724,947.6

Table 5. SO2 Actual Emissions (1996) (epa)

Unit No.	Heat Input	SO2	Operating at	Estimated Coal
				Usage
	(MMBtu)	(tons)	(Percent)	(tons/yr)
1	6,390,492	5,707	58.0	254,196.2
2	6,190,794	5,623	56.2	251,177.8
3	6,138,087	5,508	43.8	249,515.7
4	11,701,658	10,396	71.2	499,004.6
5	14,536,078	13,408	72.7	594,426.3
6	23,931,112	22,352	71.9	953,968.0
Totals or Average	68,888,221	62,994	65.1	2,802,288.6

Table 6. SO2 and NOx Actual Emissions (1990) (aor)

Unit No.	Coal Usage	Calorific Value	Heat Input	SO2	NOx	Operating at
	(tons)	(Btu/lb)	(MMBtu)	(tons)	(tons)	(Percent)
1	258,832	12,281	6.36E+06	5,412	4,400	57.7
2	271,860	12,281	6.68E+06	5,686	4,622	60.6
3	569,400	12,281	1.40E+07	7,179	5,854	99.8
4	388,325	12,281	9.54E+06	8,084	6,602	58.0
5	592,011	12,281	1.45E+07	12,512	10,064	72.7
6	362,296	12,281	8.90E+06	7,715	6,159	26.7
Totals or Average	2,442,724	12,281	6.00E+07	46,588	37,701	56.7

Table 7. SO2 and NOx Actual Emissions (1994) (aor)

Unit No.	Coal Usage	Calorific Value	Heat Input	SO2	NOx	Operating at
•	(tons)	(Btu/lb)	(MMBtu)	(tons)	(tons)	(Percent)
1	148,818	12,281	3.66E+06	3,231	2,758	33.2
2	168,304	12,281	4.13E+06	3,623	3,119	37.5
3	297,144	12,281	7.30E+06	6,065	5,195	52.1
4	280,595	12,281	6.89E+06	6,072	5,199	41.9
5	505,129	12,281	1.24E+07	10,888	8,592	62.0
6	845,724	12,281	2.08E+07	18,110	14,382	62.4
Totals or Average	2,245,714	12,281	5.52E+07	47,989	39,245	52.2

Table 8. SO2 and NOx Actual Emissions (1995) (aor)

Unit No.	Coal Usage	Calorific Value	Heat Input	SO2	NOx	Operating at
	(tons)	(Btu/lb)	(MMBtu)	(tons)	(tons)	(Percent)
1	186,212	12,845	4.78E+06	4,043	3,450	43.4
2	186,383	12,845	4.79E+06	3,925	3,452	43.5
3	274,919	12,845	7.06E+06	5,929	5,090	50.4
4	463,970	12,845	1.19E+07	9,963	8,587	72.5
5	519,788	12,845	1.34E+07	10,363	8,840	66.7
6	897,070	12,845	2.30E+07	18,752	15,255	69.3
Totals or Average	2,528,342	12,845	6.50E+07	52,975	44,674	61.4

Table 9. SO2 and NOx Actual Emissions (1996) (aor)

Unit No.	Coal Usage	Calorific Value	Heat Input	SO2	NOx	Operating at
	(tons)	(Btu/lb)	(MMBtu)	(tons)	(tons)	(Percent)
1	265,722	11,718	6.23E+06	5,486	4,920	56.6
2	249,629	11,718	5.85E+06	5,064	4,622	53.1
3	298,202	11,718	6.99E+06	6,406	5,521	49.9
4	486,874	11,718	1.14E+07	9,855	9,011	69.4
5	574,584	11,718	1.35E+07	12,975	10,634	67.3
6	892,742	11,718	2.09E+07	20,307	16,520	62.9
Totals or Average	2,767,753	11,718	6.49E+07	60,093	51,228	61.3

Table 10. SO2 and NOx Actual Emissions (1997) (aor)

Unit No.	Coal Usage	Calorific Value	Heat Input	SO2	NOx	Operating at
	(tons)	(Btu/lb)	(MMBtu)	(tons)	(tons)	(Percent)
1	246,327	11,718	5.77E+06	5,344	3,235	52.4
. 2	368,326	11,718	8.63E+06	7,771	3,850	78.4
3	502,172	11,718	1.18E+07	9,772	5,093	84.0
4	474,906	11,718	1.11E+07	10,383	5,572	67.7
5	450,802	11,718	1.06E+07	10,753	4,515	52.8
6	640,000	11,718	1.50E+07	22,829	10,929	45.1
Totals or Average	2,682,533	11,718	6.29E+07	66,852	33,194	59.5

Table 11. Projected NOx and SO2 Emissions Based on Throughput Limit of 2.85 Million Tons of Coal (Standard in Units 1-6)

Unit No.	Coal Usage	Calorific Value	Heat Input	Emissions Rate	SO2	Emissions Rate	NOx	Operating
				SO2		NOx		at
	(tons)	(Btu/lb)	(MMBtu)	(lb/MMBtu)	(tons)	(lb/MMBtu)	(tons)	(Percent)
1	243,116	12,281	5.97E+06	1.76	5,240	1.40	4,181	54.2
2	235,538	12,281	5.79E+06	1.73	5,014	1.31	3,782	52.5
3	308,309	12,281	7.57E+06	1.50	5,683	1.14	4,301	54.1
4	511,503	12,281	1.26E+07	1.74	10,951	1.37	8,634	76.4
5	588,710	12,281	1.45E+07	1.79	12,922	1.33	9,585	72.3
6	962,824	12,281	2.36E+07	1.98	23,402	1.43	16,874	71.1
·								
Totals or Average	2,850,000	12,281	7.00E+07	N/A	63,212	N/A	47,357	66.2

Note: The emission rates for SO2 and NOx in Table 11 were determined by averaging the tons emitted and heat inputs in Tables 6-10.

Table 12. Projected NOx and SO2 Emissions Based on Throughput Limit of 3.30 Million Tons of Coal (PRB in Units 1-4)

Unit No.	Coal Usage Calorific Value		Heat Input	Emissions Rate	SO2	Emissions Rate	NOx	Operating
						NOx		at
	(tons)	(Btu/lb)	(MMBtu)	(lb/MMBtu)	(tons)	(lb/MMBtu)	(tons)	(Percent)
1	325,465	9,100	5.92E+06	1.90	5,627	1.10	3,258	53.8
2	315,718	9,100	5.75E+06	1.90	5,459	1.10	3,160	52.2
3	409,695	9,225	7.56E+06	1.60	6,047	0.92	3,477	54.0
4	680,226	9,225	1.26E+07	1.60	10,040	0.92	5,773	76.4
5	596,167	12,100	1.44E+07	2.00	14,427	0.85	6,132	72.1
6	977,374	12,100	2.37E+07	2.00	23,652	0.85	10,052	71.1
Totals or Average	3,304,645	10,142	6.99E+07	N/A	65,253	N/A	31,852	66.1

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WETLANDS MANAGEMENT DIVISION TELEPHONE (813) 272-7104

### **MEMORANDUM**

DATE

July 2, 1998

TO:

Al Linero, P.E.

FROM:

Rick Kirby, P.E.

THRU: Jerry Campbell, P.E.

SUBJECT:

TECO Gannon Station, Coal Yard Modification Application (0570040-006-AC)

The EPC has completed our review of the revised application and associated information submitted by TECO and dated June 8, 1998. The revised application reduces the allowable coal throughput increase to 3,666,671 tons/year. The revised application also presents the increased throughput as a pollution control project. The basis for this claim is proposed NO_x reduction as a result of burning a lower heat content coal, other emissions will increase according to the information provided. I request the following questions and comments be considered during this review.

- 1. The submittal does not address emissions from the coal yard itself. As previously outlined by EPC, we do not agree with the applicants methodology, particularly the bulldozing and crushing of coal. Emission factor from AP42 Chapter 11.9, "Western Surface Coal Mining" are appropriate.
- 2. The package includes emissions estimates for PM/PM10. Only one value is give for this factor. PM10 and total particulate matter are PSD regulated air pollutants (Table 212 400-2, FAC). The applicant must provide emissions estimates for both from the entire facility.
- 3. The applicant submitted values for increases in SO₂, NO_x, and PM/PM10. Several other PSD pollutants emitted from coal burning were not evaluated. The applicant should provide analysis for CO, fluorides, lead, and mercury.
- 4. The EPC did not receive copies of calculations used to derive the emission estimates given. These should be provided along with all input parameters.

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Al Linero July 2, 1998 Page 2

5. As stated in previous EPC comments regarding this application, the Gannon Stations' coal usage and power output have been steadily increasing over several years. From 1994 through 1996 Gannon Station's coal use has increased by approximately 23% with a corresponding heat input rate increase of 18%. Coal usage has been rapidly approaching the current permitted throughput limit of the yard.

In this submittal TECOs own numbers show that in the years they are considering baseline (1995/1996) the actual coal usage has risen to within 7% of the current limit. Given the admitted net significant increase and the fact that the coal yard limit has been reached, we do not believe this project qualifies as a pollution control project (PCP) as described in 40 CFR 52.21.

Thank you for the opportunity to provide comments.

mjh .

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# AIR MANAGEMENT DIVISION MEMORANDUM

TO:

JERRY CAMPBELL P.E.

THROUGH:

STERLIN WOODARD

FROM

PATRICK SHELL DE

SUBTECT:

COAL USE AT THE GANNON STATION

DATE:

OCTOBER 20, 1997

Tampa Electric is asking for a 335,000 ton increase in their fuel yard throughput, this represents an additional 7,800,000 MMBTU of heat value (using 1996 AOR fuel heat content). This represents enough additional heat input to run Unit # 6 with a capacity of 3798 MMBTU/hr for 2062 hours (one quarter), or the entire station at 12071 MMBTU/hr an addition 650 hours. What accounts for this requirement of addition heat input? Two possibilities are; increased power production or a large reduction in heating value of the fuel.

For the past three years, coal usage at the Gannon Station has been increasing. The coal use has increased approximately 23% from 1994 to the end of 1996 (see Figure 1). The increase in coal usage from 1995 to 1996 was further confirmed by DOE's EIA report, Cost and Quality of Fuels for Electric Plants. Attachment 1 (1995) and Attachment 2 (1996) show increases in the quantity of fuel received at the Gannon Station. The increase in coal throughput has corresponded with an 18% increase in heat input reported for the Gannon Station.

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Figure 1 Coal Use (Source: AOR)

The resulting difference between the coal use change of 23% and the heat input change of 18% was due to a reduction in the heat content of the coal. This was confirmed by additional calculations. Therefore, the majority of the increase in coal throughput is the result of increased power generation and not a change in heating value of the coal.

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The conclusion of increased power production at the Gannon Station was confirmed by analysis of the EPA quarterly summary data which includes MWH of power generation. Gannon Station has increased power production 21% from 4th Quarter 1996 through 2nd Quarter 1997. This was further reflected in increases in station capacity measured in terms of heat input. (See Figure 2)

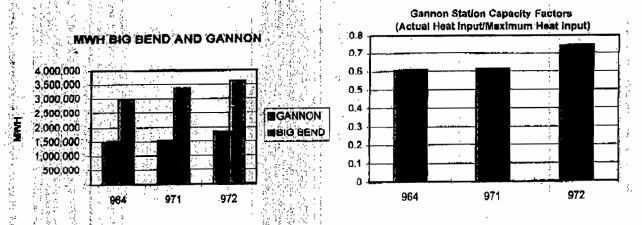
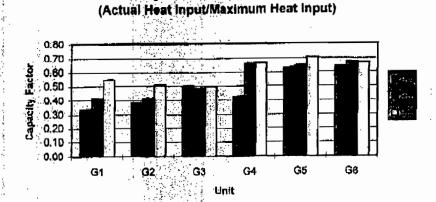


Figure 2: MWH Power Generation at Gannon and Big Bend & Gannon Station Capacity Factors (Source: EPA Acid Rain Division)

The increases in station heat input capacity are broken down into unit heat input capacities for the years 1994, 1995 and 1996 (see Figure 3). The largest changes are in units 1 and 2. It was noted that these units have had periods of downtime in which work was done on these units in recent years.



Changes in Unit Capacity Factor

Figure 3: Unit Capacities (Source: Calculated from AOR Heat Input)

3

The possibility that the increase in Gannon Station load was due to a decrease in Big Bend station load was looked into. During the pass three quarters, the Big Bend station has also picked up additional load. Therefore, the entire TEC system has been increasing power generation for this time period (see Figure 2).

The resulting increases in SO2 emissions at the Gannon station were observed by the CEM's (see Figure 4).

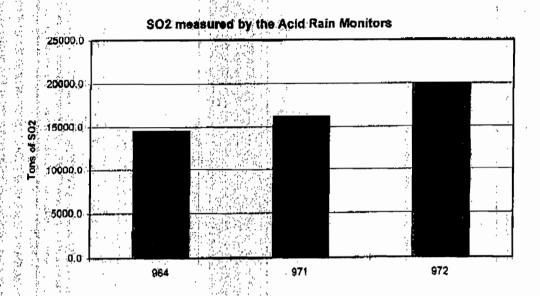


Figure 4: SO2 Emitted (Source: EPA Acid Rain Division)

### Recommendations:

- 1) The Gannon Station coal yard throughput limit is the limiting factor in the production of more power at the Gannon Station. It is recommended that permitting address the coal yard as "bottle neck" in the production of power at the Gannon Station and consider the increase in (PM, NOx, CO, VOC, and Pb) emissions from the six boilers resulting from an increase in coal throughput.
- 2) Further investigation should be conducted to determine if any of the Units at Gannon have been modified or reconstructed in order to accommodate the significant increases in their capacity factors. An example is Gannon 1 which has increased its capacity factor from 0.34 to 0.55 in the past 3 years.

Cc: Rick Kirby, P.E.



## Department of Environmental Protection

Lawton Chiles Governor Virginia B. Wetherell Secretary

June 10, 1998

Mr. Brian Beals, Section Chief Air, Radiation Technology Branch Preconstruction/HAP Section U.S. EPA - Region IV 100 Alabama Street, Southwest Atlanta, Georgia 30303

Re: TECO Gannon Plant-Coalyard and Fuel Use Project

Dear Mr. Beals:

Attached for your comment is a PSD Non-Applicability evaluation submitted in support of a request to increase the coalyard throughput to account for the lower heating value and higher moisture of certain coals increasingly used at the Tampa Electric Company (TECO) Gannon Plant in Tampa.

Because there is a federally-enforceable coalyard throughput limit of 2,850,000 tons per year and the units operate at a relatively low availability, a relaxation could theoretically lead to increased use of the six units. However, we could simply change the basis of the throughput limit from an annual tonnage to the equivalent annual heat throughput. TECO has submitted information to demonstrate that the project also qualifies as a pollution control project (PCP) in accordance with 40 CFR 52.21(b)(32).

We intend to make a decision on the matter shortly and welcome your input. If you have any questions, please call me at (850)921-9523.

Sincerely,

A. A. Linero, P.E.

Administrator

New Source Review

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Enclosure



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BUREAU OF AIR REGULATION

June 8, 1998

Mr. A.A. Linero, P.E., Administrator New Source Review Section Florida Department of Environmental Protection Bureau of Air Regulation 111 Magnolia Drive, Suite 4 Tallahassee, Florida 32301 Via FedEx Airbill No. 803727909101

Re: Tampa Electric Company (TEC) - F.J. Gannon Station Fuelyard Modification Construction Permit Application Supplemental Information Application Reference No. 0570040-006-AC

Dear Mr. Linero:

This correspondence contains TEC's evaluation demonstrating that our NO_x Reduction Pollution Control Project (PCP) at F.J. Gannon Station meets the PSD PCP exemption criteria. This supplemental information is submitted as per your request at our January 29, 1998 meeting, and as established during our meeting with Florida Department of Environmental Protection (FDEP) staff on Thursday, May 28, 1998. Please note that the requested annual coal throughput increase associated with this PCP (and included in the above referenced air construction permit application) has been revised to 3.30 million tons per calendar year, as a result of the finalization of the Big Bend and F.J. Gannon Stations Phase II Acid Rain and Title V compliance plans.

Also enclosed are three (3) signed and sealed copies of the revised pages for the construction permit application. One (1) signed and sealed copy has also been sent to both Mr. Rick Kirby, P.E. at the Environmental Protection Commission of Hillsborough County (EPCHC), and Mr. Gerald Kissel, P.E. at FDEP - Southwest District - Tampa.

As communicated to FDEP during our meeting in Tallahassee last week, TEC is requesting that FDEP consider TEC's system-wide emission reductions in their evaluation of our requested fuelyard coal throughput increase. In light of anticipated NO_x emission reductions of 15,000 tons per year, coupled with the critical nitrogen deposition issues in and around Tampa Bay, TEC strongly believes that this project falls well within the definition of a PCP. This coal throughput increase will also allow TEC to achieve significant system-wide SO₂ reductions using the new Big Bend Station Units 1 and 2 scrubber and the F.J. Gannon Station Title V compliance plan. Finally, FDEP approval of TEC's requested coal throughput increase is essential to maintaining the Early NOx Reduction MOU between TEC and EPCHC.

Mr. A.A. Linero, P.E., Administrator June 8, 1998 Page 2 of 2

Thanks again for your cooperation and assistance with this project. If you have any additional questions or comments, feel free to call me at (813) 641-5034.

Sincerely,

Theresa J.L. Watley Consulting Engineer

**Environmental Planning** 

EP\gm\TJLW596

### Attachments

c: Mr. Clair Fancy - FDEP, Tallahasee

Mr. Richard Kirby - EPCHC (enc)

Mr. Gerald Kissel - FDEP, Tampa (enc)



#### TAMPA ELECTRIC

January 9, 1998

Mr. Jerry Campbell
Assistant Director - Air Programs
Environmental Protection Commission
of Hillsborough County
1410 North 21st Street
Tampa, FL 33605

Re:

Tampa Electric Company F.J. Gannon Station 1997 Coal Throughput

Dear Mr. Campbell:

As per our recent telephone conversation, this letter is being provided to conclude our ongoing discussions concerning the 1997 annual throughput limit at Gannon Station. We truly appreciate EPC's efforts in working with us to develop a back-up plan that allowed for operating flexibility, while mitigating any potential environmental impacts, at Gannon Station if we were faced with a permit exceedance. We are pleased to inform you that we did not exceed our annual throughput limit of 2.85 million tons of coal. Thanks to the concerted efforts from several departments at Tampa Electric, we were able to maintain compliance with the throughput limit established in permit AC29-114676 and imposed in permit AC29-216380. Attached you will find a monthly accounting of the coal deliveries to the F.J. Gannon Station during 1997, which totaled 2.84 million tons

Again, thank you for your cooperation, and I look forward to resolving the long-term fuel yard throughput issues over the next few months.

Sincerely,

Gregori M. Nelson, P.E. Administrator - Air Programs Environmental Planning

EP\gm\TJLW\$83

Enclosure

c/enc: Mr. Clair Fancy, FDEP - Tallahassee

Mr. Bill Thomas, FDEP - Tampa Ms. Karen Sheffield, TEC

M. Xllde

TAMPA ELECTRIC COMPANY

P.O. BOX 111

TAMPA, FL 33601-0111

HILLSBOROUGH COUNTY 223-0800

DUTSIDE OF HILLSBOROUGH COUNTY 1-888-223-0800

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BUREAU OF AIR REGULATION

### 1997 Coal Deliveries by Month - GANNON STATION (TONS)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Fuel Expense Report (Fuels Accounting)	276085	260705	222016	189805	245488	356487	248103	305914	226142	155635	147354	207293	2841027
(1944) (1945) (1945) (1945) (1945) (1945) (1945) (1945) (1945)	TOWARD CO. TO THE	· :.	27 - 17	· / ';	a magazia.		1,24 /4	170	7 W 1 7	4,474			1 1 2

# Florida Department of Environmental Protection

TO:

Kirby Green

FROM:

Howard Rhodes

DATE:

December 15, 1997

SUBJECT:

TECO Gannon Coal Yard Project

On July 1, the Southwest District received a permit application from TECO to increase throughput at the Gannon Coal Yard from 2.85 million tons per year (MMTPY) to 4 MMTPY. TECO submitted additional information in response to completeness letters of July 25, September 18 and October 10. It appeared initially that the only issue was how to avoid an increase in particulate emissions from the increased operations at the coal yard. The County pointed out that an increase in throughput may actually be a "debottlenecking project" resulting in increased use of the electrical units or, at the very least, an increase in particulate emissions from those units due to the use of high ash, low Btu, Powder River Basin (PRB) coal.

TECO began experimenting with PRB coal as a strategy to cut back nitrogen oxides  $(NO_X)$  emissions in 1996. PRB coal also has low sulfur. They are determining the best way to blend it with any other coals available to them to meet their economic and environmental objectives. They will likely realize a decrease in  $NO_X$ , little change in  $SO_2$ , and an increase in PM within their permitted limits. The units would probably not produce significant additional electricity. They would just consume more coal to reach the same historical heat input and output.

The County believes a PSD permit may be required. Conversations between the District and EPA suggest the same. The reason is that any change, including relaxation of a federally enforceable permit condition (like the present 2.85 MMTPY throughput limit), at a facility requires PSD review for all units affected by the change.

Our staff (including Doug Beason and Pat Comer of OGC) met with Hillsborough County and TECO (including Larry Curtin) on November 4 expecting to have a full discussion of the matter. Instead, TECO (unexpectedly) focused on how to handle a consent order if they exceed their permitted limits by the end of the year. They were told by Pat Comer that an order cannot be given in advance of a violation, especially when it may involve a PSD violation. This situation, unlike an event such as a hurricane, does not warrant an emergency order. On December 1, we received a copy of a letter from TECO indicating that they will submit responses to the most recent request by the Southwest District by December 31.

What is required is that the Bureau of Air Regulation conduct a PSD Applicability review. We advised the District to refer the permit to BAR. All such permits are now normally done here. There are no construction permits for the boilers whereas there is one for the coal yard. We believe we can conduct the determination quickly if TECO provides the information as indicated in the December 1 letter and works directly with BAR. We would provide EPA the reasons for our determination. Although EPA was given a brief summary of this situation by the District staff, we do not believe that EPA had enough facts to offer an opinion to the Department. Normally they prefer that we make such decisions. If PSD does not apply, relatively simple permit revisions of the coal yard permits are required.

According to the District staff, TECO plans to work off their inventory at Gannon to avoid exceeding their permitted throughput this year. This is what they should do to avoid any permit violations. EPA is reviewing past projects at various power companies, including TECO, for PSD applicability.

### **BEST AVAILABLE COPY**



TAMPA ELECTRIC

November 24, 1997

Mr. Gerald Kissell, P.E.
Air Permitting Supervisor
Florida Department of Environmental Protection
Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Via Facsimile and U.S. Mail

Re:

Tampa Electric Company (TEC)

Fuel Yard Modification Construction Permit Application

Response to Agency Comments

Application Reference No. 0570040-006-AC

Dear Mr. Kissell:

Pursuant to the provisions of Section 120.60, F.S. and Chapter 62-12.070(5), F.A.C., this correspondence is to inform you that TEC's responses to the agency's comments received on October 28, 1997 regarding the above referenced construction permit application will be submitted in full by December 31, 1997.

If you have any additional questions or comments, feel free to contact me at (813) 641-5034. Thank you for your assistance on this project.

Sincerely,

Theresa J.L. Watley

Consulting Engineer Environmental Planning

EP\pm\TJLW574

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BUREAU OF AIR REGULATION

CC: C. anderson, BAR C. Farcy, BAR

P.O. BOX 111

TAMPA, FL 33601-0111

TAMPA ELECTRIC COMPANY

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DUTSIDE OF HILLSBORDUGH COUNTY 1-888-223-0800

Mr. Richard Kirby - EPCHC

Mr. Al Linero - FDEP Tall.

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DOTTE BERGER JOE CHILLURA CHRIS HART JIM NORMAN JAN PLATT THOMAS SCOTT ED TURANCHIK

EXECUTIVE DIRECTOR ROGER P. STEWART



ADMINISTRATIVE OFFICES, LEGAL & WATER MANAGEMENT DIVISION 1800 - 9TH AVENUE TAMPA FLORIDA 33805 TELEPHONE (813) 272-5960 FAX (813) 272-5157

AIR MANAGEMENT DIVISION TELEPHONE (813) 272-5530 Waste Management Division TELEPHONE (813) 272-5788

ANDS MANAGEMENT DIVISION TELEPHONE (813) 272-7104

### ENVIRONMENTAL PROTECTION COMMISSION of Hillsborough County

FAX Transmittal Sheet

TO: Voice Phone: FAX Phone: TOTAL NUMBER OF PAGES INCLUDING THIS COVER PAGE: (813) 272-5605 EPC FAX Transmission Line: For retransmission or any FAX problems, call: (813) 272-5530 (Circle applicable section below) Air Division -Enforcement -Engineering -Support Operations SPECIAL INSTRUCTIONS:

COMMISSION

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ROGER P STEWART



ADMINISTRATIVE OFFICES, LEGAL & WATER MANAGEMENT DIVISION 1900-9TH AVENUE TAMPA, FLORIDA 33605 TELEPHONE (813) 272-5960 FAX (813) 272-5167

AIR MANAGEMENT DIVISION TELEPHONE (813) 272-5530 WASTE MANAGEMENT DIVISION TELEPHONE (813) 272-5788 WETLANDS MANAGEMENT DIVISION

TELEPHONE (813) 272-7104

December 15, 1997

Ms Karen A. Sheffield, P.E. General Manager Tampa Electric Company P. O. Box 111 Tampa, FL 33601-0111

Re: Gannon Station Fuel Throughput

Dear Ms. Sheffield:

This letter is a follow-up to continuing discussions between Tampa Electric and EPC staff concerning the throughput limits at the Gannon coalyard. As you are aware, the State-issued construction permit AC29-114676 contains a federally enforceable condition limiting the yard to 2.85 million tons of coal per year. It is our understanding that Tampa Electric is interpreting that to be a calendar year limitation and that you are close to reaching that figure for 1997. The EPC has the lead on compliance in this matter and we have been asked to respond. The purpose of this letter then is to provide Tampa Electric some information regarding the EPC's intentions.

The EPC does not have the delegated or the statutory authority to change the existing permit limitation. The DEP is the permitting agency and we will work with them to process Tampa Electric's request to increase the coalyard throughput. The issue of what was intended to be covered by the federal oil to coal authorization and how the EPA's PSD regulations relate will be sorted out in time. Our analysis of the Tampa Electric's construction permits indicates there are PSD implications, but admittedly we have not studied the federal conversion initiative to see if PSD was to be somehow preempted. Clearly, this is a key issue in processing your requests.

In the hear term, we have been asked what steps could be taken to minimize the EPC's concerns about exceeding the 2.85 million ton limitation prior to December 31. We have been advised that Tampa Electric could probably operate the Gannon station without exceeding it, but this would involve holding deliveries and running the plant reserves below the recommended minimums. In order to avoid this scenario and mitigate any environmental impact, the EPC would not initiate administrative action if the limit were exceeded provided the following conditions were met:

THE SHALL SH

Ms. Karen A. Sheffield, P.E. December 15, 1997 Page 2

- Tampa Electric will treat all coal destined for the Gannon station prior to delivery at the facility with a dust suppressing surfactant. Evidence of the treatment, including an MSDS and the approximate application rate in gallons of surfactant per ton of coal, shall be available at the plant upon request on each and every shipment received. This shall continue until such time as the Department takes final agency action on the throughput request.
- 2. The EPC will be notified as soon as practical prior to the receipt of any coal exceeding the 2.85 million ton figure before year's end. The notification shall be in writing and include the year-to-date total coal received, the amount in this particular shipment, how it is being received (rail or barge), and the type and the rate of application of the surfactant.
- 3. Tampa Electric shall evaluate the performance of each individual electrostatic precipitator controlling the particulate matter emissions from the combustion of the coal in the boilers. At a minimum this will involve an analysis of the voltage and current parameters to ensure maximum efficiency. This would be similar to the corona power exercise the EPC attempted previously. A written copy of the analysis and any recommended changes in operation shall be submitted to the EPC within 45 days of completion. The analysis and the results should be completed no later than June 1998.

Be advised this letter only covers the contingency that excess coal is received-not burned. If Tampa Electric were to have to fire excess coal, then the EPC would have to reevaluate the guidance provided above. This would be a more serious concern and the agency would have less flexibility.

We also need to mention that all annual throughput limitations need to be based on twelve month rolling averages in order to meet the EPA's practical enforceability test. Thus, if the Department determines that the federal off to coal initiative did not preempt PSD, and it is appropriate to continue limiting the facility's potential to emit with a coal throughput below the boiler's capacity, then it would seem as though the Department would be required to use rolling averages. This would be reflected in any new construction permit as well as your Title V permit. We noted the draft Title V does not use the rolling average terminology, and we will ask that it be changed accordingly.

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Ms. Karen A. Sheffield, P.E. December 15, 1997 Page 3

44

Please keep us apprised of this situation, and we will try to work with you. If you have any questions, please contact myself of Jerry Campbell.

Sincerely,

Roger P. Stewart Executive Director

cag

cc: Clair Fancy Bill Thomas

BANGARA MANAGER

### BEST AWAILABLE COPY



November 24, 1997

Mr. Gerald Kissell, P.E. Air Permitting Supervisor Florida Department of Environmental Protection Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

Via Facsimile and U.S. Mail

Re:

Tampa Electric Company (TEC)

Fuel Yard Modification Construction Permit Application

**Response to Agency Comments** 

Application Reference No. 0570040-006-AC

Dear Mr. Kissell:

Pursuant to the provisions of Section 120.60, F.S. and Chapter 62-12.070(5), F.A.C., this correspondence is to inform you that TEC's responses to the agency's comments received on October 28, 1997 regarding the above referenced construction permit application will be submitted in full by December 31, 1997.

If you have any additional questions or comments, feel free to contact me at (813) 641-5034. Thank you for your assistance on this project.

Sincerely,

Theresa J.L. Watley Consulting Engineer **Environmental Planning** 

Mr. Richard Kirby - EPCHC

Mr. Al Linero - FDEP Tall.

TAMPA ELECTRIC COMPANY

P.O. BOX 111

EP\gm\TJLW574

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CC: C. anderson, BAR

Nov 3 '97

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### EXECUTIVE DIRECTOR

ROGER P. STEWART



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WASTE MANAGEMENT DIVISION TELEPHONE (813) 272-5788

WETLANDS MANAGEMENT DIVISION TELEPHONE (813) 272-7104

#### MORANDUM ME

DATE:

November 3, 1997

TO:

Al Linero, PE

1", " 1 p (" ", 1 m . "

FROM:

Richard C. Kirby IV, PE

Jerry Campbell, PE THROUGH:

SUBJECT:

Tampa Electric Company (TECO) Cannon Coal

Yard

(0570040-006-AC)

TECO has made application for a construction/modification permit to increase coal throughput from 2.85 to 4.0 million tons per year. The application was received in June, but to date it is still incomplete. The current 2.85 million ton per year limit was established in federally enforceable construction permit AC29-114676 issued in 1987 by Tallahassee. The permit reads "per year" and TECO is interpreting that to be a calendar year (Jan 1 - Dec

The additional fuel is to be burned at Gannon and is not being shipped off elsewhere. We reviewed EPA's New Source Review Manual. Prevention of Significant Deterioration and Non Attainment Area Permitting, October 1990. This manual was not finalized, but it is considered an authoritative document. Based on EPC's analysis, the handling of the additional 1.15 million tons of coal will produce a significant increase in PM emissions just in the yard itself. A second issue is the emissions from the combustion of the coal. feel it should be reviewed for PSD/BACT applicability as well under the debottlenecking provision.

Since the coal yard throughput limit also limits the amount which can be burned in the furnaces, it in effect determines the potential emissions for the facility. By permit, any individual boiler can operate 8760 hours, but in total the facility's fuel is capped at 2.85 million tons. The definition of potential to emit incorporates limitations on fuels, so it appears appropriate to consider it here. The permitting history indicates the throughput limitations are not arbitrary, and were based on the facility's anticipated use when it was converted from fuel oil to coal in the late 70's and early 80's. The fairly dramatic increase in coal usage over the past several years (24% in 3 years) and the size of

### **BEST AVAILABLE COPY**

Memorandum November 3, 1997 Page 2

the increase requested (1.15 million tons or 40%), indicate to us Gannon is being converted from a cyclic plant to a baseload facility. This seems to go beyond an inconsequential request and requires a closer look. Part of the tonnage increase (maybe a fifth) appears to be due to the burning of lower btu coals to lower NOX and that should be accounted for in our review. However, when the heat input to the facility increases, that would seem to warrant NSR. A historical summary is attached (attachment #2).

The emissions which result from increased combustion clearly should be included in determining the net emissions increase. The relaxation in the coal yard removes a bottle neck at the facility and the NSR Guidance Notebook has established precedence where this must be taken into account (see attachment #1).

Thank you for the opportunity to provide comments.

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Attachments

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# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION III 841 Chestrut Building Philadelphia Pennsylvania 19107-4431

OCT 21 1993

Mr. Thomas L. Henderson
Regional Director
Air Regional Office
Virginia Department of Environmental Quality
7701-03 Timberlake Road
Lynchburg, Virginia 24502

Dear Mr. Henderson:

I have reviewed your letter dated October 6, 1993 and discussed it briefly with Tom Berkeley and other members of your office.

EPA's Office of Air Quality Planning and Standards (OAQPS) has reviewed the conclusions outlined below but I have not requested that a full review of the Lynchburg Foundry project be made and a formal EPA opinion be issued. I felt, because of an immediate opinion is needed for your meeting with the company this week, that time would not allow for such an in depth analysis and review. If a formal Agency opinion does become necessary, for any reason, please let me know and we will initiate that process.

I concur with the DEQ's determination that the proposed modification is subject to PSD review.

The Lynchburg Foundry Company owns and operates an iron foundry including cupolas, molding equipment, and other related process equipment. The company plans to modify (physically change) the molding equipment and other process equipment downstream of the cupolas to modernize and expand the production capability of the plant. Although not be physically changed, the capacity of the cupolas will be expanded as a result of the downstream modifications and emissions increases will result.

The PSD regulations at 40 C. F. R. \$52.21(b)(2) define a "major modification" as one in which a physical change in or change in the method of operation of a major stationary source results a significant net emissions increase. The cupola is an emissions unit [40 CFR \$52.21(b)(7)] at the stationary source [40 CFR \$52.21(b)(5)]. The net emissions increase [40 CFR \$52.21(b)(3)] occurs at the source and must include all emissions increases and decreases which are the result of the modification. Clearly, the emissions from the cupola would not experience a 500 tons per year increase in Carbon Monoxide emissions if the foundry were not being physically modified and production expanded. Therefore, your conclusion that the proposed

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modification is subject to PSD review is the appropriate determination.

Based on the historical data provided as an attachment to your letter, this source is clearly "major" for purposes of PSD and, again, your conclusion in "Position Number 1" that the 1977 permit contained state and federally enforceable production limits is appropriate.

A detailed discussion of "Major Modification Applicability" and "netting" can be found in the October 1990 New Source Review Workshop Manual, Chapter A, Section III., pages A.33 through A.56, a copy of which is enclosed. If your office needs a copy of the complete Manual, please call me and I will see that copies are sent to you immediately. A situation similar to the one presented by Lynchburg Foundry is presented on page A.53. A new unit is being installed; existing units A and B are not being physically modified but their emissions will increase as a result of the installation of the new unit; the "anticipated increase must be included as part of the increase from the proposed modification".

A last point to consider as your office develops the PSD permit for this source is the actual netting transaction itself. In order for emission decreases to be creditable, they must be based upon current actual emissions and be federally enforceable. Therefore, any units that are being shutdown or modified to produce the decrease must be included in the PSD permit.

If I can be of any further assistance to you, please do not hesitate to contact me at Area Code 215, 597-8379 or at the above address.

Sincerely,

Eileen M. Glen, Chief New Source Review Section

### Enclosures

cc: Ms. Pamela Faggert, Director Air Division, VDEQ

> Mr. Robert Beasley, OPE Air Division, VDEQ

Mr. David Solomon, Chief

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Mr. David Solomon, Chief New Source Review Section, OAQPS BEST AVAILABLE COPY
EPC/HC AIR MANAGEMENT Fax:813-272-5605 Nov 3 '97 16:55 P.06/07

## Outline of Tampa Electric Coalyard Permitting:

Tall to the second	to the state of th	Carron de la carro	
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6/11/82	Noble & Associates	coalyard	Modification includes: new cyclone separators will be
			added to the existing bunker feed, replace existing fines
}	<b>\</b>		crusher building with a new building.
1			Throughouts: existing 1,269,950 ton/year (86% rail, 14%
			barge), proposed 2.4 mil ton/year (1.5 million by rail, 0.9
45/5/55			million by barge)
10/6/82	Application for	coalyard	Modification of Gannon coal handling to serve
}	modification to coal		reconverted units 1-4. Existing emissions: 39.4
11/2/82	yard.		tons/year, Proposed: 59.8, increment 20.4 tons
11/2/62	Response to	coalyard	Attached Noble report, incremental increase is 21,45
0.000	incompleteness letter		
3/9/83	DER Technical	coalyard	The particulate emission increase will be less than 25
	Evaluation and	1	tons per yeartherefore the modification is not subject to
ļ	Preliminary	1 :	pre-construction review.
	Determination for		
A/40/00	AC29-61276		Construction was it is inqued as the subset limits
4/12/83	issuance of AC29-	coalyard	Construction permit is issued, no throughput limits
10/0/04	61276		
10/2/84	Application for an air	coalyard	Control devices: enclosures and wet dust suppression
40/0/04	operating permit		system
10/2/84	Certification of	coalyard	Initial operation: September 1957
{	completeness of	WA - UNIN	Operation rates: 0-3000 tons/hr
	construction ////	l P	Design Capacity. 2.4 million tons/year
		<u> </u>	During compliance test: 1772 tons/hr
10/17/84	Letter from DER	coalyard	Modification is a deletion of the H/J transfer point venting
}	accepting AC29-	1 :	and associated cyclone dust separator
040/05	61276 modification	1	
9/19/85	EPC comments on	coalyard	Comment: if coal throughput is greater than 2,4 million
	coalyard operating		tons, permittee must recalculate PM increment. THIS
	permit		WAS DELETED AND THE REQUIREMENT FOR
			ANNUAL THROUGHPUT IN THE YARD SHALL NOT
		} :	EXCEED 2.4 MILLION TONS AS PER THE
0.0000			CONSTRUCTION PERMIT.
9/26/85	Meeting record	coalyard	Condition for 2.4 million throughput limit is discussed,
100505	THE PARTY WAS ALL AS A STATE OF THE PARTY WAS	<u> </u>	TEC requests 20 % opacity limit for coal piles
10/25/85	air operating permit is	coalyard	The maximum design handling rates for each point is
	issued		addressed.
1/8/86	application for a	coalyard	Amendment of the coal throughput to the Gannon Coal
	modification of		Yard facility from the initial design throughput rate of 2.4
	coalyard	i   .	million to a revised maximum operating rate of 2.89
			million tons/year. No physical changes will be made to
			the coalyard.
			Attachment 1: Pre-construction emissions: 156.2 tpy
			Permitted: 160.12 tpy
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Proposed: 180.82 tpy
	11 / 1/2 / March / 1847 / 16		Increment 24.65 tpy
2/27/86	Response to	coalyard	No information, attachments 1-5 are missing
	incompleteness letter		
4100107	AC 114676		7 NO. OF THE RESIDENCE
1/29/87	Response to 2nd	coalyard	Attachment graphing increase in emissions ( linear
	incompleteness		increase), spreadsheet with coal yard calculations

4/8/87	Technical evaluation	coalyard	Evaluated increase from 2.4 to 2.85 million tons/yr, PM
	and preliminary		increment is 23.97 tons/yr
	determination		Main Mitigation Points:
}	}		coal pile management being improved by direct
}	{		throughput 10% to the bunkers
			2) water sprays or chemical wetting will be applied to
			storage piles during dry periods to maintain an opacity of
	·	,	less than or equal to 5% this condition is necessary to
			Jusitify the 50% and 70 % control efficiencies claimed by
5/19/87	Issuance of AC29-	coalyard	Condition #8 the annual coal throughput shall not exceed
ar Taror	114676	Coalyara	2.85 million tons per year.
7/11/87	application for	coalyard	Nothing new
	operating permit		
10/1/87	issuance of	coalyard	Condition 7 annual throughput limit is 2.85 million tons
	modification to		
}	operating permit	:	
	AO29-136682	} :.	
	Replaces: Ac29-		
	114676 and AO29-	j	
}	94044	1	
8/1/88	application for a	coalyard	Increase throughput capability in the new coal unloader
	construction permit for		existing throughput:
	the replacement of the		
}	west barge coal		
	unloader	<u> </u>	· · · · · · · · · · · · · · · · · · ·
10/13/88	• • • • • • • • • • • • • • • • • • • •	coalyard	Annual throughput will be 1,020,000 tons coal/year
	and preliminary		emission increment is a -0.1 tons/year
	determination for		existing 0.61tpy to proposed 0.51tpy
10(0(00	Gannon coal unloader	 	10-His-4, 4500 t-b and 4070000 t/
12/8/88	Issuance of AC152987 for the	coalyard	Condition 1: 1500 tph and 1070000 tons/yr doal
	replacement of the		throughput limit Condition 3: permittee shall use a wetting agent to meet
: : :	west coal unloader		5.% opacity.
4/7/89	unit 1-6 rotoclone	Rotoclone	Coal transfer rate 730,000 ton/yr, utilization rate 1600
411109	application	NotoGorie.	ton/hr per bunker
9/1/89	application for	coalyard	nothing new
	operating permit for	.,	,
"	coalyard	<b> </b> }	
10/6/89	first AO for rotoclones	Rotoclones	annual coal throughput < 1600 TPH/bunker
12/15/89	issuance of amended	coalyard	operating permit for replacement of ac permit
, , , , ,	air operating permit		
	for coalyard AO29-		
	136682	,	
3/10/93	memo to DEP	coalyard .	Coalyard throughput for 1991 was 2.29 million tons
. ,	concerning the	v. L. Yari	fron ore will be replacing 1/2 of the limestone as a fluxing
	renewal of operating	7 7 7 10	agent, ie 14,250 tpy
; ;	permitAO29-136682		WAS THE EMISSIONS INC. DUE TO THE USE OF
<u> </u>	: :	<u></u>	THIS FLUXING AGENT LOOKED AT?
4/23/93	Issuance of AO29-	coalyard :	
, , , , , , , , , , , , , , , , , , ,	216480		
8/28/95	letter from TEC	coalyard	TEC is informing DEP that it intends to construct the third
· · .	1	•	of four coal reclaimers permitted under AC 29-61276

#### **COMMISSION**

DOTTIE BERGER
JOE CHILLURA
CHRIS HART
JIM NORMAN
JAN PLATT
THOMAS SCOTT
ED TURANCHIK

#### **EXECUTIVE DIRECTOR**

ROGER P. STEWART



ADMINISTRATIVE OFFICES, LEGAL & WATER MANAGEMENT DIVISION 1900 - 9TH AVENUE TAMPA, FLORIDA 33605 TELEPHONE (813) 272-5960 FAX (813) 272-5157

AIR MANAGEMENT DIVISION TELEPHONE (813) 272-5530

WASTE MANAGEMENT DIVISION TELEPHONE (813) 272-5788

WETLANDS MANAGEMENT DIVISION TELEPHONE (813) 272-7104

October 27, 1997

Mr. Patrick Ho Environmental Planning Tampa Electric Company P. O. Box 111 Tampa, FL 33601-0111

Re: Gannon Fuel Yard

Dear Mr. Ho:

This is in response to TEC's correspondence of October 10, 1997 and follow up conversations regarding the fuel throughput needs for the Gannon Station. As you are aware, the Florida DEP is the permitting authority for your facility and they will render any final determinations regarding TEC's permits. However, based on our understanding of the permitting rules and our discussions with the DEP staff, we do not believe they will be able to grant any type of temporary permit which would allow TEC to exceed the current 2.85 million ton throughput limitation. This limitation is listed in the federally enforceable permit AC29-114676 issued May 19, 1987, and the procedures to modify that figure involve considerably more deliberations than TEC's timeframe would seem to allow.

If we are correct, and there is not sufficient time for TEC to provide a complete application and have it given a proper review, then a consent order may be an option. Consent orders traditionally allow for some continued activity while corrective actions are being taken. They also have the advantage of a shorter turnaround and potentially could be in place in the matter of a few weeks. The remedies would have to be agreed to by the signatories, as well as the DEP and the EPA. Both have oversight responsibilities on EPC's compliance activities, and it would make no sense to proceed without their concurrence.

# RECEIVED

OCT 2 9 1997

BUREAU OF AIR REGULATION



Patrick Ho October 27, 1997 Page 2

We have not approached the Executive Director on this matter, and merely mention the consent order mechanism as a possible option. If the throughput exceedance appears imminent and TEC would be receptive to discussing an order, then please notify the EPC.

Sincerely,

Jerry Campbell, P.E. Assistant Director

Air Management Division

cag

cc: Clair Fancy

Bill Thomas Dick Dubose



# Department of Environmental Protection

Lawton Chiles Governor Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

Virginia B. Wetherell Secretary

October 24, 1997

Certified Mail - Return Receipt Requested

Ms. Janice K. Taylor Tampa Electric Co. P.O. Box 111 Tampa, FL 33601-0111 RECEIVED

OCT 27 1997

BUREAU OF AIR REGULATION

Re: Gannon Fuel Yard - two applications:

- 1) Air Permit Application, ref. 0570040-006-AC
- 2) October 10, 1997 request for temporary permit condition

Dear Ms. Taylor:

Our review of the subject application(s) has revealed a need to conduct an analysis of the effects that increasing throughput in the coal yard will have on emissions generated by the units burning the fuel. As this matter involves a determination of applicability of the regulations for the Prevention of Significant Deterioration (PSD), we have requested assistance from the New Source Review Section in Tallahassee. In order to facilitate the PSD applicability review and to continue processing of your application(s), please submit the following additional information, pursuant to Rule 62-4.050(1), F.A.C.:

- 1. Your responses to date have not satisfactorily addressed the issue raised in the attached Cctober 8, 1997 letter to Brian Beals. Please respond to that issue.
- 2. Construction permit AC29-114676, issued May 19, 1987, authorized an increase in coal throughput at the coal yard from 2.4 million tons per year to 2.85 million tons per year. The current application leads to the raising of the question as to the basis for the request to increase the coal yard throughput at that time, particularly regarding any considerations at the boilers. Please provide further detail.

3. Please address the issue discussed in the HEPC correspondence attached.

Note - Rule 62-4.050 requires applications of this type to be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses for additional information of an engineering nature. Therefore, your response to the above requests should be certified as above.

Pursuant to the provisions of Section 120.60, F.S. and Chapter 62-12.070(5), F.A.C., if the Department does not receive a response to this request for information within 90 days of the date of this letter, the Department will issue a final order denying your application. You need to respond within 30 days after you receive this letter, responding to as many of the information requests as possible and indicating when a response to any unanswered question will be submitted. If the response will require longer than 90 days to develop, an application for new construction should be withdrawn and resubmitted when completed information is available. Or for operating permits, you should develop a specific time table for the submission of the requested information for Department review and consideration. Failure to comply with a time table accepted by the Department will be grounds for the Department to issue a Final Order of Denial for lack of timely response. A denial for lack of information or response will be unbiased as to the merits of the application. The applicant can reapply as soon as the requested information is available."

Your response should be submitted to this office, with copies to HEPC and the New Source Review Section in Tallahassee. If you have any questions, please call me at (813)744-6100 extension 107, or for questions regarding the PSD applicability determination, please call Al Linero, P.E., at (850)488-1344.

Regarding your request for a temporary permit condition (item 2 above), the request is denied (based on incompletion item 1. above). See the attached "Notice of Denial."

Sincerely,

Gerald J. Kissel, P.E.

c: Mr. J. Campbell/Mr. Rick Kirby, HEPC

Mr. G. Richardson, DEP

Mr. A. Linero, DEP

c:\teco1097.doc gjk

# Memorandum

# Florida Department of **Environmental Protection**

TO:

Brian Beals, EPA Atlanta

FROM:

Jerry Kissel, Air Program SWD

DATE:

October 8, 1997

Tampa Electric Co's (TECO) Gannon plant has separate permits for its coal yard and its boilers. In order to reduce NO_x emissions, they are changing to a lower btu/lb western coal and have applied for a modification to the coal yard permit to increase the annual throughput. The coal yard modification is not PSD-significant.

The increased coal throughput will cause a PSD-significant increase in PM at the boilers. Should this factor be brought into the evaluation of the coal yard application? Debottlenecking has been mentioned, and TECO has stated that de-bottlenecking refers to an increase in <u>production</u> from their boilers (and there will be no increase in production), not to an increase in <u>emissions</u> from their boilers.

I talked to Greg Worley on this today, who said that it is the total facility emissions which must be evaluated, so I believe we have our answer, but I'd appreciate a written reply.

Thanks

cc:

R. Kirby, EPC A. Linero, DEP J. Taylor, TECO

c:\msoffice\winword\b bealls.doc

COMMISSION

DOTTIE BERGER
JOE CHILLURA
CHRIS HÄRT
JIM NORMAN
JÄN PLATT
THOMAS SCOTT
ED TURANCHIK

# EXECUTIVE DIRECTOR ROGER P. STEWART

MILL DE DE DOUGH COUNTY

ADMINISTRATIVE OFFICES, LEGAL & WATER MANAGEMENT DIVISION 1900 -9TH AVENUE TAMPA, FLORIDA 39605 TELEPHONE (813) 272-5960 FAX (813) 272-5157

AIR MANAGEMENT DIVISION TELEPHONE (813) 272-5530

WASTE MANAGEMENT DIVISION TELEPHONE (813) 272-5788

WETLANDS MANAGEMENT DIVISION TELEPHONE (813) 272-7104

MEMO

DATE:

October 24, 1997

: TO:

Jerry Kissel, P.E.

FROM:

Rick Kirby, P.E.

SUBJECT:

Tampa Electric Company , Gannon Coal Yard Modification Request

0570040-006-AC

I have reviewed TECO's responses to our requests for additional information. These responses are marked Addendum, August, 1997 and Addendum, September, 1997. Based on my review I have determined there are 2 remaining issues.

- 1. There are more appropriate emission estimation factors and methodologies in AP42 than those presented by TECO. In particular, TECO continues to use total moisture content in there PME calculations. As stated previously, coal surface moisture content should be used. Also, the emissions from open coal piles being worked by bulldozers should be done using Table 11.9-2, Factors For WasterCoal Mining, AP42. These factors, even using TECO's assumptions for moisture content and control efficiency, show a net significant increase from this activity alone. Factors from this section of AP42 should be used whereever possible for emissions calculation.
- 2. The emission from burning of the additional coal must be taken into account in determining whether PSD/BACT applies to this modification.

mjh



# Department of Environmental Protection

Lawton Chiles Governor Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

Virginia B. Wetherell Secretary

NOTICE OF DENIAL

#### CERTIFIED MAIL

Re Gannon Fuel Yard

Ms. Janice K. Taylor Tampa Electric Company P.O. Box 111 Tampa, FL 33601-0111

The applicant, Tampa Electric Company, applied to the Department of Environmental Protection (Department) on October 10, 1997, for a temporary permit condition (application attached).

The Department has permitting jurisdiction under Chapter 403.087, Florida Statutes (F.S.). The Department hereby denies the application on the basis that it would violate the throughput limit of Specific Condition 2. of the current operation permit AO29-216380, which is based on the throughput limit of Specific Condition 8 of construction permit AC29-114676.

A person whose substantial interests are affected by this denial may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Blvd., Mail Station 35, Tallahassee, FL 32399-3000, within 14 days of receipt of this permit denial. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

Page 1 of 4

The Petition shall contain the following information;

- (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
- (b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
- (d) A statement of the material facts disputed by Petitioner, if any;
- (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
- (f) A statement of which rules or statutes petitioner contends. require reversal or modification of the Department's action or proposed action; and
- (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this denial. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent

intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

This denial is final and effective on the date filed with the Clerk of the Department unless a petition is filed in accordance with the above paragraphs or unless a request for extension of time in which to file a petition is filed within the time specified for filing a petition and conforms to Rule 62-103.070, F.A.C. Upon timely filing of a petition or a request for an extension of time this permit denial will not be effective until further Order of the Department.

When the Order (Denial) is final, any party to the Order has the right to seek judicial review of the Order pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date the Final Order is filed with the Clerk of the Department.

Executed in Tampa, Florida.

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Far Richard D. Garrity, Ph.D.

Director of District Management

cc: HEPC

Douglas Beason, Esq.

# CERTIFICATE OF SERVICE

T	he	un	der	signe	ed	duly	de	esi	gnate	ed o	deput	ту а	gency	c]	lerk	her	eby
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FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Clerk Date

c:\tecogan.nod gjk



October 10, 1997

Mr. Gerald Kissell, P.E. Air Permitting Supervisor Florida Department of Environmental Protection Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619 Via Hand Delivery

Re: Tampa Electric Company (TEC) F.J. Gannon Station

Fuel Yard Annual Throughput

Dear Mr. Kissell:

As you are aware, TEC has submitted a permit application to modify the above referenced emission sources. As indicated on several occasions, including our telephone conversation of October 9, 1997 and the meeting of September 10, 1997, an urgency exists associated with this permit modification approval to facilitate F.J. Gannon Station's need for increased fuel throughput in 1997. Due to permitting delays, TEC apparently will not receive the approved permit modification in time to accommodate F.J. Gannon Station's 1997 throughput needs.

As a result, TEC is requesting a temporary permit condition valid through the end of 1997 to increase fuel yard throughput from 2.85 million to 3.185 million tons per year (tpy). TEC is not proposing to increase fugitive particulate matter emissions due to this increase in fuel throughput. Instead, this temporary operating scenario will include additional emission control, specifically the application of a chemical surfactant prior to or during fuel delivery to the Gannon site. As shown on the attached spreadsheet (signed and sealed by a Florida Professional Engineer), this additional particulate matter control results in lower potential emissions for the proposed temporary 3.185 million tpy scenario versus the currently approved 2.85 million tpy scenario.

TAMPA ELECTRIC COMPANY

P.O. BOX 111

TAMPA, FL 33601-0111

HILLSBOROUGH COUNTY 223-0800

OUTSIDE OF HILLSBOROUGH COUNTY 1-888-223-0800

HTTP://WWW.TECOENERGY.COM

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Mr. Gerald Kissell, P.E. October 10, 1997 Page 2 of 2

TEC would be pleased to meet with you or your staff at your convenience to discuss this request. If you have any additional questions or comments, feel free to contact me at (813) 641-5039. Thank you for your timely assistance on this project.

Sentend  $4ay \neq 641-5381$ 

Sincerely,

Japice K. Taylor

Senior Engineer

Environmental Planning

Attachment

EP\gm\JKT814

c: Mr. Jerry Campbell, P.E.-EPC Via Hand Delivery

Mr. Sterlin Woodard, EPC Via Hand Delivery

Mr. Richard Kirby, EPC Via Hand Delivery

Mr. Al Linero-FDEP-Tallahassee Via FedEx - Airbill No. 5060869310

TABLE 1. F.J. Gannon Station - Fuel Yard PM₁₀ Emission Rate Comparison

Emission Source Description			Existing Emission Control Efficiency (pct)	Existing PM ₁₀ Emission * (tpy)	Proposed Emission Control Method	Proposed Emission Control Efficiency (pct)	Proposed PM ₁₀ Emission† (tpy)
Barge to West Clamshell	FH-002	None	0	0.42	Dust Suppressant	95	0.37
West Clamshell to West Hopper	FH-005	Wind Shield	25	0.31	Dust Suppressant	95	0.28
West Hopper to Conveyor B	FH-009	Enclosure	- 50	0.21	Dust Suppressant and Enclosure	95	0.19
Conveyor B to Conveyor C	FH-011	Enclosure	50	0.21	Dust Suppressant and Enclosure	90	0.20
Conveyor C to Conveyor D1/D2	FH-012	Dust Suppressant and Enclosure	90	0.04	Dust Suppressant and Enclosure	90	0.05
Rail Car to Hopper	FH-013	Partial Enclosure	40	0.12	Dust Suppressant and Enclosure	95	0.09
Hopper to Conveyor L	FH-014	Enclosure	50	0.10	Dust Suppressant and Enclosure	95	0.08
Conveyor L to Conveyor D1/D2	FH-015	Dust Suppressant and Enclosure	95	0.01	Dust Suppressant and Enclosure	95 .	10.0
Conveyor D1/D2 to Conveyor M1/M2	FH-016/017	Dust Suppressant and Enclosure	90	0.06	Dust Suppressant and Enclosure	90	0.07
Conveyor M1/M2 to Conveyor E1/E2	FH-018/019	Dust Suppressant and Enclosure	90	0.06	Dust Suppressant and Enclosure	90	0.07
Conveyor E1/E2 to Storage Pile	FH-020/021	Dust Suppressant	70	0.18	Dust Suppressant	70	0.20
Fuel Storage	FH-022/023	Dust Suppressant	50	0.08	Dust Suppressant	50	0.08
Underground Reclaim to Conveyor F1/F2/F4	FH-024/025/027	Dust Suppressant and Enclosure	85	0.09	Dust Suppressant and Enclosure	85	0.10
Conveyor F1/F2/F4 to Conveyor G1/G2	FH-028/029/031	Dust Suppressant and Enclosure	90	0.06	Dust Suppressant and Enclosure	90	0.07
Conveyor G1/G2 to Hammermill Crusher 1/2	FH-032/033	Dust Suppressant and Enclosure	90	0.06	Dust Suppressant and Enclosure	90	0.07
Hammermill Crusher 1/2 to Conveyor H1/H2	FH-034/035	Dust Suppressant and Enclosure	90	0.06	Dust Suppressant and Enclosure	90	0.07
Conveyors H1/H2 to Conveyors J1/J2	FH-036 -	Rotoclones	75	2.97	Rotoclones	75	2.97
Conveyors J1/J2 to Bunkers	FH-041						
Storage Pile Maintenance	FH-044	Dust Suppressant	50	10.86	Dust Suppressant	50	10.86
Total				15.90			15.83

^{*}PM₁₀ emissions based on handling 2.850,000 tons of coal in 1997; 1,950,000 tons via barge delivery and 900,000 tons via rail delivery.

Note: PM₁₀ emissions calculated using the emission algorithms previously submitted with the original application to amend the fuel yard operating permit dated June 30, 1997, and in the two responses to agency comments dated August 20 and September 24, 1997.

#### Professional Engineer Statement:

I, the undersigned, hereby certify that, to the best of my knowledge, any emission estimates reported or relied on in this document are true, accurate, and complete and are based on reasonable techniques available for calculating emissions.

Signature

Date

Professional Engineer Name:

Thomas W. Davis

Registration Number:

36777

Professional Engineer Mailing Address:

Organization/Firm:

Environmental Consulting & Technology, Inc.

Street Address:

3701 NW 98th Street

City:

Gainesville Florida

State: Zip Code:

32606

Professional Engineer Telephone Numbers:

Telephone:

(352) 332-0444

Fax:

(352) 332-7622

[†]PM₁₀ emissions based on handling 3,185,000 tons of coal in 1997; 1,754,000 tons via barge delivery through October 10, 1997; 455,000 tons via barge delivery from October 11 through December 31, 1997; 724,000 tons via rail delivery through October 10, 1997; and 252,000 tons via rail delivery from October 11 through December 31, 1997.



October 24, 1997



Mr. A. A. Linero, P.É., Administrator New Source Review Section Florida Department of Environmental Protection Bureau of Air Regulation 111 S. Magnolia Drive, Suite 4 Tallahassee, Florida 32301 Via FedEx Airbill No. 5060869354

Re: Tampa Electric Company

**Gannon Station** 

**Fuel Yard Modification Construction Permit Application** 

Application Reference No. 0570040-006-AC

Dear Mr. Linero:

Based on your telephone conversation with Janice Taylor on Tuesday, October 21, 1997, enclosed please find copies of the above submittal and subsequent Responses to Agency Comments.

If you have any additional questions, please contact me at (813) 641-5034.

Sincerely,

Theresa J.L. Watley Consulting Engineer Environmental Planning

EP\gm\TJLW562

Enclosure

TAMPA ELECTRIC COMPANY

P.O. BOX 111

TAMPA, FL 33601-0111

HILLSBOROUGH COUNTY 223-0800

OUTSIDE OF HILLSBOROUGH COUNTY 1-888-223-0800

HTTP://WWW.TECOENERGY.COM

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#### **BEST AVAILABLE COPY**



October 10, 1997

Mr. Gerald Kissell, P.E. Air Permitting Supervisor Florida Department of Environmental Protection Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

Via Hand Delivery

Re: Tampa Electric Company (TEC) F.J. Gannon Station

Fuel Yard Annual Throughput

Dear Mr. Kissell:

As you are aware, TEC has submitted a permit application to modify the above referenced emission sources. As indicated on several occasions, including our telephone conversation of October 9, 1997 and the meeting of September 10, 1997, an urgency exists associated with this permit modification approval to facilitate F.J. Gannon Station's need for increased fuel throughput in 1997. Due to permitting delays, TEC apparently will not receive the approved permit modification in time to accommodate F.J. Gannon Station's 1997 throughput needs.

As a result, TEC is requesting a temporary permit condition valid through the end of 1997 to increase fuel yard throughput from 2.85 million to 3.185 million tons per year (tpy). TEC is not proposing to increase fugitive particulate matter emissions due to this increase in fuel throughput. Instead, this temporary operating scenario will include additional emission control, specifically the application of a chemical surfactant prior to or during fuel delivery to the Gannon site. As shown on the attached spreadsheet (signed and sealed by a Florida Professional Engineer), this additional particulate matter control results in lower potential emissions for the proposed temporary 3.185 million tpy scenario versus the currently approved 2.85 million tpy scenario.

TAMPA ELECTRIC COMPANY

P.O. BOX 111

TAMPA, FL 33601-0111

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OCT 13 1997

BUREAU OF AIR REGULATION Mr. Gerald Kissell, P.E. October 10, 1997 Page 2 of 2

TEC would be pleased to meet with you or your staff at your convenience to discuss this request. If you have any additional questions or comments, feel free to contact me at (813) 641-5039. Thank you for your timely assistance on this project.

Sincerely,

Japice K. Taylor

Senior Engineer

Environmental Planning

#### Attachment

EP\gm\JKT814

c: Mr. Jerry Campbell, P.E.-EPC Via Hand Delivery

Mr. Sterlin Woodard, EPC

Via Hand Delivery

Mr. Richard Kirby, EPC Via Hand Delivery

Mr. Al Linero-FDEP-Tallahassee Via FedEx - Airbill No. 5060869310

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Conveyor L to Conveyor D1/D2	FH-015	Dust Suppressant and Enclosure	95	0.01	Dust Suppressant and Enclosure	95	0.01
Conveyor D1/D2 to Conveyor M1/M2	FH-016/017	Dust Suppressant and Enclosure	90	0.06	Dust Suppressant and Enclosure	90	0.07
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Conveyor F1/F2/F4 to Conveyor G1/G2	FH-028/029/031	Dust Suppressant and Enclosure	90	0.06	Dust Suppressant and Enclosure	90	0.07
Conveyor G1/G2 to Hammermill Crusher 1/2	FH-032/033	Dust Suppressant and Enclosure	90	0.06	Dust Suppressant and Enclosure	90	0.07
Hammermill Crusher 1/2 to Conveyor H1/H2	FH-034/035	Dust Suppressant and Enclosure	90	0.06	Dust Suppressant and Enclosure	90	0.07
Conveyors H1/H2 to Conveyors J1/J2	FH-036 -	Rotoclones	75	2.97	Rotoclones	75	2.97
Conveyors J1/J2 to Bunkers	FH-041	•					
Storage Pile Maintenance	FH-044	Dust Suppressant	50	10.86	Dust Suppressant	50	10.86
Total		,		15.90			15.83

^{*}PM₁₀ emissions based on handling 2,850,000 tons of coal in 1997; 1,950,000 tons via barge delivery and 900,000 tons via rail delivery.

Note: PM₁₀ emissions calculated using the emission algorithms previously submitted with the original application to amend the fuel yard operating permit dated June 30, 1997, and in the two responses to agency comments dated August 20 and September 24, 1997.

#### Professional Engineer Statement:

I, the undersigned, hereby certify that, to the best of my knowledge, any emission estimates reported or relied on in this document are true, accurate, and complete and are based on reasonable techniques available for calculating emissions.

_____

Date

Professional Engineer Name: Registration Number: Thomas W. Davis

Number: 36777

Professional Engineer Mailing Address:

Organization/Firm:

Environmental Consulting & Technology, Inc.

Street Address:

3701 NW 98th Street

City:

Gainesville

State: Zip Code: Florida 32606

Professional Engineer Telephone Numbers:

Telephone:

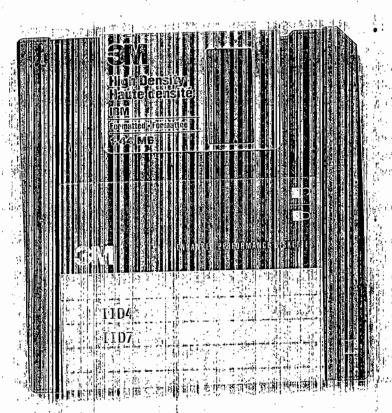
(352) 332-0444

Fax:

(352) 332-7622

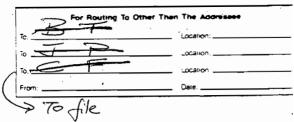
[†]PM₁₀ emissions based on handling 3,185,000 tons of coal in 1997; 1,754,000 tons via barge delivery through October 10, 1997; 455,000 tons via barge delivery from October 11 through December 31, 1997; 724,000 tons via rail delivery through October 10, 1997; and 252,000 tons via rail delivery from October 11 through December 31, 1997.

### **BEST AVAILABLE COPY**





# State of Fiorida DEPARTMENT OF ENVIRONMENTAL REGULATION



# Interoffice Memorandum

TO: Dale Twachtmann

FROM: Steve Smallwood

DATE: February 6, 1990

SUBJ: TECO Variance

The Tampa Electric Company (TECO) has petitioned for a two year variance from the requirements of Florida Administrative Code (F.A.C.) Rule 17-2.210(2), Permit requirement; 17-2.610(2), General Visible Emission Standards of 20% opacity; and 17-2.650(2)(c)12.b, Emission Limitations for Miscellaneous Manufacturing Process Operations (5% opacity or 98% control). The petition for the variance has been reviewed by the Division of Air Resources Management, DER's Southwest District Office, and the Hillsborough County Environmental Protection Commission personnel.

TECO's Big Bend and Gannon Generating Stations have boilers which are equipped with slag tank vents to prevent pressure build up and are a necessary safety measure. The slag tank vents have not been previously permitted and do not meet the emission limitations required by F.A.C. Chapter 17-2.

Under the Florida rules the vents would require the installation of control equipment. Since the boilers are the only such boilers in operation in the United States, TECO will need to custom design, test, fabricate and install the control equipment. TECO has requested a two year period to complete such a task.

With your concurrence we would like to proceed with a public hearing on the intent to issue the variance. Please advise.

SS/plm

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.  Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.  1. Show to whom delivered, date, and addressee's address.  2. Restricted Delivery (Extra charge)										
3. Article Addressed to:  Mr. Jerry L. Williams  Tampa Electric Company  P. O. Box 111  Tampa, FL 33601-0111	4. Article Number  P 938 762 715  Type of Service:  ☐ Registered ☐ Insured ☐ COD ☐ Express Mail ☐ Return Receipt for Merchandise  Always obtain signature of addressee									
5. Signature — Address  X  6. Signature — Agent  X  7. Date of Delivery  PS Form 3811 Mon 1998 — ALLS C.R.O. 1998 2010	or agent and <u>DATE DELIVERED</u> .  8. Addressee's Address (ONLY if requested and fee paid)									

# P 938 762 715

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED

NOT FOR INTERNATIONAL MAIL

(See Reverse)

	Sent to Mr. Jerry L. Wil	liams, TEC	0
	Street and No. P. O. Box 111		
	P.O., State and ZIP Code Tampa, FL 33601-0	0111	
	Postage	S	
	Certified Fee		
	Special Delivery Fee		
	Restricted Delivery Fee		
o	Return Receipt showing to whom and Date Delivered		
e 198	Return Receipt showing to whom, Date, and Address of Delivery		
, כפה	TOTAL Postage and Fees	S	
S roim sour, June 1985	Postmark or Date Mailed: 10-13-89 Vairance Request-S	lag Tank Vents	
Ų			



# Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary

October 16, 1989

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Jerry L. Williams Tampa Electric Company P. O. Box 111 Tampa, Florida 33601-0111

Dear Mr. Williams:

Re: Variance Request for Slag Tank Vents

The Department has reviewed your letter dated April 7, 1989, and agrees with your plan in dealing with permitting the slag tank vents, but has deemed your variance request incomplete.

In accordance with the Florida Administrative Code (F.A.C.) Rule 17-103.100, Applications for Variance, you will need to address the requirements in (1)(f) and (1)(g) before the Department can process your petition.

If you have any questions, please call Syed Arif or Pradeep Raval at (904)488-1344, or write to me at the above address.

Sincerely,

C. H. Fancy, P.E.

Bureau of Air Regulation

CHF/PR/t

cc: B. Thomas, SW District

I. Choronenko, HCEPC

Pradeep- 11-7 Are you keeping a filian this? Noon Patty

# DER 1985 RULES OF ADMINISTRATIVE PROCEDURE - NON-RULEMAKING 17-103

exceptions may be served or filed, or the time within which any act is required to be performed, as provided by any rule or order of the Department, shall be computed in accordance with the Florida Rules of Civil Procedure.

Specific Authority: 120.53, F.S.
Law Implemented: 120.53, F.S.
History: Revised 10-20-73, Amended 2-6-78, 4-28-81, Formerly 17-1.16, Transferred from 17-1.32 and Amended 6-1-84.

#### 17-103.090 Informal Conference.

- (1) If the Department deems it advisable in reaching a prompt resolution of a controversy or dispute with a party or parties, it may arrange an informal conference between the party or parties and the Department. Unless otherwise specified, an informal conference shall be requested within ten (10) days of service of the initial pleading. An attempt shall be made to resolve the controversy or dispute in an amicable manner.
- (2) A respondent's rights will not be adjudicated at such a conference, and the right to request a public hearing on the alleged violations or the orders for corrective action subsequently issued not be affected by requesting and participating in an informal conference. The Department staff members participating in such informal conference shall file with the Department a report concerning matters covered in the informal conference. Unless otherwise specified, in writing, by the Department, a responsive pleading or demand for hearing shall be filed within ten (10) days from the completion of the informal conference, unless a longer time is provided by Rule 17-103.110, FAC,

or Chapter 403, Florida Statutes. Failure to file responsive pleading or demand for hearing within that time period shall be deemed a waiver thereor.

Specific Authority: 120.53(1), F.S. Law Implemented: 120.53(1), F.S. History: Revised 10-20-73, Amended 2-6-78, Formerly 17-1.44, Transferred from 17-1.53 and Amended 6-1-84.

# 17-103.100 Petitions or Applications for Variances.

- (1) A petition or application for a variance, pursuant to Section 403.201, Florida Statutes, of the Florida Air and Water Pollution Control Act, shall be in accordance with these rules. The petitioner or applicant shall address the factors listed in paragraphs (a) through (g) in the request. The Department shall review the petition within a reasonable period of time to determine if the petition is complete. If the Department determines the petition to be incomplete. petitioner shall be afforded additional opportunity to supply information before the Department evaluates the merits of the request.
- (a) The statute or rule from which a variance is sought.
- (b) The facts which show that a variance should be granted because of one of the reasons set forth in Section 403.201, Florida Statutes.
- (c) The period of time for which the variance is sought, including the reasons and facts in support of the time period.
- (d) The requirements which the petitioner can meet, including the date or time when the requirements will be met.
- (e) The steps or measures the petitioner is taking to meet the

requirement from which the variance is sought. If the request is pursuant to Section 403.201(1)(b), F.S., the petitioner shall include a schedule when compliance will be achieved.

- (f) The social, economic and environmental impacts on the applicant, residents of the area and of the state if the variance is granted.
- (g) The social, economic and environmental impacts on the applicant, residents of the area and of the state if the variance is dealed.
- (2) Renewals of variances, pursuant to Section 403.201, Florida Statutes, shall be applied for in the same manner as for the initial variance.
- (3) Variances shall be denied or granted at the discretion of the Secretary of the Department, except for variances submitted under the Florida Electrical Power Plant Siting Act, the Florida Transmission Line Siting Act or the Florida Industrial Siting Act, which shall be granted or denied at the discretion of the Governor and the Cabinet.
- (4) The Department shall publish notice of intent in the Florida Administrative Weekly. The petitioner shall publish such notice in a newspaper of general circulation in the area affected by the proposed variance. Notice shall be in accordance with Rule 17-103.150, FAC, and shall read substantially as set forth in Rule 17-103.150(3), FAC.
- (5) An application for a variance or exemption, pursuant to Section 403.854, Florida Statutes, of the Florida Safe Drinking Water Act, shall be in accordance with Section 17-22.09, Florida Administrative Code. The variance provisions of

Section 403.201, Florida Statutes, do not apply to the Florida Safe Drinking Water Act or rules promulgated thereunder.

(6) Relief from Department rules may also be granted pursuant to other specific rules, such as, but not limited to, rules 17-3.031, 17-4.243, and 17-4.245, FAC. Specific Authority: 120.53(1), F.S. Law Implemented: 120.53(1), F.S. History: New 2-6-78, Amended 7-8-82, Transferred from 17-1.57 and Amended 6-1-84.

# 17-103.110 Administrative Enforcement Actions.

- (1) Notice of Violation.
- (a) A notice of violation is an appropriate initial administrative pleading which may be issued by the Department when, after Investigation, it has reason to believe that person has, or is presently engaged in an activity in violation of the provisions of Chapters 403, 373, 376 or 253, Florida Statutes, or Department rules. Such notice shall be served on the respondent(s) by actual delivery to; service of process on, in accordance with Florida Rules of Civil Procedure; or by certified mail, return receipt requested; and shall identify the provision of law, rule, or Department permit alleged to have been violated, and shall include a brief statement of the facts constituting such alleged violation.
- (b) A notice of violation shall be issued by the Secretary, Assistant Secretary or District Manager. Unless a responsive pleading and request for a Section 120.57 administrative hearing is filed within twenty (20) days after service of the notice, or as otherwise provided by Rule 17-103.090, FAC (Informal

# **F.J. GANNON STATION**

# FUEL YARD MODIFICATION CONSTRUCTION PERMIT APPLICATION





**JUNE 1997** 

ADDENDUM JUNE 1998

# TAMPA ELECTRIC COMPANY - F.J. GANNON STATION NO, REDUCTION POLLUTION CONTROL PROJECT EVALUATION

#### **BACKGROUND**

Tampa Electric Company (TEC) operates the F.J. Gannon Station power plant and associated fuel yard in Tampa, Hillsborough County, Florida. In June 1997 (with subsequent submittals through December 1997), TEC submitted an air construction permit application to the Florida Department of Environmental Protection (FDEP) to increase the allowed coal throughput at the fuel yard from 2.85 to 3.77 million tons per calendar year (MMtpy). This throughput increase was requested to accommodate the use of high moisture/low heat content coals as the primary compliance strategy to reduce nitrogen oxides (NO_X) emissions from the six steam electric generating units designated as Gannon 1 through 6.

The FDEP Southwest District referred the application to the central FDEP office in Tallahassee for a determination regarding Prevention of Significant Deterioration (PSD) applicability prior to further processing. TEC maintains that the coal yard and steam generating units are separate entities with respect to existing operating permits and that the fuel yard permit conditions apply only to the fuel yard, not to the entire facility. Without conceding that the coal yard and steam generating units permit conditions are mutually applicable, TEC has presented this project to FDEP as a Pollution Control Project (PCP). As defined in 40 CFR 52.21(b)(32), a PCP is

Any activity or project undertaken at an existing electric steam generating unit for purposes of reducing emissions from such unit. Such activities and projects are limited to . . . an activity or project to accommodate switching to a fuel which is less polluting than the fuel in use prior to the activity or project, including, but not limited to natural gas or coal reburning, or the co-firing of natural gas and other fuel for the purpose of controlling emissions.

Furthermore, in accordance with 40 CFR 52.21(b)(2)(iii)(h)

The addition, replacement or use of a pollution control project at an existing electric utility steam generating unit are exempt from review for PSD, unless the Department determines such addition, replacement, or use renders the unit less environmentally beneficial, or except (1) When the Administrator has reason to believe that the pollution control project would result in a significant net increase in representative actual annual emissions of any criteria pollutant over levels used for that source in the most recent air quality impact analysis in the area conducted for the purpose of title I if any and (2) The Administrator determines the increase will cause or contribute to a violation of any national ambient air quality standard or PSD increment, or visibility limitation.

As such, the purpose of this document is to validate the applicability of the PSD PCP exemption for the proposed fuel yard project at F.J. Gannon Station. This validation is presented in accordance with the July 1994 EPA Guidance Document entitled "Pollution Control Projects and New Source Review (NSR) Applicability" by demonstrating the *net environmental benefit* of this PCP.

#### DESCRIPTION OF POLLUTION CONTROL PROJECT (PCP)

The F.J. Gannon Station PCP consists of utilizing and co-firing various blends of TEC standard coals with low- to medium-sulfur Powder River Basin (PRB) coals in Gannon Units 1 through 6. Table 1 presents average fuel quality data for the coals projected for use at F.J. Gannon Station. To compensate for the high moisture content/low heat content of these new coals, an increase in coal throughput is required to achieve an equivalent heat input rate, and the same unit generation capability, as achieved with TEC standard coals. This heat input equilibration is presented in Table 2, which indicates that a coal throughput of 3.3 million tons per calendar year is required at F.J. Gannon Station with the projected fuel usage. This projected fuel usage at F.J. Gannon Station is consistent with TEC's Phase II Acid Rain compliance plan and the F.J. Gannon Station Title V compliance plan.

As substantiated by many electric utilities across the country, the higher moisture content in PRB coal inhibits  $NO_X$  formation during combustion, resulting in lower  $NO_X$  emissions. As presented in Table 3, a 15,099 ton per year reduction in  $NO_X$  emissions is projected as a result of this PCP. This result is based on TEC-conducted preliminary engineering studies and TEC to-date operating experience. In addition, particulate matter (PM) emissions are not expected to increase, as indicated in Table because of the moderate ash content in the projected coals. However, as presented in Table 5, sulfur dioxide ( $SO_2$ ) emissions are projected to increase 1,798 tons per year over the 1996-1997 representative actual annual emissions or 8,730 tons per year over the 1995-1996 representative actual annual emissions. This increase results from the projected coal blending necessary to maintain the Acid Rain and Title V compliance plans.

According to the U.S. Environmental Protection Agency (EPA) analysis of the PCP rule at FR Vol. 57, No. 140, pages 32320-32321

Thus EPA is today adopting revisions to its PSD and nonattainment regulations for the addition, replacement or use at an electric steam generating unit of any system or device whose primary function is the reduction of pollutants (including the switching to a less-polluting fuel where the primary purpose of the switch is the reduction of air pollutants).

In establishing that the primary purpose of the fuel switch is to reduce  $NO_X$  emissions, TEC's project qualifies as a PCP. Furthermore, TEC believes that PCP qualification remains in place even though  $SO_2$  emissions are projected to increase. Per the EPA analysis:

Several commentators pointed out that a pollution control project that reduces one pollutant should not be allowed to increase emissions of another pollutant if that increase will cause or exacerbate a different pollution problem. . . . Although a pollution control project could theoretically cause a small collateral increase in some emissions, it will substantially reduce emissions of other pollutants. In recognition of this, the rule provides for a case-by-case assessment of the pollution control project's net emissions and overall impact on the environment.

Therefore, TEC understands that the criteria which FDEP must follow to completely validate the PCP applicability are clear. The decrease in NO_X or PM emissions must be substantial and the collateral increase in SO₂ emissions must be inconsequential.

#### **NET EMISSIONS ANALYSIS**

Evaluation of the merits of the project is primarily based on a comparison of future representative actual annual emissions after implementation of the PCP with past actual emissions as presented in Tables 2, 3, 4, and 5. But, the connection of F.J. Gannon Station PCP with other TEC Acid Rain compliance activities cannot be overlooked.

On May 15, 1998, TEC filed a petition with the Florida Public Service Commission (FPSC) for approval of the Big Bend Station Units 1 and 2 flue gas desulfurization (FDG) scrubber project. The TEC Phase II Clean Air Act Compliance Document was filed with FPSC on May 19, 1998. In these documents, TEC presents the information necessary to conclude that the Big Bend Station Units 1 and 2 FGD project is the best alternative for Phase II SO₂ compliance for the entire TEC system. As such, and in accordance with the Acid Rain regulations, the SO₂ allowances gained at Big Bend Station will be "bubbled" for SO₂ allowance credit at F.J. Gannon Station. Consistent with these Title IV Acid Rain protocols, FDEP should jointly evaluate all changes in SO₂ emissions from Big Bend and F.J. Gannon Stations. In examining the overall picture, TEC is clearly reducing total SO₂ emissions from these two proximately located facilities.

#### **CONCLUSION**

Based on the foregoing analysis, TEC believes that FDEP should conclude:

- The use of PRB coals blended with other standard coals will provide a substantial decrease in NO_x emissions without causing a substantial increase in the emissions of any other regulated pollutant,
- The fuel yard throughput increase is an activity necessary to accommodate switching to a fuel which is less polluting than the fuel in use prior to the project, and
- The proposed changes constitute a Pollution Control Project (PCP) that provides a *net* environmental benefit. Hence, the PSD PCP exemption is applicable.

Table 1. F.J. Gannon Station - PCP Fuel Quality - Phase II Compliance Plan

	PRB Low	PRB Med.	Std. A	Std. B
Heat Input, Btu/lb	8773.0	8350.0	12604.0	11938.0
Sulfur, lb/MMBtu	0.9	2.2	3.6	2.1
Ash, lb/MMBtu	5.7	7.8	6.6	6.5

Table 2. F.J. Gannon Station - PCP Projected Coal Usage - Phase II Compliance Plan

		1995 Actual			1996 Actual		1995/1996 Average			
Unit	Coal Usage	Coal Heat	Total Heat	Coal Usage	Coal Heat	Total Heat	Coal Usage	Coal Heat	Total Heat	
		Content	Input		Content	Input		Content	Input	
	(tons)	(Btu/lb)	(Btu)	(tons)	(Btu/lb)	(Btu)	(tons/yr)	(Btu/lb)	(Btu/yr)	
1	186,212	12,845	4.78E+12	265,722	11,718	6.23E+12	225,967	12,182	5.51E+12	
2	186,383	12,845	4.79E+12	251,464	11,718	5.89E+12	218,924	12,198	5.34E+12	
3	274,919	12,845	7.06E+12	298,202	11,718	6.99E+12	286,561	12,259	7.03E+12	
4	463,970	12,845	1.19E+13	486,874	11,718	1.14E+13	475,422	12,268	1.17E+13	
5	519,780	12,845	1.34E+13	574,584	11,718	1.35E+13	547,182	12,253	1.34E+13	
6	897,070	12,845	2.30E+13	892,742	11,718	2.09E+13	894,906	12,283	2.20E+13	
Total or Average	2,528,334	12,845	6.50E+13	2,769,588	11,718	6.49E+13	2,648,961	12,256	6.49E+13	

	Projected at	Maximum Fuelyard	l Throughput	Pollution	Prevention Coal Th	roughput
Unit	Coal Usage	Coal Heat	Total Heat	Coal Usage	Coal Heat	Total Heat
		Content	Input		Content	Input
	(tons)	(Btu/lb)	(Btu)	(tons)	(Btu/lb)	(Btu)
1	243,116	12,182	5.92E+12	325,465	9,100	5.92E+12
2	235,538	12,198	5.75E+12	315,718	9,100	5.75E+12
3	308,309	12,259	7.56E+12	409,695	9,225	7.56E+12
4	511,503	12,268	1.26E+13	680,226	9,225	1.26E+13
5	588,710	12,253	1.44E+13	596,167	12,100	1.44E+13
6	962,824	12,283	2.37E+13	977,374	12,100	2.37E+13
-		<u> </u>				
Total or Average	2,850,000	12,256	6.99E+13	3,304,646	10,570	6.99E+13

Table 3. F.J. Gannon Station - PCP NOx Emission Comparison - Phase II Compliance Plan

		_Future	Projected NOx En	nission		Pas	st Actual NOx Emis	sion	NOx
Unit	Coal Usage	Coal Heat	Total Heat	Emission	Annual	1995	1996	Average	Emission
		Content	Input	Rate	Emisions				Change
	(tons)	(Btu/lb)	(Btu)	(lb/MMBtu)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)
1	325,465	9,100	5.92E+12	1.10	3,258	3,445	4,916	4,181	(923)
2	315,718	9,100	5.75E+12	1.10	3,160	3,448	4,618	4,033	(873)
3	409,695	9,225	7.56E+12	0.92	3,477	5,086	5,517	5,302	(1,824)
4	680,226	9,225	1.26E+13	0.92	5,773	8,583	9,007	8,795	(3,022)
5	596,167	12,100	1.44E+13	0.85	6,132	6,887	10,630	8,759	(2,627)
6	977,374	12,100	2.37E+13	0.85	10,052	15,250	16,516	15,883	(5,831)
Total or Average	3.304.646	10,570	6.99E+13	N/A	31.852	42.699	51.204	46.952	(15.099)

Pas	t Actual NOx Emiss	sion	NOx
1996	1997	Average	Emission
			Change
<u>(tpy)</u>	(tpy)	(tpy)	(tpy)
4,916	3,235	4,076	(818)
4,618	3,850	4,234	(1,074)
5,517	5,093	5,305	(1,828)
9,007	5,572	7,290	(1,516)
10,630	4,515	7,573	(1,441)
16,516	10,929	13,723	(3,670)
51.204	33.194	42,199	(10.347)

Table 4. F.J. Gannon Station - PCP PM/PM10 Emission Comparison - Phase II Compliance Plan

			Future Projected P	M/PM10 Emission			Past A	Actual PM/PM10 En	nission	PM/PM10
Unit	Coal Usage	Coal Heat	Total Heat	Coal Ash	Control	Annual	1995	1996	Average	Emission
		Content	Input	Content 1	Efficiency	Emisions				Change
	(tons)	(Btu/lb)	(Btu)	(lb/MMBtu)	(pct)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)
1	325,465	9,100	5.92E+12	7.3	99.09	59	46	60	53	6
2	315,718	9,100	5.75E+12	7.3	99.09	57	92	112	102	(45)
3	409,695	9,225	7.56E+12	6.4	99.07	68	102	104	103	(35)
4	680,226	9,225	1.26E+13	6.4	99.05	115	271	326	299	(183)
5	596,167	12,100	1.44E+13	6.5	98.50	491	193	212	203	288
6	977,374	12,100	2.37E+13	6.5	98.50	805	1,116	1,109	1,113	(308)
Total or										
Average	3.304.646	10.570	6.99E+13	N/A	N/A	1,595	1.820	1.923	1.872	(277)

1Emission rates for Units 1 through 4 (cyclone boilers) are based on 30 percent fly ash and 70 percent slag. Emission rates for Units 5 and 6 (wet bottom turbo-furnace boilers) are based on 70 percent fly ash and 30 percent slag

Past A	Actual PM/PM10 E	mission	PM/PM10
1996	1997	Average	Emission
			Change
(tpy)	(tpy)	(tpy)	(tpy)
60	105	83	(24)
112	117	115	(58)
104	150	127	(59)
326	358	342	(227)
212	392	302	189
1,109	818	964	(159)
1,923	1.940	1.932	(338)

Table 5. F.J. Gannon Station - PCP SO2 Emission Comparison - Phase II Compliance Plan

	Future Projected SO2 Emission					Past Actual SO2 Emission			SO2
Unit	Coal Usage	Coal Heat	Total Heat	Emission	Annual	1995	1996	Average	Emission
		Content	Input	Rate	<b>Emisions</b>				Change
	(tons)	(Btu/lb)	(Btu)	(lb/MMBtu)	(tpy)	(tpy)	_(tpy)	(tpy)	(tpy)
1	325,465	9,100	5.92E+12	1.9	5,627	4,021	5,480	4,751	877
2	315,718	9,100	5.75E+12	1.9	5,459	3,918	5,058	4,488	971
3	409,695	9,225	7.56E+12	1.6	6,047	5,925	6,400	6,163	(115)
4	680,226	9,225	1.26E+13	1.6	10,040	9,955	9,849	9,902	138
5	596,167	12,100	1.44E+13	2.0	14,427	10,374	12,968	11,671	2,756
6	977,374	12,100	2.37E+13	2.0	23,652	18,797	20,301	19,549	4,103
Total or Average	3.304.646	10.570	6.99E+13	N/A	65,253	52.990	60.056	56,523	8,730

Station SO2 Rate
Based on Title IV Annual Average 1.9

Pa	SO2			
1996	1997	Average	Emission	
			Change	
(tpy)	(tpy)	(tpy)	(tpy)	
5,480	5,344	5,412	215	
5,058	7,771	6,415	(956)	
6,400	9,772	8,086	(2,039)	
9,849	10,383	10,116	(76)	
12,968	10,753	11,861	2,566	
20,301	22,829	21,565	2,087	
60.056	66.852	63,454	1,798	

# Signature Pages

# Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible Official:

Name:

Charles R. Black

Title:

Vice President Energy Supply

2. Owner or Authorized Representative or Responsible Official Mailing Address:

Organization/Firm:

Tampa Electric Company

Street Address:

P.O. Box 111

City:

Tampa

State: FL Zip Code :

33601-0111

3. Owner/Authorized Representative or Responsible Official Telephone Numbers:

Telephone:

(813)228-1767

Fax: (813)228-4290

4. Owner/Authorized Representative or Responsible Official Statement:

I, the undersigned, am the owner or authorized representative* of the non-Title V source addressed in this Application for Air Permit or the responsible official, as defined in Rule 62-210.200, F.A.C., 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 units.

Signature

I. Part 2 - 1

DEP Form No. 62-210.900(1) - Form

Effective: 3-21-96

^{*} Attach letter of authorization if not currently on file.

### **Application Processing Fee**

Check one:

[X] Attached - Amount:

\$250.00

[ ] Not Applicable.

#### **Construction/Modification Information**

- 1. Description of Proposed Project or Alterations:
  - 1. Increase fuel yard throughput from 2,850,000 tpy to 3,304,646 tpy.
  - 2. Standardize all barge and rail unloading belt speeds at 2,300 tph.
  - 3. Add equipment to handle alternate fuel at 362,025 tpy and 400 tph.
- 2. Projected or Actual Date of Commencement of Construction:

01-Sep-1997

3. Projected Date of Completion of Construction:

31-Aug-1998

# **Professional Engineer Certification**

1. Professional Engineer Name:

Thomas W. Davis

Registration Number:

36777

2. Professional Engineer Mailing Address:

Organization/Firm: Env. Consulting & Technology, Inc.

Street Address: 3701 NW 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 certified, 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 pollutant 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 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.

ignature. Date

Attach any exception to certification statement.

I. Part 6 - 1

DEP Form No. 62-210.900(1) - Form

Effective: 3-21-96

Revised Application Pages

# C. EMISSIONS UNIT DETAIL INFORMATION (Regulated Emissions Units Only)

Emissions Unit Details		
I. Initial Startup Date:		
2. Long-term Reserve Shutdown Date:	-	
3. Package Unit:  Manufacturer:		Model Number :
4. Generator Nameplate Rating:	MW	
Dwell Temperature :  Dwell Time :  Incinerator Afterburner Temperature :		Degrees Fahrenheit Seconds Degrees Fahrenheit
missions Unit Operating Capacity		
1. Maximum Heat Input Rate:	mmBtu/hr	
. Maximum Incinerator Rate :	lb/hr	tons/day
. Maximum memerator Rate.		
	3666671	tons per year
3. Maximum Process or Throughput Rate:	3666671	tons per year
3. Maximum Process or Throughput Rate : 4. Maximum Production Rate : 5. Operating Capacity Comment :	3666671	tons per year
3. Maximum Process or Throughput Rate : 4. Maximum Production Rate :	3666671	tons per year
3. Maximum Process or Throughput Rate :  4. Maximum Production Rate :  5. Operating Capacity Comment :	3666671	tons per year

III. Part 4 - 1

DEP Form No. 62-210.900(1) - Form

## F. SEGMENT (PROCESS/FUEL) INFORMATION

Emissions Unit Information Section 1	-			
Solid Fuel Bunkers (all solid fuel-fired units)				
Segment Description and Rate: Segment	1			
1. Segment Description (Process/Fuel Type and A	Associated Operating Method/Mode):			
Fuel handling				
2. Source Classification Code (SCC): 3-05-1	01-03			
3. SCC Units: Tons Transferred Or Handled				
4. Maximum Hourly Rate: 1,600.00	5. Maximum Annual Rate : 3,666,671.00			
6. Estimated Annual Activity Factor:				
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:			
9. Million Btu per SCC Unit :				
10. Segment Comment :				
Maximum Hourly Rate (Field 4) is tons per hour per bunker. Bunkers are not filled simultaneously.  Maximum Annual Rate (Field 5) is total for all bunkers.				

III. Part 8 - 1

DEP Form No. 62-210.900(1) - Form

# C. EMISSIONS UNIT DETAIL INFORMATION (Regulated Emissions Units Only)

Emissions Unit Information Section  Solid Fuel Handling and Storage (all sources)		
Emissions Unit Details		
1. Initial Startup Date :		· · · · · · · · · · · · · · · · · · ·
2. Long-term Reserve Shutdown Date :		
3. Package Unit : Manufacturer :		Model Number :
4. Generator Nameplate Rating :	MW	
5. Incinerator Information :  Dwell Temperature :  Dwell Time :  Incinerator Afterburner Temperature :		Degrees Fahrenheit Seconds Degrees Fahrenheit
Emissions Unit Operating Capacity		
1. Maximum Heat Input Rate :	mmBtu/hr	·
2. Maximum Incinerator Rate:	lb/hr	tons/day
3. Maximum Process or Throughput Rate:	3666671	tons per year
4. Maximum Production Rate:		
5. Operating Capacity Comment : Solid fuel handling rate.		
Emissions Unit Operating Schedule		
Requested Maximum Operating Schedule :  24 hours/day 52 weeks/year		7 days/week 8,760 hours/year

III. Part 4 - 2

DEP Form No. 62-210.900(1) - Form

#### F. SEGMENT (PROCESS/FUEL) INFORMATION

Emissions Unit Information Section 2				
Solid Fuel Handling and Storage (all sources)				
Segment Description and Rate: Segment 1				
1. Segment Description (Process/Fuel Type and As	sociated Operating Method/Mode):			
Solid fuel handling and storage				
2. Source Classification Code (SCC): 3-05-10	1-03			
3. SCC Units: Tons Transferred Or Handled				
4. Maximum Hourly Rate: 4,600.00 5	. Maximum Annual Rate: 3,304,646.00			
6. Estimated Annual Activity Factor:				
7. Maximum Percent Sulfur:	3. Maximum Percent Ash:			
9. Million Btu per SCC Unit :				
10. Segment Comment :				
The state of the s	el handling equipment. The Maximum Hourly Rate handling operation (i.e., two parallel conveyor belts ailed maximum hourly rates for each belt conveyor.			

III. Part 8 - 1

DEP Form No. 62-210.900(1) - Form



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APR 06 1998

BUREAU OF AIR REGULATION

March 31, 1998

Mr. G.J. Kissel, P.E. Air Permitting Supervisor Department of Environmental Protection Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619 Via Facsimile and U.S. Mail

Mr. A.A. Linero, P.E., Administrator New Source Review Section Department of Environmental Protection Bureau of Air Regulation 2600 Blair Stone Road Tallahassee, Florida 32399-2400 Via Facsimile and U.S. Mail

Re:

Tampa Electric Company (TEC) - F.J. Gannon Station Fuel Yard Modification Construction Permit Application Application Reference No. 05700040-006-AC

Dear Mr. Kissel and Mr. Linero:

On December 29, 1997 we submitted our last Response to Agency Comments regarding the above referenced permit application. We then received a letter dated January 14, 1998 from Mr. Kissel outlining the protocol that would be implemented for TEC's fuel yard and RDF permitting. On January 26, 1998, we met with Mr. Linero at our TEC facility in Apollo Beach. At this meeting, Mr. Linero requested additional information to give the Department reasonable assurance that our proposed fuel yard modifications constituted a Pollution Control Project.

While it is TEC's intention to successfully obtain the desired permit modifications, we have been delayed in compiling the needed information due to our efforts in resolving some Title V issues at Gannon Station. Therefore, we are requesting a 60-day extension of your 90-day permit application review period.

Thanks for your cooperation. If you have any questions, please feel free to give me a call at (813) 641-5034.

Sincerely,

Theresa J.L. Watley Consulting Engineer

**Environmental Planning** 

EP\gm\TJLW586

CC: L. Anderson, BAR

TAMPA ELECTRIC COMPANY
P. O. BOX 111 TAMPA, FL 33601-0111

#### Memorandum

# Florida Department of Environmental Protection

TO:

Lennon Anderson

FROM:

Al Linero

DATE:

January 12, 1998

SUBJECT:

TECO Gannon Coal Yard Project

Attached is a copy of the latest TECO submittal. I got it today, but the District apparently got a copy December 30 or 31, so the clock has been running. As of now, we only need to make a PSD Applicability Determination. If PSD applies, then we will process this permit here. If it does not apply, the SWD will finish processing the application. Then you will likely need to update the Title V permit at a future date.

In order to make the determination, I'd like your help on the following:

- We need a table showing the permitted PM, SO₂, NO_X emission limits for all Gannon Units. Maybe you have that from the Title V draft permit.
- A copy of the coal conversion order. There are references in the file. I don't believe I have seen a copy of it. Maybe you can contact Hillsborough EPC or the SWD and see if either has a copy.
- Other reports by EPA or the FEA regarding the justification for TECO to convert to coal. These could be in the District files if they are not in our own files.
- Any documentation that shows why TECO needed to get a permit which did not trigger PSD for the coal yard at the time they were ordered (if they were in fact ordered) to switch to coal.
- Typical information on heat and ash content of Powder River Basin coal and any reasons to believe emissions of PM should or should not increase. Information on ESP performance would help too since there is a correlation between fuel sulfur content and PM collection efficiency.

I will ask TECO for the same information, but I'd like to have it from our own sources if possible. This will allow me to process this action quickly. Let me have whatever you can put together by this Friday. I plan to meet with TECO very soon to let them know how things look for them. Thanks.

cc: Scott Sheplak Clair Fancy Cindy Phillips



December 29, 1997

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DEP

Mr. Gerald J. Kissel, P.E.
Air Permitting Supervisor
Florida Department of Environmental Protection (FDEP)
Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Via FedEx Airbill No. 800926221000

Tampa Electric Company (TEC) - F.J. Gannon Station Fuel Yard Modification Construction Permit Application Response to Agency Comments Application Reference No. 0570040-006-AC

Dear Mr. Kissel:

Re:

Enclosed are three (3) spiral-bound signed and sealed copies of TEC's responses to agency comments regarding the above referenced construction permit application, and one (1) loose copy, suitable for incorporation with the previously submitted binder copy, to assist with your review. Also, as per your request, one (1) signed and sealed copy has been sent to both Mr. Rick Kirby, P.E. at the Environmental Protection Commission of Hillsborough County (EPCHC), and Mr. Al Linero, P.E. at the Florida Department of Environmental Protection (FDEP) - New Source Review Section - Tallahassee.

This submission is in response to your incompleteness letter dated October 24, 1997, that requested additional information to facilitate a Prevention of Significant Deterioration (PSD) applicability review and to continue processing this application. TEC has responded to each of the agency comments in detail, however, we again note that because the PSD applicability issue was not identified in the original letter of incompleteness, this issue should not be considered in determining the completeness of this permit application.

Please note that this set of responses reflects a significant change in TEC's annual throughput request. Based on the exchange of information at our meeting with FDEP and EPCHC in Tallahassee on November 3, 1997 and a re-examination of our projected load and compliance fuel usage, TEC has

TAMPA ELECTRIC COMPANY

P.O. BOX 111

TAMPA, FL 33601-0111

HILLSBORDUGH COUNTY 223-0800

DUTSIDE OF HILLSBOROUGH COUNTY 1-888-223-0800

HTTP://WWW.TECGENERGY.COM

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BUREAU OF AIR REGULATION

AN EQUAL OPPORTUNITY COMPANY

Mr. Gerald J. Kissel, P.E. December 29, 1997 Page 2 of 2

amended our requested coal throughput to 3.77 million tons per year (tpy). This change represents a decrease of 230,000 tpy from the 4.00 million tpy requested in the initial submittal. As such, revisions of the pertinent pages from the permit application are included in this submittal.

TEC would be pleased to meet with you or your staff at your convenience to discuss these responses in detail. If you have any additional questions or comments, feel free to contact me at (813) 641-5034.

Thank you for your assistance on this project.

Sincerely,

Theresa J.L. Watley Consulting Engineer Environmental Planning

EP\gm\TJLW580

Attachments

c/enc: Mr. Richard Kirby - EPCHC

Mr. Al Linero - FDEP Tallahassee

## F.J. GANNON STATION

# FUEL YARD MODIFICATION CONSTRUCTION PERMIT APPLICATION



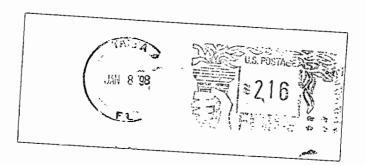
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**JUNE 1997** 

ADDENDUM DECEMBER 1997



## F.J. GANNON STATION

# FUEL YARD MODIFICATION CONSTRUCTION PERMIT APPLICATION



**JUNE 1997** 

ADDENDUM DECEMBER 1997

## **RESPONSES**

# FUEL YARD CONSTRUCTION PERMIT APPLICATION

#### Tampa Electric Company (TEC) - F.J. Gannon Station Fuel Yard Construction Permit Application Responses to FDEP Comments of October 24, 1997

#### FDEP Comment No. 1

Your responses to date have not satisfactorily addressed the issue raised in the attached October 8, 1997 letter to Brian Beals. Please respond to that issue.

#### TEC Response No. 1

The issued raise in the October 8, 1997, letter to Brian Beals is the applicability of the U.S. Environmental Protection Agency (EPA) debottlenecking policy to the fuel yard project. The specific issue is whether an increase in permitted coal yard throughput represents a debottlenecking that requires a Prevention of Significant Deterioration (PSD) applicability determination and potential PSD permitting for an emissions increase from the boilers. In this situation, PSD is not applicable to the F.J. Gannon Station boilers for two independent reasons. These reasons are:

- The use of Powder River Basin (PRB) and Indonesian coal for combustion is exempt from PSD applicability as a pollution control project.
- This increase in coal combustion is exempt from PSD applicability because the increase is not included within the Florida Department of Environmental Protection (FDEP) definition of modification.

Each reason is discussed separately, below.

• Pollution Control Project Exemption.

Chapter 62-212.400(2)(a)2., Florida Administrative Code (F.A.C.), exempts pollution control projects at existing steam generating units from the PSD permitting requirements of 62-212.400, F.A.C., if the project meets the requirements of 40 Code of Federal Regulation (CFR) 52.21(b)(2)(iii)(h). The use of PRB and Indonesian coals for combustion is a pollution control project because combustion of these coals reduces nitrogen oxides (NO_x) and sulfur dioxide (SO₂) emissions from existing steam generating units. This NO_x reduction occurs because the PRB and Indonesian coals have a higher moisture content than coals previously used at F.J. Gannon Station. The additional moisture inhibits NO_x formation during combustion, resulting in lower NO_x emissions. This SO₂ reduction is the result of the lower sulfur content in the PRB and Indonesian coals as compared to our traditional design coals. As such, this pollution control project meets the criteria of 40 CFR 52.21(b)(2)(iii) (h), and is therefore exempt from the PSD permitting requirements of 62-212.400, F.A.C., because this use does not render the steam generators less environmentally beneficial. Instead, this use is more environmentally

beneficial because  $NO_x$  and  $SO_z$  emissions from the steam generators will be reduced and compliance with all other applicable emission requirements will continue to be maintained.

TEC notes that coal throughput will increase 0.92 million tons per year (tpy), from 2.85 million to 3.77 million tpy, as a result of this pollution prevention project. The calculations to support this coal throughput figure are provided in Table 1. The throughput increase was calculated in a three step procedure. First, actual coal usage and total heat content was determined for the baseline years. Because PRB coal deliveries began in 1996 and have continued to date, 1994 and 1995 were selected as the baseline years for determining the throughput increase. Next, total heat content was projected for the maximum allowed coal throughput of 2.85 million tpy. Finally, the equivalent amount of coal throughput was determined to be 3.77 million tpy, assuming that Steam Generators 1 through 4 are PRB coal-fired and that Steam Generators 5 and 6 are fired with a coal blend that includes 40 percent Indonesian coal.

TEC also notes that the requested annual coal throughput limit is based on a calendar year, in accordance with the existing throughput limit and consistent with the historical practice since the issuance of a coal throughput limit in Construction Permit AC29-61276 to serve F.J. Gannon Station Units 1-6. This approach is also consistent with EPA's and FDEP's ambient annual standards, which are calendar-year based.

#### Definition of Modification Exclusion

Under 62-210.200(187)(a), F.A.C., a modification is any physical change in, change in the method of operation of, or addition to a facility which would result in an increase in actual emissions of any air pollutant subject to regulation. No physical change or addition to a facility will be made to accommodate the coal throughput increase. Under 62-210.200(187) (a)2., F.A.C., a physical change or change in the method of operation does not include an increase in the hours of operation or in the production rate, unless such change would be prohibited under any federally enforceable permit condition which was established after January 6, 1975. The existing fuel yard operating permit contains a coal throughput limit of 2.85 million tpy that is a federally enforceable permit condition established after January 6, 1975. Thus, any increase in throughput beyond the permit limit is a change in the method of operation, falls within the definition of modification, and makes the fuel yard subject to air permitting. As discussed above, however, the throughput limit increase beyond 2.85 million tpy is solely dependent on the pollution control project and the equilibration of heat content for the proposed compliance fuels which is exempt from PSD permitting requirements.

Consistent with the existing F.J. Gannon Station operating permits and draft Title V Air Operation Permit, the fuel yard throughput limit is applicable only to the fuel yard. This throughput limit is not a facility-wide applicable requirement nor an applicable requirement to the individual steam generators. Further, the steam generators' operating permits do not contain any other federally enforceable permit conditions which restrict hours of operation or production rate. Finally, the steam generators will continue to be in compliance with all

applicable requirements following the coal throughput increase. As a result, the coal throughput increase is not a physical change nor change in the method of operation of the steam generators, and so is not a modification. Because the change is not a modification, the PSD rules, including the debottlenecking guidelines, are not applicable to the steam generators.

#### FDEP Comment No. 2

Construction permit AC29-114676, issued May 19, 1987, authorized an increase in coal throughput at the coal yard from 2.4 million tons per year to 2.85 million tons per year. The current application leads to the raising of questions as to the basis for the request to increase the coal yard throughput at that time, particularly regarding any considerations at the boilers. Please provide further detail.

#### TEC Response No. 2

The historical files regarding TEC's fuel yard activities at Gannon Station from 1985 through 1987 provide significant information regarding FDEP's Comment No. 2. First, as stated in a TEC letter to DER on November 14, 1985:

"...Specific Condition No. 7 limits the volume of coal that may be transferred through the coal yard to 2.4 million tons per year. This condition represents a restriction on operation which is not based on an environmental restriction. We prefer that the operating permit not include conditions that would limit our production flexibility, but we recognize the Department's desire to ensure compliance with applicable rules and statutes. This number (2.4 millions tons per year) was used to determine whether the expected increase in emissions [from the coal yard] would be greater than the significance level of 25 tons/year, and thus trigger a LAER review. Based on evaluations using DER's equations, it was determined that the increase in emissions [from the coal yard] would be 3.95 tons/year over pre-modification levels, which is much lower than the significant increase level. Using the same technique for estimating the emissions as previously submitted, we have concluded that 2.9 million tons of coal can pass through the coal yard in a year without exceeding the applicable significance level..."

Secondly, as stated in DER's Technical Evaluation and Preliminary Determination of the Gannon Station Coal Yard Modification dated April 8, 1987:

"The Gannon coal yard facility originally supplied coal to Gannon Units 5 and 6. In 1983, TECO received a construction permit (AC 29-61276) to allow modification of the Gannon coal yard to also supply Gannon Units 1, 2, 3, and 4 with an annual coal throughput to the coal yard of 2.4 million tons per year. The modification proposed now will increase the coal throughput to 2.85 millions tons per year. This modification will

allow for maximum stockpiling and reclaiming of various sulfur content coals and will provide the flexibility necessary for blending the coals to achieve the required sulfur content and heating values. As proposed by TECO, this modification to increase coal throughput to the coal yard will result in an increase in fugitive dust emissions from the coal handling system and storage areas. The increase in particulate emissions from this modification and the earlier modification to the coal yard permitted in 1983, will result in an increase in particulate matter, which is less than the applicable significant emissions increase of 25 tons per year..."

#### As such, it is clear that:

- The fuel yard throughput increase in 1987 as well as the currently requested throughput increase were both a means to provide operational flexibility to the plant by enabling the blending and use of various coals to achieve the desired reduction in emissions and maintenance of heat content;
- DER correctly did not consider the effect that increasing throughput in the fuel yard would have on emissions generated by the units burning the fuel, but did take into consideration the potential for a significant emissions increase from the fuel yard.

Please note that F.J. Gannon Station is not changing from a cyclic to a baseload power generating station. F.J. Gannon Station is more load-following than Big Bend Station, but F.J. Gannon Station continues to carry a typical baseload of approximately 50-60% capacity. While the currently requested increase in the coal yard throughput is not dictated by extreme projections in load growth, the typically expected 3% annual load growth is accounted for along with the needed flexibility for blending/using compliance fuels.

#### FDEP Comment No. 3

Please address the issue discussed in the HEPC correspondence attached.

#### TEC Response No. 3

The cited correspondence is the memorandum from Rick Kirby to Jerry Kissel dated October 24, 1997. This memo raises two issues. Issue No. 2, which deals with the applicability of PSD to the steam generators, has been addressed in TEC Response No. 1 of this document. Issue No. 1, which deals with fuel yard emission factors, was addressed in TEC's Response to Agency Comments dated September 24, 1997. Specifically, coal moisture content and bulldozer operations emission factors were addressed in TEC Response No. 3 and in TEC Response No. 2, respectively, of that document. The Environmental Protection Commission of Hillsborough County (EPCHC) comment of October 24, 1997, repeats EPCHC's positions regarding coal moisture content and bulldozer operations emission factors without providing any technical support for those positions. In contrast, the TEC comments of September 24,

1997, provide ample technical support for TEC's selection of coal moisture content and bulldozer operations emission factors. The applicable portion of TEC's September 24, 1997, comments are repeated below for FDEP's convenience.

#### Coal Moisture Content

TEC believes that total material moisture content is the appropriate parameter to use for calculating particulate matter (PM) and respirable particulate matter (PM₁₀) emissions with AP-42 emission factors for the following reasons.

- The AP-42 emission factors consistently reference "material moisture content" when discussing emission factor inputs. No reference exists to material surface moisture content.
- Appendix C.2 of AP-42 identifies the procedures for laboratory analysis of dust loading samples. In this appendix, the recommended procedure for determining material moisture content is American Society For Testing and Materials (ASTM) methods such as D-2216. Method D-2216 is the Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock. This method defines the water content of a material as "the ratio of the mass of water contained in the pore spaces of soil or rock material, to the solid mass of particles in that material, expressed as a percentage." By incorporating this ASTM method into AP-42, EPA clearly intended material moisture content to include all of the moisture contained in a material, not just surface moisture. Consistent with this approach, TEC has used the total minimum coal moisture content to estimate PM and PM₁₀ emissions using AP-42 emission factors.
- TEC's approach to estimating PM and PM₁₀ emissions from fuel yard sources is consistent with earlier analyses by TEC and other utility companies that received agency approval. TEC is not aware of any Florida construction permit application that included fugitive dust emission estimates based on surface moisture content.

TEC would be pleased to review the input EPCHC received from EPA regarding this issue. Without this information, TEC cannot analyze the apparent inconsistency with EPA's AP-42. In addition, TEC does not understand the basis for EPCHC's suggestion to use a surface moisture content of 2 percent. As stated above, TEC believes total moisture is the appropriate parameter. However, even if surface moisture content was to be used in the AP-42 emission factors, TEC has no data indicating that 2 percent is an appropriate surface moisture content value for the fuels currently in use at F.J. Gannon Station.

#### Storage Pile Maintenance Emission Factor

Tractors operating to maintain the fuel storage piles cause PM and PM₁₀ emissions. These emissions are included in the F.J. Gannon Station emissions inventory as source FH-044. The appropriate

emission calculation spreadsheets are included in Appendix B of the construction permit application. The emission factor used to estimate these emissions was obtained from Section 13.2.2, Unpaved Roads, of the Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources (AP-42). The Fifth Edition of AP-42, including Supplements A and B, was used. EPCHC noted that Section 11.9. of AP-42, Western Surface Coal Mining, includes an algorithm for coal bulldozing operations. EPCHC thought that using this algorithm might be more appropriate than using the unpaved road emission factor. Both emission factors have been reviewed. The unpaved road emission factor was selected because:

- In Section 13.2.4, Aggregate Handling and Storage Piles, AP-42 specifically recommends using the unpaved roads emission factor from Section 13.2.2 to calculate emissions from equipment on coal storage piles.
- The unpaved roads emission factor has a higher emission factor quality rating than the western surface coal mining emission factor. The unpaved roads emission factor has an unadjusted A rating, which must be adjusted one step down to B because annual conditions are being evaluated. The western surface coal mining emission factor has an unadjusted B rating, which must be adjusted at least one step down to C because an eastern power plant fuel yard is being evaluated. AP-42 actually recommends a C rating if the western surface coal mining emission factor is applied to an eastern coal mine. AP-42 is silent on applying the factor to any other industrial operation, so the best possible rating for the western coal mining emission factor in this situation is C.
- FDEP and EPCHC have agreed with using the unpaved roads emission factor to estimate fuel storage pile emissions at other facilities, including the recently permitted Big Bend Station fuel yard transloading project.

Given this background, TEC believes using the unpaved road emission factor is more appropriate for calculating PM and PM $_{10}$  emissions caused by maintenance operations on the F.J. Gannon Station fuel yard.

## **TABLES**

# F.J. GANNON STATION PROJECTED COAL USAGE BURNING PRB AND INDONESIAN COALS

Table 1. F.J. Gannon Station - Projected Coal Usage Burning PRB and Indonesian Coals

		1994 Actual			1995 Actual		19	94/1995 Avera	ge
Unit	Coal Usage	Coal Heat	Total Heat	Coal Usage	Coal Heat	Total Heat	Coal Usage	Coal Heat	Total Heat
		Content	Input		Content	Input		Content	Input
	(tons)	(Btu/lb)	(Btu)	(tons)	(Btu/lb)	(Btu)	(tons/yr)	(Btu/lb)	(Btu/yr)
1	148,818	12,745	3.79E+12	186,212	12,745	4.75E+12	167,515	12,745	4.27E+12
2	168,304	12,745	4.29E+12	186,383	12,745	4.75E+12	177,344	12,745	4.52E+12
3	279,144	12,745	7.12E+12	274,919	12,745	7.01E+12	277,032	12,745	7.06E+12
4	280,595	12,745	7.15E+12	463,970	12,745	1.18E+13	372,283	12,745	9.49E+12
5	505,129	12,745	1.29E+13	519,780	12,745	1.32E+13	512,455	12,745	1.31E+13
6	845,724	12,745	2.16E+13	897,070	12,745	2.29E+13	871,397	12,745	2.22E+13
Total or									
Average	2,227,714	12,745	5.68E+13	2,528,334	12,745	6.44E+13	2,378,024	12,745	6.06E+13

	Projected at M	aximum Fuelya	ard Throughput	Pollution P	revention Coal	Throughput
Unit	Coal Usage	Coal Heat	Total Heat	Coal Usage	Coal Heat	Total Heat
		Content	Input		Content	Input
	(tons)	(Btu/lb)	(Btu)	(tons)	(Btu/lb)	(Btu)
1	200,762	12,745	5.12E+12	312,038	8,200	5.12E+12
2	212,542	12,745	5.42E+12	330,347	8,200	5.42E+12
3	332,015	12,745	8.46E+12	516,040	8,200	8.46E+12
4	446,171	12,745	1.14E+13	693,469	8,200	1.14E+13
5	614,163	12,745	1.57E+13	710,300	11,020	1.57E+13
6	1,044,347	12,745	2.66E+13	1,207,822	11,020	2.66E+13
Total or						
Average	2,850,000	12,745	7.26E+13	3,770,018	10,023	7.26E+13

## **SIGNATURE PAGES**

AUTHORIZATION AND P.E. CERTIFICATION

#### Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible	Official:	
---------------------------------------------------------------------	-----------	--

Name ·

Patrick Ho

Title:

Manager, Environmental Planning

2. Owner or Authorized Representative or Responsible Official Mailing Address:

Organization/Firm:

Tampa Electric Company

Street Address:

P.O. Box 111

City: Tampa

State:

FL

Zip Code:

33601-0111

3. Owner/Authorized Representative or Responsible Official Telephone Numbers:

Telephone:

(813)641-5044

Fax: (813)641-5081

4. Owner/Authorized Representative or Responsible Official Statement:

I, the undersigned, am the owner or authorized representative* of the non-Title V source addressed in this Application for Air Permit or the responsible official, as defined in Rule 62-210.200, F.A.C., 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 units. 12/29/97 Date

Signature

* Attach letter of authorization if not currently on file.

I. Part 2 - 1

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#### **Application Processing Fee**

Check one:

[X] Attached - Amount: \$250.00 [ ] Not Applicable.

#### **Construction/Modification Information**

- 1. Description of Proposed Project or Alterations:
  - 1. Increase fuel yard throughput from 2,850,000 tpy to 3,770,000 tpy.
  - 2. Standardize all barge and rail unloading belt speeds at 2,300 tph.
  - 3. Add equipment to handle alternate fuel at 362,025 tpy and 400 tph.
  - 4. Replace two existing crushers (Notification, only.)
- 2. Projected or Actual Date of Commencement of Construction: 01-Sep-1997
- 3. Projected Date of Completion of Construction: 31-Aug-1998

#### **Professional Engineer Certification**

1. Professional Engineer Name: Thomas W. Davis

Registration Number: 36777

2. Professional Engineer Mailing Address:

Organization/Firm: Env. Consulting & Technology, Inc.

Street Address: 3701 NW 98th Street

City: Gainesville State: FL Zip Code: 32606-

3. Professional Engineer Telephone Numbers:

Telephone: (352)332-0444 Fax: (352)332-6722

#### **Application Contact**

1. Name and Title of Application Contact:

Name: Theresa Watley

Title: Consulting Engineer, Environmental Planning

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)641-5034

Fax:

(813)641-5081

#### **Application Comment**

I. Part 7 - 1

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#### 4. Professional Engineer Statement:

I, the undersigned, hereby certified, 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 pollutant 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 [X] 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 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 Communication Date

12 | 19 | 97

I. Part 6 - 1

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^{*} Attach any exception to certification statement.

# REVISED APPLICATION PAGES

# C. EMISSIONS UNIT DETAIL INFORMATION (Regulated Emissions Units Only)

Solid Fuel Bunkers (all solid fuel-fired units)		
Emissions Unit Details		
1. Initial Startup Date :		
2. Long-term Reserve Shutdown Date :		
3. Package Unit :		
Manufacturer:		Model Number :
4. Generator Nameplate Rating :	MW	
5. Incinerator Information :		
Dwell Temperature :		Degrees Fahrenheit
Dwell Time :		Seconds
Incinerator Afterburner Temperature :		Degrees Fahrenheit
Emissions Unit Operating Capacity  1. Maximum Heat Input Rate:	mmBtu/hr	
2. Maximum Incinerator Rate :	lb/hr	tons/day
3. Maximum Process or Throughput Rate :	4132025	tons per year
4. Maximum Production Rate :		
5. Operating Capacity Comment :		
Emissions Unit Operating Schedule		
Requested Maximum Operating Schedule :		
l -		7 days/week
24 hours/day		8,760 hours/year

III. Part 4 - 1

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#### F. SEGMENT (PROCESS/FUEL) INFORMATION

Emissions Unit Information Section 1				
Solid Fuel Bunkers (all solid fuel-fired units)				
Segment Description and Rate: Segment	1			
1. Segment Description (Process/Fuel Type and A	ssociated Operating Method/Mode):			
Fuel handling	·			
2. Source Classification Code (SCC): 3-05-10	01-03			
3. SCC Units: Tons Transferred Or Handled				
4. Maximum Hourly Rate: 1,600.00	5. Maximum Annual Rate: 4,132,025.00			
6. Estimated Annual Activity Factor:				
7. Maximum Percent Sulfur :	8. Maximum Percent Ash:			
9. Million Btu per SCC Unit :				
10. Segment Comment :				
Maximum Hourly Rate (Field 4) is tons per hour per bunker. Bunkers are not filled simultaneously.  Maximum Annual Rate (Field 5) is total for all bunkers.				

III. Part 8 - 1

DEP Form No. 62-210.900(1) - Form

# C. EMISSIONS UNIT DETAIL INFORMATION (Regulated Emissions Units Only)

Emissions Unit Information Section 2 Solid Fuel Handling and Storage (all sources)	<del></del>	
Emissions Unit Details		
1. Initial Startup Date :		
2. Long-term Reserve Shutdown Date :		
3. Package Unit :		
Manufacturer :		Model Number :
4. Generator Nameplate Rating:	MW	
5. Incinerator Information:		
Dwell Temperature:		Degrees Fahrenheit
Dwell Time :		Seconds
Incinerator Afterburner Temperature :		Degrees Fahrenheit
Emissions Unit Operating Capacity	·	
1. Maximum Heat Input Rate:	mmBtu/hr	
2. Maximum Incinerator Rate :	lb/hr	tons/day
3. Maximum Process or Throughput Rate:	4132025	tons per year
4. Maximum Production Rate :		
5. Operating Capacity Comment : Solid fuel handling rate.		
Emissions Unit Operating Schedule		
Requested Maximum Operating Schedule :		
24 hours/day		7 days/week
52 weeks/year		8,760 hours/year

III. Part 4 - 1

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#### F. SEGMENT (PROCESS/FUEL) INFORMATION

Emissions Unit Information Section 2					
Solid Fuel Handling and Storage (all sources)					
Segment Description and Rate: Segment 1	Segment Description and Rate: Segment 1				
1. Segment Description (Process/Fuel Type and Associate	ed Operating Method/Mode):				
Solid fuel handling and storage					
2. Source Classification Code (SCC): 3-05-101-03					
3. SCC Units: Tons Transferred Or Handled					
4. Maximum Hourly Rate: 4,600.00 5. Max	ximum Annual Rate : 3,770,000.00				
6. Estimated Annual Activity Factor:					
7. Maximum Percent Sulfur: 8. Ma	ximum Percent Ash				
9. Million Btu per SCC Unit:					
10. Segment Comment :					
Maximum hourly rate may be different for some fuel handling equipment. The Maximum Hourly Rate (Field 4) of 4,600 tph is the highest for any one fuel handling operation (i.e., two parallel conveyor belts operating simultaneously). See DOC.II.E.6 for detailed maximum hourly rates for each belt conveyor.					

III. Part 8 - 1

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