

**Introduction**

Tampa Electric Company (TEC) intends to install an emergency by-pass conveyance system (J3 by-pass conveyors). The system will serve as a backup system conveyance system should one or more of the existing conveyors should fail. The system is expected to operate continuously up to 7 days while the existing conveyors are being repaired. The proposed system is considered a physical change and is subject to the air construction permitting requirements in Chapter 62-210.300 F.A.C. TEC is submitting an air construction permit application to construct the emergency by-pass conveyance system.

**Existing Coal Yard**

A description of the existing conveyors and emission point IDs are shown in the Table 1. The coal is unloaded from the Barge Clamshell or Bucket Elevators and conveyed to the middle fuel yard area, where it is stacked and stored. Coal from the storage pile is reclaimed and conveyed to the blending bins, crusher tower and the boiler bunkers. Attachment B1 - B5 shows the process flow diagrams of the existing coal conveyance system. The layout of the existing coal yard area is shown attached.

**Table 1. Description Summary of the Existing Coal Yard Conveyance System**

Transfer Point/Conveyance System	Emission Point ID
Barge Clamshell to Conveyor D1	FH-001
Barge Bucket Elevator to Conveyor A1	FH-002
Conveyor A1 to Conveyor B1	FH-003
Conveyor B1 to Conveyor D1	FH-004
Self-Unloading Barge to Conveyor D1	FH-005
Conveyor D1 to Conveyor E1	FH-006
Conveyor E1 to Conveyor Y or F1	FH-007
Conveyor Y to Conveyor Z	FH-008a
Conveyor Z to West Emergency Storage Pile (WESP)	FH-008b
Dozer Reclaim from WESP to Portable Conveyor	FH-011a
Portable Conveyor to Conveyor F1	FH-011b
Conveyor Z to Conveyor P	FH-012
Conveyor P to Intermediate Conveyor	FH-013
Intermediate Conveyor to North Stacker Conveyor (G2)	FH-014
North Stacker Conveyor (G2) to North/Center Storage Pile	FH-015
Bucket Elevator Reclaim to North Stacker Conveyor (G2)	FH-016
North Stacker Conveyor (G2) to Conveyor P	FH-017
Conveyor F1 to South Stacker Conveyor (G1)	FH-022
South Stacker Conveyor (G1) to South/Center Storage Pile	FH-023
South Reclaimer to South Reclaimer Conveyor (G1)	FH-024
South Reclaimer Conveyor (G1) to Conveyor F1	FH-025
Conveyor P to Conveyor J2	FH-028
Conveyor J2 to Conveyor Q2	FH-029
Conveyor F1 to Conveyor J1	FH-030
Conveyor J1 to Conveyor Q1	FH-031
Conveyors Q1 and Q2 to Blending Bins	FH-032 thru FH-035
Blending Bins to Conveyors T1 and T2	FH-036 thru FH-047
Conveyor T1 to Crusher 1	FH-048
Conveyor T2 to Crusher 2	FH-049
Crusher to Conveyor W1	FH-050
Crusher to Conveyor W21	FH-051
Conveyor U to East Emergency Storage Pile (EESP)	FH-052

Conveyor W1 to Conveyor L1	FH-055
Conveyor W2 to Conveyor L2	FH-056
Dozer Reclaim from EESP to "K" Feeders	FH-057
"K" Feeders to Conveyors L1 or L2	FH-058
"Conveyors L1 and L2 to Fuel Bunkers	FH-059 thru FH-062

### Existing By-Pass Emergency Conveyance System

TEC does not have a dedicated emergency by-pass system.

### Proposed By-Pass Emergency Conveyance System

TEC intends to construct an emergency bypass conveyance system (J3 bypass conveyors). In the event of an emergency, a bull dozer (CAT D9) will continuously move and push coal to the grizzly infeed hopper area (FH-100 dozer emissions). The bull dozer will push and move coal into the grizzly hopper from the existing pile. The coal from grizzly hopper is conveyed onto a 72" covered, belt conveyor (FH-101). The coal is then conveyed to a 54" covered, by-pass conveyor (FH-102). The coal is conveyed to new enclosed hoppers and then into the existing L conveyors (FH103).

The existing infeed hopper consists of four (4) K feeders (K1A, K1B, K2A, K2B). Feeders K1A and K2A will remain in place to conveyor beneficiated fly ash to the L conveyors. Feeders K1B and K2B will be dismantled and removed to increase the conveying rate from 1,000 to 2,000 tons per hour. The existing hoppers on the K feeders and L Conveyors will be modified to an enclosed hopper to allow direct conveyance from the 54" conveyor to L1 and L2 conveyors.

### Emission Control Equipment

TEC is currently required to treat the coal with surface water spray and surfactants to minimize fugitive emissions. The proposed system will use similar engineering controls to minimize fugitive dust emissions. The conveyors will be enclosed/covered to minimize fugitive emissions during conveyance. The transfer points will be completely enclosed to prevent fugitive emissions. The system will not contain a dust suppression system. However, best management practices such as water sprays will be used to suppress fugitive emission during bull dozer operations and grizzly hopper loading.

### Proposed Emissions

TEC conducted calculations to estimate PM/PM<sub>10</sub>/PM<sub>2.5</sub> emissions from the emergency conveyance system. The AP-42 procedure, Section 13.2.2.2, Eqn. (1a), was used to calculate the particulate matter (PM) emissions for the CatD9 bull dozer operations. Similarly, the AP-42 procedure, Section 13.2.4.3, Eqn. (1), was used to calculate the particulate matter (PM) emissions for material handling operations. The calculations were based on operating at the maximum heat input and coal feed rates from each unit operating at 8,760 hours per year.

Table 2 shows the PM emissions from the emergency bypass conveyors are below the significant emission thresholds. The PM, PM<sub>10</sub> and PM<sub>2.5</sub> emissions were calculated to be 3.1, 1.4 and 0.20 tons per year, respectively. Consequently, this proposed unit is considered a regulated source of emissions pursuant to Rule 62-210.300, F.A.C.

### Permitting Applicability

This emission unit will be used an emergency bypass coal conveyance system. This unit is considered a "Modification" pursuant to Chapter 62-210.200(199) F.A.C. The unit emissions for does not exceed the signification emission thresholds for PM, PM<sub>10</sub> and PM<sub>2.5</sub> set forth in CFR 52.21. Therefore, this unit is only subject an air construction permitting requirements pursuant to Chapter 62-210.300 F.A.C.

**Table 2. Particulate Matter Emissions Summary**

Activity/Transfer Point	EU ID	Emission Rate (TPY)		
		PM	PM <sub>10</sub>	PM <sub>2.5</sub>
Dozer Operations	FH-100	0.41	0.094	0.0094
Dozer Operations to Grizzly Hopper	FH-101	2.2	1.1	0.16
Grizzly Hopper to Bypass Conveyor	FH-102	0.22	0.11	0.016
Bypass Conveyor to "K" Feeder to L1 or L2	FH-103	0.22	0.11	0.016
Total		<b>3.1</b>	<b>1.4</b>	<b>0.20</b>

**Permitting Applicable Requirements**

This emission unit is subject the following requirements:

Federal

40 CFR Part 60 Subpart Y: Standards of Performance for Coal Preparation Plants

State

Chapter 62-296.320(4)(c)., F.A.C.: Unconfined Emissions of Particulate Matter  
Chapter 62-296.711 Materials Handling, Sizing, Screening, Crushing and Grinding Operations.

Local (General Requirement)

EPC/HC PART 5, Chapter 1-3.52, Visible Emissions (5% visible emissions requirement)

**Proposed Construction Schedule**

The unit is expected to commence construction in June 2012.

**Attachments**

Existing System

- Attachment B1: Fuel Handling Process Flow Diagram, Barge Unloading and Middle Fuel Yard
- Attachment B2: Fuel Handling Process Flow Diagram, North/Middle Fuel Yard
- Attachment B3: Fuel Handling Process Flow Diagram, South/Middle Fuel Yard
- Attachment B4: Fuel Handling Process Flow Diagram, Blending Bins
- Attachment B5: Fuel Handling Process Flow Diagram, Crusher Tower, Bunkers
- Facility Plot Plan
- Existing Conveyor System Layout

Proposed System

- Drawing L-000: Overall Site Plan of the Emergency Bypass Conveyor System
- Drawing 11473-FC-21C-2: Layout of Emergency Bypass Conveyor System (markup)
- Drawing L-030: General arrange of the 72" belt feeder
- Drawing L-039: General arrangement of the 54" Emergency Bypass Conveyor
- Process Flow Diagram
- Emission Calculations