

Robert W.



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DIVISION OF AIR RESOURCE MANAGEMENT

November 1, 2011

Jeffrey F. Koerner, Program Administrator
Florida Department of Environmental Protection
Division of Air Resource Management
Office of Air Permitting and Compliance
2600 Blair Stone Road, M.S. 5505
Tallahassee, Florida 32399-2400

Via Fedex
Airbill No. 7976 9018 8442

Re: Tampa Electric Company - Big Bend Station
Title V Permit Number 0570039-045-AV
Emergency Limestone Conveyance System (EUs -020)
Air Permit Application 3094-1
Facility ID No. 0570039

Project NO: 0570039-051-AC
concurrent - 0570039-052-AV ✓

Dear Mr. Koerner:

Tampa Electric Company (TEC) is electronically submitting an air permit application No. 3094-1 to construct and operate a backup emergency limestone conveying system (EU-020). This conveyance system will serve as a backup conveyance system to maintain the supply of limestone to the flue gas desulfurization (FGD) system, if the existing conveyance system fails.

Existing Limestone Conveyance System

Limestone is currently conveyed at 200 tons per hour from the limestone storage building to the plant FGD system through a series of conveyors (see Figure 1). Conveyor LD transfers limestone from the storage building onto conveyor LE. The limestone is conveyed to conveyor LF, then transferred into the Silo C. Particulate matter (PM) emissions from these conveyors are controlled by a baghouse.

Proposed Emergency Limestone Conveyance System

An emergency limestone conveyance system rated at 100 tons per hour is proposed. The new equipment will consists of a reclaimer hopper and bucket elevator. The hopper will be designed to be movable so that it will not interfere with normal vehicle traffic in this area. A short feeder belt conveyor will be located at the bottom of the hopper to feed the bucket elevator conveyor. The bucket elevator conveyor will transfer the limestone vertically upward approximately 100 feet into Silo C. Except for the hopper, the conveyance system will be fully enclosed to minimize dust emissions during operation. A plan and profile drawing of the system is shown attached.

Two options are available to supply limestone to the emergency conveyance system. The primary option consists of bulk deliveries of limestone from a supplier (See option no. 1 - Figure 2). Trucks will enter into the facility and unload the limestone in a designed paved area adjacent the hopper. An existing front end loader will continuously transfer limestone from the stock pile into the hopper to meet the limestone demand. The truck deliveries will be coordinated and staged in a manner to minimize emissions and impacts to the facility. Approximately 4 trucks with a capacity of 25 tons are anticipated to meet the 100 tons per hour requirement. Each truck will travel a total of about 2,500 feet to deliver the load. Larger bulk deliveries in excess of the 25 tons may be used depending on the operating needs at the time. This may result in a reduction in the number of deliveries and fugitive road emissions.

The secondary option will supply limestone from the limestone storage building (See option no. 2 - Figure 2). Existing front end loader(s) will transfer limestone from the storage building to the hopper. The front end loader(s) will travel a total of approximately 1,300 feet each time to fill the hopper.

Emissions Impact

TEC conducted calculations to estimate PM emissions from this proposed conveyance system (see attached). The system is designed to operate as a backup emergency conveyance system when the existing conveyance system malfunctions or fails. The AP-42 procedure (13.2.4 Aggregate Handling and Storage Piles) was used to estimate the amount of the limestone emissions during loading the hopper. The AP-42 procedure (13.2.1 Paved Roads) was used to estimate emissions generated by the front end loader during operation.

Table 1 shows the PM emissions summary of the proposed system. These calculations are based on operating up to 250 hours per year, and excludes the contribution of emissions from the existing system. Truck and front end loader (option no. 2) vehicle dust emissions are based on a control efficiency of 50%. A summary of the air emission calculations is attached.

Table 1 – Summary of PM Emissions (Options No. 1 and 2).

Description	PM Emissions (tons/year)
Existing Conveyance System (Not operating)	0.0057
Proposed Conveyance System (Options No.1)	
Limestone Emissions	0.015
Front End Loader Emissions (50% controlled)	1.2
Net Emissions (Option No.1)	1.2
Proposed Conveyance System (Options No.2)	
Limestone Emissions	0.0082
Front End Loader Emissions	1.2
Net Emissions (Option No.2)	1.2

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The calculations demonstrate the emissions are less than the 5.0 tons per year threshold. For option no.1, the net emission rate, including fugitive emissions from vehicle travel, is about 1.2 tons per year. Similarly, the net emissions rate for option is approximately 1.2 tons per year. Therefore, these emissions are considered an insignificant source of emissions pursuant to Rule 62-210.300(3)(b)1., F.A.C. However, this system is subject to the air construction permitting requirements as a new or modified emissions unit.

TEC requests concurrent processing of the air construction permit and Title V permit revision. Please contact me at (813) 228-4232 or Byron Burrows at (813) 228-1282, if you have any questions or comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert Velasco". The signature is fluid and cursive.

Robert A. Velasco, P.E., BCEE, QEP
Air Programs
Environmental, Health & Safety

EHS/rfk/RAV119

cc: Cindy Zhang-Torres DEP
Diana Lee, EPCHC