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	1
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	1
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	
Conveyor L to Conveyor D1/D2	FH-015	Dust Suppressant and Enclosure	95	Dust Suppressant and Enclosure	95	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	D
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	
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	85	NC 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	90	I
Hammermill Crusher 1 to Conveyor H1	FH-034	Dust Suppressant and Enclosure	70	Dust Suppressant and Enclosure	90	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 J 1/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	90	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

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

9/24/97

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. 3701 Northwest 98th Street

Street Address:

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.

Thom or. Que	9 22 97
Signature	Date
(seal)	· ·

^{*} Attach any exception to certification statement.

DOCUMENT II.E.6.2

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

_	PM10 Emission						
	Emission		Future				
Emission Point Description	Point ID	Actual	Actual	Change			
		(tpy)	(tpy)	(tpy)			
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 FH-017	0.03 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-019	0.03	0.05	0.02			
Conveyor M2 to conveyor E2	FH-020	0.03	0.03	0.02			
Conveyor E1 to fuel storage pile	FH-020	0.08	0.13	0.05			
Conveyor E2 to fuel storage pile	FH-022/023	0.08	0.13	0.00			
Fuel storage pile							
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			
PM10 Emission Summary		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								
	PM Emission							
·	Emission		Future					
Emission Point Description	Point ID	Actual	Actual	Change				
•		(tpy)	(tpy)	(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				
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	0.03				
Conveyor F1 to conveyors G1, G2	FH-028	0.05	0.08	0.03				
Conveyor F4 to conveyors G1, G2	FH-029	0.05	0.08	0.03				
Conveyor F3 to conveyors G1, G2	FH-030	0.00	0.00	0.00				
Conveyor F2 to conveyors G1, G2	FH-031	0.05	0.08	0.03				
Conveyor G1 to crushers	FH-032	0.08	0.05	-0.03				
Conveyor G2 to crushers	FH-033	0.08	0.13	0.05				
Crushers to conveyor H1	FH-034	0.08	0.13	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				
Contojoi o io convojois G1, G2	7111-003	0.00	0.02	0.02				
PM Emission Summary		10.55	14.42	3.87				

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 Fuel Handling - Barge to West Clamsheli (Spillage) **Emission Source Description:** Emission Control Method(s)/ID No.(s):Dust Suppressant Transfer Point ID(s): **Emission Point ID:** EMISSION ESTIMATION EQUATIONS Emission (lb/ftr) = 0.0011 x material transferred (tor/ftr) 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 Efficiency **Quantity Transferred** Content **Emission Rates** Speed (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 **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. 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 01/20/97 Date: Evaluated by: A. Trbovich Date: 01/20/97

01/20/97

Date:

Date:

A. Trbovich

Data Entered by:

Reviewed by:

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

FH-003

MAT	MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure:							
Emission Source	FACILITY AND SOURCE DESCRIPTION Emission Source Description: Fuel Handling - Barge to Continuous Unloader (Spillage)							
	<u> </u>	Barge Enclosure and Du		,,, ,	<u> </u>			
Emission Point I		FH-003		Transfer Point II	D/s)·	·		
EMISSION ESTIMATION EQUATIONS								
Emission (lhfbs) —	0 0011 v meterial transfers	d (ton/hr) x [(average wind s		moisture content (r	wt\m1.41 x (100	manifordi (100)		
		(tpy) x [(average wind speed						
Source: Section	13 2 4 — Aggregate H	landling and Storage Pil	les. AP-42. Fifti	h Edition, Januar	ry 1995.			
	TIO.E.T - Aggregate I	Raiding and otorago in	100,711 10,1111	it Caluari, amira	1000.			
		PUT DATA AND EMI	SSIONS CAL	CUI ATIONS				
			Material					
Mean Wind	Act		Moisture	Control	Actual			
Speed (mph)	Quantity T	(ton/yr)	Content (pct)	Efficiency (pct)	Emissio	(tpy)		
8.6	1,150	4,000,000	6.5	95.0	0.02	0.04		
		SOURCES	OF INPUT DA	TĀ				
Pai	rameter			ata Source				
	_							
Mean Wind Spec		Tampa, FL, Climate of t	the States, Third	Edition, 1985.				
Actual Quantity Material Moistur		TEC; 1997. Average fuel moisture of	content: TEC 19	994				
Control Efficience		Table 3-10, Fugitive E	, 		er Plants, EPRI, Ju	ne 1984.		
		· y						
	•							
		NOTES AND	OBSERVATIO	ONS				
Short-term (24-	-hr average) dispersio	n modeling emissions re	ates assume we:	st clamshell and	continuous unloa	ders operating		
simultanaously	v each at 1 150 tob for	r a total unloading rate o	of 2 300 tob			-		
311101121100431	y, each at 1,150 this tol	a total unloading rate t	л 2,500 фп.					
	<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						

Date:

Reviewed by:

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

MATER	IAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:					
		FACILITY AND SO	URCE DESC	RIPTION						
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:										
	EMISSION ESTIMATION EQUATIONS									
Emireion (th/br) = 0.001	11 v meterial transferre	d (ton/hr) x [(average wind s	need (mph)/5)1.3 /	moisture content (net)/2) 1.4) v (100-co)	ntrolineti#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	[pet]/100) x (1/2,000)				
Source: Section 13	.2.4 – Aggregate H	landling and Storage Pi	les, AP-42, Fift	h Edition, Janua	ry 1995.					
	_	=	_							
	เกเ	PUT DATA AND EM	ISSIONS CAL	CULATIONS						
			Material							
Mean Wind	Act		Moisture	Control	Actual					
Speed	Quantity T	ransferred (ton/yr)	Content (pct)	Efficiency (pct)	Emissio (lb/hr)	n Rates (tpy)				
(mph)	(ton/hr)	[ton/Ai)	(pct)	(pet)	(ID/III)					
8.6	1,150	4,000,000	6.5	95.0	0.02	0.04				
L		SOURCES	OF INPUT DA	TA						
Param	eter		D	ata Source						
				. =		·				
Mean Wind Speed		Tampa, FL, Climate of	the States, Third	<u>l Edition, 1985.</u>						
Actual Quantity Tran Material Moisture Co		TEC, 1997. Average fuel moisture	nontont: TEC 10	204						
Control Efficiency	· ·	Table 3-10, Fugitive E			er Plants. EPRI. Ju	ine 1984.				
Control Cincioney		Table o log tagaire a			<u> </u>					
		•								
		NOTES AND	ORSERVATIO	אכ						
Short-term (24-hr	average) dispersio	n modeling emissions r	ates assume we	st clamshell and	continuous unloa	ders operating				
simultaneously, e	ach at 1,150 tph for	a total unloading rate	of 2,300 tph.							
				-	,					
				-						
					·					
			•							
			CONTROL		ings, m. 1910 - Marian	20020000000000000000000000000000000000				
		.	CONTROL	<u> </u>	<u> </u>					
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

EMISSION SOURCE TYPE

MATE	MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES					
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source D	escription:	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 I	D(s):	
		EMISSION ESTIM	IATION EQU	ATIONS		
Eminaion (Ibda) — 0.0	Ott v makerial transferre	d (ton/hr) x [(average wind s	(mah) (m) 1.3	mainture content (
		(tpy) x [(average wind speed				
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		CULATIONS		
Mean Wind	Act	nal	Material Moisture	Control	Actual	PM
Speed	Quantity T		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 C	F INPUT DA	TA		
Para	meter	-		ata Source		
Mean Wind Speed		Tampa, FL, Climate of	the States This	d Edition 1985		
Actual Quantity Tre	ansferred	TEC, 1997.	uie Clates, Tillic	Luiuon, 1905.		
Material Moisture		Average fuel moisture	ontent; TEC, 19	994.		
Control Efficiency		Table 3-16, Fugitive E	missions From (Coal-Fired Pow	er Plants, EPRI, Ju	ne 1984.
		•				
		NOTES AND	OBSERVATIO	ons		
Short-term (24-ḥ	r average) dispersio	n modeling emissions re	ates assume we	st clamshell and	continuous unloa	ders operating
simultaneously.	each at 1.150 toh fo	r a total unloading rate of	of 2.300 toh.			
						-
			•	-		
		ΠΑΤΑ	CONTROL			
Data Collected	hv:	A. Trbovich	ONTIOL	**************************************	Date:	01/20/97
			-	_		
Evaluated by:		A. Trbovich	-		_	01/20/97
Data Entered b	y:	A. Trbovich	_			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 Emission Point ID: FH-007 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (fb/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** Content **Efficiency Emission Rates** Speed (ton/yr) (pct) (pct) (lb/hr) (tpy) (mph) (ton/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> 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 3-16, 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 Data Collected by: A. Trbovich Date: 01/20/97 Date: 01/20/97 Evaluated by: A. Trbovich 01/20/97 Data Entered by: A. Trbovich Date:

Date:

Reviewed by:

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

MATE	RIAL TRANSFER	ES	Figure:					
		FACILITY AND SO	OURCE DESC	RIPTION				
Emission Source D	escription:	Fuel Handling - West I	lopper to Conve	yor B				
Emission Control N	lethod(s)/ID No.(s):	Enclosure and Dust Sup	pressant					
Emission Point ID:	I	FH-009		Transfer Point I	D(s):			
		EMISSION ESTIN	MATION EQU	ATIONS				
Emission (lb/hr) = 0.00)11 x material transferre	d (torylly) x [(average wind s	speed (mph)/5) ^{1.3}	moisture content (pct)/2) ^{1.4}] x (100co	ntrol[pct]/100)		
		(tpy) x [(average wind spee						
Source: Section 19	3 2 4 - Aggregate l	landling and Storage Pi	les AP-42 Fift	h Edition Janua	rv 1995			
Source. Section 13	3.2.4 - Aggregate F	and oldrage Fi	165, AF - 42, Filt	ii Culuoii, Seriua	iy 1333.			
	<u>IN</u>	PUT DATA AND EM	ISSIONS CAL Material	CULATIONS				
Mean Wind	Act	ual	Moisture	Control	Actual	PM ₁₀		
Speed	Quantity T		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 DA	TA				
Parameter Data Source								
		T 51 Oli11	# - Ot-to- T-'-	1 F111 - 1005				
Mean Wind Speed Actual Quantity Tra	neforrad	Tampa, FL, Climate of TEC, 1997.	the States, Inire	1 Edition, 1985.				
Material Moisture C		Average fuel moisture	content; TEC, 1	994.				
Control Efficiency			able 3-16, Fugitive Emissions from Coal-Fired Power Plants, EPRI, June 1984.					
		NOTES AND	OBSERVATION	ONS				
Short-term (24-hi	average) dispersio	n modeling emissions r	ates assume we	st clamshell and	continuous unios	ders operating		
·····						and operating		
simultaneously, e	each at 1,150 tph fo	a total unloading rate	of 2,300 tph.					
						•		
	-	NATA	CONTROL					
Data Collected	bv:	A. Trbovich		. 2007-1-2000-0-2015-0-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	Date:	01/20/97		
Evaluated by:	-	A. Trbovich				01/20/97		
Data Entered by		A. Trbovich				01/20/97		
	·	A. TIDOVICII				- 1/E0/31		
Reviewed by:					Date:			

Tampa Electric Company - F.J. Gannon Station

<u>FH-</u>011

), A 7FF	DIAL TRANSFER		SOURCE TYL		=	
MAIE	HIAL TRANSFER	- FUGITIVE EMISS		·	Figure:	
5	> -		,			<u> </u>
Emission Source I	•	Fuel Handling - Conve		or C		
Emission Control	Method(s)/ID No.(s):	Enclosure and Dust Sup	pressant			<u>.</u>
Emission Point ID:	1	FH-011		Transfer Point I	D(s):	
		EMISSION ESTIN	MATION EQU	ATIONS		
Emission (lb/hr) = 0.0	0011 x material transferre	d (ton/hr) x [(average wind s	speed (mph)/5) ^{1.3}	moisture content (pct)/2) ^{1.4}] x (100-con	trol[pct]/100)
Emission (tpy) = 0.00	11 x material transferred	(tpy) x [(average wind spee	d (mph)/5) 1.3 / mo	isture content (pct)/	2) ^{1.4}] x (100—control[pet]/100) x (1/2,000)
Source: Section 1	3 2 4 - Aggregate h	landling and Storage Pi	les AP-42 Fift	h Edition Janua	nv 1995	
Cource: Cecucii i	O.E.T - Nggregate t	Midning and Otologo 11	100, 71 42, 1111	r Edidon, sunda	19 1000.	
		PUT DATA AND EM	ISSIONS CAL	CHEATIONS		
	IN	BUS DANA AND EM	Material	COLATIONS		
Mean Wind	Act		Moisture	Control	Actual	
Speed (mph)	Quantity T (ton/hr)	ransferred (ton/yr)	Content (pct)	Efficiency (pct)	Emissior (lb/hr)	(tpy)
(mpn)	(ton/nr)	(1017/41)	tpctj	(pci)	(ID/III)	
8.6	2,300	4,000,000	6.5	90.0	0.10	0.09
		SOURCES	OF INPUT DA	TA	<u> </u>	
Para	meter		<u>C</u>	at <u>a Source</u>		
Mean Wind Speed		Tampa, FL, Climate of	the States. Third	d Edition, 1985.		
Actual Quantity Tr		TEC, 1997.				
Material Moisture		Average fuel moisture				
Control Efficiency	<u> </u>	Table 3-16, Fugitive E	missions From	Coal-Fired Pow	<u>er Plants, EPRI, Ju</u>	ne 1984.
				•		
		NOTES AND	OBSERVATION	ONS		
<u> </u>						
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	•		CONTROL	was teleparate and a second access	_	
			CONTROL			
Data Collected	by:	A. Trbovich			Date: 0	01/20/97
Evaluated by:		A. Trbovich			Date: (01/20/97
Data Entered b	y:	A. Trbovich			Date: (01/20/97
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 **Emission Point ID:** FH-012 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 **Quantity Transferred** Content Efficiency **Emission Rates** Speed (pct) (pct) (lb/hr) (tpy) (mph) 8.6 2,300 4,000,000 90.0 0.10 0.09 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 for Control Efficiency Fugitive Particulate Sources, UARG, September 1981. NOTES AND OBSERVATIONS DATA CONTROL 01/20/97 Data Collected by: A. Trbovich Date: 01/20/97 Date: Evaluated by: A. Trbovich

Date:

Date:

01/20/97

A. Trbovich

Data Entered by:

Reviewed by:

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

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MATE	RIAL TRANSFER	- FUGITIVE EMISS			Figure:	
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source E	Description:	Fuel Handling - Rail Ca	r to Hopper			
Emission Control I	Method(s)/ID No.(s):	Enclosure and Dust Sup	pressant			
Emission Point ID:	: 1	FH-013		Transfer Point II)(s):	
		EMISSION ESTIM	ATION EQU	ATIONS		
Emission (lb/hr) = 0.0	011 x material transferre	d (ton/hr) x [(average wind s	peed (mph)/5) ^{1,3} /	moisture content (c	ct)/2) ^{1.4}] x (100—co	ntrol[pet]/100)
Emission (tpy) = 0.00	11 x material transferred	(tpy) x [(average wind speed	(mph)/5) 1.3 / moi	isture content (pct)/	2) ^{1.4}] x (100—control	[pct]/100) x (1/2,000)
Source: Section 1	9 2 4 Aggregate k	landling and Storage Pil	oe AD-42 556	h Edition Januar	v 1995	
Source. Section I	3.2.4 - Aggregate F	landling and Storage Fil	68, AP-42, File	n Edition, Januar	y 1993.	
			00/04/0*04/			
	<u>INI</u>	PUT DATA AND EMI	SSIUNS CAL Material	CULATIONS		
Mean Wind	Act	ual	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	4,000,000	6.5	95.0	0.05	0.04
		SOURCES C				
<u>Para</u>	<u>meter</u>	-		ata Source		
Mean Wind Speed		Tampa, FL, Climate of t	he States. Third	l Edition, 1985.		
Actual Quantity Tra		TEC, 1997.				
Material Moisture	Content	Average fuel moisture o				
Control Efficiency		Table 3-16, Fugitive E	missions From (Coal-Fired Powe	er Plants, EPRI, Ju	ıne 1984.
		NOTES AND	OR SEDVATIO	าพร		
		NOTESAND		<i>-</i> ,		
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		DATA (CONTROL			
Data Collected	by:	A. Trbovich			Date:	01/20/97
Evaluated by:		A. Trbovich			Date:	01/20/97
Data Entered b	y:	A. Trbovich	_		Date:	01/20/97
Reviewed by:	_	_			 Date:	

Tampa Electric Company - F.J. Gannon Station

		<u>EMISSION</u>	SOURCE TYP	?E				
MAT	MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure:							
	FACILITY AND SOURCE DESCRIPTION							
Emission Source Description: Fuel Handling - Hopper to Conveyor L								
Emission Control	I Method(s)/ID No.(s):	Enclosure and Dust Sup	pressant					
Emission Point ID: FH-014 Transfer Point ID(s):								
		EMISSION ESTIN	NATION EQUA	ATIONS				
Emission (lb/hr) = 0	1.0011 x material transferre	ed (ton/hr) x [(average wind a	1.3 (7\(dqm) beeq	moisture content (r	oct)/2) ^{1,4}] x (100—co	ntrol[pct]/100)		
Emission (tpy) = 0.0	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) × (1/2,000)		
Source: Section	19 2 A — Aggregate I	landling and Storage Pi	los AD-42 Fift	h Edition Januar	~ 1005			
Source: Section	13.2.4 - Aggregate r	randling and Storage Fil	185, AF - 72, File	n Edition, Januar	у 1990.			
			10010N080A1	*************				
	INI	<u>PUT DATA AND EM</u>	ISSIONS CAL Material	CULATIONS				
Mean Wind	Act	tuai	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	4,000,000	6.5	95.0	0.05	0.04		
		SOURCES	OF INPUT DA					
Par	ameter			ata Source				
Mean Wind Spee	rd .	Tampa, FL, Climate of	the States, Third	d Edition, 1985.				
Actual Quantity T		TEC, 1997.						
Material Moisture	Content	Average fuel moisture						
Control Efficience	y	Table 3-16, Fugitive E	missions From (Coal-Fired Powe	er Plants, EPRI, Ju	ine 1984.		
						,		
		NOTECAND	OBSERVATIV	3NC				
		NOTES AND	OBSERVATIO	JNS				
						_		
					_			
		DATA	CONTROL					
Data Collecte	d 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

MATE	RIAL TRANSFER	- FUGITIVE EMIS	SION SOURC	ES	Figure:	
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source D	escription:	Fuel Handling - Conve	yor L to Convey	or D1/D2		
Emission Control N	Method(s)/ID No.(s):	Enclosure and Dust Sup	pressant			
Emission Point ID:			<u>. </u>	Transfer Point I	D(s).	
Lineardi Tomi is.		EMISSION ESTIN	ATION EQU		<u> </u>	
		d (ton/hr) x [(average wind s				
Emission (tpy) ≈ 0.00	11 x material transferred	(tpy) x [(average wind speed	<u>d (mph)/5) · ~ / mo</u>	isture content (pct)/	2) ***] X (100—control	[pet]/100) x (1/2,000)
Source: Section 1	3.2.4 – Aggregate F	landling and Storage Pi	es, AP-42, Fift	h Edition, Janua	ry 1995.	
	IN	PUT DATA AND EM	SSIONS CAL	CUI ATIONS		
		***************************************	Material			
Mean Wind	Act		Moisture	Control	Actual	
Speed (mph)	Quantity T	ransferred (ton/yr)	Content (pct)	Efficiency (pct)	Emissio (lb/hr)	n Rates (tpy)
					•	
8.6	2,300	4,000,000	6.5	95.0	0.05	0.04
		SOURCES (FINPUT DA			•
Parai	meter		<u>_</u> <u></u>	Data Source		
Mean Wind Speed		Tampa, FL, Climate of	the States. Third	d Edition, 1985.		
Actual Quantity Tra	ansferred	TEC, 1997.			•	
Material Moisture (Content	Average fuel moisture				
Control Efficiency		Table 3-16, Fugitive E	missions From	Coal-Fired Pow	er Plants, EPRI, Ju	ine 1984.
				•		
			OCCEPTATE	· ·		
		NOTES AND	<u>OBSERVATIO</u>	ONS		
•						
		DATA	CONTROL			
Data Collected	hv:	A. Trbovich	<u>JOHN, JOE</u>	000000000000000000000000000000000000000	Date:	01/20/97
		A. Trbovich				01/20/97
Evaluated by:						
Data Entered b	y:	A. Trbovich		_	_	01/20/97
Reviewed by:					Date:	

Tampa Electric Company - F.J. Gannon Station

FH-016

		EMISSION	SOURCE TYP	?E				
MA	TERIAL TRANSFER	- FUGITIVE EMISS			Figure:			
FACILITY AND SOURCE DESCRIPTION								
Emission Sourc	e Description:	Fuel Handling - Convey	yor D1 to Conve	yor M1				
Emission Contro	oi Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	/8				
Emission Point								
		EMISSION ESTIM	IATION EQUI	ATIONS				
Emission (lb/tr) =	0.0011 x material transferre	d (ton/hr) x [(average wind s) peed (mph)/5) ^{1,3}	moisture content (p	ct)/2) ^{1.4}] x (100cor	trol[pct]/100)		
Emission (tpy) = 0	.0011 x material transferred	(tpy) x [(average wind speed	d (mph)/5) ^{1,3} / moi	sture content (pct)/?) ^{1.4}] x (100-control)	pct]/100) x (1/2,000)		
Source: Section	n 19 2 4 – Aggregate h	landling and Storage Pil	les AP-42 Fift	h Edition Januar	v 1995			
Source. Section	ii 13.2.4 – Aggregate r	and Storage Fit	165, AF -42, File	i Edibor, Jardar	y 1993.			
			100101101011	*OPPRETIONS				
	<u>INI</u>	PUT DATA AND EMI	Material	CULATIONS				
Mean Wind	Act	ual	Moisture	Control Efficiency	Actual PM ₁₀			
Speed	Quantity T		Content		Emission			
(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					
<u>Pa</u>	<u>rameter</u>		D	Data Source				
Mean Wind Spe	ed	Tampa, FL, Climate of	the States, Third	d Edition, 1985.				
Actual Quantity		TEC, 1997.						
Material Moistur		Average fuel moisture content; TEC, 1994.						
Control Efficience	cy	Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1981.						
		rugiuve Faruculate Sol	uices, UANG, Se	sptember 1901.				
		NOTES AND	ORSERVATIO	วพร				
						-		
Short-term (24	-hr average) dispersio	n modeling emissions re	ates assume bot	th stackers opera	ting simultaneous	ily,		
each at 2,300	tph for a total rate of 4	,600 tph.				'		
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*								
-								
		DATA	CONTROL		981078			
Data Collecte	ed by:	A. Trbovich		ſ	Date: (01/20/97		
Evaluated by	:	A. Trbovich			Date: (01/20/97		
Data Entered	l by:	A. Trbovich			Date: (01/20/97		

Date:

Reviewed by:

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

MAT	ERIAL TRANSFER	R - FUGITIVE EMISS	SION SOURC	ES	Figure:				
		FACILITY AND SO	URCE DESC	RIPTION					
Emission Source	Description:	Fuel Handling - Convey	or D2 to Conve	yor M2					
Emission Contro	- I Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	/8	,				
Emission Point II									
	EMISSION ESTIMATION EQUATIONS								
	0044 AI-I A	ed (ton/hr) x [(average wind s				A-1511 H 001			
Emission (tpy) = 0.0	0011 x material transferred	id (toy) x [(average wind speed	peea (mpn)/5) *** / i (mph)/5) ^{1.3} / moi	sture content (pct)/	2) ^{1.4}] x (100-control)	pet]/100) x (1/2,000)			
Causas Castina	49.04	Andline and Charge Bi	AD 40 EM	b Faire lesse	400E				
Source: Section	13.2.4 – Aggregate i	dandling and Storage Pil	185, AP-42, FM	n Edmon, Janua	ry 1995.	<u>-</u>			
0.000.000.000.000.000.000.000.000.000.000.000	-			A					
		PUT DATA AND EMI	SSIONS CAL Material	CULATIONS					
Mean Wind	Ac	tual	Moisture	Control	Actual PM ₁₀				
Speed		ransferred	Content	Efficiency	Emission	 			
(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			
L		SOURCES	F INPUT DA	TA	L				
Par	ameter			ata Source		· · · · · · · · · · · · · · · · · · ·			
Man Wind Spee		Temps El Climato of	the States This	l Edition 1985					
Mean Wind Spee Actual Quantity		Tampa, FL, Climate of to TEC, 1997.	me States, Time	Culuon, 1905.					
Material Moisture	Content	Average fuel moisture	content; TEC, 19	994.					
Control Efficienc	y	Table 3.2.17-2, Workb			and Dispersion M	odeling of			
		Fugitive Particulate Sources, UARG, September 1981.							
		NOTES AND	ODCEDIATIO	OME					
						-			
Short-term (24-	-hr average) dispersion	n modeling emissions re	ates assume bo	th stackers oper	ating simuitaneous	siy,			
each at 2,300 f	tph for a total rate of 4	,600 tph.							
		-							
			•						
		DATA	CONTROL						
Data Collected by: A. Trbovich Date:					Date: (01/20/97			
Evaluated by:		A. Trbovich			Date: (01/20/97			
Data Entered	Data Entered by: A. Trbovich Date: 01/20/97								
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 Description: Fuel Handling — Conveyor M1 to Conveyor E1							
Emission Control N	dethod(s)/iD No.(s):	Enclosure With Dust Su	ppressant Spray	/8			
Emission Point ID:		FH018		Transfer Point I	 D(s):		
		EMISSION ESTIN	ATION EQU				
Emission (thinks) — 0.00	044	ed (ton/fir) x [(average wind s	(
Emission (tpy) = 0.00	11 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)	
Sauran Sartian 1	004 4	Jandline and States Bi	AD 40 EM	h Edikian Janua	-: 400F		
Source: Section (3.2.4 – Aggregate i	landling and Storage Pi	185, AP-42, FIII	n Edition, Janua	гу 1995.		
			10010110001	OFFERTIONS			
	IN	<u>PUT DATA AND EM</u>	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				
Parai	meter			ata Source			
Mean Wind Speed		Tampa, FL, Climate of	the States Thir	l Edition 1985			
Actual Quantity Tra	ensferred	TEC, 1997.	ale Gales, Thire	- Luiuoii, 1303.			
Material Moisture (Average fuel moisture	content; TEC, 1	994.			
Control Efficiency		Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Fugitive Particulate Sources, UARG, September 1981.					
		rugiuve Failiculate Soi	uices, OANG, O	eptember 1901.			
		NOTES AND	OBSERVATIO	ONS			
Short-term (24-h	r average) dispersio	n modeling emissions re	ates assume bo	th stackers oper	ating simultaneous	siy,	
	n for a total rate of 4	<u>_</u>		· · ·			
each at 2,000 (p)	1101 a total 1ate 01 4	,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
		 					
		DATA	CONTROL				
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Reviewed by:			- -		Date:		

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

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MATE	RIAL TRANSFER	- FUGITIVE EMISS			Figure:		
		FACILITY AND SO	URCE DESC	RIPTION			
Emission Source (Description:	Fuel Handling - Convey	or M2 to Conve	yor E2			
Emission Control	Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	/8			
Emission Point ID:	:	FH-019		Transfer Point I	D(s):		
_		EMISSION ESTIM	ATION EQU	ATIONS			
			13		14		
Emission (lb/hr) ≈ 0.0 Emission (lb/hr) ≈ 0.00	011 x material transferred	d (ton/hr) x [(average wind s (tpy) x [(average wind speed	(mph)/5)	moisture content (pcf)/	20 ^{1.4} 1 x (100—control	itro([pct]/100) [pct]/100) x (1/2.000)	
		TYN. X					
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		CULATIONS			
Mean Wind	Act	uel	Material Moisture	Control	Actual PM ₁₀ Emission Rates		
Speed	Quantity T		Content	Efficiency			
(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 C	OF INPUT DA	TA			
Para	meter	<u> </u>		Data Source			
M ME-4 O4		Towns El Climate of	the States This	4 Edition 100E			
Mean Wind Speed Actual Quantity Tra		Tampa, FL, Climate of to TEC, 1997.	ine States, Thire	r Edition, 1965.			
Material Moisture		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.					
		Fugitive Particulate Soc	irces, UARG, S	eptember 1981.			
				~*.			
		NOTES AND	OBSERVATIO	ONS			
Short-term (24-h	r average) dispersio	n modeling emissions ra	ates assume bo	th stackers oper	ating simultaneous	ily,	
each at 2,300 tp	h for a total rate of 4	,600 tph.					
						•	
				_			
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		DATA (CONTROL				
Data Collected	by:	A. Trbovich			Date:	01/20/97	
Evaluated by:	•	A. Trbovich		_	Date:	01/20/97	
Data Entered b	y:	A. Trbovich			Date:	01/20/97	
Reviewed by:					Date:		

Tampa Electric Company - F.J. Gannon Station

FH-020

_		EMISSION	SOURCE TY	PE			
MAT	ERIAL TRANSFER	- FUGITIVE EMIS	SION SOURC	ES	Figure:		
		FACILITY AND SO	OURCE DESC	RIPTION			
Emission Source	Description:	Fuel Handling - Conve	yor E1 to Storaç	je Pile			
Emission Contro	i Method(s)/ÎD No.(s):	Dust Suppressant					
Emission Point II	D:	FH-020		Transfer Point ID	(s):		
		EMISSION ESTIM	MATION EQU	ATIONS			
Emission (lb/hr) = 0	0.0011 x material transferre	d (ton/hr) x [(average wind s	speed (mph)/5) ^{1.3}	moisture content (pc	t)/2) ^{1.4}] x (100—cont	rol[pct]/100)	
Emission (tpy) = 0.0	0011 x meterial transferred	(tpy) x [(average wind spee	d (mph)/5) ^{1,3} / mo	isture content (pct)/2)	1.4] x (100-control[et]/100) x (1/2,000	
Source: Section	13.2.4 – Aggregate i	landling and Storage Pi	iles, AP-42, Fift	h Edition, January	1995.		
	IŅ	PUT DATA AND EM		CULATIONS			
Mean Wind	Act	tual	Material Moisture	Control	Actual I	PM	
· 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	70.0	0.29	0.26	
		SOURCES	OF INPUT DA				
<u>Par</u>	ameter			Data 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	У	Table 3.2.17~2, Workbook on Estimation of Emissions and Dispersion Modeling of Fugitive Particulate Sources, UARG, September 1981.					
		NOTES AND	OBSERVATION	ONS			
Short-term (24-	-hr average) dispersio	n modeling emissions r	ates assume bo	th stackers operat	ing simultaneousl	у.	
each at 2 300 t	tph for a total rate of 4	600 tob	_			-	
540H 41 2,000 1	pi 101 a 10aa 1210 01 4	,000 tpii.					
					_	•	
		DATA	CONTROL				
Data Collecte	d by:	A. Trbovich		D	ate: 0	9/12/97	
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Data Entered	by:	A. Trbovich		D	ate: 0	9/12/97	

Date:

Reviewed by:

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

			<u></u>	<u> </u>			
MA [*]	TERIAL TRANSFER	- FUGITIVE EMISS			Figure:		
		FACILITY AND SO	URCE DESC	RIPTION			
Emission Sourc	e Description:	Fuel Handling - Convey	or E2 to Storag	e Pile			
Emission Contro	ol Method(s)/ID No.(s):	Dust Suppressant					
Emission Point	ID:	FH-021		Transfer Point II)(s):		
		EMISSION ESTIM	ATION EQU	ATIONS			
Emission (lh/br) —	0 0011 v material transfers	d (ton/hr) x [(average wind s	need (mph) /5) 1.3 /	maisture content (n	-n/m ^{1.4} 1 v (100	etrolineti (100)	
		(tpy) x [(average wind speed					
Source: Section	n 13.2.4 – Aggregate i	landling and Storage Pil	es, AP-42, Fiftl	h Edition, Januar	y 1995.		
					_		
	IN	PUT DATA AND EMI		CULATIONS			
Mean Wind	Act	าเลโ	Material Moisture	Control	Actual PM ₁₀ Emission Rates		
Speed	Quantity T		Content	Efficiency			
(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	
1		SOURCES	F INPUT DA				
<u>Pa</u>	rameter		<u>D</u>	ata Source			
Mean Wind Spe	ed	Tampa, FL, Climate of t	the States Third	Fdition 1985			
Actual Quantity		TEC, 1997.	are cuates, rime	<u> </u>			
Material Moistur	re Content	Average fuel moisture	content; TEC, 19	994.			
Control Efficience	cy .	Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Fugitive Particulate Sources, UARG, September 1981.					
		Fugitive Particulate Sou	irces, UAHG, Se	eptember 1981.			
		NOTES AND	OBSERVATIO	ONS			
01						<u> </u>	
Snort-term (24	-nr average) dispersio	n modeling emissions re	ates assume oth	stackers operat	ing simultaneousi	γ.	
each at 2,300	tph for a total rate of 4	,600 tph.	_				
	_						
		DATA (CONTROL				
Data Collecte	ed by:	A. Trbovich		ı	Date:	09/12/97	
Evaluated by	<u></u>	A. Trbovich			Date:	09/12/97	
Data Entered	l 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 1.12 m/s Threshold Friction Velocity: Control Efficiency: 50 pct Pile Width (m): Pile Height (m): 21 Surface Area (m²) 16,758 Pile Length (m): 215 70 Actual PM₁₀ Meteorological Friction Emission Affected Pile Affected Period Velocity Potential Surface Area Area **Emission Rate** (m²) (m/s) (g/m^2) (pct) (lb/hr) (tpy) 1.30 6.38 670.3 0.59 0.0024 14 30 1.13 0.26 4 670.3 0.02 < 0.0001 37 670.3 0.72 0.0014 1 33 7 81 4 5.34 0.0107 65 1.48 16.52 14 2,346.1 0.0081 65 1.80 43.82 4 670.3 4.05 6.38 0,59 0.0012 77 1.30 4 670.3 1.33 670.3 0,72 0.0014 90 7.81 Maximum Per Period 9.39 N/A N/A 0.0252 SOURCES OF INPUT DATA Data Source **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. Affected Area Calculated: ECT, 1997. NOTES AND OBSERVATIONS DATA CONTROL Data Collected by: Date: 09/12/97 A. Trbovich Date: 09/12/97 A. Trbovich Evaluated by: A. Trbovich Date: 09/12/97 Data Entered by:

Date:

Reviewed by:

EMISSION INVENTORY WORKSHEET Tampa Electric Company – F.J. Gannon Station EMISSION SOURCE TYPE FH-023a 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 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: 50 pct Pile Width (m): Pile Height (m): 16,754 Pile Length (m): 170 21 Surface Area (m²) **Q1** Actual PM₁₀ Meteorological Friction Emission Affected Pile Affected Emission Rates Period Velocity Potential Surface Area Area (m/s) (a/m^2) (pct) (m²) (lb/hr) (DA) 670.2 0.50 0.0024 6.38 14 1.30 30 0.26 4 670.2 0.02 <0.0001 1.13 670.2 0.72 0.0014 7.81 37 1.33 4 0.0107 65 1.48 16.52 14 2,345.5 5.34 0.0081 65 1.80 43.82 4 670.2 4.05 77 6.38 670.2 0.59 0.0012 1.30 4 0.0014 90 1.33 7.81 670.2 0.72 Maximum Per Period 9.38 N/A 0.0252 N/A Total SOURCES OF INPUT DATA **Parameter Data Source** Uncrusted coal pile, Table 13.2.5-2., AP-42, January 1995. 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. Pile Surface Area (m²) Calculated: ECT, 1997. Meteorological Periods 1986 NWS data, processed per AP-42, ECT, 1997. Equation, Section 13.2.5, AP-42, January 1995. 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. Calculated: ECT, 1997. Affected Area NOTES AND OBSERVATIONS DATA CONTROL Data Collected by: A. Trbovich Date: 09/12/97 Date: 09/12/97 Evaluated by: A. Trbovich A. Trbovich Date: 09/12/97 Data Entered by: Date: Reviewed by:

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): 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: 140 Pile Width (m): 125 Pile Height (m): 21 Surface Area (m²) Pile Length (m): 18,855 Meteorological Friction **Emission** Affected Pile Affected Actual PM₁₀ Velocity Potential Surface Area Emission Rates Period Area (m²) (m/s)(g/m²) (pct) (lb/hr) 1.30 6.38 754.2 0.66 0.0013 0.26 754.2 0.03 < 0.0001 30 1.13 4 37 1.33 7.81 4 754.2 0.81 0.0016 65 1.48 16.52 6.01 0.0120 14 2.639.6 65 1.80 43.82 4 754.2 4.55 0.0091 0.66 0.0013 77 1.30 6.38 4 754.2 754.2 0.81 0.0016 90 1.33 7.81 Maximum Per Period N/A 10.56 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, Worldbook 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. 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

A. Trbovich

A. Trbovich

A. Trbovich

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	Tampa Ek	ectric Company – F.				<u>FH-024</u>
		EMISSION S	SOURCE TYP	e		
MATE	RIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:	
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source D	escription:	Fuel Handling - Underg	round Reclaim	System to Convey	or F1	
	-	Tuoi haireinig Oracig	10011011001001111	System to contey	 	
Emission Control N	lethod(s)/ID No.(s):	Enclosure With Dust Sup	pressant	<u> </u>		
Emission Point ID:		FH-024		Transfer Point ID((s):	
		EMISSION ESTIM	ATION EQU	ATIONS		
					- 4.4	
		ed (ton/hr) x [(average wind s) ! (tpy) x [(average wind speed				
Emission (tpy) = 0.001	1 X MAILEMAN TRANSPORTED	(tpy) x ((average wind speed	i (mpn)/5) ··· / moi	sture content (pcq/2)] x (100-control	pet(/100) x (1/2,000)
Source: Section 13	3.2.4 - Aggregate I	landling and Storage Pil	es, AP-42, Fiftl	h Edition, January	1995.	
		_				
	7.4	PUT DATA AND EMI	CCIONIC CAL	CHEATIONS		dadisional english shorts (v. r.)
		POWDATA AND EMI	Material Material	COLATIONS	<u></u>	<u> </u>
Mean Wind	Act	tual	Moisture	Control	Actual	PM ₁₀
Speed	Quantity T		Content	Efficiency	Emissio	
<u>(mph)</u>	(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	TA 300 100 100		
Parar	neter			ata Source	nye iti madaqaatanan isi mahiini dhaqaanid	presidente production of the second control
Mean Wind Speed		Tampa, FL, Climate of t	he States, Third	Edition, 1985.		
Actual Quantity Tra		TEC, 1997.				
Material Moisture C	Content	Average fuel moisture of Table 3.2.17-2, Workbo			nd Dispersion M	
Control Efficiency		Fugitive Particulate Sou			nd Dispersion m	odeling of
				<i>,</i>		
		NOTES AND	ORSERVATIO			5886086780 Aud Reduction (C.)
	<u> </u>					
Short-term (24-h	r average) dispersio	n modeling emissions ra	ites assume 4 re	elaimers operating	simultaneously	<u> </u>
each at 400 tph f	or a total rate of 1,6	600 tph.				
	_					
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-		-	-	•		
		DYA-TA-7	CONTROL			7779888 C 2018888 C 2018 C
	-		JUNINUE :::	<u> </u>	<u>.</u>	
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 	7•	A. HIDOTRII				
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***************************************	Tampa_Eid	ectric Company - F				FH-025
			SOURCE TYL			Barrana ang atau at pang a
MA	TERIAL TRANSFER	R - FUGITIVE EMIS FACILITY AND SC			Figure:	0.100000000000000000000000000000000000
					_	<u> </u>
Emission Source	ce Description:	Fuel Handling - Under	ground Reclaim	System to Conve	yor F4	
Emission Contr	rol Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant			
Emission Point	t ID:	FH-025		Transfer Point (C)(s):	
		EMISSION ESTIM	MATION EQU	ATIONS		
Emission (lb/hr) =	= 0.0011 x meterial transferre	ed (ton/hr) x [(average wind :	speed (mph)/5) ^{1.3} /	/ moisture content (p	ct)/2) ^{1.4} 1 x (100-co	
Emission (tpy) =	0.0011 x material transferred	(tpy) x [(average wind spee	d (mph)/5) 1.3 / moi	isture content (pct)/2) ^{1.4}] x (100-control	[pct]/100) x (1/2,000)
Source: Socie	nn 19 2 4 — Aggragata I	Handling and Storage Pi	ilos AD 42 Eit	h Edition Jenuer	4 1005	
Source: Secuc	on 15.2.4 – Aggregate i	randling and Storage Fi	1165, AP - 42, FIII	n Edition, Januar	y 1333.	
Social Control of the		DUT-0474-4410-514	1001011001	0.00		diamenta dia managa terma, anda
		PUT DATA AND EM	ISSIONS CAL Material	CULATIONS		
Mean Wind	Ac	tual	Moisture	Control	Actual	PM ₁₀
Speed		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
	1	SOURCES	OF INPUT DA			
Pe	<u>arameter</u>			ata Source		
Mean Wind Spe	eed	Tampa, FL, Climate of	the States. Third	d Edition, 1985.		
Actual Quantity		TEC, 1997.				
Material Moistu	ure Content	Average fuel moisture			<u> </u>	
Control Efficier	ncy	Table 3.2.17-2, Workt Fugitive Particulate So			and Dispersion M	lodeling of
		NOTES AND	OBSERVATION	ONS	_	
Short-term (24	4-hr average) dispersio	n modeling emissions r	ates assume 4 r	elaimers operatin	g simultaneously	'.
	<u> </u>	<u> </u>		<u> </u>	<u> </u>	•
each at 400 t	tph for a total rate of 1,6	ου ψιι.				
						•
			,			
		DATA	CONTROL			
Data Collect	ted by:	A. Trbovich			ate:	09/12/97
	-					

A. Trbovich

09/12/97

Date:

Data Entered by:

	Tampa Ele	ectric Company – F	,			<u> [FH-026</u>
		EMISSION	SOURCE TYP	PE		
· MA	TERIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:	
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source	ce Description:	Fuel Handling - Underg	round Reclaim	System to Conve	evor F3	•
-	-	Enclosure With Dust Su				-
Emission Point		FH-026		Transfer Point II	D(s):	-
		EMISSION ESTIN	ATION EQU			
		ed (ton/hr) x [(average wind s				
Emission (tpy) = (0.0011 x material transferred	(tpy) x ((average wind speed	d (mph)/5) ' - / moi	sture content (pct)/	2) 1.7] x (100 – contro	[pct]/100) x (1/2,000)
Source: Section	on 13.2.4 – Aggregate i	dandling and Storage Pi	les. AP-42. Fifti	h Edition, Januar	 rv 1995.	
		PUT DATA AND EM	ISSIONS CAL Material	CULATIONS		
Mean Wind	Ac	tual	Moisture	Control	Actual	I PM ₁₀
Speed		ransferred	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
	<u> </u>	SOURCES C	OF INPUT DA	TA .		
Pa	arameter			ata Source		200000000000000000000000000000000000000
Mean Wind Spe		Tampa, FL, Climate of	the States, Third	d Edition, 1985.		
Actual Quantity Material Moistu		TEC, 1997. Average fuel moisture	content: TEC 19	204		
Control Efficier		Table 3.2.17~2, Workb			and Dispersion M	lodeling of
	· · · · · · · · · · · · · · · · · · ·	Fugitive Particulate So			•	ŭ
		,				
	<u> </u>	NOTES AND	ORSERVATIO	ONS		
	•				_	
Short-term (24	f-hr average) dispersion	on modeling emissions re	ates assume 4 re	elaimers operation	ng simultaneously	<u>′. </u>
each at 400 t	ph for a total rate of 1,6	500 tph.				
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			•			
		·	0011700	10,000 f 3 , 00000 - 100 F00000 - 110	- 6.5.5.50., switch: ,000000000000000000000000000000000000	001000000000000000000000000000000000000
		DATA	CONTROL			
Data Collect	ed by:	A. Trbovich			Date:	09/12/97
Evaluated by	y:	A. Trbovich			Date:	09/12/97
Data Entere	d by:	A. Trbovich			Date:	09/12/97

Date:

FH-027

Tampa Electric Company — F.J. Gannon Station

EMISSION SOURCE TYPE

MATER	IAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:		
		FACILITY AND SO	URCE DESC	RIPTION			
Emission Source De	scription:	Fuel Handling - Underg	round Reclaim	System to Conve	yor F2		
Emission Control Me	ethod(s)/ID No.(s):	Enclosure With Dust Su	ppressant				
Emission Point ID:		FH-027		Transfer Point II	D(s):		
		EMISSION ESTIN	ATION EQU	ATIONS			
Emission (lb/hr) = 0.001	1 x meterial transferre	od (ton/hr) x ((average wind s	peed (mph)/5) ^{1,3} /	moisture content (c	ct)/2) ^{1.4} 1 x (100-cor	trol (pet) /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)	pet]/100) x (1/2,000)	
Source: Section 13	.2.4 – Aggregate I	landling and Storage Pi	les. AP-42. Fifti	h Edition, Januar	v 1995.		
					,		
	181	PUT DATA AND EM	ISSIANS CAL	CHIATIONS			
	HV	FORDATA AND EMI	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	400	4,000,000	6.5	85.0	0.03	0.13	
		SOURCES (OF INPUT DA	TA .	L		
Param	eter		D	ata Source			
	_	-					
Mean Wind Speed		Tampa, FL, Climate of	the States, Third	Edition, 1985.			
Actual Quantity Tran		TEC, 1997.			•		
Material Moisture Co	ontent	Average fuel moisture			and Dianassian M	adoling of	
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 .			
Short—term (24—hr	everege) dispersio	n modeling emissions r			a eimultaneouely		
·			2103 43341110 4 11	oraniero operadi	ig omitalitations.		
each at 400 tph to	r a total rate of 1,6	юо ф и.					
	•						
	•						
		DATA	CONTROL				
Data Collected b	y:	A. Trbovich		١	Date:	09/12/97	
Evaluated by:		A. Trbovich			Date:	09/12/97	
Data Entered by	:	A. Trbovich			Date:	09/12/97	
Reviewed by:					Date:		

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

			SOUNCE					
MAT	TERIAL TRANSFER	- FUGITIVE EMISS			Figure:			
		FACILITY AND SO	URCE DESC	RIPTION				
Emission Source	e Description:	Fuel Handling ~ Convey	or F1 to Conve	yor G1/G2				
Emission Contro	ol Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	' 8				
Emission Point I	D:	FH-028		Transfer Point ID)(s):			
		EMISSION ESTIM	ATION EQU	ATIONS				
			13.		14			
		d (ton/hr) x ((average wind s (tpy) x ((average wind speed						
(4)								
Source: Section	13.2.4 – Aggregate F	landling and Storage Pil	es, AP-42, Fifti	h Edition, Januar	y 1995			
		.						
	IN	PUT DATA AND EMI		CULATIONS				
100000		•	Materiai	041	A -4	514		
Mean Wind Speed	Act Quantity T		Moisture Content	Control Efficiency	Actual Emission	• •		
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)		
		4 000 000	6.5	00.0	0.02	0.09		
8.6	400	4,000,000	6.5	90.0	0.02	0.09		
	SOURCES OF INPUT DATA							
Pai	rameter		<u> </u>	ata Source				
Mean Wind Spec	ed	Tampa, FL, Climate of	the States, Third	Edition, 1985.				
Actual Quantity		TEC, 1997.						
Material Moistur		Average fuel moisture				- d - N' 4		
Control Efficience	;y	Table 3.2.17-2, Workb Fugitive Particulate Sou			and Dispersion Mo	odeling of		
		V-g.u.v- 1 - 10-11-10						
		NOTES AND	ORSFRVATIO	DNS				
						000000000000000000000000000000000000000		
Short-term (24	-hr average) dispersio	n modeling emissions re	ates assume 4 re	elaimers operaun	g simultaneously,			
each at 400 tp	h for a total rate of 1,6	00 tph.						
		DATA	CONTROL					
Data Collecte	ed by:	A. Trbovich			Date: (1/20/97		
Evaluated by	•	A. Trbovich			Date: ()1/20/97		
Data Entered	by:	A. Trbovich			Date: (01/20/97		
Reviewed by:	,)ate·			

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

FH-029

		LMISSICIA	300HUL 111	(-			
MAT	TERIAL TRANSFER	- FUGITIVE EMIS			Figure:		
		FACILITY AND SC	DURCE DESC	RIPTION			
Emission Source	e Description:	Fuel Handling - Conve	yor F4 to Conve	yor G1/G2			
Emission Contro	oi Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	/8			
Emission Point I	D:	FH-029		Transfer Point I	D(s):		
		EMISSION ESTIN	MATION EQU	ATIONS			
Emission (lb/lw) -:	0 0011 v material transfers	d (ton/hr) x [(average wind s	need (mob)/5)1.3	moisture content (net)/21 ^{1.4} 1 v (100	mtrol[oot] (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	[pet]/100) x (1/2,000)	
	4004			L = dial = 1	4005		
Source: Section	1 13.2.4 — Aggregate r	landling and Storage Pi	<u>188, AP−42, Fiπ</u>	n Edition, Janua	ry 1995.		
Т	IN	PUT DATA AND EM	ISSIONS CAL Material	CULATIONS			
Mean Wind	Act	rial	Moisture	Control	Actual	PM	
Speed	Quantity T	· .	Content	Efficiency		n Rates	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)	
(mpn)	(tonym)	1001/91/	фец	TPGIJ	((0)/111)	1011	
8.6	400	4,000,000	6.5	90.0	0.02	0.09	
		SOURCES (OF INPUT DA				
Pai	<u>rameter</u>		<u>_</u>	ata Source			
Mean Wind Spec	ad	Temps El Climete of	the States Thir	f Edition 1985			
Actual Quantity		Tampa, FL, Climate of the States, Third Edition, 1985. TEC, 1997.					
Material Moistur		Average fuel moisture	content; TEC, 19	994.			
Control Efficience	: y	Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of					
		Fugitive Particulate So	urces, UARG, S	eptember 1981.			
				•			
_		NOTES AND	<u>OBSERVATIO</u>	ONS	<u> </u>		
Short-term (24-	-hr average) dispersio	n modeling emissions r	ates assume 4 r	elaimers operati	ng simult aneously		
each at 400 tp	h for a total rate of 1,6	00 tph.					
					•		
			·				
		DATA	CONTROL				
Data Collecte	ed by:	A. Trbovich			Date:	01/20/97	
Evaluated by	:	A. Trbovich			Date:	01/20/97	
Data Entered	hv.	A. Trhovich			Date:	01/20/97	

Date:

Tampa Electric Company - F.J. Gannon Station

			SOUNCE ITI					
MA	TERIAL TRANSFER	- FUGITIVE EMISS			Figure:			
FACILITY AND SOURCE DESCRIPTION								
Emission Sourc	e Description:	Fuel Handling - Convey	or F3 to Conve	yor G1/G2				
Emission Contr	ol Method(s)/ID No.(s):	Enclosure With Dust Sup	ppressant Spray	/8		·		
Emission Point	Emission Point ID: FH-030 Transfer Point ID(s):							
		EMISSION ESTIM	IATION EQU	ATIONS				
Eminaion (lh/hr) —	0.0011 v material transfers	d (torylw) x [(average wind s	need (moh) (5) 1.3	moieture content (r	www.1.41 v (100	tralinati (100)		
Emission (tpy) = 0	0.0011 x material transferred	(tpy) x [(average wind speed	(mph)/5) ^{1,3} / moi	sture content (pct)/	2) ^{1.4}] x (100—control)	pet]/100) x (1/2,000)		
Source: Sectio	n 13.2.4 – Aggregate F	landling and Storage Pil	es, AP-42 <u>, Fift</u>	h Edition, Januar	y 1995.			
								
	<u>IN</u>	PUT DATA AND EMI		CULATIONS				
Mean Wind	Act	uai	Material Moisture	Control	Actual	PM ₁₀		
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		
SOURCES OF INPUT DATA								
Parameter Data Source								
Mean Wind Spe	and .	Tampa, FL, Climate of t	he States Third	Fdition 1985				
Actual Quantity		TEC, 1997.	are clates, min	Laidon, 1000.				
Material Moistu		Average fuel moisture of	ontent; TEC, 1	994.				
Control Efficien	су	Table 3.2.17-2, Workb			and Dispersion M	odeling of		
		Fugitive Particulate Soc	irces, UARG, S	eptember 1981.				
000000000000000000000000000000000000000		NOTECANO	OBCEDIATIO	34/0				
		NOTES AND						
Short-term (24	-hr average) dispersio	n modeling emissions re	ites assume 4 r	elaimers operatii	ng simultaneously	1		
each at 400 tj	ph for a total rate of 1,6	00 tph.						
		-						
						· .		
			-					
	·	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		
Reviewed by	•				 Date:			

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE								
MAT	TERIAL TRANSFER	- FUGITIVE EMISS			Figure:			
	FACILITY AND SOURCE DESCRIPTION							
Emission Source	e Description;	Fuel Handling - Convey	yor F2 to Conve	yor G1/G2				
Emission Contro	Method(s)/ID No.(s):	Enclosure With Dust Sup	ppressant Spray	/8				
Emission Point I	ID:	FH-031		Transfer Point I	D(s):			
		EMISSION ESTIM	NATION EQUA	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) ' ~ /	moisture content (pct)/2) ' · ⁻] x (100—cor 	ntrol[pct]/100)		
Chission (wy) = v.		(mh) x ((samede ana sheer	1 (mpn//3) / nex	BUS CORER (DC4)	2)***] X (100- con iso	pety 100) x (1/2,000)		
Source: Section	n 13.2.4 – Aggregate H	landling and Storage Pil	les, AP-42, Fifti	h Edition, Janua	ry 1995.			
	· ·		ICCIONIC CAL	CHIATIONS				
	JINI	PUT DATA AND EMI	Material	CULATIONS				
Mean Wind	Act	ual laur	Moisture	Control	Actual	PM ₁₀		
Speed	Quantity T	ransferred	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		
1	SOURCES OF INPUT DATA							
Par	rameter		D	ata Source				
Mean Wind Spec	ed	Tampa, FL, Climate of t	the States, Third	l Edition, 1985.				
Actual Quantity	Transferred	TEC, 1997.						
Material Moistur	e Content	Average fuel moisture of						
Control Efficience	-y	Table 3.2.17-2, Workbo			and Dispersion M	odeling of		
	-	Fugitive Particulate Sou	urces, UAHG, Se	eptember 1981.	•			
		1						
	,	,	•					
		NOTES AND	<u>OBSERVATIO</u>	DNS				
Short-term (24-	-hr average) dispersio	n modeling emission rat	tes assume 4 re	laimers operatin	g simultaneously,	1		
		-		<u> </u>				
each at 400 tp	h for a total rate of 1,6	<u>00 τρη.</u>						
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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		
Paviawad by:								

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

- F.J. Gannon Station FH-032

MATE	DIAL TRANSFER	- FUGITIVE EMISS	NON SOURC		Figure		
MAIL	MAL INAMOLEM	FACILITY AND SO			Figure:		
Emission Source [Description:	Fuel Handling - Convey					
Emission Control I	Method(s)/ID No.(s):	Enclosure With Dust Su	pressant	_			
Emission Point ID:	:	FH-032		Transfer Point IC	D(s):		
		EMISSION ESTIM	ATION EQU	ATIONS			
		d (ton/hr) x [(average wind s					
Emission (tpy) = 0.00	11 x material transferred	(tpy) x ((average wind speed	1 (<u>mph)</u> /5) ^{1.3} / moi	sture content (pct)/2) ^{1.4}] x (100—control[pct]/100) x (1/2,000)	
Source: Section 1	3.2.4 - Aggregate F	landling and Storage Pil	es, AP-42, Fiftl	n Edition, Januar	y 1995.		
				· <u>-</u>			
	IN	PUT DATA AND EMI	SSIONS CAL	CULATIONS			
Mean Wind	Act	nual .	Material Moisture	Control	Actual	P M 40	
Speed	Quantity T		Content	Efficiency	Actual PM ₁₀ Emission Rates		
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpv)	
8.6	800	4,000,000	6.5	90.0	0.03	0.09	
	-	SOURCES C	F INPUT DA				
ParaPara	meter		<u> </u>	ata Source			
Mean Wind Speed		Tampa, FL, Climate of t	he States, Third	Edition, 1985.			
Actual Quantity Tr	ansferred	TEC, 1997.					
Material Moisture (Control Efficiency	Content	Average fuel moisture of Table 3.2.17-2. Workb			and Dispersion Mo	odeling of	
		Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Fugitive Particulate Sources, UARG, September 1981.					
		NOTES AND	OBSERVATIO	ons			
·							
· · · · · · · · · · · · · · · · · · ·				.			
		DATA	CONTROL				
Data Collected	by:	A. Trbovich	JOHINGE		Date: 0	1/20/97	
Evaluated by:		A. Trbovich			Date: (1/20/97	
Data Entered b		A. Trbovich			Date: 0	01/20/97	
Reviewed by:				I	Date:	_	

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

MAT	TERIAL TRANSFER	ES	Figure:				
		FACILITY AND SO	URCE DESC	RIPTION			
Emission Source	Description:	Fuel Handling - Convey	or G2 to Hamm	ermill Crusher 2			
Emission Contro	ol Method(s)/ID No.(s):	Enclosure With Dust Sup	ppressant				
Emission Point I	D:	FH-033		Transfer Point II	D(s):		
	_	EMISSION ESTIM	IATION EQUA	ATIONS			
Emission (lb/hr) = 6	0.0011 x material transferre	d (ton/hr) x [(average wind s	peed (mph)/5) ^{1,3} /	moisture content (s	oct)/2)1.41 x (100-co	ntrol[nct]/100)	
		(tpy) x [(average wind speed					
Source: Section	13.2.4 – Aggregate i	landling and Storage Pil	es. AP-42. Fifti	h Edition, Januar	rv 1995.		
Oddied: Oddied	TIO.E.T Page oguto	talaning and otorago in		Tearson, surrous	.,		
	IN	PUT DATA AND EMI	SSIONS CAL	CIII ATIONS			
		BOWDAINAVAIND:LIMI	Material	CODAMONO			
Mean Wind		tual	Moisture	Control	Actual		
Speed		ransferred (ton/yr)	Content (pct)	Efficiency (pct)	Emissio (lb/hr)	n Rates (tpy)	
(mph) 8,6	(ton/hr) 800	4,000,000	6.5	90.0	0.03	0.09	
		COURCES	SENDITEDA	TA		·	
SOURCES OF INPUT DATA Parameter Data Source							
	T Gray to the state of the stat						
Mean Wind Spec	ed	Tampa, FL, Climate of t	the States, Third	Edition, 1985.			
Actual Quantity		TEC, 1997.					
Material Moistur Control Efficience		Average fuel moisture of Table 3.2.17-2, Workb			and Dispersion M	adeling of	
	••	Fugitive Particulate Sources, UARG, September 1981.					
		NOTES AND	OBSERVATIO	ONS			
*							
		-	-				
		DATA	CONTROL				
Data Collecte	ed by:	A. Trbovich		000-100 1000 100000 100,000 1 1 1 1 1 1 1 1	Date:	01/20/97	
Evaluated by		A. Trbovich				01/20/97	
Data Entered		A. Trbovich			_	01/20/97	
Reviewed by:					Date:	,,-	
neviewed by:	•				Date.		

Tampa Electric Company - F.J. Gannon Station

FH-034

		EMISSION	SOURCE TYP	?E				
MA	TERIAL TRANSFER	- FUGITIVE EMISS			Figure:			
		FACILITY AND SO	URCE DESC	RIPTION				
Emission Sourc	e Description:	Fuel Handling - Hamme	ermill Crusher 1	to Conveyor H1				
Emission Contro	ol Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	/8				
Emission Point	ID:	FH-034		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	pct)/2) ^{1.4}] x (100—co	ntrol[pet]/100)		
Emission (tpy) = 0).0011 x material transferred	(tpy) x [(average wind speed	1 (mph)/5) ^{1.3} / moi	sture content (pct)/2	<u>2)^{1.4}] x (100-control</u>	[pct]/100) x (1/2,000)		
Source: Section	n 13.2.4 – Aggregate F	landling and Storage Pil	les, AP-42, Fift	h Edition, Januar	ry 1995.			
	IN	PUT DATA AND EMI	SSIONS CAL	CULATIONS				
Mean Wind	Act	hal	Material Moisture	Control	Actual	DM		
Speed	Quantity To	,	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 DATA							
<u>Pa</u>	rameter		D	ata Source		-		
Mean Wind Spe	ed	Tampa, FL, Climate of t	the States, Third	f Edition, 1985.				
Actual Quantity	Transferred	TEC, 1997.						
Material Moistur		Average fuel moisture of						
Control Efficiend	cy	Table 3.2.17-2, Workb Fugitive Particulate Sou			and Dispersion M	odeling of		
				-				
		NOTES AND	OBSERVATIO	DNS				
			 					
						•		
		DATA (CONTROL					
Data Collecte	∍d by:	A. Trbovich			Date:	01/20/97		
Evaluated by	<i>r</i> :	A. Trbovich		!	Date:	01/20/97		
Data Entered	l by:	A. Trbovich		!	Date:	01/20/97		
Reviewed by:	•			ŗ	Date:			

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

			<u> </u>			<u> </u>
MATE	RIAL TRANSFER	- FUGITIVE EMIS			Figure:	
		FACILITY AND SC	<u>URCE DESC</u>	RIPTION		
Emission Source (Description:	Fuel Handling - Hamm	ermill Crusher 2	to Con <mark>veyor H2</mark>		
Emission Control	Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant			
Emission Point ID:			•	Transfer Point I	D/e)·	
Cilibatori i Orik 10	•	EMISSION ESTIN	ATION EQU		<i>5</i> (6):	
		_				
Emission (lb/hr) = 0.0	2011 x material transferre	d (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	111 x material transferred	(tpy) x [(everage wind spee	d (mph)/5) ' / mol	sture content (pct)/	2)***] x (100—control	[pct]/100) x (1/2,000)
Source: Section 1	13.2.4 – Aggregate I	landling and Storage Pi	ies, AP-42, Fift	h Edition, Janua	ry 1995.	
	IN	PUT DATA AND EM	ISSIONS CAL	CULATIONS		
			Material	<u> </u>		
Mean Wind		tual	Moisture	Control	Actual	• •
Speed (mph)	Quantity T (ton/hr)	ransterred (ton/yr)	Content (pct)	Efficiency (pct)	(lb/hr)	n Rates (tpy)
	800		6.5	90.0	0.03	0.09
8.6		4,000,000			0.03	0.09
D		SOURCES (OF INPUT DA			
Mean Wind Speed	meter	Tampa, FL, Climate of		ata Source		
Actual Quantity Tr		TEC, 1997.	ule Glates, Time	Laidon, 1305.		-
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, Se	eptember 1981.		
		NOTEC AND	ODCEDIATIO	31/0		
		NOTES AND	OBSERVATIO	JNS		
		<u> </u>				
			•			
		DATA	CONTROL			
Data Collected	bv:	A. Trbovich			Date:	01/20/97
Evaluated by:		A. Trbovich				01/20/97
Data Entered b	y:	A. Trbovich		_	Date:	01/20/97
Reviewed by:					Date:	•

FH-036

FH-041 Tampa Electric - F.J. Gannon Station EMISSION SOURCE TYPE MATERIAL TRANSFER - CONTROLLED EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Conveyors H1/H2 to Conveyors J1/J2, Conveyors J1/J2 to Bunkers Emission Control Method(s)/ÎD No.(s): Rotociones 1 through 6 **Emission Point ID:** FH -036 through FH-041 Transfer Point ID EMISSION ESTIMATION EQUATIONS Emission (b/hr) = Flow Rate (scfm) x (grain/scf) x (1 b/7,000 grain) $\frac{x}{x}$ (60 min/hr) Emission (tpy) = Flow Rate (scfm) x (grain/scf) x (1 lb/7,000 grain) x (60 min/hr) x Operating Hours (hrs/yr) x (1 ton/2,000 lb) Source: ECT, 1997. INPUT DATA AND EMISSIONS CALCULATIONS Operating Hours: 7 Days/Wk 8,760 Hrs/Yr Actual PM₁₀ Exit Grain Transfer **Exhaust Transfer Points Controlled Point** Flow Rate Loading **Emission Rates** By Common Control Device ID No. (scfm) (gr/scf) (lb/hr) (tpy) Unit 1 Fuel Bunker Loading 9,600 0.0023 0.19 0.99 9,600 0.0023 0.19 0.99 Unit 2 Fuel Bunker Loading Unit 3 Fuel Bunker Loading 9,600 0.0023 0.19 0.99 Unit 4 Fuel Bunker Loading 9,600 0.0023 0.19 0.99 Unit 5 Fuel Bunker Loading 5,400 0.0041 0.19 0.99 Unit 6 Fuel Bunker Loading 9,600 0.0023 0.19 0.99 SOURCES OF INPUT DATA **Data Source Parameter Operating Hours** TEC, 1997. **Exhaust Flow Rate** TEC, 1997. Vendor data. TEC, 1997. Based on FDEP Permit No. AO29-250140. **Exit Grain Loading** NOTES AND OBSERVATIONS All Rotoclones are conservatively assumed to be operating whenever any bunkering occurs. DATA CONTROL Data Collected by: A. Trbovich Date: 01/20/97 Evaluated by: A. Trbovich Date: 01/20/97

Date:

Date:

01/20/97

Data Entered by:

Reviewed by:

A. Trbovich

Tampa Electric Company - F.J. Gannon Station

			SOURCE TYL			
MATE	RIAL TRANSFER	- FUGITIVE EMISS			Figure:	
		FACILITY AND SO	OURCE DESC	RIPTION		
Emission Source	Description:	Fuel Handling - Conve	yor D1 to Conve	yor G1/G2 (By-	Pass Storage)	
Emission Control	Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	/8		
Emission Point ID	:	FH-042		Transfer Point I	D(s):	
		EMISSION ESTIM	AATION EQU	ATIONS		
Emission (lb/hr) = 0.0	0011 x material transferre	d (ton/hr) x [(average wind s	peed (mph)/5) ^{1.3}	moisture content (pct)/2) ^{1.4}] x (100-co	ntrol (pet) /1 00)
Emission (tpy) = 0.00	011 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)
			I AB 40 550	L FI Jid		
Source: Section	13.2.4 – Aggregate F	landling and Storage Pi	les, AP-42, <u>Fiπ</u>	n 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	ransferred	Content	Efficiency		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			
	meter	Town of Climate of		Data Source		
Mean Wind Speed Actual Quantity Tr		Tampa, FL, Climate of TEC, 1997.	the States, Third	a Edition, 1985.		
Material Moisture		Average fuel moisture	content; TEC, 1	994.		
Control Efficiency		Table 3.2.17-2, Workb			and Dispersion M	odeling of
 		Fugitive Particulate So	urces, UARG, S	eptember 1981.	·	
		NOTECANO	ODOCOVATU			
		NOTES AND	111111111111111111111111111111111111111			
If the fuel stackers	s and fuel stacker by	passes are operated sin	nultaneously, th	e total amount o	f fuel handled will	
not exceed 4,60	Ю tph.					
						
•						
		DATA	CONTROL			
Data Collected	l by:	A. Trbovich			Date:	01/20/97
Evaluated by:	•	A. Trbovich			Date:	01/20/97
Data Entered b		A. Trbovich		-	Date:	01/20/97
Reviewed by:			,		Date:	

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

FH-	-043
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MAT	ERIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:	
		RIPTION				
Emission Source	Description;	Fuel Handling - Convey	or D2 to Conve	yor G1/G2 (By-	Pass Storage)	
Emission Control	Method(s)/ID No.(s):	Enclosure With Dust Su	opressant Spray	/\$		
Emission Point IC) :	FH-043		Transfer Point I	D(s):	
		EMISSION ESTIM	IATION EQU	ATIONS		
		d (ton/hr) x [(average wind s				
Emission (tpy) = 0.0	011 x material transferred	(tpy) x [(average wind speed	i (mph)/5) ^{1.3} / moi	isture content (pct)/	2) ^{1.4}] x (100—control	[pet]/100) x (1/2,000)
Source: Section	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	CHEATIONS		
<u> </u>	<u>uxi</u>	ON DATA AND EMI	Material	COLATIONS		
Mean Wind	Act	ual	Moisture	Controi	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
L		SOURCES C	F INPUT DA	111 17 1 112 11		
	ameter			Data Source		
Mean Wind Spee		Tampa, FL, Climate of 1 TEC, 1997.	the States, Third	d Edition, 1985.		
Actual Quantity T Material Moisture		Average fuel moisture of	ontent: TEC. 1			
Control Efficiency		Table 3.2.17-2, Workb			and Dispersion M	odeling of
		Fugitive Particulate Sou	ırces, UAR G , S	eptember 1981.		
						·
				•		
		NOTES AND	OBSERVATIO	ONS		
If the fuel stacker	s and fuel stacker by	passes are operated sim	ultaneously, th	e total amount o	f fuel handled will	
not exceed 4,6	00 tob					-
HOLEKCESU 4,0	υ ψπ.					•
,			<u>.</u>			<u>. '</u>
		DATA (CONTROL			
Data Collected	d 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-044

Date:

000000000000000000000000000000000000000			EMICO	ION SOURCE	ETVDE		000000000000000000000000000000000000000	.5555656566554556	**************************************
							<u> </u>		<u> </u>
VEHIC	ULAR TRAFF						ICES _	Figure:	
<u> </u>			FACILITY AN	D SOURCE	DESCRIF	PTION		_	
Emission S	ource Descriptio	en:	Fuel Handling -	- Storage Pile	Maintenand	:0			
Emission C	ontrol Method(s)/ID No.(s):	Dust Suppressa	nt Sprays					
Emission P	oint ID:		FH-044						
			EMISSION E	ESTIMATION	EQUATI	ONS			
		-							
Emission (tb/	w) = 0.36 x 5.9 x (a	/12) x (S/30) x (W/3) ^{0.7} x (w/4) ^{0.5} x ((3	165-p)/365) x veh	icle miles pe	hour (VMT/	w) x (100-co	ntrol[pct]/100)	
Emission (ton	/yr) = 0.36 x 5.9 x ((2/12) x (5/30) x (W/	3) ^{0.7} x (w/4) ^{0.5} x (((365-p)/365) x ve	hicle miles p	er year (VMT	/yr) x (1 ton/ 2	,000 lb) x (100	-control[pct]/100)
Source: Se	ection 13.2.2 – l	Japaned Roads.	AP-42 Fifth Ed	lition January	1995.				
		J. 100 1 1000,	74., 11101 2.0	indir, dance y					
			UT DATA AND			ILATION.	S		
Operating I	lours:	16	Hrs/Day	<u>7</u>	Days/Wk		T	5,824	Hrs/Yr
8	s	w	w	P	Vehicle	Miles	Control	Act	ual PM ₁₀
	Vehicle Speed	1	No. of Wheels	1			Efficiency		sion Rates
(pct)	(mph)	(ton)			(VMT/hr)		(pct)	(lb/hr)	(tpy)
8.4	2.5	48	6	107	10.0	58,240	50.0	3.73	10.86
	I .	l .	SOURC	CES OF INP	UT DATA				
Par	ameter				Data So	urce			
Operating I	lours	ECT, 1997. Es	timated.		_				
Silt Conten	t, s	Table 13.2.2-1	, Section 13.2.2	2, AP42, Janu	ary 1995.				
Vehicle Spe		TEC, 1997. Av							
Vehicle We		TEC, 1997. Av							
No. of Whe Rainfall Day		TEC, 1997. Av		ition 1095 D	ata for Tam	na El			
	es Traveled	ECT, 1997. Es	States, Third Ed	1110H, 1965. DA	ata ior raini	ра, г.		_	
Control Effi		Table 3.2.15-2	. Workbook on		_ Emissions a	ınd Disper	sion Modeli	ng for Fugiti	ve Particulate
		Sources, UARG	i, September 19	81.					
		I.	NOTES	AND OBSER	RVATION:	S	0.53,686,83594		
Calimata a							duum annudaaumhaadar dd	<u></u>	
CSUMATE OF	vehicle miles tra	aveled based on	the use of four	buildozers on	the storage	plies.			
									•
			Đ	ATA CONTR	10L			_	
Data Coll	ected by:	A. Trbovich						Date:	09/12/97
Evaluated	d by:	A. Trbovich						Date:	09/12/97
Data Ente	ered by:	A. Trbovich						Date:	09/12/97

Tampa Electric Company - F.J. Gannon Station

AH-001

		EMISSION	SOURCE TY	PE		
MAT	ERIAL TRANSFER	R – FUGITIVE EMIS			Figure:	
		FACILITY AND SC	OURCE DESC	RIPTION		Rada Till Colonya Va
Emission Source	Description:	Auxiliary Handling - Tr	uck Unloading			
Emission Contro	Method(s)/ID No.(s):	Dust Supressant				
Emission Point II	D:	AH-001		Transfer Point II	D(s):	
		EMISSION ESTIN	MATION EQU	ATIONS		
Emission (lb/hr) = 0	0011 x material transferre	ed (torv/hr) x [(average wind a	peed (mph)/5) ^{1.3} /	moisture content (p	et)/2) ^{1.4} 1 x (100-co	stroi[act]/100)
Emission (tpy) = 0.0	0011 x material transferred	(tpy) x [(average wind spee	d (mph)/5) ^{1.3} / moi	sture content (pct)/2	z) ^{1.4}] x (100—control	[pet]/100) x (1/2,000)
Source: Section	12 2 4 — Aggregate l	Handling and Storage Pi	los AP-42 Fift	h Edition Januar	v 1995	
Source: Section	13.2.4 - Aggregate i	nandling and Storage Fi	ies, AF-42, Filt	n Edidon, Januar	y 1995.	
	,,,	DUTER TANANDELL	ICCIONC CAL	CULATIONS	2 / 40/40/00/00/00/00/00/00/00/00/00/00/00/0	
	J <u>N</u>	PUT DATA AND EM	Material	COLATIONS	<u> </u>	
Mean Wind	Act	tual	Moisture	Control	Actual	PM ₁₀
Speed		ransferred	Content	Efficiency	Emissio	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	400	362,025	6.5	85.0	0.03	0.01
1. 10 1 10 1 10 10 10 10 10 10 10 10 10 10		SOURCES	OF INPUT DA			
	ameter			ata Sou <u>rce</u>		
Mean Wind Spee		Tampa, FL, Climate of	the States, Third	d Edition, 1 <u>985.</u>		
Actual Quantity T Material Moisture		TEC, 1997. TEC, 1997. Average fu	al maiatura aon	tont		
Control Efficiency		TEC, 1997. Average to	er moisture con	tent.		
	-					
		NOTES AND	OBSERVATIO	ONS		
Annual quantity t	ransferred based on l	Units 1 through 4 firing a	an 80/20 coal/T	F blend at maxir	num capacity for	3,760 hrs/yr.
5.989 MMBtu/h	r x 0.2 / 14.492 Btu/lb	TDF x 8,760 hrs/yr x 1	ton/2.000 lb = 3	62.025 tpv		
Alternate fuel inc	ludes IDF and WDF.	The actual annual quan	tity of IDF and	WDF transferred	may vary, but the	actual total
quantity of altern	ate fuel transferred w	ill not exceed 362,025 tp	py.			
		DATA	CONTROL		. <u>(2000</u> 2	
Data Collected	d by:	A. Trbovich			Date:	01/08/97
Evaluated by:		A. Trbovich			Date:	01/08/97
Data Entered	by:	A. Trbovich			Date:	D1/08/97
	•				Date:	

Tampa Electric Company - F.J. Gannon Station

AH-002

MAT	ERIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:	
		FACILITY AND SO	URCE DESC	RIPTION	engles i nganggalan ki englesi	
Emission Source	Description:	Auxiliary Handling - Sto	orage Pile to Ho	pper		
Emission Contro	- I Method(s)/ID No.(s):	Enclosure and Dust Sup	pressant			
Emission Point I	D:	AH-002		Transfer Point ID	(s):	
		EMISSION ESTIM	IATION EQU	ATIONS	11, 21, 21 (2) (TET 4)	
Emission (th (the) (2 0044	d (ton/hr) x [(average wind s	(n/m1.41 = //m	-4-15-41400
		(tpy) x [(average wind speed				
		1 10 10	15 10 50		4005	
Source: Section	13.2.4 – Aggregate F	landling and Storage Pil	es, AP-42, Fitt	h Edition, January	1995.	
	IN	PUT DATA AND EMI	SSIONS CAL 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	400	362,025	6.5	90.0	0.02	0.01
		SOURCES C				
	<u>ameter</u>			ata Source		
Mean Wind Spee		Tampa, FL, Climate of t	the States, Third	Edition, 1985.		
Actual Quantity		TEC, 1997.	al maiatura ean	ion!		
Material Moisture Control Efficience		TEC, 1997. Average full Table 3-16, Fugitive Er			Plants, EPRI, Jun	e 1984.
	•			_		
		l				
		•				
		NOTES AND	OBSERVATIO	ONS	a grand and a state of the stat	
Annual quantity	transferred based on l	Jnits 1 through 4 firing a	n 80/20 coal/TC	F blend at maxim	um capacity for	8,760 hrs/yr.
5,989 MMBtu/h	nr x 0.2 / 14,492 Btu/lb	TDF x 8,760 hrs/yr x 1 to	on/2,000 lb = 3	62,025 tpy		
Alternate fuel inc	ludes TDF and WDF.	The actual annual quant	tity of TDF and	WDF transferred n	nay vary, but the	actual total
quantity of altern	nate fuel transferred wi	ill not exceed 362,025 tp	y.			
			,			
		DATA	CONTROL	v to d		The state of the s
Data Collecte	d by:	A. Trbovich			ate:	01/08/97
Evaluated by:		A. Trbovich		D	ate:	01/08/97
Data Entered		A. Trbovich		D	ate:	01/08/97

Date:

AH-003

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

MAT	ERIAL TRANSFER	- FUGITIVE EMISS			Figure:	
		FACILITY AND SO	URCE DESC	RIPTION	harman si shaaar abadahaanab _ us +	
Emission Source	Description:	Auxiliary Handling - Ho	pper to Convey	or T		
Emission Contro	Method(s)/ID No.(s):	Enclosure and Dust Sup	pressant	_		
Emission Point II	D: •	AH-003		Transfer Point I	D(s):	
		EMISSION ESTIN	ATION EQU	ATIONS	nga datan Bariski 👵	108 yr Howell Comment
			1.2	_		
		d (ton/hr) x [(average wind s (tpy) x [(average wind speed				
Emission (tpy) = 0.0	O I X material transferred	(tpy) x ((average wind speed	(mpn)/5) ** / mo	sture content (pcy/	2) 1 x (100-control	(pet)/100) x (1/2,000)
Source: Section	13.2.4 - Aggregate l	landling and Storage Pi	es, AP-42, Fift	h Edition, Janua	ry 1995.	
	,	PUT DATA AND EM	SCIONS CAL	CHEATIONS		reen gaargemaa — Koongemaa
	: <u></u>	<u> </u>	Material	COLATIONS	5 11-91 (2019) 12-14 (2	
Mean Wind	Act	tual	Moisture	Control	Actual	PM ₁₀
Speed	Quantity T	ransferred	Content	Efficiency	Emissio	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)_	(lb/hr)	(tpy)
8.6	400	362,025	6.5	90.0	0.02	0.01
		SOURCES C	OF INPUT DA			1 10 100
	<u>ameter</u>			ata Source		
Mean Wind Spee		Tampa, FL, Climate of	the States, Third	d Edition, 1985.		_
Actual Quantity T Material Moisture		TEC, 1997. TEC, 1997. Average fu	el moisture con	tent.		
Control Efficiency		Table 3-16, Fugitive E			Plants, EPRI, Jun	e 1984.
				. <u> </u>		
		NOTES AND	OBSERVATIO	ONS		1 20400 0040 1 11 11 14 14 1
Annual quantity t	ransferred based on l	Jnits 1 through 4 firing a	n 80/20 coal/T	F blend at maxi	mum capacity for	8,760 hrs/yr.
		TDF x 8,760 hrs/yr x 1 t				
5,909 MMBIU/II	II X 0.2 / 14,492 Btu/ID	TUF X 6,700 fils/yi X 1 1	on/2,000 ib = 3	62,025 tpy	_	
Alternate fuel inc	ludes TDF and WDF.	The actual annual quan	tity of TDF and	WDF transferred	may vary, but the	actual total
guantity of altern	ate fuel transferred w	ill not exceed 362,025 tp	٧.			
, ,			<u> </u>			
		DATA	CONTROL			The second section of the second
Data Collecte	d by:	A. Trbovich		, <u>-</u>	Date:	01/08/97
Evaluated by:		A. Trbovich			Date:	01/08/97
Data Entered	by:	A. Trbovich			Date:	01/08/97
Reviewed by:					Date:	

Tampa Electric Company - F.J. Gannon Station

	rampa En	ectric Company – r	.u. Gainion S	ration		<u> 711</u> 004
		EMISSION	SOURCE TY	PE .	est for the second	er, ii iiinii yii
MATE	RIAL TRANSFER	R - FUGITIVE EMIS	SION SOURC	ES	Figure:	
		FACILITY AND SC	OURCE DESC	RIPTION	end in the constitution of process	The second was been as
Emission Source I	Description:	Auxiliary Handling - Co	onveyor T to Co	nveyor U	_	
Emission Control	Method(s)/ID No.(s):	Enclosure and Dust Sup	pressant			
Emission Point ID:	:	AH-004		Transfer Point II	D(s):	
_		EMISSION ESTIN	AATION EQU	ATIONS		And the second second
		ed (ton/hr) x [(average wind s				
Emission (tpy) = 0.00)11 x material transferred	l (tpy) x [(average wind spee	d (mph)/5) ^{1.3} / mo	isture content (pct)/2	2) ^{1.4}] x (100-control)	pct]/100) x (1/2,000
Source: Section 1	I3.2.4 – Aggregate I	dandling and Storage Pi	les, AP-42, Fift	h Edition, Januar	y 1995.	
	IN	PUT DATA AND EM	ISSIONS CAL	CULATIONS		
0000 0000000000000000000000000000000000	ann i bhann shaifadha anns ean si anbhibha achan <u>a s i a</u>		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	400	362,025	6.5	90.0	0.02	0.0
n new year on engagene year on year og godden ne Start en	Copyre without a first and the	SOURCES (OF INPUT DA	TA	ere ev er galar	. Statement + P
Para	meter			Data Source		
Mean Wind Speed	,	Tampa, FL, Climate of	the States, Thire	d Edition, 1985.	_	
Actual Quantity Tr	ansferred	TEC, 1997.		_		
<u>Material Moisture</u>	Content	TEC, 1997. Average fu				
Control Efficiency		Table 3-16, Fugitive E	mission from Co	oal-Fired Power	Plants, EPRI, June	1984.
·		NOTES AND	OBSERVATION	ONC	sanay a safarah esa na isana sasilan	are en contrarioù a stadic trib i
Annual quantity tr	aneferred based on l	Jnits 1 through 4 firing a		*****	num canacity for 8	3 760 bre/vr
					Train capacity for t	,,, oo 1113, yr.
		TDF x 8,760 hrs/yr x 1				
Alternate fuel inclu	ides TDF and WDF.	The actual annual quan	tity of TDF and	WDF transferred	may vary, but the	actual total
quantity of alterna	te fuel transferred w	ill not exceed 362,025 tp	oy.			
	<u>_</u> ,					
			•		· ·	
		DATA	CONTROL	speciments and the second	and the second s	Company of the same

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
Reviewed by:		Date:	

Tampa Electric Company - F.J. Gannon Station

AH-005

EMISSION SOURCE TYPE

MATERIAL	TRANSFER .	- FUGITIVE EMISSION SOURCES
MAICNIAL	INANOFER -	- FUGITIVE EMISSION SOURCES

Figure:

Emission Source Description:

Auxiliary Handling - Conveyor U to Conveyors H1 and H2

FACILITY AND SOURCE DESCRIPTION

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.

Mean Wind Speed	Actual Quantity Transferred		Material Moisture Content	Control Efficiency	Actual PM ₁₀ Emission Rates	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	400	362,025	6.5	90.0	0.02	0.0
		SOURCES	OF INPUT DA	TA	The second secon	

■ 2000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
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 CONTROL

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

Reviewed by: Date:

APPENDIX B.2

ACTUAL PM₁₀ EMISSION CALCULATION SPREADSHEETS

Tampa Electric Company - F.J. Gannon Station

FH-002

		EMISSION	SOURCE TYP	PE		anguage of the gradual		
· MA	TERIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	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):	Barge Enclosure						
Emission Point	ID:	FH-002		Transfer Point ID	(s):	_		
		EMISSION ESTIN	IATION EQU	ATIONS				
Emission (lb/bs) —	0 0011 v material transfers	d (ton/hr) x [(average wind s	need (mph) /51.3 /	moisture content (no	w/201.41 v (100_00=			
Emission (tpy) = (0.0011 x material transferred	(tpy) x [(average wind speed	(mph)/5) 1.3 / moi	sture content (pct)/2)	1.4] x (100-control[p	ct]/100) x (1/2,000)		
Source: Section	n 13.2.4 – Aggregate i	Handling and Storage Pil	es, AP-42, Fift	h Edition, January	1995.			
					•			
	<u>IN</u>	PUT DATA AND EMI	SSIONS CAL	CULATIONS				
Mean Wind	Act	tual	Moisture	Control	Actual F	'M ₁₀		
Speed	Quantity T	ransferred	Content	Efficiency	Emission			
(mph)	(ton/hr)	(ton/yr)	(pct)_	(pct)	(lb/hr)	(tpy)		
8.6	1,150	882,681	6.5	50.0	0.25	0.09		
		SOURCES	F INPUT DA					
<u>Pa</u>	<u> rameter </u>			ata Source				
Mass Wind Soc	and	Tampa, FL, Climate of	the States Thir	1 Edition 1985				
Mean Wind Spe Actual Quantity		TEC, 1997.	are Otates, Trint	Laidon, 1000.		· ·		
Material Moistu		Average fuel moisture	content; TEC, 19	994.				
Control Efficien	су	ECT, 1997. Set at 50 pct to conservatively minimize actual emissions for PSD evaluation. Permitted control efficiency is 0 pct.						
,		remitted control enich	ancy is o per.					
0.41		NOTES AND	OPSERVATION	7A/C		landelsem (1917 - 1917 e.)		
2.3.131323333333						<u></u>		
Actual PM ₁₀ en	nissions based on 2,648	3,044 tpy of fuel used. A	ctual fuel use is	the average of th	ie 1995 and 1996	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 conti	nuous, and rail un	loading		
systems, or 8	82,681 tons per system	1.						
Actual short-te	erm emissions based or	n clamshell and continuo	us unloading s	ystems operating	simultaneously at	1,150 tph, each		
		DATA (CONTROL					
Data Collect	ed by:	A. Trbovich		D	ate: 0	9/16/97		
Evaluated by		A. Trbovich		D	ate: 0	9/16/97		
	·							

Date:

Tampa Electric Company - F.J. Gannon Station

FH-003

09/16/97

Date:

Date:

		EMISSION	SOURCE TYP	E			
M <u>A</u>	TERIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:		
		FACILITY AND SO	URCE DESC	RIPTION			
Emission Sourc	e Description:	Fuel Handling — Barge t	to Continuous U	nloader (Spillag	e)		
Emission Contr	ol Method(s)/ID No.(s):	Barge Enclosure					
Emission Point	ID:	FH-003		Transfer Point II	D(s):		
		EMISSION ESTIM	IATION EQUA	ATIONS			
Emission (lb/hr) =	0.0011 x material transferre	d (ton/hr) x [(average wind s	peed (mph)/5) ^{1.3} /	moisture content (p	ct)/2) ^{1.4}] x (100-cor	strol[pct]/100)	
Emission (tpy) = 0	.0011 x material transferred	(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: Sectio	n 13.2.4 – Aggregate i	landling and Storage Pil	les, AP-42, Fifth	n Edition, Januar	y 1995.		
	IN	PUT DATA AND EMI	SSIONS CAL	CULATIONS			
			Material		A - A	D04	
Mean Wind Speed	Act Quantity T	tual Moisture Transferred Content		Control Efficiency		ual PM ₁₀ sion Rates	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)	
8.6	1,150	882,681	6.5	50.0	0.25	0.09	
		SOURCES C	OF INPUT DA	TA			
Pa	rameter		<u>D</u>	ata Source			
Mean Wind Spe	ed	Tampa, FL, Climate of t	the States, Third	Edition, 1985.			
Actual Quantity		TEC, 1997.					
Material Moistur Control Efficient		Average fuel moisture of ECT, 1997. Set at 50 p			tual emissions for	PSD evaluation	
Control Emclen	cy	Permitted control efficie		very minimize ac	ida emissions for	. ob evaluation.	
					•		
		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	
used, 2,528,	334 tons and 2,767,753	tons, respectively.					
Actual fuel deliv	very was assumed to be	equally divided among	the barge clam	shell, barge con	tinuous, and rail u	inloading	
			.	.,		<u> </u>	
	82,681 tons per system	<u> </u>					
Actual short-te	rm emissions based or	n clamshell and continuo	ous unloading sy	stems operating	simultaneously a	t 1,150 tph, each.	
		DATA	CONTROL				
Data Collecte	ed by:	A. Trbovich	<u>CONTINUES ()</u>	<u>. 255 81 1806 (18.1 6.1 6.1)</u> 1	Date:	09/16/97	
Evaluated by	•	A. Trbovich		_		09/16/97	

A. Trbovich

Data Entered by:

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 **Emission Point ID:** FH-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 Speed Quantity Transferred Content **Efficiency Emission Rates** (ton/yr) (pct) (pct) (lb/hr) (tpy) (ton/hr) (mph) 882,681 6.5 85.0 0.07 0.03 8.6 1.150 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. **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 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. Actual short-term e<mark>missions based on clamshell and</mark> 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

Date:

Date:

09/16/97

A. Trbovich

Data Entered by:

Tampa Electric Company - F.J. Gannon Station

FH-006

EMISSION SOURCE TYPE

MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES

Figure:

Emission Source Description:

FACILITY AND SOURCE DESCRIPTION Fuel Handling - Continuous Unloader to Conveyor A

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

Emission Point ID:

FH-006

Transfer Point ID(s):

EMISSION ESTIMATION EQUATIONS

Emission (ib/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5)^{1.2} / 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.

<u> </u>		,	Material			
Mean Wind Actual		ual	Moisture	Control	Actual PM ₁₀ Emission Rates	
Speed	Quantity Transferred		Content	Efficiency		
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	1 150	882 681	6.5	85.0	0.07	0.03

 _		_		•	_	_				_		-	•
7.1		_	CE.		r ,		ın	JUI		.,	4	81.07	•
_	u			•	_	# 5555 J	•••		2007	_	_		- 100

<u>Parameter</u>	Data Source
	The State of the Chates Third Edition 1995
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 $_{10}$ 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

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20 July 14	/ - 1			_	// V			•	

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

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

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

Date: Reviewed by:

Tampa Electric Company - F.J. Gannon Station

FH-007

EMISSION SOURCE TYPE									
MA	TERIAL TRANSFER	- FUGITIVE EMIS	SION SOURC	ES	Figure:				
		FACILITY AND SO	URCE DESC	RIPTION					
Emission Source	e Description:	Fuel Handling - Conve	yor A to Continu	ous Feeder					
Emission Contr	ol Method(s)/ID No.(s):	Enclosure							
Emission Point	ID:	FH-007		Transfer Point ID	(s):				
EMISSION ESTIMATION EQUATIONS									
Emission (lb/hr) =	0.0011 x material transferre	d (ton/hr) x [(average wind s	peed (mph)/5) ^{1.3} /	moisture content (po	±1)/2) ^{1.4}] x (100—cod	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: Sectio	n 13.2.4 – Aggregate h	landling and Storage Pi	les, AP-42, Fifti	h Edition, January	/ 1995.				
	IN	PUT DATA AND EM	ISSIONS CAL	CULATIONS					
	•••	**************************************	Material			2.			
Mean Wind	Act	ual	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	1,150	882,681	6.5	85.0	0.07	0.03			
		SOURCES	OF INPUT DA	TA		8885/8888 FA/F			
Pa	rameter			ata Source					
Mean Wind Spe	eed ·	Tampa, FL, Climate of	the States, Third	f Edition, 1985.					
Actual Quantity	-	TEC, 1997.							
Material Moistu	re Content	Average fuel moisture	content; TEC, 19	994.					
Control Efficien	ncy .	ECT, 1997. Set at 85 pct to conservatively minimize actual emissions for PSD evaluation. Permitted control efficiency is 50 pct.							
		NOTES AND	OBSERVATIO	ONS					
Actual PM ₁₀ em	nissions based on 2,648	3,044 tpy of fuel used.	Actual fuel use is	the average of the	he 1995 and 1996	actual fuel			
used, 2,528,	334 tons and 2,767,753	tons, respectively.							
Actual fuel deliv	very was assumed to be	equally divided among	the barge clam	shell, barge conti	inuous, and rail u	nloading			
systems, or 8	82,681 tons per system	· .							
Actual short-term emissions based on clamshell and continuous unloading systems operating simultaneously at 1,150 tph, each									
DATA CONTROL									
Data Collect	ed by:	A. Trbovich			ate:	09/16/97			
Evaluated by	y :	A. Trbovich			ate:	09/16/97			
Data Enteres	tests Entered by: A Tribovich Date: 09/16/97								

Date:

Tampa Electric Company - F.J. Gannon Station

FH-009

Figure:

EMISSION SOURCE TYPE

MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES

FACILITY AND SOURCE DESCRIPTION

Emission Source Description:

Fuel Handling - West Hopper to Conveyor B

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

Emission Point ID:

FH-009

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		
Mean Wind Speed	Act Quantity T	rual ransferred	Material Moisture Content	Control 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

	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 85 pct to conservatively minimize actual emissions for PSD evaluation.
	Permitted control efficiency is 50 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.

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

	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-011

Figure:

EMISSION SOURCE TYPE

MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES

FACILITY AND SOURCE DESCRIPTION

Emission Source Description:

Fuel Handling - Conveyor B to Conveyor C

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

Emission Point ID:

FH-011

Transfer Point ID(s):

Data Source

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		tual ransferred	Material Moisture Content	Control Efficiency		PM ₁₀ on 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

SOUR	CES OF	INPL	JT DA	TA

1 4(4())	
Mana Wind On and	Town 51 Olivests of the Chates Third Edition 4005
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 50 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.

Parameter

DATA CONTROL

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

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

Emission Source Description: Fuel Handling - Conveyor C to Conveyor D1/D2 Emission Control Method(e)/ID No.(e): Enclosure With Dust Suppressant Sprays Emission Point ID: FH-012 Transfer Point ID(e): EMISSION ESTIMATION EQUATIONS Emission (tb/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) cmission (tpy) = 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) x (1/2,000) Bource: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS Mean Wind Speed Quantity Transferred Content Efficiency (pct) (pct) (lb/hr) (tpy) 8.6 2.300 1.765,362 6.5 90.0 0.10 0.04 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.	MATE	RIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:	
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/liv) = 0.0011 x material transferred (fton/liv) x [(average wind speed (mph)/s)]^{1.3} / moisture content (pct)/z]^{1.4}] x (100-control[pct]/100) x (FACILITY AND SO	URCE DESC	RIPTION		
Emission Point ID: FH-012 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (Ib/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5) ^{1.3} / moisture content (pct/z) ^{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/z) ^{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 Meaterial Moisture Control Speed Quantity Transferred Content Efficiency Emission Rates (mph) (ton/hr) (ton/yr) (pct) (pct) ((b/hr) (tpy) 8.6 2,300 1.765,362 6.5 90.0 0.10 0.04 SOURCES OF INPUT DATA Parameter Data Source Mean Wind Speed Actual Quantity Transferred TEC, 1997. Material Moisture Control Efficiency Emission Rates (mph) (100/hr) (tpy) 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.	Emission Source D	escription:	Fuel Handling - Convey	or C to Convey	or D1/D2		
Emission Point ID: FH-012 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (Ib/hr) = 0.0011 x material transferred (ton/hr) x [(average wind speed (mph)/5) ^{1.3} / moisture content (pct/z) ^{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/z) ^{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 Meaterial Moisture Control Speed Quantity Transferred Content Efficiency Emission Rates (mph) (ton/hr) (ton/yr) (pct) (pct) ((b/hr) (tpy) 8.6 2,300 1.765,362 6.5 90.0 0.10 0.04 SOURCES OF INPUT DATA Parameter Data Source Mean Wind Speed Actual Quantity Transferred TEC, 1997. Material Moisture Control Efficiency Emission Rates (mph) (100/hr) (tpy) 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.	Emission Control M	lethod(s)/ID No.(s):	Enclosure With Dust Sur	onressant Soray			
Emission (lb/hr) = 0.0011 x material transferred (ton/hr) x [[average wind speed (mph]/5] \frac{1.3}{1.3} / moisture content (pct]/2] \frac{1.4}{1.4} x (100-control[pct]/100) Emission (lby) = 0.0011 x material transferred (lby) x [[average wind speed (mph]/5] \frac{1.3}{1.3} / moisture content (pct]/2] \frac{1.4}{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	<u> </u>		•	opiosoalii opia y			
Emission (ib/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	Emission Point ID:			MIONEOW		D(s):	
Emission (tpy) = 0.0011 x material transferred (tpy) x [(everage 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			EMISSICIA ESTIM	AHUN EQUI	4110NS		
Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, Fifth Edition, January 1995. INPUT DATA AND EMISSIONS CALCULATIONS	Emission (lb/hr) = 0.00	011 x material transferre	d (ton/hr) x [(average wind s	peed (mph)/5) ^{1,3} /	moisture content (oct)/2) ^{1.4}] x (100-co	ntrol[pct]/100)
Mean Wind Speed Control Contro	Emission (tpy) = 0.001	1 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)
Mean Wind Actual Moisture Control Efficiency Emission Rates	Source: Section 15	9 2 4 — Aggregate I	landling and Storage Pil	es AP-42 Fifti	h Edition Januar	ry 1995	
Mean Wind Speed (mph) Actual Quantity Transferred (mph) Material Moisture (content (pct)) Control Efficiency (pct) Actual PM₁0 Emission Rates **SOURCES** OF INPUT DATA*** Parameter **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 **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 **Text Sources, UARG, September 1981.**	Godice. Gecaon 10	S.Z.4 - ANNIBURIO	Mandaning and Otorage Fil	65, AF - 42, Fill	n Edigon, Janga	y 1990.	
Mean Wind Speed (mph) Actual Quantity Transferred (mph) Actual Quantity Transferred (ton/yr) Content (pct) Efficiency (pct) Emission Rates 8.6 2,300 1,765,362 6.5 90.0 0.10 0.04 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.							
Mean Wind Speed (mph) Actual Quantity Transferred (mph) Moisture Content (pct) Control Efficiency (pct) Actual PM₁0 Emission Rates 8.6 2,300 1,765,362 6.5 90.0 0.10 0.04 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.			PUT DATA AND EMI		CULATIONS		
Speed Quantity Transferred Content Efficiency (pct) (lb/hr) (tpy)	Mean Wind	Act	tu al		Control	Actual	PM ₁₀
8.6 2,300 1,765,362 6.5 90.0 0.10 0.04 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.	Speed	Quantity T	ransferred	Content	Efficiency	• •	
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.	(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
ParameterData SourceMean Wind SpeedTampa, FL, Climate of the States, Third Edition, 1985.Actual Quantity TransferredTEC, 1997.Material Moisture ContentAverage fuel moisture content; TEC, 1994.Control EfficiencyTable 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1981.	8.6	2,300	1,765,362	6.5	90.0	0.10	0.04
ParameterData SourceMean Wind SpeedTampa, FL, Climate of the States, Third Edition, 1985.Actual Quantity TransferredTEC, 1997.Material Moisture ContentAverage fuel moisture content; TEC, 1994.Control EfficiencyTable 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1981.			SOURCES	F INPUT DA	TA		
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.	Paran	neter					
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.							
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.				the States, Third	Edition, 1985.		
Control Efficiency Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1981.				content: TEC 19	994		•
Fugitive Particulate Sources, UARG, September 1981.		Ontent				and Dispersion M	odeling for
			I				
NOTES AND OBSERVATIONS			NOTES AND	OBSERVATIO	ONS		
	Actual DM coninci	0 649		1,222		the 1005 and 100	S anti-old-ol
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	Actual PM ₁₀ emissi	ons based on 2,040	o,044 tpy of fuel used. A	ctual luel use is	nie gverage of	the 1995 and 1996	actual luei
used, 2,528,334 tons and 2,767,753 tons, respectively.	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	Actual fuel delivery	was assumed to be	equally divided among	the barge clam	shell, barge con	tinuous, and rail u	ınloading
					-		-
systems, or 882,681 tons per system.	systems, or 882,6	581 tons per system	1.				
				•			
DATA CONTROL			DATA (CONTROL			
Data Collected by: A. Trbovich Date: 05/23/97	Data Collected	by:				Date:	05/23/97
Evaluated by: A. Trbovich Date: 05/23/97		•				Date:	05/23/97
Data Entered by: A. Trbovich Date: 05/23/97	•						
Reviewed by: Date:	=-:\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\					Dale.	U3/23/3/

Tampa Electric Company - F.J. Gannon Station

FH~013

	, , , , , , , , , , , , , , , , ,	EMISSION	SOURCE TY	E	I.	-11 010
MAT	TERIAL TRANSFER	- FUGITIVE EMIS	SION SOURC	ES	Figure:	
		FACILITY AND SC	OURCE DESC	RIPTION		
Emission Source	Description:	Fuel Handling - Rail Co	ar to Hopper			
Emission Contro	ol Method(s)/ID No.(s):	Partial Enclosure				
Emission Point I	D:	FH-013 Transfer Point ID(s):				
		EMISSION ESTIM	MATION EQU	ATIONS		
Emission (lb/lv) = (0.0011 x material transferre	d (ton/hr) x [(average wind s	peed (mph)/5) ^{1.3}	moisture content (p	ct)/2) ^{1.4}] x (100-con	trol[pct]/100)
		(tpy) x [(average wind spee				
Source: Section	13.2.4 – Aggregate F	landling and Storage Pi	les, AP-42, Fift	h Edition, January	y 1995.	
						<u> </u>
	IN	PUT DATA AND EM	ISSIONS CAL	CULATIONS		
			Material			
Mean Wind	Act		Moisture	Controi	Actual PM ₁₀ Emission Rates	
Speed (mph)	Quantity T (ton/hr)	(ton/yr)	Content (pct)	Efficiency (pct)	(lb/hr)	(tpy)
8.6	2,300	. 882,681	6.5	85.0	0.15	0.03
L		SOURCES (OF INPUT DA	TA	l	
Pai	rameter			ata Source		
Maan Wind Spec		Tampa, FL, Climate of	the States This	d Edition 1985		
Mean Wind Special Actual Quantity		TEC. 1997.	THE OLATES, THE	2 Lataott, 1905.		
Material Moistur		Average fuel moisture	content: TEC. 1	994.		
Control Efficience		ECT, 1997. Set at 85 p	oct to conservati		ual emissions for	PSD evaluation.
		NOTES AND	OBSERVATION	ONS		
Actual PM ₁₀ emi	issions based on 2,648	3,044 tpy of fuel used.	Actual fuel use is	s the average of t	he 1995 and 1996	actual fuel
used, 2,528,3	34 tons and 2,767,753	tons, respectively.				
Actual fuel delive	ery was assumed to be	equally divided among	the barge clam	shell, barge cont	inuous, and rail u	nloading
systems, or 88	32,681 tons per system) .				
		DATA	CONTROL	- 1 - 1		
Data Collecte	ed by:	A. Trbovich			Date: (9/16/97
Evaluated by	•	A. Trbovich			Date: ()9/16/97
Data Entered	by:	A. Trbovich			Date: (09/16/97

Date:

Tampa Electric Company - F.J. Gannon Station

FH-014

Figure:

EMISSION SOURCE TYPE

MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES

FACILITY AND SOURCE DESCRIPTION

Emission Source Description:

Fuel Handling - Hopper to Conveyor L

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

Emission Point ID:

FH~014

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	Actual Quantity Transferred		Material Moisture Content	Control Efficiency	Actual PM ₁₀ Emission 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	TA		
Par	ameter	Data Source				
Mean Wind Spee	ed .	Tampa, FL, Climate of the States, Third Edition, 1985.				
Actual Quantity	<u>Fransferred</u>	TEC, 1997.				
Material Moisture	B Content	Average fuel moisture content; TEC, 1994.				
Control Efficience	У	ECT, 1997. Set at 85 pct to conservatively minimize actual emissions for PSD evalue. Permitted control efficiency is 50 pct.			SD evaluation.	
•						

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 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:	

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:** 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) 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 (pct) (pct) (lb/hr) (tpy) (mph) 2,300 882,681 6.5 90.0 0.10 0.02 8.6 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 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling for 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 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: 05/23/97 Data Collected by:

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-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 (fb/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 (by) = 0.0011 x material transferred (by) 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 Speed Content Efficiency **Emission Rates** (lb/hr) (pct) (tpy) (mph) (ton/hr) (pct) 0.03 8.6 2,300 1,324,022 6.5 90.0 0.10 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 for 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 delivery was assumed to be equally divided between conveyors D1 and D2, or 1,324,022 tons per conveyor. DATA CONTROL 05/23/97 A. Trbovich Date: Data Collected by: Evaluated by: A. Trbovich Date: 05/23/97 05/23/97 A. Trbovich Date:

Date:

Data Entered by:

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 D2 to Conve	yor M2		
Emission Control N	fethod(s)/ID No.(s):	Enclosure With Dust Su	pressant Spray	18	_	
Emission Point ID:		FH-017		Transfer Point I	D(s):	
		EMISSION ESTIM	ATION EQU	ATIONS		
Francisco (lb/br) = 0.00	011 v meterial transferre	od (ton/hr) x [(average wind s	need (moh)/53 ^{1.3} /	moisture content (r	~+1/2\ ^{1.4} 1 × (100	M011/[too]lords
		(tpy) x [(average wind speed				
			- 10 10 50		1005	
Source: Section 13	3.2.4 – Aggregate I	landling and Storage Pil	es, AP-42, Fitti	h Edition, Janua	ry 1995.	
	_					
	IN	PUT DATA AND EMI	SSIONS CAL Material	CULATIONS		
Mean Wind	Act	tuai	Moisture	Control	Actual	PM ₁₀
Speed	Quantity T		Content	Efficiency		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 C	F INPUT DA	TA		
Parar	neter			ata Source		
		-		. E.W 400F	•	
Mean Wind Speed Actual Quantity Tra	neferred	Tampa, FL, Climate of t TEC, 1997.	ne States, I hiro	1 Ealtion, 1985.		
Material Moisture C		Average fuel moisture of	ontent; TEC, 19	994.		
Control Efficiency		Table 3.2.17-2, Workb	ook on Estimati	on of Emissions	and Dispersion M	odeling of
		Fugitive Particulate Sou	rces, UARG, Se	eptember 1981.		
		NOTES AND	OBSERVATIO	ONS		
Actual PM ₁₀ emissi	ions based on 2,648	3,044 tpy of fuel used. A	ctual fuei use is	the average of	the 1995 and 199	5 actual fuel
	tons and 2,767,753					
used, 2,326,334	tons and 2,767,755	tons, respectively.				
Actual fuel delivery	was assumed to be	equally divided between	n conveyors D1	and D2, or 1,32	4,022 tons per co	nveyor.
			-		-	
			CONTROL	: /X:000000		
Data Collected	by:	A. Trbovich			Date:	05/23/97
Evaluated by:		A. Trbovich	_		Date:	05/23/97
Data Entered by	y:	A. Trbovich			Date:	05/23/97
Reviewed by:					Date:	,

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

MATE	RIAL TRANSFER	R - FUGITIVE EMISS	SION SOURC	ES	Figure:	
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source D	escription;	Fuel Handling - Convey	or M1 to Conve	yor E1		
Emission Control N	Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	/8		
Emission Point ID:	-	FH-018		Transfer Point I	D(s):	
		EMISSION ESTIM	IATION EQU			
Fmission (lb/hr) = 0.00	011 x material transferre	rd (ton/hr) x [(average wind s	need (moh)/5) ^{1,3} /	moisture content (nct)/2) ^{1,4} 1 x (100—co	ntrol[net]/100)
		(tpy) x [(average wind speed				
Source: Section 1	9 2 4 — Angregate I	Handling and Storage Pil	os AP-42 Fift	h Edition Janua	nv 1995	
Cource: Cooler 1	o.z.v nggrogato	taraing and otorago i ii	, 71 - 42, 1 III	ii caison, variau		
	1AJ	PUT DATA AND EMI	SSIONS CAL	CIII ATIONS		
		A COMPANIAN AND SCHOOL	Material	COLIMONO		
Mean Wind		tual .	Moisture	Control	Actual	
Speed (mph)	Quantity T	ransferred (ton/yr)	Content (pct)	Efficiency (pct)	Emissio (lb/hr)	n Hates (tpy)
			6.5		0.10	0.03
8.6	2,300	1,324,022		90.0	0.10	0.03
Daras	motor	SOURCES (F INPUT DA	<i>TA</i> Data Source		
<u> Farar</u>	<u>neter</u>		<u>_</u>	dia Source		
Mean Wind Speed		Tampa, FL, Climate of t	the States, Third	Edition, 1985.		
Actual Quantity Tra Material Moisture C		TEC, 1997. Average fuel moisture of	contont: TEC 19	004		
Control Efficiency	- Content	Table 3.2.17-2, Workb			and Dispersion M	odeling of
_		Fugitive Particulate Soc	irces, UARG, S	eptember 1981.		
		•				
		NOTES AND				
Actual PM ₁₀ emissi	ions based on 2,64	3,044 tpy of fuel used. A	ctual 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	e equally divided betwee	n conveyors M1	and M2, or 1,3	24,022 tons per co	onveyor.
-		<u> </u>				
	•		•	4		
			CONTROL			
Data Collected	by:	A. Trbovich			Date:	05/23/97
Evaluated by:		A. Trbovich		_	Date:	05/23/97
Data Entered by	y:	A. Trbovich			Date:	05/23/97
Reviewed by:					Date:	

Tampa Electric Company - F.J. Gannon Station

FH-019

EMISSION SOURCE TYPE **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 Transfer Point ID(s): **Emission Point ID:** FH-019 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) (mph) (ton/hr) (ton/yr) (pct) (pct) 90.0 0.10 0.03 2,300 1,324,022 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** 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 CONTROL 05/23/97 Date: Data Collected by: A. Trbovich 05/23/97 Evaluated by: A. Trbovich Date: Data Entered by: A. Trbovich Date: 05/23/97

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 - Convey	or E1 to Storag	e Pile		
Emission Control N	- Method(s)/ID No.(s):	Dust Suppressant				
Emission Point ID:		FH-020		Transfer Point IC)(s):	-
		EMISSION ESTIN	ATION EQU	ATIONS		
Emission (Shifter) - 0.0	O11 v material transferse	od (ton/hr) x [(average wind s	need (make m 1.3 /		-nm1.4: - (100	
Emission (tpy) = 0.00	11 x meterial 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)
Course: Carties 1	9.2.4 Agreemete l	Jandling and Storago Di	los AD: 42 544	- Edition Januar	. 100E	
Source. Section 1	3.2.4 - Aggregate F	landling and Storage Pi	185, AF ~ 42, FIIU	Edition, Januar	y 1995.	-
	181		ICCIONG OAK	OBIE TIONS		
	INI	PUT DATA AND EMI	Material	CULATIONS		
Mean Wind	Act	- -	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	TA		
Parai	meter		D	ata Source		
Mana Wind Speed		Temps El Climata of	the States Third	Edition 1985		
Mean Wind Speed Actual Quantity Tre	ensferred	Tampa, FL, Climate of TEC, 1997.	ule States, Third	<u> Euluon, 1</u> 965.		
Material Moisture		Average fuel moisture				
Control Efficiency	_	ECT, 1997. Set at 70 p		vely minimize ac	tual emissions for	PSD evaluation.
		Permitted control effici	ency is 0 pct.			
	•					
		•				accept for 500,000 or guidens declared from the
		NOTES AND				
Actual PM ₁₀ emiss	ions based on 2,648	3,044 tpy of fuel used. A	ctual fuel use is	the average of t	he 1995 and 1996	actual fuel
used, 2,528,334	tons and 2,767,753	tons, respectively.		_		
Actual fuel deliver	was assumed to be	equally divided between	en conveyors E1	and E2. or 1.324	1,022 tons per col	nveyor.
	,				<u> </u>	
						-
		DATA	CONTROL			
Data Collected	by:	A. Trbovich		ī	Date:	09/16/97
Evaluated by:		A. Trbovich	_		Date:	09/16/97
Data Entered b		A. Trbovich	_		Date:	09/16/97
Reviewed by:			-		Date:	<u> </u>

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	<u> </u>	
Emission Source D	escription:	Fuel Handling - Convey	yor E2 to Storag	e Pile		
Emission Control N	lethod(s)/ID No.(s):	Dust Suppressant				
Emission Point ID:		FH-021		Transfer Point I	D(s):	
-		EMISSION ESTIM	ATION EQU	ATIONS		
Emission (lb/hr) = 0.00	011 x material transferre	d (ton/hr) x [(average wind s	peed (mph)/5) ^{1,3} /	moisture content (oct)/2) ^{1.4}] x (100-co	ntrol[pet]/100)
		(tpy) x [(average wind speed				
Source: Section 1:	3 2 4 – Aggregate H	landling and Storage Pi	los AP-42 Fifti	h Edition Janua	ry 1995	•
Course. Cocacii i	o.z.+ Aggiogato i	raiding and otorago in	72,1110	Teardon, our loc	., 1000.	
	IN	PUT DATA AND EM	ISSIONS CAL	CHIATIONS		sersom wernerver virtually
	<u> </u>	EUNDAIA AND EM	Material	COLATIONS		1020 BA 14 10 11 84 175 1846
Mean Wind	Act		Moisture	Control	Actual	
Speed	Quantity T	ransferred (ton/yr)	Content	Efficiency	Emissio (lb/hr)	n Rates
(mph)	(ton/hr) 2,300	1,324,022	(pct) 6.5	(pct) 70.0	0.29	(tpy)
8.6	2,300				0.29	0.08
		SOURCES	OF INPUT DA			
Parar	<u>neter</u>	- ,		ata Source		
Mean Wind Speed		Tampa, FL, Climate of	the States. Third	Edition, 1985.		
Actual Quantity Tra	insferred	TEC, 1997.	4.0 0.2.00,			
Material Moisture C	ontent	Average fuel moisture	content; TEC, 19	994.		
Control Efficiency		ECT, 1997. Set at 70 p		vely minimize ac	tual emissions fo	PSD evaluation.
		Permitted control effici	ency is u pct.			
		NOTES AND	ORSERVATIO	ONS	·	
Actual PM ₁₀ emiss	ions based on 2,648	,044 tpy of fuel used. A	Actual fuel use is	the average of	the 1995 and 1996	6 actual fuel
used, 2,528,334	tons and 2,767,753	tons, respectively.				
Actual fuel delivery	was assumed to be	equally divided between	en conveyors E1	and E2, or 1,32	4,022 tons per co	nveyor.
,		,	•		· · · · ·	
		DATA	CONTROL		3615 X 8882	
Data Collected	by:	A. Trbovich			Date:	09/16/97
Evaluated by:	-	A. Trbovich			Date:	09/16/97
Data Entered by	y:	A. Trbovich			Date:	09/16/97
Reviewed by:					Date:	

Tampa Electric Company - F.J. Gannon Station

FH-022

Date:

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: 50 pct Pile Width (m): Pile Height (m): Pile Length (m): 215 70 21 Surface Area (m²) 16,758 Actual PM₁₀ Meteorological Friction Emission Affected Pile Affected Velocity **Potential** Surface Area **Emission Rates** Period Area (m/s)(a/m²) (pct) (m²) (p/hr) (tpy) 1.30 6.38 670.3 0.59 0.0024 <0.0001 0.26 4 670.3 0.02 30 1.13 0.0014 37 1.33 7.81 670.3 0.72 0.0107 65 1.48 16.52 14 2,346.1 5.34 0.0081 65 1.80 43,82 4 670.3 0.50 0.0012 77 1.30 6.38 4 670.3 1.33 7.81 670.3 0.72 0.0014 90 Maximum Per Period N/A N/A 0.0252 SOURCES OF INPUT DATA **Data Source** 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. Estimated: ECT, 1997. Fuel Pile Dimensions (m) Calculated: ECT, 1997. Pile Surface Area (m²) Meteorological Periods 1986 NWS data, processed per AP-42, ECT, 1997. 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. Calculated: ECT, 1997. Affected Area NOTES AND OBSERVATIONS DATA CONTROL 09/12/97 Date: Data Collected by: A. Trbovich Date: 09/12/97 Evaluated by: A. Trbovich 09/12/97 Date: Data Entered by: A. Trbovich

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 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:** FH-023e 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: Control Efficiency: 1.12 m/s 50 pct Pile Length (m): 170 Pile Width (m): Pile Height (m): 21 Surface Area (m²) 16,754 Actual PM₁₀ Meteorological Friction Emission Affected Pile Affected Velocity Period Potential Surface Area **Emission Rates** Area (m²) (a/m²) (pct) (lb/hr) (m/s) (PY) 6.38 670.2 0.50 0.0024 14 1.30 0.26 4 670.2 0.02 <0.0001 30 1.13 670.2 0.72 0.0014 37 1.33 7.81 4 0.0107 65 16.52 2,345.5 5.34 1.48 14 43.82 4 670.2 4.05 0.0081 65 1.80 77 1.30 6.38 4 670.2 0.50 0.0012 0.72 0.0014 90 1 33 7.81 670.2 Maximum Per Period N/A 9.38 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. 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. 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 Date: 09/12/97 Data Collected by: A. Trbovich A. Trbovich Date: 09/12/97 Evaluated by:

Date:

Date:

09/12/97

Data Entered by:

Reviewed by:

A. Trbovich

EMISSION INVENTORY WORKSHEET Tampa Electric Company - F.J. Gannon Station FH-023b 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** FH-023b **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 1.12 m/s Threshold Friction Velocity: Control Efficiency: 50 pct Pile Width (m): 125 Pile Height (m): 21 Surface Area (m²) Pile Length (m): 140 18,855 Actual PM₁₀ Affected Pile Meteorological Friction Emission Affected Period Velocity **Potential** Surface Area Area **Emission Rat** (m/s) (a/m²) (m^2) (lb/hr) (pct) 0.0013 1.30 6.38 754.2 0.66 30 1.13 0.26 4 754.2 0.03 <0.0001 754.2 0.81 0.0016 37 1.33 7.81 4 2,639.6 65 1.48 16.52 14 6.01 0.0120 65 1.80 43.82 4 754.2 4.55 0.0091 0.66 0.0013 77 1.30 6.38 4 754.2 0.0016 1.33 7.81 754.2 0.81 90 N/A Maximum Per Period 10.56 N/A 0.0270 Total SOURCES OF INPUT DATA **Parameter** Data Source 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. 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:

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09/12/97

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Data Collected by:

Data Entered by:

Evaluated by:

Tampa Electric Company - F.J. Gannon Station

FH-024

	I Allipa ER	cure Company - F				FN
		EMISSION	SOURCE TYP	Æ		
MATE	ERIAL TRANSFER	- FUGITIVE EMIS	SION SOURC	ES	Figure:	
		FACILITY AND SC				
Emission Source	Description:	Fuel Handling - Under			Byor F1	<u> </u>
Emission Control	Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant			
Emission Point ID	:	FH-024		Transfer Point II	D(s):	
		EMISSION ESTIN	AATION EQUA	ATIONS		
Fmission (lb/hr) = 0.(0011 x material transferre	ed (ton/hr) x [(average wind s	need (mph)/5) ^{1,3} /	moisture content (r		etrol(act)/100)
		(tpy) x [(average wind spee				
		10. 51				
Source: Section	13.2.4 – Aggregate F	landling and Storage Pi	les, AP-42, Fitti	n Edition, Januar	ry 1995.	
	INI	PUT DATA AND EM		CULATIONS		
Mean Wind	Act	hiel	Material Moisture	Control	Actual	PM
Speed	Quantity T		Content	Efficiency	Emissio	
(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 DA	TA		
Para	ameter			ata Source		
Mean Wind Speed		Tampa, FL, Climate of	the States, Third	l Edition, 1985.		
Actual Quantity Tr Material Moisture		TEC, 1997. Average fuel moisture	content: TEC 19			
Control Efficiency		Table 3.2.17-2, Workb			and Dispersion M	lodeling of
		Fugitive Particulate So	urces, UARG, Se	eptember 1981.		
	,	•				
		NOTES AND	OBSERVATIO)NS		
Actual PM ₁₀ emis	sions based on 2,648	3,044 tpy of fuel used. A	Actual fuel use is	the average of	the 1995 and 1994	6 actual fuel
	_					
USBQ, 2,320,33	4 tons and 2,767,753	tons, respectively.				
Actual fuel reclain	ning was assumed to	be equally divided amo	ong the reclaime	rs F1, F2, and F4	4, or 882,681 tons	per reclaimer.
Actual short—term	n emissions based or	reclaimers F1, F2, and	F4 operating sin	multaneously at	533 tph, each.	
			• -	<u>-</u>	<u></u>	
	_		•			
						<u> </u>
		DATA	CONTROL			
Data Collected	i by:	A. Trbovich			Date:	09/16/97
Evaluated by:		A. Trbovich			Date:	09/16/97
Data Entered b	bv:	A. Trbovich		Ţ	Date:	09/16/97

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 **Emission Point ID:** FH-025 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/lw) = 0.0011 x material transferred (ton/lw) x [(average wind speed (mph)/5)^{1.3} / moisture content (pct)/2)^{1.4}] x (100-control[pct]/100) Emission (tpy) = 0.0011 x meterial 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) (tpy) (mph) (ton/hr) (ton/yr) (pct) (pct) 882,681 85.0 0.04 0.03 8.6 553 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 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 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: 09/16/97

A. Trbovich

A. Trbovich

09/16/97

09/16/97

Date:

Date:

Evaluated by:

Reviewed by:

Data Entered by:

FH-027 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 **Emission Point ID:** FH-027 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 Actual PM₁₀ Control Mean Wind Actual **Quantity Transferred** Content **Efficiency Emission Rates** Speed (pct) (tpy) (lb/hr) (mph) (ton/hr) (ton/yr) (pct) 0.04 85 A 0.03 553 882,681 6.5 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. 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 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: 09/16/97 A. Trbovich Date: 09/16/97 Evaluated by:

A. Trbovich

Date:

Date:

09/16/97

Data Entered by:

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

MAT	ERIAL TRANSFER	- FUGITIVE EMIS			Figure:	
		FACILITY AND SC	URCE DESC	RIPTION		
Emission Source	Description:	Fuel Handling - Conve	yor F1 to Conve	yor G1/G2		
Emission Control	l Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	/8		
Emission Point II	D:	FH-028		Transfer Point I	D(s):	
		EMISSION ESTIN	IATION EQU	ATIONS		
Emission (lb/hr) = 0).0011 x material transferre	ed (ton/hr) x ((average wind s	peed (mph)/5) ^{1,3} /	moisture content (nct)/2) ^{1.4}] x (100—cor	ntrolineti/1001
		(tpy) x [(average wind spee				
Source: Section	13.2.4 - Aggregate I	- Handling and Storage Pi	les. AP-42. Fift	h Edition. Janua	ry 1995.	
	IN	PUT DATA AND EM	ISSIONS CAI	CUI ATIONS		
		I O I DATA AND LIN	Material	COLAMONO		
Mean Wind		tual .	Moisture	Control	Actual	
Speed	Quantity T	ransferred (ton/yr)	Content (pct)	Efficiency (pct)	Emissio (lb/hr)	n Rates (tpy)
(mph)						
8.6	553	882,681	6.5	90.0	0.02	0.02
Por		SOURCES (OF INPUT DA	<i>TA</i> Data Source		
Par	ameter		<u>L</u>	data Source		
Mean Wind Spee	od	Tampa, FL, Climate of	the States, Third	d Edition, 1985.		
Actual Quantity T		TEC, 1997.				
Material Moisture Control Efficience		Average fuel moisture Table 3.2.17-2, Workb			and Dispassion M	adaling of
CONTROL EMCIONE	y	Fugitive Particulate So			and Dispersion m	odening of
				-		·
		NOTES AND	OBSERVATIO	ONS		
Actual PM ₁₀ emis	ssions based on 2,646	3,044 tpy of fuel used.	Actual fuel use is	s the average of	the 1995 and 1996	actual fuel
	34 tons and 2,767,753					
		• • •				
Actual fuel recial	ming was assumed to	be equally divided amo	ong the reclaime	ers F1, F2, and F	4, or 882,681 tons	per reciaimer.
Actual short-ter	m emissions based or	reclaimers F1, F2, and	F4 operating si	multaneously at	533 tph, each.	
		,				
	•					
		DATA	CONTROL		A. 455	
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:					Date:	

Tampa Electric Company - F.J. Gannon Station

MATT	DIAL TRANSFER		SOURCE TY/	THE STATE OF SAME OF SAME	Fig	
MAIL	HIAL IRANSPER	- FUGITIVE EMIS			Figure:	
Emission Source	Description;	Fuel Handling - Conve	yor F4 to Conve	yor G1/G2	ř	
Emission Control	Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	/8		
Emission Point ID	<u> </u>	FH-029		Transfer Point I	D(s):	
		EMISSION ESTIM	MATION EQU	ATIONS	<u> </u>	
Emission (lb/hr) = 0.0	0011 x material transferre	d (ton/hr) x [(average wind :	speed (mph)/5) ^{1,3} /	moisture content (pct)/2) ^{1.4}] x (100-co	ntrol[pct]/100)
Emission (tpy) = 0.00	211 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 h	landling and Storage Pi	iles, AP-42, Fift	h Edition, Janua	ry 1995.	
	1N	PUT DATA AND EM	ISSIONS CAL	CULATIONS		
		**************************************	Material			
Mean Wind	Act		Moisture	Control	Actual	
Speed (mph)	Quantity T	ransterred (ton/yr)	Content (pct)	Efficiency (pct)	(lb/hr)	n Rates (tpy)
8.6	553	882,681	6.5	90.0	0.02	0.02
		SOURCES	OF INPUT DA	TA		
Para	meter			ata Source		
				. F. I'.'		
Mean Wind Speed Actual Quantity To		Tampa, FL, Climate of TEC, 1997.	the States, Iniro	1 Edition, 1985.		
Material Moisture		Average fuel moisture	content; TEC, 19	994.		
Control Efficiency	·	Table 3.2.17-2, Workt			and Dispersion M	odeling of
·			<u> </u>			
		NOTES AND	OBSERVATION	ONS		
Actual PM ₁₀ emis	sions based on 2,648	3,044 tpy of fuel used.	Actual fuel use is	s the average of	the 1995 and 1996	5 actual fuel
	4 tons and 2,767,753			-		
			4	C4 C0 4 C	4 000 004 4	
Actual fuel reclain	ning was assumed to	be equally divided amo	ong the recialme	rs F1, F2, and F	4, or 682,681 tons	per recialmer.
Actual short-term	n emissions based or	reclaimers F1, F2, and	F4 operating si	multaneously at	533 tph, each.	
		_				
	·					
		DATA	CONTROL			7
Data Collected	l by:	A. Trbovich			Date:	05/23/97
Evaluated by:		A. Trbovich			Date:	05/23/97
Data Entered t	by:	A. Trbovich	-		Date:	05/23/97
Reviewed by:	•				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 - Convey	or F2 to Convey	yor G1/G2		
Emission Control M	lethod(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	'8		
Emission Point ID:		FH-031		Transfer Point I	D(s):	-
		EMISSION ESTIN	IATION EQU	ATIONS		
-			13.	• • • • • • • • •	nm14	
Emission (lb/hr) = 0.00 Emission (lb/hr) = 0.001	111 x material transferred 1 x material transferred	od (ton/hr) x [(average wind s l (tpy) x [(average wind speed	peed (mph)/5) '	moisture content (sture content (pct)/	pct)/2) ***] x (100—cod 2) ^{1.4} 1 x (100—codrol	ntrol[pct]/100) [pct]/100) x (1/2.000)
Source: Section 15	3.2.4 – Aggregate I	landling and Storage Pi	es, AP-42, Fift	n Edition, Janua	ry 1995.	
					•	
	IN	PUT DATA AND EMI	SSIONS CAL	CULATIONS		
			Material	_		
Mean Wind	_	tual	Moisture	Control	Actual	
Speed (mph)	Quantity T (ton/hr)	ransterred (ton/yr)	Content (pct)	Efficiency (pct)	Emissio (lb/hr)	(tpy)
8.6	553	882,681	6.5	90.0	0.02	0.02
		SOURCES C	FINPUT DA	TA		
Paran	neter			ata Source		
Mean Wind Speed		Tampa, FL, Climate of	the States, Third	Edition, 1985.		
Actual Quantity Tra Material Moisture C		TEC, 1997. Average fuel moisture of	contant: TEC 19	-		
Control Efficiency	ontent	Table 3.2.17-2, Workb			and Dispersion M	odeling of
_		Fugitive Particulate So	•		•	
	•	•				
		NOTES AND	OBSERVATIO	ONS		
Actual PM., emissi	ons based on 2 644	3,044 tpy of fuel used. A	ctual fuei used	is the average o	f the 1995 and 199	36 actual fuel
						
used, 2,528,334 t	tons and 2,767,753	tons, respectively.				
Actual fuel reclaimi	ng was assumed to	be equally divided amo	ng relcaimers F	1, F2, and F4, o	r 882,681 tons per	reclaimer.
Actual short-term	amissions hasad or	n reclaimers F1, F2, and	F4 operating size	multaneously at	533 toh each	
ACIDAL SHOTE-TERM	ellissions based of	· · · · · · · · · · · · · · · · · · ·	1 4 Operating sin	ilditalieodsiy at	555 фіі, едсіі.	
		DATA (CONTROL		71. S	
Data Collected	by:	A. Trbovich			Date:	05/23/97
Evaluated by:		A. Trbovich			Date:	05/23/97
Data Entered by		A. Trbovich		_		05/23/97
Reviewed by:					Date:	

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

F	Н	 	O	3	2

MAT	ERIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:	
		FACILITY AND SO				
Emission Source	Description:	Fuel Handling - Convey	or G1 to Hamm	ermill Crusher 1		
Emission Control	Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant			
Emission Point ID) :	FH-032		Transfer Point I	D(s):	
		EMISSION ESTIN	IATION EQU	ATIONS		
Emission (lb/lw) = 0	0011 v material transferre	d (ton/hr) x [(average wind s	need (moh)/51.3 /	moisture content (net)(2)1.4] × (100_co	(MOD) Start Inch
Emission (tpy) = 0.0	011 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 2 4 Aggregate i	landling and Storage Pil	los AD_42 Eitt	h Edition Jenue	nv 1995	
Courte. Getuon	10.2.4 - Aggregate I	saroning and otorage in	100, Ar — 42, File	ii Edidoii, Valida	iy 1990.	
	181	PUT DATA AND EMI	ICCIONIC ON	CHEATIONS		
	(/N	EOI DAIA AND LIM	Material	COLAMONS		
Mean Wind	Act	ruai	Moisture	Control	Actual	
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	0.03	0.03
_	-	SOURCES C	OF INPUT DA			
<u>Para</u>	ameter		<u></u>	ata Source		
Mean Wind Speed	d	Tampa, FL, Climate of	the States, Third	d Edition, 1985.		
Actual Quantity T		TEC, 1997.				
Material Moisture	·	Average fuel moisture of Table 3.2.17-2, Workb			and Dinnersian M	adation of
Control Efficiency		Fugitive Particulate So			and Dispersion M	odeling of
		NOTES AND	OBSERVATIO	ONS		·
Actual PM ₁₀ emis	sions 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
	4 tons and 2,767,753					
Actual fuel reclair	ming was assumed to	be equally divided betw	veen conveyors	G1 and G2, or 1	,324,022 tons per	conveyor.
		DATA	CONTROL			
Data Collected	d by:	A. Trbovich			Date:	05/23/97
Evaluated by:		A. Trbovich	_		Date:	05/23/97
Data Entered		A. Trbovich			Date:	05/23/97
Reviewed by:	-	-			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 - Convey	yor G2 to Hamm	ermill Crusher 2		
Emission Control &	Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant	_	_	
Emission Point ID:		FH-033		Transfer Point II	D(s):	
		EMISSION ESTIM	IATION EQU	ATIONS		
Emission (lb/hr) = 0.00	<u> 111 x material transferred</u> 11 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 (pc0//	xct)/2) *** x (100 – cor 2) ^{1.4} ? x (100 – control	iro(petj/100) (petl/100) x (1/2.000)
			- (7 4::3	
Source: Section 13	3.2.4 – Aggregate H	landling and Storage Pi	es, AP-42, Fift	h Edition, Januar	ry 1995.	
	IN	PUT DATA AND EMI	SSIONS CAL	CULATIONS		
			Material			
Mean Wind Speed	Act Quantity T		Moisture Content	Control Efficiency	Actual Emissio	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
				22.2		
8.6	800	1,324,022	6.5	90.0	0.03	0.03
		SOURCES C	OF INPUT DA		I to	
Parar	meter			ata Source_		
Mana Wind Coord		Tampa El Climata ef	the States Third	l Edition 1985		
Mean Wind Speed Actual Quantity Tra		Tampa, FL, Climate of the TEC, 1997.	ule States, Third	1 Edidon, 1965	<u> </u>	
Material Moisture C		Average fuel moisture	content; TEC, 19	994.		*
Control Efficiency		Table 3.2.17-2, Workb			and Dispersion M	odeling of
		Fugitive Particulate Soc	urces, UARG, Se	eptember 1981.		
		NOTES AND	ORSERVATIO	DNS		
Actual PM ₁₀ emissi	ions 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, 2,528,334	tons and 2,767,753	tons, respectively.				
Actual fuel reclaimi	ing was assumed to	be equally divided betw	reen convevors	G1 and G2. or 1.	.324.022 tons per	CONVEYOR.
7.0.00	g			<u> </u>		
	4					
		DATA	CONTROL			
Data Collected	by:	A. Trbovich			Date:	05/23/97
Evaluated by:		A. Trbovich			Date:	05/23/97
Data Entered by		A. Trbovich				05/23/97
	<i>y</i> •	A. HDUTEH				30/20/01
Reviewed by:					Date:	

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

FH-034

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 (fb/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) (pct) (pct) (lb/hr) (tpy) (mph) 90.0 0.03 0.03 800 1,324,022 6.5 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 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 Date: Data Collected by: A. Trbovich Evaluated by: A. Trbovich Date: 05/23/97 Date: 05/23/97 Data Entered by: A. Trbovich Date: Reviewed by:

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

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 Point ID: FH-035 Transfer Point ID(s): Emission (Buhr) = 0.0011 x material transferred (burly) x ([severage wind speed (mph)/s) ^{1.3} / moisture content (pct)/z) ^{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 Efficiency (ton/hr) (ton/yr) (pct) (pct) (pct) (fib/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 Tamps, FL, Climate of the States, Third Edition, 1995. Actual Quantity Transferred TEC, 1997. Meterial Moisture Content Average fuel moisture content; TEC, 1994. 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 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.
Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant Emission Point iD: EMISSION ESTIMATION EQUATIONS Emission (bb/hr) = 0.0011 x material transferred (bry) x ([average wind speed (mph)/5] ^{1.3} / moisture content (pct)/2) ^{1.4}] x (100—control[pct]/100) x (1/2,000) Emission (bb/hr) = 0.0011 x material transferred (bry) 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 Mean Wind Speed Quantity Transferred Content Efficiency (pct) (pct) ([b/hr) ([b/hr) ([b/hr)] ([b/hr)) 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.
Emission Point iD: PH-035 Transfer Point iD(s): EMISSION ESTIMATION EQUATIONS Emission (bt/hr) = 0.0011 x material transferred (bor/hr) x [[average wind speed (mph)/5].3 / moisture content (pct)/2].4 x (100-control[pct]/100) Emission (bt/hr) = 0.0011 x material transferred (byr) x [[average wind speed (mph)/5].3 / moisture content (pct)/2].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 Mean Wind Speed Quantity Transferred Content (pct) (pct) (br/hr) (tbr/hr) (ton/hr) (ton/hr) (pct) (pct) (pct) (lb/hr) (tbr/hr) 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 PM10 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.
Emission (bt/hr) = 0.0011 x material transferred (bon/hr) x [(everage wind speed (mph)/5]^{1.3} / moisture content (pct)/2]^{1.4}] x (100-control[pct]/100) Emission (by) = 0.0011 x material transferred (bon/hr) x [(everage 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 Speed (mph) (ton/hr) (ton/yr) (pct) (pct) (pct) (pct) (lb/hr) (tpy)
Emission (b/hy) = 0.0011 x material transferred (boy) x [(everage 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
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
Emission (tpy) = 0.0011 x material transferred (tpy) x ([everage 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
INPUT DATA AND EMISSIONS CALCULATIONS Mean Wind Speed Quantity Transferred Content Efficiency (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 PM₁0 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.
INPUT DATA AND EMISSIONS CALCULATIONS Mean Wind Speed Quantity Transferred Content Efficiency (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 PM₁0 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.
Mean Wind Actual Moisture Control Actual PM10 Emission Rates
Mean Wind Actual Moisture Control Actual PM10 Emission Rates
Mean Wind Actual Moisture Control Efficiency Emission Rates (Ib/hr) (Ib/hr)
(mph) (ton/hr) (ton/yr) (pet) (pet) (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** **NOTES AND OBSERVATIONS** Actual PM o 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.
SOURCES OF INPUT DATA Parameter Parameter Data Source Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985. Actual Quantity Transferred TEC, 1997. 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 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.
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 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.
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 used is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively.
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 used is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively.
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 of Fugitive Particulate Sources, UARG, September 1981. **NOTES AND OBSERVATIONS** Actual PM10 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.
Material Moisture Content Average fuel moisture content; TEC, 1994. 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 used is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively.
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 used is the average of the 1995 and 1996 actual fuel used, 2,528,334 tons and 2,767,753 tons, respectively.
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 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 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 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 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.
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: 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 - F.J. Gannon Station

EMISSION SOURCE TYPE

FH-036-FH-041

MATERIAL TR	IANSFER - CO				Figure:	
	FAC	CILITY AND S	OURCE DESCR	IPTION		
Emission Source Description	n:	Fuel Handling -	- Conveyors H1/H2	to Conveyors J1/J	2, Conveyors J1/J2	to Bunkers
Emission Control Method(s)	/fD No.(s):	Rotociones 1 th	rough 6			
Emission Point ID:		FH -036 throug	jh FH-041	Transfer Point ID		- 11
	EA	IISSION EST	IMATION EQUA	TIONS		
	•				_	
Emission (b/hr) = Flow Rate (scf						
Emission (tpy) = Flow Rate (scfm	i) x (grain/scf) x (1 lb/7,	000 grain) x (60 mii	v/hr) x Operating Hour	(hrs/yr) x (1 ton/2,000	I D)	
Source: ECT, 1997.						
		_				_
			MISSIONS CAL			
Operating Hours:	24 Hrs/Day	7	Days/Wk	8,760 Hr	·s/Yr	
		Transfer	Exhaust	Exit Grain	Actual Pl	Maa
Transfer Points Controlled		Point	Flow Rate	Loading	Emission I	
By Common Contro		ID No.	(scfm)	(gr/scf)	(lb/hr)	(tpy)
Unit 1 Fuel Bunker Loading Unit 2 Fuel Bunker Loading			9,600	0.0023 0.0023	0.19 0.19	0.83
Unit 3 Fuel Bunker Loading			9,600	0.0023	0.19	0.83
Unit 4 Fuel Bunker Loading			9,600	0.0023	0.19	0.83
Unit 5 Fuel Bunker Loading			5,400	0.0041	0.19	0.83
Unit 6 Fuel Bunker Loading			9,600	0.0023	0,19	0.83
		SOURCES	OF INPUT DAT	A		
Parameter		<u></u>		a Source		
Operating Hours	TEC, 1997.					
Exhaust Flow Rate	TEC, 1997.	Vendor data.				•
Exit Grain Loading	TEC, 1997.	Based on FDEI	Permit No. AO29-	-250140.		
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				Constant Constant Constant	
		NOTES AND	O OBSERVATIO	NS	en a maga a majaraga na managa g Majaraga maga maga maga maga maga maga maga	
All Rotociones are conserva	tively assumed to b	e operating who	enever any bunkerii	ng occurs.	•	
		<u> </u>				
·					<u> </u>	
					_	
	·					
		DATA	CONTROL			
Data Collected by:	A. Trbovic	h		Date:	01/20/97	
Evaluated by:	A. Trbovic	h		Date:	01/20/97	
Data Entered by:	A. Trbovic	h		Date:	01/20/97	
Reviewed by:				Date:		
					_	

Tampa Electric Company - F.J. Gannon Station

				<u>ION SOURC</u>					<u>Partinoga (Inggana) (Inda</u>
VEHIC	ULAR TRAFF	IC ON UNPA					CES	Figure:	
			FACILITY AN	<u>D SOURCE.</u>	<u>DESCRIF</u>	PTION			
Emission Sc	ource Descriptio	n:	Fuel Handling -	Storage Pile I	Maintenand	:е	-		
Emission Co	ontrol Method(s)/ID No.(s):	Dust Suppressa	nt Sprays					
Emission Po	oint ID:		FH-044						
			EMISSION E	STIMATION	EQUATI	ONS			
Enissies Ma	w) = 0.36 × 5.0 × /=	/12) x (S/30) x (W/3)	9.7 4(4) 9.5 ((2)	es -\mes\		. have 444TA			
		(*/12) x (\$/30) x (\\/) (*/12) x (\$/30) x (\(\/)							-control[pct]/100)
				,, ,,			7-1	7 7 (
Source: Se	<u>ction 13.2.2 – l</u>	Inpaved Roads,	AP-42, Fifth Ed	ition, January	1995.				
		INP	UT DATA AND	EMISSION	S CALCL	ILATIONS	S		
Operating H	lours:		Hrs/Day		Days/Wk			5,824	Hrs/Yr
_	s	w l		_	Vehicle	. Afiles	Control	A 44	sel DAJ
Silt Conton	_	Vehicle Weight	W No of Wheele	Painfall Dave	Trave		Efficiency		ual PM ₁₀ sion Rates
(pct)	(mph)	(ton)	NO. OI WIRES	raillai Days	(VMT/hr)		(pct)	(lb/hr)	(tpy)
		40		107			50.0	2.72	10.96
8.4	2.5	48	6	107	10.0	58,240	50.0	3.73	10.86
			SOURC	ES OF INPU	JT DATA				
	arameter Data Source								
Operating H		ECT, 1997. Estimated.							
Silt Content	·	Table 13.2.2-1, Section 13.2.2, AP-42, January 1995.							
	/ehicle Speed, S TEC, 1997. Average value.								
Vehicle Wei		TEC, 1997. Av							
No. of Whee Rainfall Day		Climate of the	erage value. States, Third Edi	tion 1985 De	ta for Tam	na Fl			
Vehicle Mile		ECT, 1997. Est		1300. 50	14 101 1411	.pu, 1			
Control Effic			, Workbook on I	Estimation of E	missions a	and Dispers	sion Modeli	ng for Fugiti	ve Particulate
	,		i, September 19						
			NOTES A	AND OBSER	IVATION.	S			
Estimate of	vehicle miles tr	aveled based on	the use of four	bulldozers on t	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	bur	_						Date:	

APPENDIX B.3

FUTURE ACTUAL PM EMISSION CALCULATION SPREADSHEETS

Tampa Electric Company - F.J. Gannon Station

<u>FH-002</u>

Date:

	DIAL TRANSFER		SOURCE TYP			2 Participania de la companya de la
MAIL	HIAL IRANSPER	- FUGITIVE EMISS FACILITY AND SO			Figure:	r gradienten
Emission Sauras I	\	*			a 190 Cassassign Navy y- 1 1, 1	<u> </u>
Emission Source I	-	Fuel Handling - Barge	to west Ciamsn	en (obinage)		
Emission Control	Method(s)/ID No.(s):	Dust Suppressant				<u> </u>
Emission Point ID:		FH-002 EMISSION ESTIM	MICHEOU	Transfer Point ID	(s):	03804977134
					<u> </u>	
Emission (lb/hr) = 0.0	032 x material transferre	d (ton/hr) x [(average wind a (tpy) x [(average wind speed	peed (mph)/5) ^{1.3} /	moisture content (pc	t)/2) ^{1.4}] x (100—contr	ol[pct]/100)
						:tj/100) x (1/2,000)
Source: Section 1	3.2.4 - Aggregate I	landling and Storage Pil	les, AP-42, Fift	h Edition, January	1995.	
	INI	PUT DATA AND EMI	SSIONS CAL Material	CULATIONS		
		ual	Moisture	Control	Actual PM Emission Rates	
Speed (mph)	Quantity T (ton/hr)	ransterred (ton/yr)	Content (pct)	Efficiency (pct)	(ib/hr)	(tpy)
8.6	1,150	4,000,000	6.5	95.0	0.07	0.12
		SOURCES	OF INPUT DA	TA		
Para	meter			ata Source		
Mean Wind Speed		Tampa, FL, Climate of	the States, Third	f Edition, 1985.		
Actual Quantity Tr	ansferred	TEC, 1997.			_	
Material Moisture	Content	Average fuel moisture of	content; TEC, 19	994.		
		NOTES AND	<u>OBSERVATIO</u>	ONS		6936 W.J
					_	
			_			
		DATA	CONTROL	8-8 E 11	3703703766	77 78 78 78 78 78 78 78 78 78 78 78 78 7
Data Collected	by:	A. Trbovich			ate: 08	3/07/97
Evaluated by:	<u>-</u>	A. Trbovich		D	ate: 08	3/07/97
Data Entered b	y:	A. Trbovich	,	D	ate: 08	3/07/97

Tampa Electric Company - F.J. Gannon Station

FH~003

08/07/97

Date:

Date:

EMISSION SOURCE TYPE **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 and Dust Suppressant 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. 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) (lb/hr) (tpy) 95.0 0.07 0.12 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 DATA CONTROL A. Trbovich Date: 08/07/97 Data Collected by: Date: 08/07/97 Evaluated by: A. Trbovich

A. Trbovich

Data Entered by:

Tampa Electric Company - F.J. Gannon Station

FH-005

		EMISSION	SOURCE TYP	PE			
MATE	RIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:		
		FACILITY AND SO	URCE DESC	RIPTION	era serba sessa persona Visit i sebb le serbi e e		
Emission Source	Description:	Fuel Handling - West C	lamshell to Wes	st Hopper			
Emission Control	Method(s)/ID No.(s):	Side Enclosure and Dus	t Suppressant				
Emission Point ID	:	FH-005		Transfer Point ID(s):			
		EMISSION ESTIM	IATION EQU	ATIONS			
	0000 41-1	ed (ton/hr) x [(average wind s		/ 1-h /-	- n (m1.4) - (400 · · ·		
		l (tpy) x [(average wind speci					
Source: Section	13.2.4 – Aggregate I	landling and Storage Pi	ies, AP-42, Fift	h Edition, Januar	у 1995.		
	IN	PUT DATA AND EMI	ISSIONS CAL Material	CULATIONS	udikus erupadi dadabar eru		
Mean Wind A		tual	Moisture	Control	Actual	PM	
Speed	Quantity T	ransferred	Content	Efficiency	Emission	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 C	OF INPUT DA				
Para	ımeter		<u>_</u> <u>C</u>	oata Source			
Mean Wind Speed	1	Tampa, Ft., Climate of	the States Third	d Edition 1985			
Actual Quantity To		TEC, 1997.	are orace <u>o, rriire</u>				
Material Moisture	Content	Average fuel moisture content; TEC, 1994.					
Control Efficiency	·	Table 3-10, Fugitive Emissions From Coal-Fired Power Plants, EPRI, June 1984.					
		·					
					·		
		NOTECANO	OBSCRIVATION	OMC:	en en en en en en en en en	• .	
		NOTES AND	OBSERVATIO	JNS:			
					_		
٠							
					_		
				_	-		
		DATA	CONTROL	Tage of the second		And the second s	
Data Collected	l by:	A. Trbovich			Date: 0	8/07/97	
Evaluated by:		A. Trbovich			Date: 0	8/07/97	
Data Entered b	oy:	A. Trbovich			Date: 0	8/07/97	

Date:

FH-006

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 — Contin	uous Unloader (to Conveyor A		
Emission Control N	- lethod(s)/ID No.(s):	Enclosure and Dust Sup	pressant			
Emission Point ID:				Transfer Point'l	 D(s):	
		EMISSION ESTIM	IATION EQU			
E-i-i (b b-) - 0 00		od (toryhr) x [(average wind s	(
		(tpy) x [(average wind speed				
Source: Section 15	9 2 4 — Aggregato L	Jandline and Stores Di	loo AD 40 EW	h Ediklan Janua	m. 1005	
Source. Section 13	S.Z.+ - Aggregate F	landling and Storage Pi	195, AP-42, FIR	n Edition, Janua	ry 1993.	
			ICCIONC:ON	CHEATIONS	Magazasasa kiri ilik kuludasa kasasa nyihisini ilik	a kinn nassanun 11 - Kon
	<u></u>	PUT DATA AND EMI	Material	.COLATIONS		SE TOTAL SECTION OF THE SECTION OF T
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	1,150	4,000,000	6.5	95.0	0.07	0.12
					14 1000 200	or a sadura a sa
Parar	neter	SOURCES	<i>DF INPUT DA</i> D	ata Source	<u>8_3</u>	
				_		
Mean Wind Speed		Tampa, FL, Climate of	the States, Third	d Edition, 1985.		
Actual Quantity Tra Material Moisture C		TEC, 1997. Average fuel moisture of	content: TEC. 1	 994.		
Control Efficiency		Table 3-16, Fugitive E			er Plants, EPRI, Ju	ne 1984.
			•			
. Surrence, a la Recordina Una y la Marchia de de		NOTEC AND	ODCEDVATIO	ANOMETER STOR	was a mar nis (1907), kusa si i	1 44,1
		NOTES AND	OBSERVATIO	ONS CONS		
			•			
		ΠΔΤΑ	CONTROL		· a	iniji Siga se
Data Collected	hv:	A. Trbovich	OUTTHOLD .		<u>tari in tarahan</u>	08/07/97
	•	·				•
Evaluated by:		A. Trbovich				08/07/97
Data Entered by	y:	A. Trbovich			Date: (08/07/97
Reviewed by:					Date:	

08/07/97

Date: Date:

	rampa Ere	ectric Company - P				<u> </u>	
		<u>EMISSION</u>	SOURCE TYP	PE		STANGE TO VICTOR	
MATE	RIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:		
		FACILITY AND SO	URCE DESC	RIPTION		78.000	
Emission Source D	locarintian:	Fuel Handling - Convey	or A to Continu	oue Fooder			
				003 1 88081			
Emission Control N	Method(s)/ID No.(s):	Enclosure and Dust Sup	pressant				
Emission Point ID:		FH-007		Transfer Point II	D(s):		
		EMISSION ESTIN	ATION EQUA		Žietu ktudacija	, diffuye / .	
	,						
		ed (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	sture content (pct)/) ^{1.4}] x (100 – control	[pct]/100) x (1/2,000)	
Source: Section 1	3 2 4 — Aggregate i	Handling and Storage Pil	os AD_42 Eiftl	h Edition Januar	v 1995		
Source: Section 1	3.2.4 - Aggregate i	nandling and Storage Pil	198, AP-42, FIR	n Ediuon, Januar	y 1995.		
	IN	PUT DATA AND EMI		CULATIONS	<u> </u>	338 N - 51 M ()	
			Material	01-1	A -A	1 744	
Mean Wind Speed		tual	Moisture Content	Control Efficiency	Actua Emissio		
(mph)	(ton/hr)	ransferred (ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)	
(,							
8.6	1,150	4,000,000	6.5	95.0	0.07	0.12	
		SOURCES C	OF INPUT DA	TA .		na dia manggaya a	
Parai	meter		D	ata Source			
Mean Wind Speed		Tampa, FL, Climate of	the States, Third	Edition, 1985.			
Actual Quantity Tra Material Moisture (TEC, 1997.	verage fuel moisture content; TEC, 1994.				
Control Efficiency	Jontent	Table 3-16, Fugitive Emissions From Coal-Fired Power Plants, EPRI, June 1984.					
Control Electericy		Table 0-10, Tagitive L	110111	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	. , , , , , , , , , , , , , , , , , , ,		
s nace of the Company	·		000000474		w.o o Arcol (007)		
		NOTES AND	OBSERVATIO)NS			
		DATA	CONTROL		1 - 30° 00.23° 0	MRZP: KOK KA	
Data Collected	hv	A. Trbovich		1	Date:	08/07/97	
	UJ.		_	_		_	
Evaluated by:		A. Trbovich			Date:	08/07/97	

A. Trbovich

Data Entered by:

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

<u>FH-0</u>09

MA	TERIAI TRANSFER	- FUGITIVE EMISS	SION SOURC	Ee I	Figure:	<u> </u>
	TEMAL MANOIEM	FACILITY AND SO			rigure.	
Emission Source	e Description:	Fuel Handling – West H				
Emission Contro	ol Method(s)/ID No.(s):	Enclosure and Dust Sup	pressant			
Emission Point	ID:	FH-009		Transfer Point II	D(s):	
		EMISSION ESTIN	ATION 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	et)/2) ^{1.4}] x (100-con	rol[pct]/100)
Emission (tpy) = 0	.0032 x material transferred	(tpy) x [(average wind speed	d (mph)/5) ^{1.3} / moi	sture content (pct)/2	2) ^{1.4}] x (100− contr ol[j	ect]/100) x (1/2,000)
Source: Section	n 13.2.4 – Aggregate h	landling and Storage Pi	les, AP-42, Fift	h Edition, Januar	y 1995.	
	IN	PUT DATA AND EM	ISSIONS CAL	CULATIONS		Sign that I have
	***************************************		Material			
Mean Wind	Act		Moisture	Control	Actual PM	
Speed	Quantity T		Content	Efficiency	Emission	
(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>Pa</u>	rameter			ata_Source	_	
Mean Wind Spe	ed	Tampa, FL, Climate of	the States, Third	Edition, 1985.		
Actual Quantity Transferred TEC, 1997.				•		
Material Moistu		Average fuel moisture				
Control Efficien	cy	Table 3-16, Fugitive E	missions from C	Coal-Fired Powe	r Plants, EPRI, Jun	e 1984.
		NOTES AND	OBSERVATIO	ONS		; ·
		-				
		_				
-				_		
		DATA	CONTROL			
Data Collecte	ed by:	A. Trbovich			Date: 0	8/07/97
Evaluated by	<i>r</i> :	A. Trbovich			Date: 0	8/07/97
Data Entered	i by:	A. Trbovich			Date: 0	8/07/97
Paviowed by					Date:	

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

MATE	RIAL TRANSFER	- FUGITIVE EMISS	SION SOURCE	ES	Figure:	<u> </u>
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source D	escription:	Fuel Handling - Convey	or B to Convey	or C		
Emission Control M	lethod(s)/ĪD No.(s):	Enclosure and Dust Sup	pressant			
Emission Point ID:	ĺ	FH-011		Transfer Point I	D(s):	
		EMISSION ESTIM	ATION EQU	ATIONS		<u> </u>
Emission (lh/lw) = 0.00	132 v material transferra	d (ton/hr) x [(average wind s	need (mph)/5)1.3 /	moisture content (s	24)/2\1.41 × (100—201	traline) (100)
		(tpy) x [(average wind speed				
			AD 40 500	. = 1		
Source: Section 13	3.2.4 – Aggregate H	landling and Storage Pile	es, AP-42, FM	n Edition, Janua	ry 1995.	
						·
	INI	PUT DATA AND EMI	SSIONS CAL Material	CULATIONS		
Mean Wind Ac		ual	Moisture	Control	Actua	J PM
Speed	Quantity T		Content	Efficiency	Emissio	·
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(ib/hr)	(tpy)
8.6	2,300	4,000,000	6.5	90.0	0.29	0.25
		SOURCES C				
<u>Parar</u>	<u>neter</u>			ata Source	-	
Mean Wind Speed		Tampa, FL, Climate of t	he States. Third	l Edition, 1985.		
Actual Quantity Tra	ınsferred	TEC, 1997.				
Material Moisture C	Content	Average fuel moisture of				
Control Efficiency		Table 3-16, Fugitive Er	nissions F <u>rom</u> (Coal – Fired Pow	er Plants, EPRI, Ju	ine 1984.
						•
		NOTES AND	ORSERVATIO	ONS		
en en noor noor en 'n eest Englies produktere		ilo i Lo And	<u>ODOLITYTING</u>	<u> </u>	Tarke is targe of the con-	
•••						
			<u>. </u>			
		DATA (CONTROL		. en lantweegnintsplache . e. holydeeth highsplach	
Data Collected	by:	A. Trbovich			Date:	08/07/97
Evaluated by:		A. Trbovich			Date:	08/07/97
Data Entered by	y:	A. Trbovich			Date:	08/07/97
Reviewed by:					Date:	

FH-012

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	anna an Casalda balassada. Na an Cagairtí (Na Casalda Sa)		
Emission Source D	escription:	Fuel Handling - Convey	or C to Convey	or D1/D2			
Emission Control M	lethod(s)/ID No.(s):	Enclosure With Dust Sup	pressant Spray	' 8			
Emission Point ID:		FH-012		Transfer Point II	D(s):		
		EMISSION ESTIM	ATION EQUA				
Emission (tpy) = 0,003	2 x material transferred	d (ton/hr) x [(average wind s	l (mph)/5) ^{1.3} / moi	sture content (pct)/	2) ^{1.4}] x (100—control	ntrol(pct]/100) [pct]/100) x (1/2,000)	
Source: Section 18	3.2.4 – Aggregate i	landling and Storage Pil	es, AP-42, Fifti	<u>Edition, Januai</u>	ry 1995.		
	IN	PUT DATA AND EMI	SSIONS CAL	CULATIONS			
	_		Material				
Mean Wind		tual	Moisture	Control	Actua		
Speed (mph)	Quantity T	ransterred (ton/yr)	Content (pct)	Efficiency (pct)	Emissio (lb/hr)	n Hates (tpy)	
8.6	2,300	4,000,000	6.5	90.0	0.29	0.25	
8.0	2,300	·		•			
Doron		SOURCES C	OF INPUT DA		<u> </u>	1911 (9) 10 (4) (4) (4) (4) (7) (8) (8) (8) (8)	
<u>Paran</u>	<u>neter</u>		<u>_</u>	ata Source_			
Mean Wind Speed		Tampa, FL, Climate of	the States, Third	Edition, 1985.		·	
Actual Quantity Tra	nsferred	TEC, 1997.					
Material Moisture C	ontent	Average fuel moisture of					
Control Efficiency		Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1981.					
				•			
			0000000000				
		NOTES AND	<u>OBSERVATIC</u>	ONS	<u> </u>	translation of the second	
						•	
					_		
		DATA	CONTROL	ringer of hiller		00000 00000 00000 00000 00000 00000 0000	
Data Collected	by:	A. Trbovich	<u> </u>		-	08/07/97	
Evaluated by:		A. Trbovich			Date:	08/07/97	
Data Entered by	<i>(</i> :	A. Trbovich			Date:	08/07/97	
Reviewed by:					Date:		

Tampa Electric Company - F.J. Gannon Station

		EMISSION	SOURCE	PE		20 m 12 m
MATE	RIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:	
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source	Description:	Fuel Handling - Rail Ca	r to Hopper			
Emission Control	Method(s)/ID No.(s):	Enclosure and Dust Sup	pressant			
Emission Point ID	:	FH-013		Transfer Point II	D(s):	
		EMISSION ESTIM	IATION EQU	ATIONS		
Francisco (III III) - 0.4		4.5	1. 1. m1.3	·	-New 1. 45 11-11-11-11-11-11-11-11-11-11-11-11-	- 15 - 11 to co
Emission (tpy) = 0.00	332 x material transferred	d (ton/hr) x [(average wind s (tpy) x [(average wind speed	peed (mpn)/5)	isture content (pct)/a	ct//2) 1 100 - control	pct]/100) x (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 EMI		CULATIONS		
Mean Wind Ac		tual	Material Moisture	Control	Actua	J PM
Speed	Quantity T		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
50000000000000000000000000000000000000		SOURCES C			popular programa (S)	Anna Aig
Parameter Data S			<u> Data Source</u>			
Mean Wind Speed	•	Tampa, FL, Climate of t	the States Third	d Edition 1985		
Actual Quantity To		TEC, 1997.	are caree, iiii			
Material Moisture		Average fuel moisture of				
Control Efficiency		Table 3-16, Fugitive E	missions From	Coal-Fired Powe	er Plants, EPRI, Ju	ne 1984.
e sudspice de la completa de la comp	3,000000.0000000000000.00.00.00.00.00.00.	WALLES AND	OBSERVATO	ONG -	* * 1000000 0000 P. N. C.	
		NOTES AND	OBSERVATIO	ONS TO T		."
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FH-014 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 - Hopper to Conveyor L Emission Control Method(s)/ID No.(s): Enclosure and Dust Suppressant **Emission Point ID:** FH-014 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 Moisture Actual PM Mean Wind Actual Control Speed Content Emission Rates **Quantity Transferred** Efficiency (lb/hr) (tpy) (mph) (ton/hr) (pct) (pct) 4.000.000 95.0 0.14 8.6 2.300 0.12 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 3-16, Fugitive Emissions From Coal-Fired Power Plants, EPRI, June 1984. **Control Efficiency** NOTES AND OBSERVATIONS

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Tampa Electric Company - F.J. Gannon Station

FH-015

		EMISSION	SOURCE TY	PE		m Membagas (s. 1911)	
MATE	RIAL TRANSFER	- FUGITIVE EMIS			Figure:		
		FACILITY AND S	OURCE DESC	RIPTION			
Emission Source D	escription:	Fuel Handling - Conve	eyor L to Convey	or D1/D2			
Emission Control N	Method(s)/iD No.(s):	Enciosure and Dust Su	ppressant				
Emission Point ID:		FH-015		Transfer Point II	Transfer Point ID(s):		
		EMISSION ESTI	MATION EQU	ATIONS		i je w jak	
Emission (lb/hr) = 0.0	032 x material transferre	ed (torv/hr) x [(average wind	speed (mph)/5) ^{1.3}	/ moisture content (p	et)/2) ^{1.4}] x (100—cont		
		(tpy) x [(average wind spe					
Source: Section 1	3.2.4 - Aggregate F	Handling and Storage F	 Piles, AP-42, Fift	th Edition, Januar	y 1995.		
						·	
	IN	PUT DATA AND EN	IISSIONS CAL	LCULATIONS		2 ST07013404	
			Material			244	
Mean Wind Speed	Act Quantity T	tual iransferred	Moisture Content	Control Efficiency	Actual 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			7020 M M	
Parai	meter		[<u> Data Source</u>	_		
Mean Wind Speed		Tampa, FL, Climate of	the States. Thir	d Edition, 1985.			
Actual Quantity Tra	ansferred	TEC, 1997.					
Material Moisture (Content	Average fuel moisture content; TEC, 1994.					
Control Efficiency		Table 3-16, Fugitive	Emissions From	Coal-Fired Powe	er Plants, EPRI, Jur	ne 1984.	
		NOTES AND	OBSERVATION	ONS	. 18 (18 B) 18 C	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
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		DATA	CONTROL	· · · · · · · · · · · · · · · · · · ·			
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Tampa Electric Company - F.J. Gannon Station

FH-016

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		EMISSION	SOURCE TYP	?E		AL SUPPLE TO LINE TO THE	
MATE	RIAL TRANSFER	- FUGITIVE EMIS	SION SOURC	ES	Figure:		
		FACILITY AND SC	OURCE DESC	RIPTION		<u> </u>	
Emission Source D	escription:	Fuel Handling - Conve	yor D1 to Conve	yor M1			
Emission Control N	Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	/8			
Emission Point ID:		FH-016 Transfer Point ID(s):					
		EMISSION ESTIN	MATION EQUI	ATIONS	asi ya sebaya 1 o	<u>.</u>	
		ed (ton/hr) x [(average wind s					
Emission (tpy) = 0.003	32 x material transferred	(tpy) x [(average wind spee	d (mph)/5) ^{1.3} / moi	sture content (pct)/2)	1.4] x (100-control	pet]/100) x (1/2,000	
Source: Section 1	3.2.4 – Aggregate i	Handling and Storage Pi	les, AP-42, Fifti	h Edition, January	1995.		
		PUT DATA AND EM	ISSIONS CAL	CULATIONS	al I mala district	<u> </u>	
			Material				
Mean Wind		tuai	Moisture	Control	Actual PM		
Speed		ransferred	Content	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	
		SOURCES	OF INPUT DA				
Parai	meter			ata Source			
Mean Wind Speed		Tampa, FL, Climate of the States, Third Edition, 1985.					
Actual Quantity Transferred		TEC, 1997.					
Material Moisture (Content	Average fuel moisture					
Control Efficiency	• .	Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling for Fugitive Particulate Sources, UARG, September 1981.					
		NOTES AND	OBSERVATIO	ONS			
Short-term (24-h	r av erage) dispersio	on modeling emissions r	ates assume bo	th stackers operat	ing simultaneous	ily,	
each at 2,300 tpl	n for a total rate of 4	I,600 tph.					
		· ·					
		DATA	CONTROL			1888	
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Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

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MAT	ERIAL TRANSFER	- FUGITIVE EMISS			Figure:		
		FACILITY AND SO	URCE DESC	RIPTION	Service of the service of		
Emission Source	Description:	Fuel Handling - Convey	or D2 to Conve	yor M2			
Emission Control	Method(s)/ID No.(s):	Enclosure With Dust Sup	pressant Spray	5			
Emission Point II	D:	FH-017		Transfer Point I	D(s):		
		EMISSION ESTIM	ATION EQUA	TIONS	And the second of the second o		
Emission (lh/lw) 0	0032 v meterial transfers	ed (ton/hr) x [(average wind s	need (mah) /m 1.3 /	maishes santast (net)/2\1.41 × (100	dralinet // AM	
		(tpy) x [(average wind speed					
		landling and Storage Pil					
II							
	JAI	PUT DATA AND EMI	SSIONS CAP	CHIATIONS	n ser i Josepher geber i		
	garasan raraggat sambasan chiqid evil IIIVI		Material	COLATIONS		and put	
Mean Wind	Act	ual	Moisture	Control	Actual PM Emission Rates		
Speed	Quantity T	ransferred	Content	Efficiency			
(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 C	F INPUT DA				
Pa <u>r</u>	ameter		D	ata Source			
M 107-4 O	٠.	T	be Casasa Third	FJ:M 400E			
Mean Wind Spee Actual Quantity T		Tampa, FL, Climate of the States, Third Edition, 1985. TEC, 1997.					
Material Moisture		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.					
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	0000 Pro (000000 Barbara (1 Processor) (Aufwers (1 Processor)	NOTES AND	ORSERVATIO	DNS			
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Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

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MATE	ERIAL TRANSFER	R - FUGITIVE EMISSION SOURCES			Figure:		
		FACILITY AND SC	OURCE DESC	RIPTION			
Emission Source	Description:	Fuel Handling - Conve	yor M1 to Conve	yor E1			
Emission Control	Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	/s			
Emission Point ID):	FH-018		Transfer Point i	D(s):		
		EMISSION ESTIN	AATION EQU			·	
Emission (lb/lm) — 0.4	0022 v material transferre	d (ton/hr) x [(average wind s		maintage content (
		(tpy) x [(average wind spee					
	4004	1 41' 1 O4 D:	I AD 40 EW	- F.J.M 1	4005		
Source: Section	13.2.4 - Aggregate r	landling and Storage Pi	165, AP-42, FIR	n Edition, Janua	ry 1995.		
				A. II. 4. 7. A. I. A.			
		PUT DATA AND EM	ISSIONS CAL Material	CULATIONS		1 100 510 550	
Mean Wind	Act	wai	Moisture	Control	Actual PM Emission Rates		
Speed	Quantity T	ransferred	Content	Efficiency			
(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	
X3550.00		SOURCES	OF INPUT DA			Julian e	
Para	<u>imeter</u>			ata Source	======		
Mean Wind Speed	1	Tampa, FL, Climate of	the States. Third	f Edition, 1985.		,	
Actual Quantity To		TEC, 1997.					
Material Moisture		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 .	The explanation of the company of th	.	
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Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

EMISSION SOUNCE TITE								
MATE	RIAL TRANSFER	- FUGITIVE EMISS			Figure:			
		FACILITY AND SO	URCE DESC	RIPTION				
Emission Source I	Description:	Fuel Handling - Convey	or M2 to Conve	yor E2				
Emission Control	Method(s)/ID No.(s):	Enclosure With Dust Sup	ppressant Spray	18				
Emission Point ID: FH-019 Transfer Point ID(s):								
		EMISSION ESTIM	IATION EQU	ATIONS		11		
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) 1.41 x (100-cor	trol[pct]/100)		
		(tpy) x ((average wind speed						
Source: Section 1	3.2.4 - Aggregate	landling and Storage Pil	es, AP-42, Fift	h Edition, Janua	ry 1995.			
	IN	PUT DATA AND EMI	SSIONS CAL	CULATIONS	an man manggaran a	THE STATE OF		
			Material					
Mean Wind	Act	uai	Moisture Content	Control	Actual PM			
Speed	Quantity T			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		
		SOURCES	OF INPUT DA					
<u>Para</u>	meter	<u> </u>		ata Source				
Mean Wind Speed	1	Tampa, FL. Climate of t	the States. Third	Fdition, 1985.				
		Tampa, FL, Climate of the States, Third Edition, 1985. TEC, 1997.						
Material Moisture		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				
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		DATA	CONTROL	· · · · · · · · · · · · · · · · · · ·				
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Tampa Electric Company - F.J. Gannon Station

FH-020

EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION **Emission Source Description:** Fuel Handling - Conveyor E1 to Storage Pile Emission Control Method(s)/ID No.(s): Dust Suppressant **Emission Point ID:** FH-020 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 Moisture Mean Wind Actual Control Speed Quantity Transferred Content Efficiency **Emission Rates** (pct) (lb/hr) (mph) (ton/hr) (ton/yr) (pct) (tpy) 6.5 70.0 0.86 0.75 8.6 2,300 4,000,000 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 DATA CONTROL Date: 09/16/97 Data Collected by: A. Trbovich Evaluated by: A. Trbovich Date: 09/16/97 Date: 09/16/97 Data Entered by: A. Trbovich

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Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

FH-021

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MA	TERIAL TRANSFER	- FUGITIVE EMISS			Figure:		
		FACILITY AND SO	URCE DESC	RIPTION			
Emission Sourc	e Description:	Fuel Handling - Conve	yor E2 to Storag	e Pile			
Emission Contro	ol Method(s)/ID No.(s):	Dust Suppressant					
Emission Point	ID:	FH-021		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 (pet)/2) ^{1.4}] x (100—cor	ntrol[pet]/100)	
		(tpy) x [(average wind spee					
Source: Section	n 13 2 4 – Aggregate i	landling and Storage Pi	les AP-42 Fifti	h Edition Januar	ry 1995		
	HI TO.E.Y Agglogate I	talaning and olorage i	100, Al 42, I lik		19 1000.		
	IN	PUT DATA AND EM	ISSIONS CAL	CULATIONS		estimbesse fam en 1779 e.	
	· · · · · · · · · · · · · · · · · · ·	**ONTANDED	Material	CODAMONO		Surfer, septimina step, many or 1000 and	
Mean Wind	Act		Moisture	Control	Actua		
Speed	Quantity T (ton/hr)	ransferred (ton/yr)	Content (pct)	Efficiency (pct)	Emissio	n Rates (tpy)	
(mph)							
8.6	2,300	4,000,000	6.5	70.0	0.86	0.75	
		SOURCES (OF INPUT DA				
Pa	<u>rameter</u>			ata Source			
Mean Wind Spe	ad	Tampa, FL, Climate of	the States Third	Fdition 1985			
Actual Quantity		TEC, 1997.	<u>, , , , , , , , , , , , , , , , , , , </u>				
Material Moistu		Average fuel moisture		_			
Control Efficience	су	Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Fugitive Particulate Sources, UARG, September 1981.					
		rugitive Particulate Sol	urces, UANG, Se	eptember 1981.	·	•	
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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 IO:** 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 Threshold Friction Velocity: Control Efficiency: 1.12 m/s 215 Pile Width (m): 70 Pile Height (m): 21 Surface Area (m²) Pile Length (m): 16,758 **Meteorological** Friction Affected Pilo Actual PM Emission Affected Period **Velocity Potential** Surface Area Area **Emission Rates** (m²) (a/m²) (m/s)(pct) (p//A) (tpy) 14 1.30 6.38 670.3 1.18 0.0024 4 670.3 0.05 < 0.0001 30 0.26 1.13 4 1.44 0.0029 37 1.33 7.81 670.3 65 1.48 16.52 14 2,346.1 10.68 0.0214 65 43.82 670.3 8.09 0.0162 1.80 4 1.30 6.38 670.3 1.18 0.0024 77 0.0029 90 1.33 7.81 670.3 1.44 Maximum Per Period 18.77 NA 0.0480 NA SOURCES OF INPUT DATA Data Source Parameter-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. Estimated: ECT, 1997. Fuel Pile Dimensions (m) Pile Surface Area (m²) Calculated: ECT, 1997. Meteorological Periods 1986 NWS data, processed per AP-42, ECT, 1997. Equation, Section 13.2.5, AP-42, January 1995. 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. NOTES AND OBSERVATIONS DATA CONTROL Data Collected by: A. Trbovich Date: 09/16/97 Date: 09/16/97 Evaluated by: A. Trbovich Date: 09/16/97 Data Entered by: A. Trbovich Date: Reviewed by:

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 Suppressent Emission Point ID:** FH-023a 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 Threshold Friction Velocity: 1.12 m/s Control Efficiency: 50 pct Pile Length (m): Pile Width (m): Pile Height (m): 21 Surface Area (m²) 170 16,754 Friction Meteorological Emission Affected Pile Affected Actual PM **Potential** Emission Rates Period Velocity Surface Area Area (m²) (m/s) (a/m^2) (pct) (lb/hr) (PY) 14 1.30 6.38 670.2 1.18 0.0024 0.05 30 1.13 0.26 4 670.2 < 0.0001 1.33 670.2 0.0029 37 7.81 1.44 16.52 2,345.5 10.68 0.0214 65 1.48 14 0.0162 65 1.80 43.82 4 670.2 8.00 6.38 77 1.30 4 670.2 1.18 0.0024 1.44 0.0029 670.2 4 90 1.33 7.81 N/A 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. 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) Affected Area Calculated: ECT, 1997. NOTES AND OBSERVATIONS DATA CONTROL Data Collected by: A. Trbovich Date: 09/16/97 A. Trbovich Date: 09/16/97 Evaluated by: Data Entered by: A. Trb ovich Date: 09/16/97 Date:

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 Threshold Friction Velocity: 1.12 m/s Control Efficiency: Pile Width (m): Pile Height (m): 21 Surface Area (m²) 18,855 Pile Length (m): 140 125 Friction Affected Pile Affected Actual PM Meteorological Emission Period Velocity Potential Surface Area Emission Reb Area (a/m²) (m²) (fb/hr) (m/s) (pct) 1.30 754.2 0.0027 1.33 0.0001 0.26 754.2 0.06 30 1.13 4 0.0032 37 1.33 7.81 754.2 1.62 0.0240 65 1.48 16.52 14 2,639.6 12.01 0.0182 65 1.80 43.82 4 754.2 9.11 77 1.30 6,38 4 754.2 1.33 0.0027 0.0032 90 1.33 7.81 754.2 Maximum Per Period 21.12 N/A 0.0541 NA 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. 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. 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 09/16/97 Data Collected by: A. Trbovich Date: 09/16/97 Evaluated by: A. Trbovich Date: 09/16/97 Data Entered by: A. Trbovich Date: Date: Reviewed by:

Tampa Electric Company - F.J. Gannon Station

FH-024

	•	EMISSION	SOURCE TYP	?E			
MA	TERIAL TRANSFER	- FUGITIVE EMISS			Figure:		
		FACILITY AND SO	URCE DESC	RIPTION			
Emission Source	• Description:	Fuel Handling - Underg	round Reclaim	System to Conve	yor F1		
Emission Contro	Method(s)/ID No.(s):	Enclosure With Dust Sup	ppressant ,	-			
Emission Point	ID:	FH-024		Transfer Point II	D(s):		
		EMISSION ESTIM	MATION EQUI	ATIONS			
Emission (lb/hr) =	0.0032 x material transferre	id (ton/hr) x [(average wind s	peed (mph)/5) ^{1.3} /	moisture content (p	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)/2	2) ^{1.4}] x (100—control	[pct]/100) x (1/2,000)	
Source: Section	n 19 2 4 – Aggregate F	iandling and Storage Pil	es AP-42 Fift	h Edition Januar	v 1995		
Octive. Oction	1 10.2.4 - Aggregate I	MANAGERY CHICAGO THE	100, AI - 42, I III	ii Editori, varidai	y 1330.		
5.5555 dia.000.000 doa				~~~~~		80000000000000000000000000000000000000	
	INI	PUT DATA AND EMI	SSIONS CAL Material	CULATIONS			
Mean Wind	Act	tual	Moisture	Control Efficiency	Actual PM		
Speed		Transferred	Content		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 C	OF INPUT DA				
<u>Pa</u>	<u>rameter</u>			ata Source			
Mean Wind Spe	ed	Tampa, FL, Climate of	the States, Third	d Edition, 1985.		4	
Actual Quantity		TEC, 1997.					
Material Moistur		Average fuel moisture content; TEC, 1994.					
Control Efficience	cy	Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Fugitive Particulate Sources, UARG, September 1981.					
	_						
					•		
		NOTES AND	OBSERVATION	ONS			
			<u> </u>				
				<u> </u>			
					4		
						_	
		,					
			CONTROL				
Data Collecte	ed by:	A. Trbovich			Date:	09/16/97	
Evaluated by	':	A. Trbovich			Date:	09/16/97	
Data Entered	bv:	A. Trbovich			Date:	09/16/97	

Date:

FH-025

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

MATE	RIAL TRANSFER	R - FUGITIVE EMIS	SION SOURC	FS	Figure:		
	<u>=</u>	FACILITY AND SO			. iguio.		
Emission Source D	escription:	Fuel Handling - Underg	ground Reclaim	System to Conve	eyor F4		
Emission Control N	- Wethod(s)/iD No.(s):	Enclosure With Dust Su	ppressant				
Emission Point ID:		FH-025		Transfer Point II	D(s):		
		EMISSION ESTIN	ATION EQU				
		4 6 - 6 3 - 24	11.3 <i>.</i>				
		ed (ton/hr) x [(average wind a l (tpy) x [(average wind speed					
G G 4		u	AD 40 EW	P 4141 - 1	- 4005		
Source: Section 1	3.2.4 – Aggregate i	Handling and Storage Pi	les, AP-42, Fifti	h Edition, Januai	ry 1995.		
**************************************		DUT DATAWAND FA		OUR ATIONS		elicialitarense a e como e e e enco	
	IN	PUT DATA AND EMI	Material	CULATIONS		7.5	
Mean Wind	Ac	tual	Moisture	Control	Actua	I PM	
Speed		ransferred	Content	Efficiency	Emission		
(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				
Parai	meter	<u> </u>		ata Source			
Mean Wind Speed		Tampa, FL, Climate of	the States, Third	Edition, 1985.			
Actual Quantity Tra		TEC, 1997.			_		
Material Moisture (Control Efficiency	Content <u>·</u>	Average fuel moisture			and Dispersion M	odeling of	
Control Elliciency		Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Fugitive Particulate Sources, UARG, September 1981.					
		_					
		NOTES AND	OBSERVATIO	ONS	7.		
							
		•					
				_			
		DATA	CONTROL				
Data Collected	by:	A. Trbovich			Date:	09/16/97	
Evaluated by:		A. Trbovich			Date:	09/16/97	
Data Entered b	y:	A. Trbovich			Date:	09/16/97	
Reviewed by:			_		Date:		

Tampa Electric Company - F.J. Gannon Station

FH-026

			SOUNCE			<u> </u>
MAI	ERIAL TRANSFER	R - FUGITIVE EMISS			Figure:	
		FACILITY AND SO	UHCE DESC	RIPTION		
Emission Source	a Description:	Fuel Handling - Underg	round Reclaim	System to Conve	yor F3	
Emission Contro	Method(s)/ID No.(s):	Enclosure With Dust Sup	pressant			
Emission Point I	iD:	FH-026		Transfer Point II	D(s):	
		EMISSION ESTIM	ATION EQU	ATIONS		
					14. 44.00	
Emission (ib/W) = 0.	0.0032 x material transferred 0032 x material transferred	<u>id (ton/hr) x [(average wind sp</u> l (tpy) x [(average wind speed	peed (mph)/5)'''' / ! (mph)/5) ^{1,3} / mo	moisture content (pcf)/	<u>xct)/2) ' · · ·] x (100 – cor</u> 2) ^{1 , 4} 1 x <i>(</i> 100 – control	ntrol[pct]/100) [pct]/100) x (1/2.000)
		(\$7) v (Branch and share	/ (mpripro)	The service of the se	4 14/100	peditool v (titatooo)
Source: Section	1 13.2.4 — Aggregate F	iandling and Storage Pile	es, AP-42, Fift	h Edition, Januar	у 1995.	
	·	PUT DATA AND EMI	SSIONS CAL	CULATIONS		
			Material			
Mean Wind	Act		Moisture	Control	Actua	
Speed (mph)	Quantity To (ton/hr)	ransferred (ton/yr)	Content (pct)	Efficiency (pct)	Emissio (lb/hr)	n Rates ~ (tpy)
(mpn)						
8.6	400	4,000,000	6.5	85.0	0.07	0.37
_		SOURCES C	F INPUT DA	TA		
Par	rameter			Data Source		
				4 = 11M 400F		
Mean Wind Spec		Tampa, FL, Climate of to TEC, 1997.	he States, I hiro	1 Edition, 1985.		
Actual Quantity Material Moisture		Average fuel moisture c	ontent: TEC. 1	 994.		
Control Efficience		Table 3.2.17-2, Workbo			and Dispersion M	odeling of
	·	Fugitive Particulate Sou	ırces, UARG, S	eptember 1981.	· .	
I						
		NOTES AND	OBSERVATION	วิทร		
						•
	····					
	<u> </u>					
		DATA	CONTROL	Territoria de Signatura de la Carta de		
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

Date:

		FH-027					
MA	TERIAL TRANSFER	- FUGITIVE EMIS	<i>SOURCE TYI</i> SION SOURC		Figure:		
IM.	IENDE NOUS EN	FACILITY AND SC			rigure.		
Emission Source	e Description:	Fuel Handling - Underg			yor F2	***************************************	
Emission Contr	ol Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant				
Emission Point	ID:	FH-027		Transfer Point II	D(s):		
		EMISSION ESTIN	AATION 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-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)/2	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, Fift	h Edition, Januar	y 1995.		
	IN	PUT DATA AND EM		CULATIONS			
Mean Wind	Act	n al	Material Moisture	Control	Actua	N PM	
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	0.07	0.37	
	-	SOURCES	OF INPUT DA				
<u>Pa</u>	rameter	<u> </u>		ata Source	-		
Mean Wind Spe	ed	Tampa, FL, Climate of	the States, Third	d Edition, 1985.			
Actual Quantity		TEC, 1997.					
Material Moistu	re Content	Average fuel moisture	content; TEC, 1	994.			
Control Efficien	су	Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Fugitive Particulate Sources, UARG, September 1981.					
					·	,	
		NOTES AND	OBSERVATION	ONS			
	-						
4					_		
		DATA	CONTROL				
Data Collect	ed by:	A. Trbovich			Date:	09/16/97	

A. Trbovich

A. Trbovich

09/16/97

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Date:

Date:

Date:

Evaluated by:

Reviewed by:

Data Entered by:

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

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MA	TERIAL TRANSFER	- FUGITIVE EMIS	SION SOURC	ES	Figure:	
		FACILITY AND SC	OURCE DESC	RIPTION		<u> </u>
Emission Sourc	e Description:	Fuel Handling - Conve	yor F1 to Conve	yor G1/G2		
Emission Contro	ol Method(s)/ID No.(s):	Enciosure With Dust Su	ppressant Spray	/8		
Emission Point	ID:	FH-028		Transfer Point I	D(s):	
		EMISSION ESTIN	AATION EQU	ATIONS		7 20 Mg
Emission (lb/hr) =	0.0032 x material transferre	ed (ton/hr) x [(average wind a (tpy) x [(average wind spee	speed (mph)/5)1.3 /	moisture content (oct)/2) ^{1.4}] x (100-cor	strol[pct]/100)
Emission (tpy) = 0	,0032 x material transferred	(tpy) x ((average wind spee	d (mph)/5) *** / mod	sture content (pct)/	2) · · ·] x (100—control	pct]/100) x (1/2,000)
Source: Section	n 13.2.4 – Aggregate I	landling and Storage Pi	les, AP-42, Fift	h Edition, Janua	ry 1995.	
8		DUT-D'ATA-ALD-FIA	10010110-041	OUT A FIGURE	50. S	ractica back are all a second
	IN	PUT DATA AND EM	Material	CULATIONS		
Mean Wind Ac		tual	Moisture	Controi	Actua	I PM
Speed		ransferred	Content	Efficiency	Emission 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
	December (1980)	SOURCES (OF INDITION	TA		(%C)
SOURCES OF INPUT DATA Parameter Data Source						and the second of the second
Mean Wind Spe	ed	Tampa, FL, Climate of	the States, Third	d Edition, 1985.		
Actual Quantity		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, UAHG, S	eptember 1981.	<u> </u>	
	'					
		NOTES AND	OBSERVATIO	ONS		
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		·	_			
		DATA	CONTROL			202388
Data Collect	ed by:	A. Trbovich		_	Date:	08/07/97
Evaluated by	<i>ı</i> :	A. Trbovich			Date:	08/07/97
Data Entered	i by:	A. Trbovich	_		Date:	08/07/97
Reviewed by	:				Date:	

Tampa Electric Company - F.J. Gannon Station

FH-029

		EMISSION	<u>SOURCE TYP</u>	<u>'E</u>		A CONTRACTOR
МА	TERIAL TRANSFER	- FUGITIVE EMISS			Figure:	·
		FACILITY AND SO	URCE DESC	RIPTION		Programa de la composición de la compo
Emission Source	ce Description:	Fuel Handling - Convey	or F4 to Conve	yor G1/G2		
Emission Contr	rol Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	/8		
Emission Point	ID:	FH-029		Transfer Point I)(s):	
		EMISSION ESTIM	ATION EQU	ATIONS		
Fmission (lb/hr) =	: 0 0032 x meterial transferre	ed (ton/hr) x [(average wind s	need (mph)/5) ^{1,3} /	moisture content (o	-41/21 ^{1.4} 1 x (100-co	ntrollard (100)
Emission (tpy) = (0.0032 x material transferred	(tpy) x [(average wind speed	1 (mph)/5) 1.3 / moi	sture content (pct)/2) ^{1.4}] x (100—control	[pct]/100) x (1/2,000)
Causas Castia	- 49 0 4 Agreements I	I Winn and Change Dif	AD 40 EM		- 400E	
Source: Secut	on 13.2.4 — Aggregale r	landling and Storage Pil	188, AF-72, Fill	n Edition, Januar	y 1990.	
	IN.	PUT DATA AND EMI	SSIONS CAL Material	CULATIONS		
Mean Wind	Act	tual	Moisture	Control	Actua	ıl PM
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	0.05	0.25
	I	SOURCES	OF INPUT DA		4 · · · · · · · · · · · · · · · · · · ·	
Pa	<u>irameter</u>			ata Source		
Mean Wind Spe	and .	Tampa, FL, Climate of t	the States. Third	Fdition, 1985.		
Actual Quantity		TEC, 1997.	uio <u>Jiaio</u> ,			
Material Moistu	re Content	Average fuel moisture of				
Control Efficien	ncy	Table 3.2.17-2, Workb			and Dispersion M	odeling of
·		Fugitive Particulate Sou	Urces, Uand, Se	eptember 1901.		
		NOTES AND	OBSERVATIO	TAIC		ti ilika ju kangu
		NUIES AND	OBSERVATIO	DNO::	n institution of	
		DATA	CONTROL			
Data Collect	ed by:	A. Trbovich			-	08/07/97
Evaluated by	y:	A. Trbovich			Date:	08/07/97
Data Entered	d by:	A. Trbovich	<u> </u>		Date:	08/07/97

Date:

Tampa Electric Company - F.J. Gannon Station

FH-030

08/07/97

Date: Date:

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 (fb/fv) = 0.0032 x material transferred (tor/fv) 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 Actual Speed Content Efficiency **Emission Rates Quantity Transferred** (mph) (ton/hr) (ton/yr) (pct) (pct) (lb/hr) (tpy) 400 4,000,000 6.5 90.0 0.05 0.25 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. Average fuel moisture content; TEC, 1994. Materiai 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 DATA CONTROL Date: 08/07/97 Data Collected by: A. Trbovich 08/07/97 Date: Evaluated by: A. Trbovich

A. Trbovich

Data Entered by:

Tampa Electric Company - F.J. Gannon Station

FH-031

		<u>EMISSION S</u>	SOURCETY	<u> </u>		** 1 - * 4 *
MA	TERIAL TRANSFER	- FUGITIVE EMISS			Figure:	
		FACILITY AND SO	URCE DESC	RIPTION	1.0884.0 4.000	T 1 4 80 10 4
Emission Source	• Description:	Fuel Handling - Convey	or F2 to Conve	yor G1/G2		
Emission Contro	ol Method(s)/ID No.(s):	Enclosure With Dust Suj	ppressant Spray	/8		
Emission Point I	ID:	FH-031		Transfer Point ID)(s):	
		EMISSION ESTIM	ATION EQU			n displace.
Emission (lb/hr) =	0.0032 × material transferre	ed (ton/hr) x [(average wind s (tpy) x [(average wind speed	peed (mph)/5) 1.3 /	moisture content (p	ct)/2) ^{1.4}] x (100—con	brol[pct]/100)
Emission (tpy) = 0.	.0032 X mezenai transferred	(tpy) x ((average wind speed	d (mph)/5) · · · · / mo	sture content (pct)/2)***] x (100-control]	petj/100) x (1/2,000)
Source: Section	n 13.2.4 – Aggregate h	landling and Storage Pil	les, AP-42, Fift	h Edition, Januar	/ 1995.	
			•			
		PUT DATA AND EMI	ISSIONS CAL	CHEATIONS	1 : UNSON HORSON	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	· ·	BORDAIA AND EMI	Material	COLATIONS	<u> </u>	
Mean Wind	Act	tual	Moisture	Control	Actual	PM
Speed	Quantity T	ransferred	Content	Efficiency	Emission	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 C	OF INPUT DA	TA	7 - 1 18884	
Parameter Data Source						
Mean Wind Spe	ed	Tampa, FL, Climate of t	the States, Third	Edition, 1985.		
Actual Quantity		TEC, 1997.	·			
Material Moistur		Average fuel moisture of				-d-114
Control Efficience	cy ·	Table 3.2.17-2, Workberrick South			and Dispersion Mo	deling of
	·					
•						
		NOTES AND	ORSERVATION	DNS	100 A	13' 5
		NOILS AND	ODSERVATIO	<u> </u>		
_			<u>-</u>			
		·				
		DATA (CONTROL			
Data Collecte	ed by:	A. Trbovich		·	Date: C	8/07/97
Evaluated by	:	A. Trbovich			Date: 0	8/07/97
Data Entered	by:	A. Trbovich			Date: C	8/07/97
Reviewed by	•				Date:	

	i ampa Ei	ecuic Company - r				<u> </u>	
		EMISSION	SOURCE TYP	E		a Taliferiary responsably with I	
MATE	RIAL TRANSFER	R - FUGITIVE EMISS	SION SOURC	ES	Figure:		
		FACILITY AND SO	URCE DESC	RIPTION			
Emission Source D	escription:	Fuel Handling - Convey	or G1 to Hamm	ermill Crueher 1			
	-		·	Ordaner 1			
Emission Control N	dethod(s)/ID No.(s):	Enclosure With Dust Su	ppressant				
Emission Point ID:		FH-032		Transfer Point ID)(s):		
		EMISSION ESTIN	ATION EQUA	ATIONS			
					- 14		
		ed (ton/hr) x [(average wind s i (tpy) x [(average wind speed					
Emassion (фу) = 0.00	SZ A Material Caristerrec	(thà) x (favorada anun shaar	(mpn)/3) ** / mos	stare content (pcy/2	9 1 X (100~control	[pet]/100) x (1/2,000)	
Source: Section 1	3.2.4 - Aggregate	Handling and Storage Pi	les, AP-42, Fiftl	n Edition, Januar	y 1995.		
							
	IN	PUT DATA AND EMI	ISSIONS CAL	CHIATIONS	opposition with the legal	anggan ng sauna	
	· · · · · · · · · · · · · · · · · · ·	INO INIDATA AND LINI	Material	COLITICINO	<u> </u>	<u> </u>	
Mean Wind	Ac	tual	Moisture	Control	Actua		
Speed		ransferred	Content	Efficiency	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 O	OF INPUT DA	TA :	1 (1.4		
Parai	meter			ata Source			
			.	_			
Mean Wind Speed		Tampa, FL, Climate of the States, Third Edition, 1985.					
Actual Quantity Tra		TEC, 1997.					
Material Moisture C Control Efficiency		Average fuel moisture content; TEC, 1994. Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of					
Control Emclericy	•	Fugitive Particulate Sources, UARG, September 1981.					
		NOTES AND	ORSERVATIO	ONS		na septiman	
		NOILO AND	ODOLINAIIC		Team diaming no .		
					-		
		CATA	CONTROL	<u> </u>	1. 30 (A) (A) (A) (A)	wywg za	
			CONTROL		**		
Data Collected	by:	A. Trbovich			Date:	08/07/97	
Evaluated by:		A. Trbovich		ſ	Date:	08/07/97	
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Date:

Date:

08/07/97

A. Trbovich

Data Entered by:

Tampa Electric Company - F.J. Gannon Station

FH-033

	1.	EMISSION S	SOURCE TYP	?E		The second of th	
MATI	ERIAL TRANSFER	- FUGITIVE EMISS	ION SOURC	ES	Figure:		
		FACILITY AND SO	URCE DESC	RIPTION			
Emission Source	Description:	Fuel Handling ~ Convey	or G2 to Hamm	ermill Crusher 2			
Emission Control	Method(s)/ID No.(s):	Enclosure With Dust Sup	pressant				
Emission Point ID):	FH-033		Transfer Point II	D(s):		
		EMISSION ESTIM	ATION 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	xdV2) ^{1,4} 1 x (100~cor	trolineti/100)	
		(tpy) x [(average wind speed					
Source: Section	13.2.4 - Aggregate F	landling and Storage Pil	es AP-42 Fifti	h Edition, Januar	ry 1995.		
	TO.E.T Aggregate I	tarianing and olorage in	00, 711 YE, 1111		<u> </u>		
	INI	PUT DATA AND EMI	SSIONS CAL	CUIATIONS	endrengeres roderet jariaarit.		
	····	O DATA AND EIII	Material	.commono	ede, en ruseer uit kombin van 11 en 21 kieu		
Mean Wind	Act		Moisture	Control	Actua		
Speed (mph)	Quantity T (ton/hr)	ransterred (ton/yr)	Content (pct)	Efficiency (pct)	Emissio (lb/hr)	(tpy)	
8.6	800	4,000,000	6.5	90.0	0.10	0.25	
		SOURCES C	F INPUT DA	TA:			
Parameter Data Source							
Mean Wind Speed	4	Tampa, FL, Climate of t	he States, Third	i Edition, 1985.			
Actual Quantity To		TEC, 1997.					
Material Moisture	Content	Average fuel moisture content; TEC, 1994.					
Control Efficiency	′	Table 3.2.17-2, Workbo			and Dispersion M	odeling of	
_		Tugidae i mucdiate coc	ices, onita, o	sptember 1301.			
		•			•		
		NOTES AND	OBSERVATIO	ONS	regional ruce treasurer alle a pro-		
				•			
				<u> </u>			
					_		
		DATA	CONTROL	e i jedine			
Data Collected	d 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-034

			SOURCETY			
MAT	ERIAL TRANSFER	- FUGITIVE EMISS			Figure:	
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source	Description:	Fuel Handling - Hamme	ermill Crusher 1	to Conveyor H1		
Emission Contro	Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	78		
Emission Point II	D:	FH-034		Transfer Point II	D(s):	
		EMISSION ESTIM	AATION EQU	ATIONS		12. X 12.
Emission (Ib/Ib) - 0	0022 v material transferre	d (ton/hr) x [(average wind s	need (mah) (5) 1.3	mainhea anniant (-		
Emission (tpy) = 0.0	0032 x material transferred	(tpy) x [(average wind speed	d (mph)/5) ^{1.3} / moi	sture content (pct)/2	2) ^{1.4}] x (100-control	pet]/100) x (1/2,000)
Source: Section	13.2.4 – Aggregate I	landling and Storage Pi	les, AP-42, Fift	h Edition, Januar	ry 1995.	<u> </u>
						•
	IN	PUT DATA AND EMI		CULATIONS		i stu i
Mean Wind	Act	inai	Material Moisture	Control	Actua	J PM
Speed	Quantity T		Content	Efficiency	Emissio	
(mph)	(ton/hr)	(ton/yr)	(pct)_	(pct)	(lb/hr)	(tpv)
8.6	800	4,000,000	6.5	90.0	0.10	0.25
		SOURCES C	OF INPUT DA			1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
Par	ameter			ata Source		
Mean Wind Spee	d	Tampa, FL, Climate of	the States, Third	Edition, 1985.		
Actual Quantity 7		TEC, 1997.				
Material Moisture		Average fuel moisture			and Diamoraian M	adaling of
Control Efficience	у	Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Fugitive Particulate Sources, UARG, September 1981.				
						_
		NOTES AND	OBSERVATION	ONS	American State of the State of	
gera in service especialistic		<u></u>	0002			
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					-	
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				_		
					-	
						_
		·		_		
		DATA	CONTROL			
Data Collecte	d by:	A. Trbovich		1	Date:	08/07/97
Evaluated by:		A. Trbovich			Date:	08/07/97
Data Entered	by:	A. Trbovich		1	Date:	08/07/97
Reviewed by:				1	Date:	

	ı ampa Ex	etric Company - F	,			FH-035
		<u>EMISSION</u>	SOURCE TYP	PE		0.20 W. No. 0.000 N. 14 1 1
MAT	ERIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:	
		FACILITY AND SC			rigure.	0.07 600 1 1 201 10 1
		ADILITI AND GO	ON OL DEGO	HII II OIN		177 (1. 288) 334 (281) 48 (1.
Emission Source	Description:	Fuel Handling - Hamm	ermill Crusher 2	to Conveyor H2		
Emission Contro	Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant			
Emission Point I	D:	FH-035		Transfer Point ID)(s):	
	2,1	EMISSION ESTIN	AATION EQU	ATIONS		\$ \$ \$ 12 to 20 to 20
					_	
		d (ton/hr) x [(average wind s				
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	13.2.4 – Aggregate H	landling and Storage Pi	les, AP-42, Fift	h Edition, Januar	y 1995.	
			<u> </u>			
	·	PUT DATA AND EM	ICCIONO CAL	CHIATIONS		09000000000000000000000000000000000000
1	INI	PUI DATA AND EM	Material	CULATIONS	<u> </u>	
Mean Wind	Act	ual	Moisture	Control	Actua	I PM
Speed	Quantity T		Content	Efficiency	Emissio	
(mph)	(ton/hr)	(ton/yr)	(pct)_	(pct)	(lb/hr)	(tpy)
(III)	KONZINI		NPG1/_	ip-g	(12)1111	(
8.6	800	4,000,000	6.5	90.0	0.10	0.25
00000000000000000000000000000000000000		COURCES	OF INPUT DA			1890au - 1880au - 1880au - 18
Pos	romotor	SUURUES		ata Source	<u> </u>	1,000 - 100,000 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	rameter	Tampa, FL, Climate of			_	
Mean Wind Special Actual Quantity		TEC, 1997.	ule States, Third	<u> </u>		
Material Moisture		Average fuel moisture	content: TEC 19	94		
Control Efficience		Table 3.2.17-2, Workb			and Dispersion M	odeling of
Control Emercine	,	Fugitive Particulate So				-
		NOTES AND	OBSERVATIO	ONS		
		<u> </u>		_		
					•	
				_		
				_		
_	•		•			
		DATA	CONTROL	garaga da .	19 7000 30 200	
			CONTINUES	<u></u>		00.000.000
Data Collecte	ed by:	A. Trbovich			Date:	08/07/97
Evaluated by		A. Trbovich		[Date:	08/07/97
Data Entered	by:	A. Trbovich	•	ľ	Date:	08/07/97

Date:

FH-036-

	Tampa Ek	ectric Company - F.	J. Gannon S		managana na na kanakana kanakana ka	FH-041	
MATI	EDIAL TRANSFER	I – FUGITIVE EMISS	· ·		Eigere.	3 K 1 3	
MAII	ENIAL MANOI LI	FACILITY AND SO			Figure:		
Emission Source	Description:	Fuel Handling - Convey			Conveyors J1/J2 t	o Bunkers 1 – 6	
	<u> </u>						
	_	Rotoclones 1 through 6					
Emission Point ID):	FH-036 through FH-04		Transfer Point II	D(s):		
		EMISSION ESTIM	ATIONEQU	AIIUNS	<u>ka kirist nasis se sessis</u>	<u> </u>	
		ed (ton/hr) x [(average wind s					
Emission (tpy) = 0.0	032 x material transferred	(tpy) x ((average wind speed	l (mph)/5) ^{1.3} / moi	sture content (pct)/	2) ^{1.4}] x (100-control	pet]/100) x (1/2,000)	
Source: Section	13.2.4 - Aggregate I	landling and Storage Pil	es, AP-42, Fift	h Edition, Januar	ry 1995.		
	IN	PUT DATA AND EMI	SSIONS CAI	CULATIONS	g Tibus gira gradi i sestara	yw + + + + + +;+,	
		EO INDATA AND LIMI	Material	DODATIONO	76 1 64 W .		
Mean Wind		tual	Moisture	Control	Actua		
Speed (mph)	Quantity T	ransferred (ton/yr)	Content (pct)	Efficiency (pct)	Emissio (lb/hr)	n Rates (tpy)	
			-				
2.8	1,600	4,000,000	6.5	75.0	0.12	0.14	
D		SOURCES C			(2011) <u>地</u>尔 (1911)	A.C.Ja	
Mean Wind Speed	<u>ameter</u>	Typical Indraft Velocity		oata Source			
Actual Quantity T		TEC, 1997.					
Material Moisture		Average fuel moisture content; TEC, 1994.					
Control Efficiency	1	Control Equipment Ven	dor Data AAF, 1	1960.			
	· · · · · · · · · · · · · · · · · · ·						
		NOTES AND	OBSERVATIO	ONS		· . · · · :	
					-		
						<u>: _</u>	
-						_	

	•		
	DATA CONTRO		
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

	DIAL TRANSFEE	SUDITOR STORE	NON COURS			10/11 (A) (5/00/0000)
MAIL	HIAL THANSPER	FACILITY AND SO			Figure:	onton to tune and the
		FACILITY AND SO	UNCE DESC	TIP I I UN		
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	' \$		
Emission Point ID:		FH-042		Transfer Point II)/s)·	
		EMISSION ESTIN	ATION EQU			
						<u> </u>
		ed (ton/hr) x [(everage wind s				
Emission (tpy) = 0.00	32 x material transferred	(tpy) x ((average wind speed	t (mph)/5) ^{1.3} / moi	sture content (pct)/2	2) ^{1.4}] x (100-control[pet]/100) x (1/2,000)
Causas Castian 6	19.9.4 Assessments I	Jandina and Steens Bi	AB 40 EW	h Edition Januar	100E	
Source: Section 1	3.2.4 - Aggregate i	Handling and Storage Pil	ies, AP-42, <u>Γ</u> ιπι	n Edition, Januar	у 1995.	
	<u>IN</u>	PUT DATA AND EMI	SSIONS CAL	CULATIONS		
	_		Material			
Mean Wind		tual .	Moisture	Control	Actual	•
Speed	_	ransferred	Content	Efficiency (pct)	Emissior (lb/hr)	(tpy)
(mph)	(ton/hr)	(ton/yr)	(pct)	(рсі)	(ID/III)	(197)
8.6	2,300	4,000,000	6.5	90.0	0.29	0.25
		SOURCES (OF INPUT DA	TA sida. Adidir	10 + 20 + 11 + 12 + 12 + 12 + 12 + 12 +	gri Nasili, redigira pi
Para	meter			ata Source		4 × 4 × 4 × 4 × 4 × 4 × 4 × 4 × 4 × 4 ×
Mean Wind Speed		Tampa, FL, Climate of				
Actual Quantity Tr		TEC, 1997.				
Material Moisture	Content	Average fuel moisture	content; TEC, 19	994.		
Control Efficiency		Table 3.2.17-2, Workb	ook on Estimati	on of Emissions	and Dispersion Mo	odeling of
		Fugitive Particulate So	urces, UARG, Se	eptember 1981.		
						•
		NOTES AND	OBSERVATIO	ONS .	det en 1915 Bleek Bergi de gewen de 1915 besk Bergi	
If the first standard				- 4-4-14	fuel bendled will	
it the fuel stackers	and tuel stacker by	passes are operated sim	nuitaneously, the	total amount of	idel nandled will	
not exceed 4,60	0 tph.					
			-			
			_			
<u> </u>						
		DATA	CONTROL			
Data Collected	by:	A. Trbovich			Date: (8/07/97
Evaluated by:		A. Trbovich	_		Date: ()8/07/97
				<u> </u>		
Data Entered b	y:	A. Trbovich			Date: (08/07/97
			_			

Date:

Tampa Electric Company - F.J. Gannon Station

FH-043

MAT	TERIAL TRANSFER	- FUGITIVE EMISS	SION SOURC		Figure:	Agreement -
		FACILITY AND SO				
Emission Source	Description:	Fuel Handling - Convey			Pass Storage)	·· <u>·</u> ·
Emission Contro	w Method(s)/ID No.(s):	Enclosure With Dust Sup	ppressant Spray	/8		
Emission Point I	D:	FH-043		Transfer Point II	<u> </u>	
		EMISSION ESTIM	IATION EQU	ATIONS		
			13.		14	
		ed (ton/hr) x [(average wind s I (tpy) x [(average wind speed				
	7 // LUI - L				7 12 (100 00,100)	(1/2,000)
Source: Section	13.2.4 – Aggregate F	landling and Storage Pil	es, AP-42, Fift!	h Edition, Januar	y 1995.	
						<u>-</u>
		PUT DATA AND EMI	SSIONS CAL	CULATIONS	and arguestic chartering the Resident	e, e e e
	<u> </u>		Material			
Mean Wind	Act	iual	Moisture	Control	Actua	I PM
Speed	Quantity T		Content	Efficiency	Emissio	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	2,300	4,000,000	6.5	90.0	0.29	0.25
		SOURCES C	F INPUT DA	TA		
Paı	rameter			ata Source		
Mean Wind Spec		Tampa, FL, Climate of t	the States, Third	Edition, 1985.		
Actual Quantity		TEC, 1997.				
Material Moisture Control Efficience		Average fuel moisture of Table 3.2.17-2, Workbo			and Dispersion M	odeling of
	'9	Fugitive Particulate Sou				y
		NOTES AND	ORSFRVATIO	ONS		23.0 2005,200
	<u></u>					1 5 9 eg
If the fuel stacke	rs and fuel stacker by	passes are operated sim	ultaneously, the	e total amount of	fuel handled will	
not exceed 4,6	500 tph.					
	· · · · · · · · · · · · · · · · · · ·					
						•
						0.000015. 5 21.
		DATA (CONTROL	<u> </u>		
Data Collecte	d by:	A. Trbovich			Date:	08/07/97
Evaluated by	<u>:</u>	A. Trbovich			Date:	08/07/97
Data Entered	by:	A. Trbovich		8	Date:	08/07/97

Date:

FH-044

Tampa Electric Company — F.J. Gannon Station

EMISSION SOURCE TYPE

VEHIC	ULAR TRAFF	IC ON UNPA	VED ROADS	- FUGITIVE	EMISSIC	ON SOUP	CES	Figure:	
			FACILITY AN	D SOURCE	DESCRIF	TION			
Emission S	ource Descriptio	on:	Fuel Handling -	Storage Pile	Maintenand	:0			
Emission C	ontrol Method(s)/ID No.(s):	Dust Suppressa	nt Sprays					
Emission P	oint ID:		FH-044						
			EMISSION E	STIMATION	EQUATI	ONS			
Emission (b/t	v) = 5.9 x (s/12) x	(S/30) x (W/3) ^{0.7} x (w/4) ^{0.5} x ((365-p)	(365) x vehicle mi	les per hour	(MITAr) x (1	00-control in	efi/100)	
		(S/30) x (W/3) ^{0.7} x							ol[pct]/100)
Source: Se	ction 13.2.2 - 1	Unpaved Roads,	AP-42, Fifth Ed	ition, January	1995.				
		INP	_ JT DATA AND	EMISSION	SCALCI	ILATION	S		
Operating I	lours:		Hrs/Day		Days/Wk	2-X480-24K		5,824	Hrs/Yr
S	S	w	w	P	Vehicle	Miles	Control	Ac	tual PM
	Vehicle Speed	_	No. of Wheels	Rainfall Days			Efficiency		sion Rates
(pct) 8.4	(mph) 2.5	(ton)	6	107	(VMT/hr) 10.0	(VMT/yr) 58,240	(pct) 50.0	(lb/hr) 10.38	(tpy) 30,21
0.4	2.3	10				,	30.0	10.55	00.21
Doz		T	SOURC	ES OF INP	<i>JT DATA</i> Data Soi				
Operating F	ameter	ECT, 1997. Est	imeted		Data Sui	uice			
Silt Content		· · · · · · · · · · · · · · · · · · ·	, Section 13.2.2	. AP-42. Janu	arv 1995.				
Vehicle Spe	•	TEC, 1997. Av		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
Vehicle Wei		TEC, 1997. Av							
No. of Whee		TEC, 1997. Av			-				
Rainfall Day		Climate of the	States, Third Edi	ition, 1985. De	ta for Tam	pa, FL			
Vehicle Mile		ECT, 1997. Est							
Control Effi	ciency	1	, Workbook on i i, September 19		missions a	and Disper	sion Modeli	ng for Fugiti	ve Particulate
			NOTES.	*NO COROLL	WATION.	acciones sometimes s	, e, du 2000 en	u zádosás i pro - Directoren 1966	SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
			NOTES	AND OBSER	IVATION	S	\$49500 1084 	######################################	
Estimate of	vehicle miles tr	aveled based on	the use of four	buildozers on	the storage	piles.			
				<u> </u>					1
				· .			_		
					_				
				•					
			D	ATA CONTR	OL		e tel W	r de las las regima Las Bara las las	
Data Coll	ected by:	A. Trbovich							09/16/97
Evaluated	l by:	A. Trbovich						Date:	09/16/97
Data Ente	ered by:	A. Trbovich						Date:	09/16/97
Reviewed	by:							Date:	

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

AH.	-001
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MATER	IAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:	
		FACILITY AND SO	URCE DESC	RIPTION	6-8005/0364 <u>00</u> 8	
Emission Source De	scription:	Auxiliary Handling – Tru	ick Unloading			
Emission Control Me	ethod(s)/ID No (s):	Dust Supressent				
	.,,	•		_		·
Emission Point ID:		AH-001	IATIONECOU	Transfer Point I	D(s):	on 10 000 00000
		EMISSION ESTIM	AIION EQUI	AIIUNS	243223333 (340 M) (4313) (<u> 1915 (kilister) (h</u>
		d (ton/hr) x ((average wind s) (tpy) x ((average wind speed				
		(D)) × [(a) a) 2 a a a a a a a a a a a a a a a a	, (. ,,,,,	- Control (Dod)	27 12 (100 - 001201	perg 100) x (1/2,000)
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		
AA 3AM - A	A A		Material		A	
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	400	362,025	6.5	85.0	0.07	0.03
•		SOURCES C	F INPUT DA	<i>TA</i>	 	4848812 JASST 1
Param	eter			ata Source	Tue Inches De De Despession	A Managar Shakar (Aligerati et e.)
Mean Wind Speed		Tampa, FL, Climate of t	he States, Third	d Edition, 1985.		
Actual Quantity Tran		TEC, 1997.				
Material Moisture Co	ontent	TEC, 1997. Average fu	el moisture con	tent.		
Control Efficiency		TEC, 1997.			_	
	•					
	~~	NOTES AND	OBSERVATIO	ONS	1.98 13.67103553	a fall this control
		The state of the s				0.700 banks
Annual quantity tran	ISTORIO DEDECEMENT	laits 1 through 4 firing a	n 80/20 coai/1L	or biena at maxi	mum capacity for	8,760 nrs/yr.
5,989 MMBtu/hr x	0.2 / 14,492 Btu/lb	TDF x 8,760 hrs/yr x 1 t	on/2,000 lb = 3	62,025 tpy		
Alternate fuel includ	es TDF and WDF.	The actual annual quant	tity of TDF and	WDF transferred	may vary, but the	actual total
quantity of alternate	fuel transferred w	ill not exceed 362,025 tp	v			
quantity of alternate		m not oxocod ooz,ozo ф	· · · · · · · · · · · · · · · · · · ·			-
		_				
				_		
		DATA	CONTROL	· · · · · · · · · · · · · · · · · · ·		
Data Collected b	y:	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 Ele	ectric Company – F				<u>AH-0</u> 02
		EMISSION	SOURCE TY	PE		
MAT	TERIAL TRANSFER	R - FUGITIVE EMIS	SION SOURC	ES	Figure:	
		FACILITY AND SC	OURCE DESC	RIPTION		
Emission Source	e Description:	Auxiliary Handling - St	orage Pile to Ho	pper		
Emission Contro	ol Method(s)/ID No.(s):	Enclosure and Dust Sup	pressant			
Emission Point I	ID:	AH-002		Transfer Point ID)(s):	
		EMISSION ESTIN	AATION EQU	ATIONS		
Emission (lb/hr) =	0.0032 x material transferre	ed (ton/hr) x [(average wind s	peed (mph)/5) ^{1.3}	/ moisture content (p	ct)/2) ^{1.4}] x (100—cor	ntrol[pct]/100)
Emission (tpy) = 0.	.0032 x material transferred	i (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
Course Court	- 40 0 4 . A	Handling and Change Di	Inc. AD. 40 556		. 4005	<u> </u>
Source: Section	n 13.2.4 – Aggregate i	Handling and Storage Pi	185, AP-42, FIR	n coluon, Januar	y 1995.	<u> </u>
		PUT DATA AND EM	ISSIONS CAL Material	CULATIONS		
Mean Wind	Ac	tual	Moisture	Control	Actua	ы PM
Speed	Quantity 1	ransferred	Content	Efficiency	Emissio	n Rates
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
8.6	400	362,025	6.5	90.0	. 0.05	0.02
		SOURCES	OF INPUT DA	TA		THE STATE OF THE S
Pa	<u>rameter</u>			<u> Data Source</u>		
Mean Wind Spe		Tampa, FL, Climate of	the States, Thir	d Edition, 1985.	_	
Actual Quantity		TEC, 1997.				
Material Moistur Control Efficience		TEC, 1997. Average full Table 3-16, Fugitive E			Plants EPRI Jun	 e 1984.
CONTROL EMCIEN		Table 0 - 10, 1 agrilve L		<u> </u>	rianto, Errin, Gan	<u> </u>
	•					
		NOTES AND	OBSERVATION	ONS		
Appual guantitu	transferred based on	Units 1 through 4 firing			our canacity for	8 760 beelve
					num capacity for	0,700 1113/91.
	<u></u>	TDF x 8,760 hrs/yr x 1				<u> </u>
Alternate fuel in	cludes TDF and WDF.	The actual annual quar	itity of TDF and	WDF transferred	may vary, but the	actual total
quantity of alter	nate fuel transferred w	rill not exceed 362,025 t	oy.			
•						
			_			
		DATA	CONTROL		20000000000000000000000000000000000000	
Data Collecte	ed by:	A. Trbovich			Date:	08/07/97
Evaluated by	· •	A. Trbovich		1	Date:	08/07/97

A. Trbovich

08/07/97

Date:

Date:

Data Entered by:

	rampa Er	cure company - r				AIT-003
<u> </u>		EMISSION	SOURCE TYP	<u>'E</u>		A JURES AND THE REST.
MA	TERIAL TRANSFER	- FUGITIVE EMIS	SION SOURC	ES	Figure:	
	•	FACILITY AND SC				Market Page
			•		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Emission Source	Bescription:	Auxiliary Handling - Ho	opper to Convey	or T		
Emission Contro	- nl Mathad/e\/ID No./e\:	Enclosure and Dust Su	nnraggent			
Emission Contro	A Metriod(s)/ID No.(s).	Eliciosule dru Dust 30	phi esemir			
Emission Point	D:	AH-003		Transfer Point II	D(s):	
		EMISSION ESTIM	MATION EQU	ATIONS	utsmir lakt vil	
Emission (lb/hr) =	0.0032 x material transferre	d (ton/hr) x [(average wind s	speed (mph)/5) ^{1.3} /	moisture content (p	ct)/2) ^{1.4}] x (100–cor	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) ^{1.4}] x (100-control	[pct]/100) x (1/2,000)
				-		
Source: Section	n 13.2.4 – Aggregate F	landling and Storage Pi	iles, AP-42, Fift	h Edition, Januar	y 1995.	
	<u> </u>	PUT DATA AND EM		CULATIONS	104 (0.14) - 14 (0.14) (0.14) 1 - 14 (0.14) - 14 (0.14) (0.14) 1	
Mean Wind	Ant	ruai	Material Moisture	Control	Actua	L DM
	Quantity T		Content	Efficiency	Emissio	
Speed (mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)
(mpn)	(ton/in)	(tOn/yj)	fbéri	(pct)	(ID/III)	(py)
8.6	400	362,025	6.5	90.0	0.05	0.02
		_				
		SOURCES (OF INPUT DA		<u>. 1. 400%</u>	
Pai	rameter			ata Source	_	
Mean Wind Spec	ed	Tampa, FL, Climate of	the States, Third	Edition, 1985.		
Actual Quantity	Transferred	TEC, 1997.				
Material Moistur	e Content	TEC, 1997. Average for	uel moisture con	tent		
Control Efficience	у	Table 3-16, Fugitive E	mission from Co	pal-Fired Power	Plants, EPRI, Jun	e 1984.
0.1000000000000000000000000000000	•	NOTECANO	OBCCDVATA	NO-280-1-1-1	- James Marchael	
		NOTES AND	OBSERVATIO	JNS	* 1 30031111	NUMBER OF STREET
Annual quantity	transferred based on l	Units 1 through 4 firing	an 80/20 coal/Tt	F blend at maxir	num 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 = 3	62,025 tpy		
Alternate fuel in	cludes TDF and WDF.	The actual annual quar	ntity of TDF and	WDF transferred	may vary, but the	actual total
7410111210 1201 111			, -: 120		,,,	
quantity of alter	nate fuel transferred wi	ill not exceed 362,025 t	py.			
				<u>:_</u>	,	_
			•			
		DATA	CONTROL	ej sa a s	1915/2013/85/97	
			OUNTHUE		F1871 / 1880,889 cc	56 - 5 - 745568,000 - 1
Data Collecte	ed by:	A. Trbovich			Date:	08/07/97
Evaluated by		A Trhovich			Date:	08/07/97
Evaluated by	•	A. Trbovich			Jale	55/01/31
Data Entered	by:	A. Trbovich		I	Date:	08/07/97

Date:

Tampa Electric Company - F.J. Gannon Station

AH-004

08/07/97

Date:

Date:

EMISSION SOURCE TYPE MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure: FACILITY AND SOURCE DESCRIPTION Emission Source Description: Auxiliary Handling - Conveyor T to Conveyor U Emission Control Method(s)/ID No.(s): Enclosure and Dust Suppressant AH-004 **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 Actual Moisture **Control Actual PM Emission Rates Quantity Transferred** Content **Efficiency** Speed (pct) (pct) (lb/hr) (tpy) (mph) 400 362.025 6.5 90.0 0.05 0.02 8.6 SOURCES OF INPUT DATA **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 A. Trbovich Date: 08/07/97 Data Collected by: 08/07/97 Evaluated by: A. Trbovich Date:

A. Trbovích

Data Entered by:

		N INVENTORY				
	Tampa Ele	ectric Company - F				<u> AH – 005</u>
		<u>EMISSION :</u>	SOURCE TY	<u>PE</u>		
MATE	ERIAL TRANSFER	- FUGITIVE EMISS	SION SOURC	ES	Figure:	
		FACILITY AND SO	URCE DESC	RIPTION		
Emission Source l	Description:	Auxiliary Handling — Co	nveyor U to Co	nveyors H1 and H	2	
Emission Control	Method(s)/ID No.(s):	Enclosure and Dust Sup	pressant			
Emission Point ID	•	AH-005		Transfer Point (D)	(s):	
		EMISSION ESTIM	ATION EQU			
Emission (ib/hr) = 0.0	0032 x material transferre	d (tor/hr) x [(average wind s	peed (mph)/5) ^{1.3}	moisture content (pc	1)/2) ^{1.4}] x (100-co	introl[pct]/100)
Emission (tpy) = 0.00	332 x material transferred	(tpy) x [(average wind speed	i (mph)/5) 1.3 / mo	isture content (pct)/2)	1.4] x (100-contro	i[pct]/100) x (1/2,000
Source: Section 1	1924 - Aggregato i		oe AD_42 56	h Edition Jeograpy	1995	
Source. Secuon	13.2.4 - Aggregate i	landling and Storage Pil	98, AF - 42, FIII	ii Euluori, January	1993.	
	-	_		_		
	IN	PUT DATA AND EMI		CULATIONS	Hospital Color	
14 - 145- 1			Material	041	A A	-1.014
		tual Secondaria	Moisture	Control Efficiency		al PM on Rates
Speed (mph)	Quantity T (ton/hr)	(ton/yr)	Content (pct)	(pct)	(ib/hr)	(tpy)
8.6	400	362,025	6.5	90.0	0.05	0.02
8.0	400	302,023	0.5	. 30.0	0.00	0.02
		SOURCES C			<u>. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</u>	
	meter			Data Source		
Mean Wind Speed		Tampa, FL, Climate of t TEC, 1997.	he States, Thir	d Edition, 1985.		
Actual Quantity Tr Material Moisture		TEC, 1997. Average fu	el moisture con	tent		
Control Efficiency		Table 3-16, Fugitive E			lants, EPRI, Jun	ne 1984.
	ooloogiaaan aasta aan aan ooloo oo oo oo	· · · · · · · · · · · · · · · · · · ·	000000474			
		NOTES AND	OBSERVATIO	ONS	1 41	
Annual quantity tr	ansferred based on l	Jnits 1 through 4 firing a	n 80/20 coal/Ti	OF blend at maxim	um capacity for	8,760 hrs/yr.
5,969 MMBtu/nr	X U.2 / 14,492 Btu/iii	TDF x 8,760 hrs/yr x 1 t	on/2,000 1D = 3	962,U23 thy		
Aiternate fuel incl	udes TDF and WDF.	The actual annual quant	tity of TDF and	WDF transferred m	ay vary, but the	actual total
		:II4				
quantity of aiterna	te fuel transferred w	ill not exceed 362,025 tp	у.			
	-	DATA	CONTROL	2.1.1. 1894 3.1.1. 1894 3.1.1		
Data Collected	l bv.	A. Trbovich		ח	ate:	08/07/97
Data Confected	· ~ f ·	A. HUUTIUH		_	~····	

A. Trbovich

A. Trbovich

08/07/97

08/07/97

Date:

Date:

Date:

ΔH	ARA	RT	WK	1

Evaluated by:

Reviewed by:

Data Entered by:

APPENDIX B.4

ACTUAL PM EMISSION CALCULATION SPREADSHEETS

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

FH-002

MAT	ERIAL TRANSFER	- FUGITIVE EMISS			Figure:		
		FACILITY AND SO	URCE DESC	RIPTION			
Emission Source	Description:	Fuel Handling — Barge	to West Clamsh	ell (Spillage)			
Emission Contro	l Method(s)/lD No.(s):	Barge Enclosure					
Emission Point II	D:	FH-002		Transfer Point II	D(s):		
		EMISSION ESTIN	IATION EQU	ATIONS			
Friedra (h.C.)		d (ton/hr) x ((average wind s			1.4	-15	
		d (torym) x (yeverage wind speed					
Source: Section	13.2.4 - Aggregate F	landling and Storage Pi	les, AP-42, Fift	h Edition, Janua	y 1995.	•	
	IN	PUT DATA AND EMI	SSIONS CAL	CULATIONS			
T		<u> </u>	Material				
Mean Wind	Act		Moisture	Control	Actua	• • • • •	
Speed	Quantity T		Content	Efficiency	Emission		
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(lb/hr)	(tpy)	
8.6	1,150	882,681	6.5	50.0	0.72	0.27	
L		SOURCES C	OF INPUT DA	TA			
Parameter Data Source							
Mean Wind Spee		Tampa, FL, Climate of the States, Third Edition, 1985.					
Actual Quantity		TEC, 1997.					
Material Moisture		Average fuel moisture content; TEC, 1994. ECT, 1997. Set at 50 pct to conservatively minimize actual emissions for PSD evaluation.					
Control Efficienc	y	Permitted control efficiency is 0 pct.					
	· · · · · · · · · · · · · · · · · · ·	T GIIIILIGA CONACI GIIICI	ency is o pet.				
		NOTES AND	OBSERVATIO	ONS			
Actual PM emiss	ions based on 2,648,0	44 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	34 tons and 2,767,753	tons, respectively.					
Actual fuel delive	ery was assumed to be	equally divided among	the barge clam	shell, barge con	tinuous, and rail u	nloading	
systems, or 88	2,681 tons per system				,		
Actual short-ter	m emissions based or	n clamshell and continue	ous unloading s	ystems operating	simultaneously at	1,150 tph, each	
				<u> </u>		·	
		DATA	CONTROL				
Data Collecte	d by:	A. Trbovich			Date: 0	9/16/97	
Evaluated by:	•	A. Trbovich	-		Date: 0	9/16/97	
Data Entered	by:	A. Trbovich			Date: 0	9/16/97	
Reviewed by:					Date:		

Tampa Electric Company - F.J. Gannon Station

FH-003

EMISSION SOURCE TYPE

MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES

Figure:

Emission Source Description:

Fuel Handling - Barge to Continuous Unloader (Spillage)

FACILITY AND SOURCE DESCRIPTION

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

Emission Point ID:

FH-003

Transfer Point ID(s):

EMISSION ESTIMATION EQUATIONS

Emission (lb/lw) = 0.0032 x material transferred (ton/lw) 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.

Mean Wind Speed	Act	<i>PUT DATA AND EM</i> tual transferred	Material Moisture Content	Control Efficiency	Actua Emissio	al PM on 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

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

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

	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:	

systems, or 882,681 tons per system.

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 **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.

Mean Wind	Actual Quantity Transferred		Material Moisture	Control	Actual PM Emission Rates	
Speed (mph)	(ton/hr)	(ton/yr)	Content (pct)	Efficiency (pct)	(ib/hr)	(tpy)
8.6	1,150	882,681	6.5	85.0	0.21	0.08
Par	ameter	SOURCES	OF INPUT DA			
Parameter Data Source Mean Wind Speed Tampa, FL. Climate of the States, Third Edition, 1985.			<u> </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	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

	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

FH-006

Figure:

EMISSION SOURCE TYPE

MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES

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:

FH-006

Transfer Point ID(s):

Data Source

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 [(everage 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	A AND EMISS	IONS CA	ALCULATIONS

Mean Wind Speed	Act Quantity T	tual ransferred	Moisture Content	Control Efficiency		al PM on 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

1 4114111					
Mean Wind Speed	Tampa, FL, Climate of the States, Third Edition, 1985.				
Mean Wind Speed	Tampa, FL, Chinate of the States, Third Edition, 1905.				
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 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.

Parameter

Actual short—term e<mark>missions based on ciamshell and</mark> 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 A. Trbovich Evaluated by:

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

Date: Reviewed by:

Tampa Electric Company - F.J. Gannon Station

		EMISSION	SOURCE TYP	PE			
MATE	RIAL TRANSFER	- FUGITIVE EMISS			Figure:		
		FACILITY AND SO					
Emission Source D	Description:	Fuel Handling - Convey	or A to Continu	ous Feeder			
	Method(s)/ID No.(s):		, o. , , , o o o o o o o o o o o o o o o				
Emission Point ID:		FH-007		Transfer Baint II	D(-).		
Emission Foint ID.		EMISSION ESTIN	ATION FOLL	Transfer Point II	U(8):	8000	
<u> </u>		<u> </u>			00000000	2000an 1940 bersetti 1941 ya 1470	
Emission (lb/hr) = 0.0	032 x material transferre	d (tor/hr) x ((average wind s (tpy) x ((average wind speed	peed (mph)/5) ^{1,3} /	moisture content (ct)/2) ^{1.4}] x (100-co	ntrol[pct]/100)	
Emission (tpy) = 0.00	32 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 1	3.2.4 - Aggregate I	landling and Storage Pil	es. AP-42. Fift	h Edition, Janua	ry 1995.		
	i N	PUT DATA AND EMI	ISSIONS & AL	CHEATIONS			
		FUI DATA AND EMI	Material	COLATIONS			
Mean Wind	Act	tual	Moisture	Control	Actual PM		
Speed		ransferred	Content	Efficiency		n 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 DA	TA			
Para	meter	_	C	ata Source			
Mana Mand Canad		Towns El Climata of	the States Third	d Edition 1005			
Mean Wind Speed Actual Quantity Tre		Tampa, FL, Climate of the States, Third Edition, 1985. TEC, 1997.					
Material Moisture		Average fuel moisture	content; TEC, 19	994.			
Control Efficiency		ECT, 1997. Set at 85 pct to conservatively minimize actual emissions for PSD evaluation.					
	_	Permitted control efficient	ency is 50 pct.			-	
		NOTES AND	OBSERVATIO	ONS			
Actual PM emissio	ns based on 2,648,0	H4 tpy of fuel used. Act	tual fuel use is t	he average of th	e 1995 and 1996 a	actual fuel	
ueed 2 528 994	tons and 2,767,753	tone respectively					
		•					
Actual fuel delivery	y was assumed to be	equally divided among	the barge clam	shell, barge con	tinuous, and rail u	unloading	
systems, or 882,	,681 tons per system).					
Actual short-term	emissions based or	n clamshell and continue	ous unloading s	ystems operating	simultaneously a	at 1,150 tph, each	
			•	,	,, .		
		DATA	CONTROL	- 1713(8886)(G) 1			
Data Collected	by:	A. Trbovich	-,,,	A STATE OF THE STA	Date:	09/16/97	
Evaluated by:	•	A. Trbovich				09/16/97	
Data Entered b		A Troovich		_		09/16/97	

Date:

Tampa Electric Company - F.J. Gannon Station

FH-009

		EMISSION	SOURCE TY	PE				
MA	TERIAL TRANSFER	- FUGITIVE EMIS	SION SOURC	ES	Figure:			
		FACILITY AND SC	URCE DESC	RIPTION				
Emission Source	e Description:	Fuel Handling – West H	lopper to Conve	eyor B				
Emission Contro	ol Method(s)/ID No.(s):	Enclosure						
Emission Point	ID:	FH-009		Transfer Point ID)(s):			
		EMISSION ESTIN	ATION EQU	ATIONS				
Eminaion (th.fhr.)	0 0000 v material transferre	nd (ton/hr) x [(average wind s		1				
		(tpy) x ((average wind speed						
-								
Source: Section	n 13.2.4 – Aggregate I	landling and Storage Pi	les, AP-42, Fift	th Edition, Januar	y 1995.			
	<u>IN</u>	PUT DATA AND EM		LCULATIONS				
Mean Wind	Act	tual	Material Moisture	Control	Actua	I PM		
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	0.21	0.08		
l		SOURCES C	OF INPUT DA	TA				
Pa	rameter			Data Source				
44 1455-4 Om o	a	Town - 51 Olimata of	the Charles This	d Edikion 4005				
Mean Wind Spe Actual Quantity		TEC, 1997.	umpa, FL, Climate of the States, Third Edition, 1985. EC. 1997.					
Material Moistur		Average fuel moisture content; TEC, 1994.						
Control Efficience	cy	ECT, 1997. Set at 85 pct to conservatively minimize actual emissions for PSD evaluation.						
		Permitted control effici	ency is 50 pct.	_				
		NOTES AND	OBSERVATION	ONS				
Actual PM emiss	sions based on 2,648,0	144 tpy of fuel used. Act	tual fuel use is t	the average of the	1995 and 1996 a	ctual fuel		
used, 2,528,3	34 tons and 2,767,753	tons, respectively.						
		<u> </u>	Ab - b		inverse and sail of			
Actual fuel deliv	ery was assumed to be	e equally divided among	the parge clair	isnell, barge cont	indous, and rail u	nicading		
systems, or 8	82,681 tons per system	1.						
Actual short—te	rm emissions based or	n clamshell and continue	ous unloading s	ystems operating	simultaneously a	t 1,150 tph, each		
		 -						
		DATA	CONTROL					
Data Collecte	ed by:	A. Trbovich		C	Date:	09/16/97		
Evaluated by	:	A. Trbovich			Date:	09/16/97		
Data Entered	 l by:	A. Trbovich			Date:	09/16/97		

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 - Convey	or B to Convey	or C			
Emission Contro	Method(s)/ID No.(s):	Enclosure					
Emission Point I	D:	FH-011		Transfer Point ID(s):			
		EMISSION ESTIM	ATION 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	et)/2) ^{1.4}] x (100-cor	trol[pct]/100)	
Emission (tpy) = 0.	0032 x material transferred	(tpy) x [(average wind speed	(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 H	landling and Storage Pile	es. AP-42. Fifti	h Edition, Januar	v 1995.		
	INI	PUT DATA AND EMI	SSIONS CAL	CULATIONS			
			Material		5-11-12-12-12-12-12-12-12-12-12-12-12-12-		
Mean Wind	Act		Moisture	Control	Actua		
Speed (mph)	Quantity T	ransferred(ton/yr)	Content (pct)	Efficiency [(lb/hr)	n Hates (tpy)	
8.6	2,300	1,765,362	6.5	85.0	0.43	0.16	
	SOURCES OF INPUT DATA						
Pai	rameter	Data Source					
Mean Wind Spec	ed	Tampa, FL, Climate of t	he States, Third	Edition, 1985.			
Actual Quantity	Transferred	TEC, 1997.					
Material Moisture		Average fuel moisture content; TEC, 1994.					
Control Efficience	ey	ECT, 1997. Set at 85 pct to conservatively minimize actual emissions for PSD evaluation. Permitted control efficiency is 50 pct.					
		NOTES AND	OBSERVATIO	ONS			
Actual PM emiss	ions based on 2,648,0	44 tpy of fuel used. Act	ual fuel use is t	he average of the	a 1995 and 1996 a	ctual fuel	
	34 tons and 2,767,753						
-							
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				
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

EMISSION SOURCE TYPE

FH-012

MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES Figure:							
FACILITY AND SOURCE DESCRIPTION							
Emission Source Description: Fuel Handling - Conveyor C to Conveyor D1/D2							
Emission Control N	Emission Control Method(s)/ID No.(s): Enclosure With Dust Suppressant Sprays						
Emission Point ID:							
		EMISSION ESTIM	ATION EQU	ATIONS			
Emission (lh/hr) = 0.0	032 v meterial transferre	ed (ton/hr) x [(average wind s	peed (mph)/5)1.3	l moisture content (241/21 ^{1.4} 1 x /100—cor	strol[net]/1000	
Emission (tpy) = 0.003	32 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 1	3.2.4 - Aggregate H	landling and Storage Pil	es. AP-42. Fift	h Edition, Janua	rv 1995.		
	IN	PUT DATA AND EMI	SSIONS CAL	CULATIONS	j. 1		
	Act	Material			Actual PM		
Mean Wind Speed	Act Quantity T		Moisture Content	Control Efficiency	Actua Emissio		
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(ib/hr)	(tpy)	
8.6	2,300	1,765,362	6.5	90.0	0.29	0.11	
SOURCES OF INPUT DATA							
Parai	meter	Data Source					
Mean Wind Speed		Tampa, FL Climate of t	he States. Third	d Edition, 1985.			
Actual Quantity Tra	ansferred	Tampa, FL, Climate of the States, Third Edition, 1985. 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							
Actual PM emission	ns 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	ctual 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.							
ayatama, or ouz,our turis per system.							
	-						
		DATA	CONTROL			<u></u>	
Data Collected	by:	A. Trbovich	JOIN INOL.			08/07/97	
Evaluated by:	-	A. Trbovich				08/07/97	
Data Entered b	y :	A. Trbovich				08/07/97	
Reviewed by:					Date:		

Tampa Electric Company - F.J. Gannon Station

FH-013

MATE	RIAL TRANSFER	I - FUGITIVE EMISS	SION SOURC		Figure:		
		FACILITY AND SO	URCE DESC	RIPTION			
Emission Source D	escription:	Fuel Handling - Rail Ca	ır to Hopper			-	
Emission Control N	Method(s)/ID No.(s):	Partial Enclosure		,			
Emission Point ID:		FH-013		Transfer Point I	ID(s):		
		EMISSION ESTIM	IATION EQUI	ATIONS			
Emission (lb/hr) = 0.00 Emission (tpy) = 0.00	032 x material transferred 32 x material transferred	od (ton/hr) x [(average wind speed (tpy) x [(average wind speed	peed (mph)/5) ^{1.3} / d (mph)/5) ^{1.3} / moi	moisture content (pct)/	pct)/2) ^{1.4}] x (100—cor 2) ^{1.4}] x (100—control	strol[pet]/100) (pet]/100) x (1/2,000)	
Source: Section 1:	3.2.4 - Aggregate H	landling and Storage Pil	es, AP-42, Fifti	h Edition, Janua	ry 1995.		
						· · · · · · · · · · · · · · · · · · ·	
	INI	PUT DATA AND EMI	ISSIONS CAL Material	CULATIONS			
Mean Wind	Act	:uai	Moisture	Control	Actua	ı РМ	
Speed	Quantity T	ransferred	Content	Efficiency	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	
		SOURCES	OF INPUT DA				
Parar	meter		<u>D</u>	Data Source			
Mean Wind Speed	ļ	Temps Fl. Climate of	the States Third	d Edition, 1985.			
Actual Quantity Tra	ansferred	Tampa, FL, Climate of the States, Third Edition, 1985. TEC, 1997.					
Material Moisture C		Average fuel moisture content; TEC, 1994.					
Control Efficiency		ECT, 1997. Set at 85 pct to conservatively minimize actual emissions for PSD evaluation.					
		Permitted control efficie	ency is 40 pcτ.				
		NOTES AND	OBSERVATIO	ONS			
Actual PM emission	ns based on 2,648,0	244 tpy of fuel used. Act	lual fuel use is t	the average of th	e 1995 and 1996 a	ictual fuel	
used, 2,528,334	tons and 2,767,753	tons, respectively.					
Actual fuel delivery	y was assumed to be	e equally divided among	the barge clam	nsheli, barge cor	ntinuous, and rail u	ınloading	
<u> </u>	.681 tons per system				-		
systems, or ouz,	001 mis bar system	<u> </u>					
			50.47004	a tasaa a		ecoccus anomouve (CSE) prosent (1	
	-		CONTROL	<u> 19.00 (m. 19.00</u>			
Data Collected	by:	A. Trbovich		 -		09/16/97	
Evaluated by:		A. Trbovich			Date:	09/16/97	
Data Entered by:		A. Trbovich		Date:	09/16/97		

Date:

Tampa Electric Company – F.J. Gannon Station

EMISSION SOURCE TYPE

FH-014

MATE	RIAL TRANSFER		MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES				
		FACILITY AND SO	OURCE DESC	RIPTION			
Emission Source D	escription:	Fuel Handling - Hoppe	er to Conveyor L				
Emission Control N	Method(s)/ID No.(s):	Enclosure					
Emission Point ID:		FH-014		Transfer Point	ID(s):		
		EMISSION ESTI	MATION EQU	-		7888.4873367.5	
		d (tor/hr) x ((average wind					
Emission (tpy) = 0.003	32 X MAKENAI WAINSPERFED	(tpy) x [(average wind spee	id (mpn)/5) *** / mo	sture content (pcq)	(2) · · ·] X (100—control	[pet]/100) x (1/2,000)	
Source: Section 1	3.2.4 - Aggregate F	landling and Storage Pi	iles, AP-42, Fift	h Edition, Janua	ry 1995.		
	INI	PUT DATA AND EM	ISSIONS:CAI	CHILATIONS	988 5 TO CONTRACTOR OF THE CON	201919 C 801 C 82 2 82 8 1 8 1 8 1 8 1 8 1 8 1 8 1 8 1	
	, , , , , , , , , , , , , , , , , , ,	SOISDAIA AND EM	Material	COLATIONS		er ammere in a transport of the	
Mean Wind	Act	ual	Moisture Content	Control Efficiency	Actual PM		
Speed	Quantity T				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	
		SOURCES	OF INPUT DA	TA	 	3856438636636.	
Parar	meter			ata Source			
Mean Wind Speed		Tampa, FL, Climate of the States, Third Edition, 1985.					
Actual Quantity Transferred Material Moisture Content		TEC, 1997. Average fuel moisture content; TEC, 1994.					
Control Efficiency	JOHLBIR	ECT, 1997. Set at 85 pct to conservatively minimize actual emissions for PSD evaluation.					
		Permitted control efficiency is 50 pct.					
		NOTES AND	OBSERVATION	ONS			
Actual DM omission	beed 2 649 0	44 tpy of fuel used. Ac	tual fual usa is t	be everene of th	a 1005 and 1006	actual final	
ACIUAL PM emission	ns based on 2,040,0	44 thy of fuer used. Ac	tual luel use is i	ne average of the	ie 1995 and 1990 a	icidal idei	
used, 2,528,334	tons and 2,767,753	tons, respectively.					
Actual fuel delivery	was assumed to be	equally divided among	the barge clam	shell, barge cor	ntinuous, and rail (unloading	
systems, or 882,	681 tons per system	<u> </u>					
		DATA	CONTROL				
Data Collected	by:	A. Trbovich			Date:	09/16/97	
Evaluated by:		A. Trbovich		-	Date:	09/16/97	
Data Entered b		A. Trbovich	_			09/16/97	
Reviewed by:					Date:		
eviewed by.							

FH-015 Tampa Electric Company - F.J. Gannon Station EMISSION SOURCE TYPE Figure: MATERIAL TRANSFER - FUGITIVE EMISSION SOURCES FACILITY AND SOURCE DESCRIPTION Emission Source Description: Fuel Handling - Conveyor L to Conveyor D1/D2 Emission Control Method(s)/ID No.(s): Enclosure Transfer Point ID(s): Emission Point ID: FH-015 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 **Emission Rates** Speed **Quantity Transferred** Content Efficiency (mph) (ton/hr) (ton/yr) ' (pct) (pct) (lb/hr) (tpy) 2.300 882,681 6.5 90.0 0.29 0.05 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 3-16, 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 CONTROL 09/16/97 Data Collected by: A. Trbovich Date:

A. Trbovich

A. Trbovich

09/16/97

09/16/97

Date:

Date:

Date:

Evaluated by:

Reviewed by:

Data Entered by:

<u>FH-</u>016

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

MA	TERIAL TRANSFER	- FUGITIVE EMISS			Figure:		
		FACILITY AND SO	URCE DESC	RIPTION			
Emission Source	e Description:	Fuel Handling - Convey	or D1 to Conve	yor M1			
Emission Contro	ol Method(s)/ID No.(s):	Enclosure With Dust Sup	ppressant Spray	s			
Emission Point	ID:	FH016		Transfer Point ID)(s):		
		EMISSION ESTIM	ATION EQUA	ATIONS			
Emission (Ib/br)	0 0022 v material transferre	d (ton/hr) x [(average wind s	need (mph) (5) 1.3 /	maistura santant (n		tratication	
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 – Aggregate F	landling and Storage Pil	es, AP-42, Fifth	n Edition, Januar	y 1995.		
	IN	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	2,300	1,324,022	6.5	90.0	0.29	0.08	
	SOURCES OF INPUT DATA						
<u>Pa</u>	<u>rameter</u>		<u>D</u>	ata Source			
Mean Wind Spe	ad	Tampa, FL, Climate of t	the States Third	Edition 1985			
Actual Quantity		TEC, 1997.	are etates, rima				
Material Moistur		Average fuel moisture	content; TEC, 19	94.			
Control Efficience	су	Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling for					
		Fugitive Particulate Soc	urces, UARG, Se	ptember 1981.			
		NOTES AND	OBSERVATIO	ONS			
Actual PM emiss	sions based on 2,648,0	44 tpy of fuel used. Act	tual fuel use is ti	he average of the	1995 and 1996 a	ctual fuel	
used, 2,528,3	34 tons and 2,767,753	tons, respectively.			_		
Actual fuel deliv	ery was assumed to be	equally divided between	en conveyors D1	and D2, or 1,32	4,022 tons per cor	veyor.	
_							
		DATA	CONTROL:_	•		THE PARTY	
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	

Date:

EMISSION INVENTORY WORKSHEET FH-017 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 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 Moisture Control Actual PM Mean Wind Actual **Quantity Transferred** Content Efficiency **Emission Rates** Speed (lb/hr) (tpy) (pct) (pct) (mph) (ton/hr) 0.08 8.6 2.300 1.324.022 6.5 90.0 0.29 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 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 Date: 08/07/97 Data Collected by: A. Trbovich Date: 08/07/97 Evaluated by: A. Trbovich 08/07/97

A. Trbovich

Date:

Date:

Data Entered by:

Tampa Electric Company – F.J. Gannon Station

FH-018

MA'	TEDIAI TRANSCED	- FUGITIVE EMISS	SION SOURCE		<u> </u>	<u>- 800 (180) </u>
MA	TENIAL INAMOFER	FACILITY AND SO			Figure:	S. 4-4-5 (1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Emission Sourc	•	Fuel Handling - Convey	or M1 to Conve	yor E1		
Emission Contro	ol Method(s)/ID No.(s):	Enclosure With Dust Sup	pressant Spray	<u>'8</u>		
Emission Point	iD:	FH-018	4471011 5011	Transfer Point iD)(s):	
		EMISSION ESTIM	AHUN EQU	1110NS		
		d (ton/hr) x [(average wind s				
Emission (tpy) = 0	.0032 x material transferred	(tpy) x [(average wind speed	! (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 Pile	es, AP-42, Fifti	h Edition, Januar	y 1995.	
		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	2,300	1,324,022	6.5	90.0	0.29	0.08
		SOURCES C		TA		
<u>Pa</u>	rameter		ַ	ata Source		
Mean Wind Spe	ed	Tampa, FL, Climate of t	the States, Third	Edition, 1985.		
Actual Quantity		TEC, 1997.				
Material Moistur Control Efficient		Average fuel moisture of Table 3.2.17-2, Workbo			and Dispersion M	odeling of
CONTROL EMCIÐIN		Fugitive Particulate Sou			and broperoren w	Juoming Ci
		l		•		
		NOTES AND	OBSERVATIO	DNS		
Actual PM emiss	sions based on 2,648,0	44 tpy of fuel used. Act	ual fuel use is t	he average of the	1995 and 1996 a	ctual fuel
used. 2.528.3	334 tons and 2,767,753	tons, respectively.				
					4 022 4000 000	
Actual fuel deliv	rery was assumed to be	equally divided betwee	n conveyors Mi	and M2, of 1,32	4,022 tons per co	nveyor.
					- -	
		DATA (CONTROL	an Array (1997) Array (1997)		
Data Collecte	ed by:	A. Trbovich		נ	Date:	08/07/97
Evaluated by	<i>r</i> :	A. Trbovich			Date:	08/07/97
Data Entered	l by:	A. Trbovich			Date:	08/07/97
Reviewed hy	, •			ŗ	Date:	

FH-019 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 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 (fb/fr) = 0.0032 x material transferred (ton/fr) 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** (lb/hr) (mph) (ton/hr) (ton/yr) (pct) (pct) (tpy) 1.324.022 6.5 90.0 0.29 0.08 8.6 2,300 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 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		##### <u>##14114</u>
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 Ek	ectric Company – F				FH-020	
			SOURCE TY				
MATE	RIAL TRANSFER	- FUGITIVE EMIS			Figure:		
		FACILITY AND SO	OURCE DESC	RIPTION			
Emission Source D	escription:	Fuel Handling - Conve	yor E1 to Storaç	je Pile			
Emission Control M	fethod(s)/ID No.(s):	Dust Suppressant					
Emission Point ID:		FH-020		Transfer Point ID)(s):		
		EMISSION ESTIN	NATION EQU	<u>ATIONS</u>			
		od (ton/hr) x [(average wind s (tpy) x [(average wind spee					
<u> гимськогі (фу)</u> — 0.000	SZ A HIMMONIA DANSIONO	(this) x (terrers the main sheet	a (mprijisj / mo	maze corama (pcq/2)	<u> </u>	
Source: Section 13	3.2.4 – Aggregate I	landling and Storage Pi	les, AP-42, Fift	h Edition, Januar	y 1995.		
	in in	PUT DATA AND EM		CULATIONS			
	_	<u>.</u>	Material				
Mean Wind		Actual	Moisture	Control	Actu	-	
Speed		ransferred	Content	Efficiency	(lb/hr)	n Rates	
(mph)	(ton/hr)	(ton/yr)	(pct)	(pct)	(ID/Hr)	(tpy)	
8.6	2,300	1,324,022	6.5	70.0	0.86	0.25	
		SOURCES (OF INPUT DA				
<u>Parar</u>	<u>neter</u>			<u> Data Source</u>			
Mean Wind Speed		Temps El Climate of	the States. Thir	d Edition, 1985.			
Actual Quantity Tra	 insferred	Tampa, FL, Climate of the States, Third Edition, 1985. TEC, 1997.					
Material Moisture C		Average fuel moisture	content; TEC, 1	994.			
Control Efficiency	• .	ECT, 1997. Set at 70 p Permitted control effici		ively minimize act	ual emissions fo	r PSD evaluation.	
	-	Permitted Control ellici	ency is o pct.				
		NOTES AND	OBSERVATION	ONS			
Actual PM emission	ns based on 2.648.0	944 tpy of fuel used. Ac	tual fuel use is t	the average of the	1995 and 1996	actual fuel	
	tons and 2,767,753						
		-					
Actual fuel delivery	was assumed to be	e equally divided between	en conveyors E	and E2, of 1,324	1,022 tons per co	nveyor.	
					·		
		·					
		DATA	CONTROL				
Data Collected	by:	A. Trbovich			Date:	09/16/97	

A. Trbovich

A. Trbovich

09/16/97

09/16/97

Date:

Date:

Date:

Evaluated by:

Reviewed by:

Data Entered by:

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

FH-021	
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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 **Quantity Transferred** Content Efficiency **Emission Rates** Speed (lb/hr) (tpy) (pct) (ton/yr) (pct) (mph) (ton/hr) 70.0 0.25 1,324,022 6.5 0.86 8.6 2.300 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** ECT, 1997. Set at 70 pct to conservatively minimize actual emissions for PSD evaluation. Control Efficiency 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 CONTROL 09/16/97 Data Collected by: A. Trbovich Date: 09/16/97 Date: Evaluated by: A. Trbovich 09/16/97 Data Entered by: A. Trbovich Date: Date: Reviewed by:

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 Suppressent** 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 Erocion. 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: 50 pct Pile Width (m): Pile Height (m): 21 Surface Area (m²) 16,758 Pile Length (m): 215 70 Actual PM Meteorological Friction Emission Affected Pile Affected Period Velocity **Potential** Surface Area **Emission Rates** <u>(m²)</u> (m/s) (g/m^2) (pct) (lb/hr) (tpy) 14 1.30 6.38 670.3 1.18 0.0024 0.26 0.05 <0.0001 30 1.13 4 670.3 37 1.33 7.81 4 670.3 1.44 0.0029 2,346.1 10.68 0.0214 14 65 1.48 16.52 8.09 65 1.80 43.82 4 670.3 0.0162 0 0024 **77** 1.30 6.38 4 670.3 1.18 90 1.33 7.81 4 670.3 1.44 0.0029 Maximum Per Period 18.77 NA N/A 0.0480 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 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 1966 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 09/16/97 Data Collected by: A. Trbovich Date: Evaluated by: A. Trbovich Date: 09/16/97 09/16/97 Date: Data Entered by: A. Trbovich Reviewed by: 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** Transfer Point ID(s): **Emission Point ID:** FH-023a 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 Threshold Friction Velocity: Control Efficiency: 1.12 m/s Pile Height (m): 21 Surface Area (m²) Pile Length (m): 170 Pile Width (m): 91 16,754 Meteorological Friction **Emission** Affected Pile Affected Actual PM Period Velocity Potential Surface Area **Emission Rates** Area (m²) (m/s) (g/m²) (pct) (lb/hr) (total) 670.2 1.18 0.0024 1.30 14 <0.0001 30 1.13 0.26 4 **670.2** 0.05 4 670.2 1.44 0.0029 37 1.33 7.81 14 2,345.5 10.68 0.0214 65 1.48 16.52 0.0162 65 1.80 43.82 4 670.2 8.00 1.18 0.0024 4 670.2 6.38 77 1.30 90 1.33 7.81 670.2 1.44 0.0029 Maximum Per Period 18.77 NA N/A 0.0480 Total SOURCES OF INPUT DATA **Parameter Data Source** 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. 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 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 Tampa Electric Company - F.J. Gannon Station FH-023b 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 1905. INPUT DATA AND EMISSIONS CALCULATIONS Threshold Friction Velocity: 1.12 m/s Control Efficiency: 140 Pile Width (m): Pile Height (m): 21 Surface Area (m²) 18,855 Pile Length (m): 125 Actual PM **Meteorological** Friction Emission Affected Pile Affected Period Velocity **Potential** Surface Area **Emission Rate** Area (m²) (m/s) (g/m²) (pct) (lb/lw) (PY) 14 6.38 754.2 1.33 0.0027 1.30 30 1.13 0.26 4 754.2 0.05 0.0001 1.62 0.0032 1.33 7.81 754.2 37 4 16.52 2,639.6 12.01 0.0240 65 1.48 14 0.0182 43 82 754.2 9.11 65 1.80 4 0.0027 77 1.30 6.38 4 754.2 1.33 0 0032 754.2 1.62 90 1.33 7.81 4 21.12 Maximum Per Period N/A Total N/A 0.0541 SOURCES OF INPUT DATA **Parameter** Data Source Uncrusted coal pile, Table 13.2.5-2., AP-42, January 1995. 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. 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

Figure:

Frieds Common Description	Free Handing Alexander	Basisia Sunta da Garagas 54
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

FACILITY AND SOURCE DESCRIPTION

Emission (fb/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 meterial 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		CULATIONS		
Mean Wind	Act	ual .	Material 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	552	882,681	6.5	85.0	0.10	0.08
			OF INDUIT DA			

	SOURCES OF INPUT DATA
Parameter	Data Source
M W6-4 O4	Towns El Cilcusto of the Chates Third Edition 1995
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 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 CONTRO		
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

FH-025

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) = 0.0032 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** Content Efficiency Speed (lb/hr) (tpy) (ton/yr) (pct) (pct) (mph) (ton/hr) 553 882,681 85.0 0.10 80.0 8.6 SOURCES OF INPUT DATA **Data Source** <u>Parameter</u> Mean Wind Speed Tampa, FL, Climate of the States, Third Edition, 1985. **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 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 Data Collected by: A. Trbovich Date: A. Trbovich Date: 09/16/97 Evaluated by: Data Entered by: A. Trbovich Date: 09/16/97 Reviewed by: Date:

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

FH-027

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:** FH-027 Transfer Point ID(s): EMISSION ESTIMATION EQUATIONS Emission (lb/ltr) = 0.0032 x material transferred (ton/ltr) x [(average wind speed (mph)/5) 1.3 / moisture content (pct)/2) 1.4] x (100-control[pct]/100) Emission (tpy) = 0.0032 x meterial 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 Controi Quantity Transferred Content **Efficiency Emission Rates** Speed (lb/hr) (tpy) (ton/yr) (pct) (pct) (mph) (ton/hr) 882.681 6.5 85.0 0.10 0.08 8.6 553 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: 09/16/97 Date: 09/16/97 Evaluated by: A. Trbovich Date: 09/16/97 Data Entered by: A. Trbovich Date: Reviewed by:

FH-028

08/07/97

Date:

Date:

	: apa =:		COURCE TV			11 020
		EMISSION	SOURCE TYPE	<u>'E</u>	<u> </u>	
MATE	RIAL TRANSFER	- FUGITIVE EMIS			Figure:	
		FACILITY AND SC	OURCE DESC	RIPTION		
Emission Source I	Description:	Fuel Handling - Conve	yor F1 to Conve	yor G1/G2		
Emission Control	Method(s)/ID No.(s):	Enclosure With Dust Su	ppressant Spray	/8		
Emission Point ID	:	FH-028		Transfer Point II	D(s):	
		EMISSION ESTIN	MATION EQU	ATIONS		1, 1
Emission (th the) — 0.4	2022 v material transfer	ed (ton/hr) x [(average wind a	(-wm1.41 × (100	
		l (tpy) x [(average wind spee				
		1422_N 1			71	
Source: Section 1	13.2.4 – Aggregate i	landling and Storage Pi	les, AP-42, Fift	h Edition, Januar	y 1995.	
	·					
	IN	PUT DATA AND EM	ISSIONS CAL	CULATIONS	errogen in Borns grand video e grand in State of St	
	·		Material		·	
Mean Wind	Ac	tual.	Moisture	Control		al PM
Speed		ransferred	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	OF INPUT DA			
Para	meter			ata Source	=	
Mean Wind Speed	1	Tampa, FL, Climate of	the States Third	Fdition 1985		
Actual Quantity Tr		TEC, 1997.	are oraces, rime	Luiuon, 1000.		
Material Moisture		Average fuel moisture				
Control Efficiency		Table 3.2.17-2, Workb			and Dispersion M	lodeling of
		rugiuve radiculate oo	uices, onna, o	eptember 1301.		
			000501/47/4	2440		
		NOTES AND	OBSERVATIO	DNS	<u> </u>	
Actual PM emission	ons based on 2,648,0	044 tpy of fuel used. Ac	tual fuel use is t	he average of the	1995 and 1996	actual fuel
used, 2,528,334	4 tons and 2,767,755	tons, respectively.			·	
Actual fuel reclain	ning was assumed to	be equally divided amo	ng the reclaime	rs F1, F2, and F4	l, or 882,681 tons	per reclaimer.
Actual short-term	n emissions based or	n reclaimers F1, F2, and	F4 operating si	multaneously at	533 tph, each.	,
				<u>-</u>	•	
		•	•			
		DATA	CONTROL	· 		· ·
Data Collected	by:	A. Trbovich			Date:	08/07/97
Evaluated by:		A. Trbovich			Date:	08/07/97

A. Trbovich

Data Entered by:

EMISSION INVENTORY WORKSHEET Tampa Electric Company E. J. Gannon Station

	rampa ER	ecure Company - F	.J. Gannon S	tation		<u>гп-029</u>	
		<u>EMISSIŌN</u>	SOURCE TYP	?E			
MAT	ERIAL TRANSFER	R - FUGITIVE EMISS	SION SOURC	ES	Figure:		
		FACILITY AND SO				986 P.J. 3	
Emission Source	Decadations			·		· · · · · · · · · · · · · · · · · · ·	
	 -	Fuel Handling - Convey		•			
Emission Control	Method(s)/ID No.(s):	Enclosure With Dust Sup	ppressant Spray	/8			
Emission Point IC) :	FH-029		Transfer Point ID	(s):		
		EMISSION ESTIM	ATION EQU		` '		
			•				
		ed (ton/hr) x [(average wind s					
Emission (tpy) = 0.0	032 x material transferred	(tpy) x [(average wind speed	d (mph)/5) ^{1,3} / moi	sture content (pct)/2)	^{1.4}] x (100—control[p	xt]/100) x (1/2,000	
Source: Section	1924 - Aggregate l	Handling and Storage Pil		h Edition January	, 1005		
Jource. Jecuon	10.2.4 - Aggregate i	Manding and Storage Fit	165, Ar - 42, Filt	ir Edition, January	1333.		
		PUT DATA AND EMI	SSIONS CAL Material	CULATIONS			
Mean Wind	Act	tual	Material Moisture	Control	Actual PM		
Speed		ransferred	Content	Efficiency	Emission	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	OF INPUT DA	TA	41 1 8 11 044 1 034 3		
Para	ameter			ata Source			
Mean Wind Spee		Tampa, FL, Climate of	the States, Third	<u>d Edition, 1985.</u>			
Actual Quantity T		TEC, 1997.					
Material Moisture Control Efficiency		Average fuel moisture content; TEC, 1994.					
Control Emelency	,	Table 3.2.17-2, Workbook on Estimation of Emissions and Dispersion Modeling of Fugitive Particulate Sources, UARG, September 1981.					
				<u> </u>			
. F. r. P., Salardie Mate. Warenessing	78.08000000 :	NOTES AND	OPCEDVATION	NC:	,		
		NOTES AND	OBSERVATIO	<u></u>	<u> </u>	officer of the second	
Actual PM emissi	ons based on 2,648,0	244 tpy of fuel used. Act	tual fuel use is t	he average of the	1995 and 1996 ac	tual fuel	
used. 2.528.35	34 tons and 2,767,753	tons, respectively.					
Actual fuel reclair	ming was assumed to	be equally divided amo	ng the reclaime	rs F1, F2, and F4,	or 882,681 tons p	per reclaimer.	
Actual short-terr	m emissions based or	n reclaimers F1, F2, and	F4 operating si	multaneously at 5	33 tph, each.		
	,		•				
		DATA	CONTROL		A CAMPAGE AND SERVICE OF THE SERVICE		
Data Collecte	d by:	A. Trbovich		D	ate: 0	8/07/97	
Evaluated by:		A. Trbovich		D	ate: 0	8/07/97	
Data Entered	bv:	A. Trbovich		D	ate: 0		

Date:

Tampa Electric Company - F.J. Gannon Station

FH-031

		EMISSION	SOURCE TY	E		· .	
MATE	RIAL TRANSFER	- FUGITIVE EMIS	SION SOURC	ES	Figure:		
		FACILITY AND SC	OURCE DESC	RIPTION	2011年11日	•	
Emission Source D	Description:	Fuel Handling - Convey	vor F2 to Conve	vor G1/G2			
Emission Control	-	Enclosure With Dust Su		-			
			pproducti opre		24-1-	_	
Emission Point ID:		FH-031	ATIONICOLL	Transfer Point I	• •	 	
		EMISSION ESTIN	MATIONEQUI	ATTONS	<u> </u>		
Emission (lb/br) = 0.0	032 v material transfers	ed (ton/hr) x [(average wind s	mend (mmh)/5)1.3	moisture content (
		(tpy) x (average wind spee					
(17)				4 - 7 ·			
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		CULATIONS			
	_		Material	0-4-1	Actual PM		
Mean Wind		tual	Moisture	Control			
Speed		ransferred	Content	Efficiency	Emissio		
(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 DA	<i>TA</i>			
Para	meter			ata Source			
Mean Wind Speed		Tampa, FL, Climate of	the States, Third	d Edition, 1985.	<u> </u>		
Actual Quantity Tra	ansferred	TEC, 1997.	· ·		<u> </u>		
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 So	<u>urces, UARG, S</u>	eptember 1981.			
		NOTES AND	ORSERVATION	ONS		Magazini.	
Actual PM emissio	ns based on 2,648,0	244 tpy of fuel used. Ac	tual fuel used is	the average of t	he 1995 and 1996	actual fuel	
used. 2.528.334	tons and 2,767,753	tons, respectively.					
		,					
Actual fuel reclaim	ing was assumed to	be equally divided amo	ng relcaimers F	1, F2, and F4, o	r 882, 6 81 tons per	reclaimer.	
Actual about tarm	aminalana basad as	n reclaimers F1, F2, and	E4 aparating si	multanagualy at	522 tob seeb		
ACION SHOIL-INI	emissions Dased Oi	1 recialmers F1, F2, and	r4 operating si	munarieously at	Jos ipii, eacii.		
	-		•				
		DATA	CONTROL	, v	- Companyana Nagas		
Data Callanta d	hac		- JOHN HOLE		s_ssa	08/07/97	
Data Collected	uy.	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:		

EMISSION INVENTORY WORKSHFFT FH-032 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 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) = 0.0032 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 Speed Content Efficiency **Emission Rates** (mph) (ton/hr) (ton/yr) (pct) (pct) (lb/hr) (tpy) 1,324,022 6.5 90.0 0.10 80.0 8.6 800 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** 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 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 A. Trbovich Date: 08/07/97 Data Collected by: Date: 08/07/97 Evaluated by: A. Trbovich

A. Trbovich

08/07/97

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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-099 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 Moisture Actual Control Speed **Quantity Transferred** Content **Efficiency Emission Rates** (lb/hr) (tpy) (mph) (ton/hr) (ton/yr) (pct) (pct) 8.6 800 1,324,022 6.5 90.0 0.10 0.08 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. 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 between conveyors G1 and G2, or 1,324,022 tons per conveyor.

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

	Tampa Ek	ectric Company – F				FH-034
MAT	EDIAL TRANSFER	R – FUGITIVE EMIS	SOURCE TYPE		Figure.	estatives of the state of
MAI	ENIAL TRANSFER	FACILITY AND SC			Figure:	and the work
Emission Source	Description:	Fuel Handling - Hamm				· · · · · · · · · · · · · · · · · · ·
<u>-</u>	•	<u>-</u>				
		Enclosure With Dust Su	bbiesseur obien	-		
Emission Point ID):	FH-034 EMISSION ESTIM	MATION FOLL	Transfer Point ID	(s):	
			na non Equi	ATTONO:	·	<u> </u>
		ed (tor/hr) x [(average wind a f (tpy) x [(average wind spee				
Emission (tpy) = 0.0	032 x material transferred	I (tpy) x [(average wind spee	<u>d (mph)/5) ' ~ / moi</u>	sture content (pct)/2)	***] x (100-control)	ocij/100) x (1/2,000
Source: Section	13.2.4 – Aggregate I	Handling and Storage Pi	iles, AP-42, Fifti	h Edition, January	1995.	
						•
		PUT DATA AND EM		CULATIONS	region and generally distributed in the con-	a is surjected whole
Mean Wind	Ac	tual	Material Moisture	Control	Actual	P M
Speed	Quantity 1	ransferred	Content	Efficiency	Emission	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 DA		fra Holi	
Para	ameter			ata Source		
Mean Wind Speed	di	Tampa, FL, Climate of	the States, Third	Edition, 1985.		
Actual Quantity T		TEC, 1997.				
Material Moisture		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	OBSERVATIO	ONS		
Actual PM emissi	ons based on 2,648,0	044 tpy of fuel used. Ac	tual fuel use is t	he average of the	1995 and 1996 ac	ctual fuel
used, 2,528,33	4 tons and 2,767,753	3 tons, respectively.				
		be equally divided beto	waan convavors	H1 and H2 or 1 3	124 022 tons per c	CODVEYOR
Actual Idei Tectali	ming was assumed to	be equally divided bett	ween conveyors	111 4114 112, 01 1,0	24,022 tons per c	
		<u> </u>				
•			•			
		DATA	CONTROL			
Data Collected	d by:	A. Trbovich		D	ate: 0	8/07/97
Evaluated by:		A. Trbovich		D	ate: 0	8/07/97

A. Trbovich

08/07/97

Date:

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FH-035 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 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) = 0.0032 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** Efficiency **Emission Rates** Speed Content (mph) (ton/hr) (ton/yr) (pct) (pct) (lb/hr) (tpy) 80.0 8.6 800 1.324.022 6.5 90.0 0.10 SOURCES OF INPUT DATA Parameter 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. 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 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 CONTROL

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Data Entered by:

Evaluated by:

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

FH-036-FH-041

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MA	TERIAL TRANSFER	R - FUGITIVE EMIS	SION SOURC	ES	Figure:		
		FACILITY AND SC	OURCE DESC	RIPTION			
Emission Source	e Description:	Fuel Handling - Conve	yors H1/H2 to C	onveyors J1/J2, (Conveyors J1/J2 to	Bunkers 1-6	
Emission Contro	ol Method(s)/ID No.(s):	Rotoclones 1 through 6					
Emission Point ID:		FH-036 through FH-04	1 1	Transfer Point ID)(s):		
		EMISSION ESTIN	NATION EQU	ATIONS			
Emission (lb/hr) =	0.0032 x meterial transferre	ed (ton/hr) x [(average wind s	speed (mph)/5) ^{1,3}	/ moisture content (o	ct)/2) ^{1.4} 1 x (100-con	troi[oct]/100)	
		(tpy) x [(average wind spee					
Source: Section	n 19 2 4 — Aggregate i	Handling and Storage Pi	los AD-42 5H	h Edition Jeouse		_	
Source. Secuoi	i 15.2.4 – Aggregale i	naliding and Storage Fi	165, AF - 42, FIII	n Editon, Januar	y 1993.		
			10010110101				
— Т		PUT DATA AND EM	ISSIUNS CAL Material	CULATIONS		· · · · · ·	
Mean Wind	Ac	tual	Moisture	Control Efficiency	Actual PM Emission Rates		
Speed		ransferred	Content				
(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		TA		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
	<u>rameter</u>	Data Source					
Mean Wind Spe		Typical Indraft Velocity	for Coal Bunke	rs, ECT 1994.	_	<u> </u>	
Actual Quantity		TEC, 1997.					
Material Moistur Control Efficience		Average fuel moisture content; TEC, 1994. Control Equipment Vendor Data AAF, 1960.					
	- ,		,				
		NOTES AND	OBSERVATION	ONS	gr sample. ja li		
A - A I DM I	· · · · · · · · · · · · · · · · · · ·				- 4005 4 4006	4161	
Actual PM emiss	sions based on 2,046,0	044 tpy of fuel used. Ac	tual fuel used is	the average of the	10 1995 and 1996	actual luel	
used, 2,528,3	34 tons and 2,767,753	tons, respectively.				•	
						•	
		DATA	CONTROL	De decision de décisión de la respectivo		Server Se	
Data Collecte	ed by:	A. Trbovich		[Date: C	8/07/97	
Evaluated by	:	A. Trbovich		[Date: (8/07/97	
Data Entered	l by:	A. Trbovich			Date: (08/07/97	
Reviewed by	•				Date:		

Tampa Electric Company - F.J. Gannon Station

FH-044

09/16/97

Date: Date:

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 (tb/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 (VMT/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 W Vehicle Miles Control **Actual PM** P Travelled Efficiency **Emission Rates** Silt Content Vehicle Speed | Vehicle Weight No. of Wheels | Rainfall Days (VMT/hr) (VMT/yr) (pct) (mph) (ton) (pct) (lb/hr)(tpy) 10.38 30.21 8.4 2.5 48 6 107 10.0 58.240 50.0 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 buildozers on the storage piles. DATA CONTROL Data Collected by: A. Trbovich Date: 09/16/97 Evaluated by: A. Trbovich Date: 09/16/97

Data Entered by:

Reviewed by:

A. Trbovich