



Jeb Bush  
Governor

# Department of Environmental Protection

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

David B. Struhs  
Secretary

**Permittee:**

Tampa Electric Company  
P.O. Box 111  
Tampa, Florida 33601-0111

**Expiration Date:** July 5, 2002

**Permit No.:** 0570040-012-AC

**Facility ID No.:** 0570040

**SIC No.:** 49, 4911

**Project:** Gannon Station - Unit Nos. 1, 2, & 4  
WDF Modification

**STATEMENT OF BASIS:** This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-204, 62-210, 62-212, 62-213, 62-296, 62-297, and Chapter 62-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans and other documents, attached hereto or on file with the Florida Department of Environmental Protection:

This permit is for the modification of the F. J. Gannon Station Unit Nos. 1, 2, and 4 steam generator operating limitations to allow for the firing of a coal and wood-derived fuel (WDF) blend. WDF can be composed of Paper Pellets, Yard Trash, and Wood/Wood Chips, as defined in this permit.

**Effective Date:** (clerk date)

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Howard L. Rhodes, Director  
Division of Air Resources  
Management

HLR/sms

**Subsection A. Summary of Emissions Unit ID Nos. and Brief Descriptions.**

**E.U.**

<b><u>ID No.</u></b>	<b><u>Brief Description</u></b>
-001	Unit No. 1-Fossil Fuel-Fired Steam Generator
-002	Unit No. 2-Fossil Fuel-Fired Steam Generator
-004	Unit No. 4-Fossil Fuel-Fired Steam Generator

*Please reference the Permit No., Facility ID No., and appropriate Emissions Unit(s) ID No(s). on all correspondence, test submittals, applications, etc.*

**Subsection B. Relevant Documents.**

The documents listed below are not a part of this permit; however, they are specifically related to this permitting action.

These documents are on file with permitting authority:

- AC permit application received August 28, 2000.
- Additional information requested September 26, 2000.
- TECO response received November 27, 2000.
- Additional information requested December 27, 2000.
- TECO response received March 21, 2001.

1. A part of this permit is the attached 15 General Conditions. [Rule 62-4.160, F.A.C.]
2. Issuance of this permit does not relieve the permittee from complying with applicable emission limiting standards or other requirements of Chapters 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, or any other requirements under federal, state or local law.  
[Rule 62-210.300, F.A.C.]

Operation Limitations - Fuels

3. This permit allows Unit Nos. 1, 2, and 4 to be fired on a coal/wood-derived fuel (WDF) blend with the following restrictions:
  - A. The maximum amount of WDF fired in a boiler shall not exceed 10% of the fuel fired in a boiler on a weight basis. The total quantity of WDF fired in Unit Nos. 1, 2, 3, and 4 shall not exceed 56,940 tons per consecutive 12-month period (*56,940 TPY is the calculated weight basis from Unit No. 3, allowed by Permit No. 0570040-012-AC*).  
(\* Note: See C. below for additional restrictions.)
  - B. WDF shall be defined only as material falling under one of the following type categories  
(\* Note: See C. below for additional restrictions):
    - i. Paper Pellets - Pellets consisting of paper, cardboard and polymer-impregnated or coated paper, such as disposable drinking cups, paper plates, etc.,. It shall include no materials coated or treated with hazardous substances including, but not limited to, tar, asphalt, and coatings containing heavy metals. Pellets shall be free of hazardous substances and as free as practicable of metal, hard plastics, textiles, and food products.
    - ii. Yard Trash - As defined in Rule 62-701.200 (90), F.A.C., and shall contain only vegetative material resulting from landscaping maintenance or land clearing operations and includes materials such as trees and shrub trimmings, grass clippings, palm fronds, trees and tree stumps.
    - iii. Wood/Wood Chips - Derived from clean wood lumber, pallets, construction debris free of listed hazardous substances including, but not limited to, pentachlorophenol, creosote, tar, asphalt, and paint containing heavy metals.
  - C. Based upon the operating conditions during the April 18 and 19, 2000, WDF test burn for Unit No.3, the following additional WDF usage restrictions apply until additional compliance stack testing is done during firing of different WDF blend ratios and WDF types.
    - i. WDF is limited to a maximum of 4.0% of the fuel fired in a unit on a weight basis.
    - ii. WDF is limited to paper pellets only.

In order to increase the WDF blend ratio above the level in C. i. (but never to exceed 10% WDF), or allow for the blending of Yard Trash and Wood/Wood Chips as part of the WDF, then additional testing shall be conducted on the applicable unit. To increase the blend % for WDF consisting of paper pellets only, PM and VE testing only will be required. Successful testing showing compliance with the operation permit limitations at a higher blend ratio will allow future operation up to that level + 10% (not to exceed 10% WDF by weight). Successful testing (i.e. testing showing compliance with the permit limitations and demonstrating no increase in emissions due to the inclusion of the additional types of WDF) while firing Yard Trash and Wood/Wood Chips will allow for subsequent use of those categories of WDF as part of the coal/WDF blend. The permittee shall notify the Air Compliance Section of the Southwest District Office of the Department and the Air Management Division of the Environmental Protection Commission of Hillsborough County (EPC), at least 15 days prior to the date on which each formal compliance test is to begin of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted. The test notification shall include a proposed test protocol which, upon agreement by the Department, will establish the testing to be done and the conditions under which the test will be conducted and evaluated. A copy of the test report shall be submitted to the Air Management Division of the EPC and the Air Compliance Section of the Southwest District Office of the Department within 45 days after the test is completed.

*Testing Note: As it deems appropriate and applicable, the Department may take into account the results of any WDF blend testing conducted on a unit in approving changes to WDF types and blend ratios in lieu of additional testing.*

- D. Paper pellets fired in this unit shall be produced using a waste separation process as described or similar to that described as the "typical waste separation process for Paper Pellets" submitted as Attachment D to the application for Permit No. 0570040-011-AC, including separation of large items, hand sorting, metal extraction/separation, air classification, organic material screening, and large film plastic removal; or equivalent waste separation processing methods (i.e. methods that are designed to result in a target level of approximately 5% or less non-paper materials in the final waste stream). Each time that the permittee receives material from a new paper pellet supplier, or there is a significant change in the waste separation process of a prior supplier, the permittee shall submit a detailed description of the waste separation process used by that supplier (or changes to a previously submitted supplier's process) to the Air Management Division of the Environmental Protection Commission of Hillsborough. The Department reserves the right to request additional information, require additional testing of, or disapprove use of paper pellets from this supplier if it has good reason to believe that this waste separation process will not result in material that meets the above definition of Paper Pellets.

[Rules 62-4.070(3), 62-297.310(7)(a)9, and 62-297.310(8), F.A.C., permit application dated August 1998, and Department test burn authorization letter of March 18, 1997]

3.1. The firing of coal and WDF blend in these units is prohibited after December 31, 2004.  
[Consent Decree (U.S. vs. TECO) dated February 29, 2000]

#### Additional Recordkeeping Requirements

4. In order to document compliance with Specific Condition No. 3, the permittee shall maintain daily records for each unit of the quantity (tons) of WDF fired, with a statement as to the type(s) of WDF included (i.e. Paper Pellets, Yard Trash and/or Wood/Wood Chips), and the coal/WDF blend ratio (on a weight basis). The permittee shall also keep records, on a monthly basis of the estimated total of WDF fired by type (i.e. Paper Pellets, Yard Trash and/or Wood/Wood Chips). This monthly record shall also include a statement identifying the suppliers of the paper pellets used that month. These records shall be recorded in a permanent form suitable for inspection by the Department upon request, and shall be retained for at least a five (5) year period.

[Rule 62-4.070(3), F.A.C.]

#### Additional Compliance Testing Requirements

5. Future annual particulate matter and visible emissions testing shall be conducted while firing coal/WDF blend at 90-100% of the maximum permitted WDF blend ratio (or the maximum WDF blend ratio for which the permittee wants the unit to be permitted for, not to exceed 10% WDF). This requirement may be waived (and testing done on 100% coal) if coal/WDF blend has been fired for less than 400 hours in the previous 12 month period and it is anticipated that it will not be used for more than 400 hours in the next 12 month period. The test reports shall include a statement and documentation of the coal/WDF blend ratio (weight basis) in use during the test, including a statement as to the types of WDF (i.e. Paper Pellets, Yard Trash and/or Wood/Wood Chips) included in the WDF material fired.

[Rules 62-4.070(3), and 62-297.310(20) and (8), F.A.C.]

#### Title V Permit Revision

6. Within 180 days of completion of testing of each unit, the permittee shall submit a Title V operation permit revision application to include the terms of this construction permit in the Title V permit for the F. J. Gannon Station.

[Rule 62-213.420, F.A.C.]

TECHNICAL EVALUATION  
AND  
PRELIMINARY DETERMINATION

Tampa Electric Company (TECO)  
F. J. Gannon Station  
**Facility ID No.:** 0570040  
Hillsborough County

Air Construction (Modification) Permit  
**Permit No.:** 0570040-012-AC

Department of Environmental Protection  
Division of Air Resource Management  
Bureau of Air Regulation

June 11, 2001

# TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

## 1. GENERAL INFORMATION

### 1.1 APPLICANT NAME AND ADDRESS

Authorized Representative: Ms. Karen A. Sheffield, P.E.  
General Manager

F. J. Gannon Station  
Tampa Electric Company  
P. O. Box 111  
Tampa, Florida 33601-0111

### 1.2 REVIEW AND PROCESS SCHEDULE

August 28, 2000	Received permit application.
September 26, 2000	Additional information requested.
November 27, 2000	TECO response received.
December 27, 2000	Additional information requested.
March 21, 2001	TECO response received; application deemed complete.

## 2. FACILITY INFORMATION

This facility is located at Port Sutton Road, Tampa, Hillsborough; UTM Coordinates: Zone 17, 360.1 km East and 3087.5 km North; Latitude: 28° 02' 31" North and Longitude: 82° 25' 31" West.

The SIC code is:

Industry Group No.	49	Electric, Gas and Sanitary Services
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The F. J. Gannon station consists of six steam boilers (Units 1 through 6); six steam turbines; one simple-cycle combustion turbine; a once-through cooling water system; solid fuels, fluxing material, fly ash, slag, and storage/handling facilities; fuel storage tanks; and ancillary support equipment. The nominal output is 1317 megawatts (MW). The facility utilizes coal as its primary fuel for Units 1-6. The combustion turbine is allowed to burn new No. 2 fuel oil, with a maximum sulfur content of 0.5%, by weight.

*The requested modification is to allow TECO the flexibility to burn Wood Derived Fuel (WDF)/coal blends in Units 1, 2, and 4 in accordance with the same conditions specified by Permit No. 0570040-011-AC. The maximum WDF allowed to be burned at the station does not change.*

This facility is classified as a Major or Title V Source of air pollution because emissions of at least one regulated air pollutant, such as particulate matter (PM/PM<sub>10</sub>), sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), or volatile organic compounds (VOC) exceeds 100 tons per year (TPY).

This facility is within an industry included in the list of the 28 Major Facility Categories per Table 62-212.400-1, F.A.C. Because emissions are greater than 100 TPY for at least one criteria pollutant, the facility is also a Major Facility with respect to Rule 62-212.400, Prevention of Significant Deterioration (PSD). This facility is a major source of hazardous air pollutants (HAPs).

## 3. PERMIT DESCRIPTION

The applicant requests approval to burn Wood Derived Fuel (WDF)/coal blends in Units 1, 2, and 4.

Tampa Electric Company  
F. J. Gannon Station

Permit No.: 0570040-012-AC

## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Unit No. 3 is currently permitted to burn Wood Derived Fuel (WDF). Unit No. 3 began commercial operation in August 1960.

This Permit addresses emissions units -001, 002, and -004 (Unit Nos. 1, 2 and 4 respectively).

#### 4. PERMIT EMISSIONS & RULE APPLICABILITY

A comparison of past actual annual emissions to future actual representative annual emissions for Units 1, 2, and 4 was provided by Thomas W. Davis, P.E., ECT, on November 27, 2000. When firing WDF, emissions of SO<sub>2</sub> and NO<sub>x</sub> decrease. A brief summary for each unit is shown below.

Unit No. 1			
Pollutant	Combustion of coal only	Combustion of coal with WDF	Emission Rate Change
PM	84.4 TPY	84.4 TPY	0 TPY
PM10	84.4 TPY	84.4 TPY	0 TPY
H <sub>2</sub> SO <sub>4</sub>	20.8 TPY	20.8 TPY	0 TPY
SO <sub>2</sub>	4,363.9 TPY	4,327.3 TPY	-36.6 TPY
NO <sub>x</sub>	2,158.0 TPY	2,011.7 TPY	-146.3 TPY
VOC	16.2 TPY	16.2 TPY	0 TPY
CO	830.0 TPY	830.0 TPY	0 TPY

Unit No. 2			
Pollutant	Combustion of coal only	Combustion of coal with WDF	Emission Rate Change
PM	80.3 TPY	80.3 TPY	0 TPY
PM10	80.3 TPY	80.3 TPY	0 TPY
H <sub>2</sub> SO <sub>4</sub>	19.8 TPY	19.8 TPY	0 TPY
SO <sub>2</sub>	4151.0 TPY	4,116.2 TPY	-34.8 TPY
NO <sub>x</sub>	2,052.8 TPY	1,913.6 TPY	-139.2 TPY
VOC	15.5 TPY	15.5 TPY	0 TPY
CO	789.5 TPY	789.5 TPY	0 TPY



## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Unit No. 4

Pollutant	Combustion of coal only	Combustion of coal with WDF	Emission Rate Change
PM	134.5 TPY	134.5 TPY	0 TPY
PM10	134.5 TPY	134.5 TPY	0 TPY
H <sub>2</sub> SO <sub>4</sub>	33.1 TPY	33.1 TPY	0 TPY
SO <sub>2</sub>	6,954.4 TPY	6,896.1 TPY	-58.3 TPY
NO <sub>x</sub>	3,439.1 TPY	3,205.9 TPY	-233.2 TPY
VOC	25.9 TPY	25.9 TPY	0 TPY
CO	1,322.7 TPY	1,322.7 TPY	0 TPY

Tests were conducted on unit No. 3 while firing a blend of coal and 4% WDF on April 18 & 19, 2000. A summary of the test results is shown below. Air pollutant emissions *decreased* for SO<sub>2</sub> and NO<sub>x</sub>.

Pollutant	Combustion of coal only	Combustion of coal with 4% WDF	Emission Rate Change
PM - Sootblowing	0.03 lb/MMBTU	0.03 lb/MMBTU	0 lb/MMBTU
H <sub>2</sub> SO <sub>4</sub>	0.003 lb/MMBTU	0.003 lb/MMBTU	0 lb/MMBTU
SO <sub>2</sub> <sup>1</sup>	1.551 lb/MMBTU	1.538 lb/MMBTU	-0.013 lb/MMBTU
NO <sub>x</sub> <sup>1</sup>	0.767 lb/MMBTU	0.715 lb/MMBTU	-0.052 lb/MMBTU
VOC	0 lb/MMBTU	0 lb/MMBTU	0 lb/MMBTU
VE	0	0	0

All data based on stack test unless otherwise noted.

<sup>1</sup> CEM data.

Because this Permit requires a modification, an AC permit is required and the public notice requirements for AC permits are applicable.

The proposed Permit is otherwise subject to preconstruction review requirements under the provisions of Chapter 403, Florida Statutes, and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). Allowable excess emissions will not change as a result of this Permit.

The facility is located in an Hillsborough County designated "attainment" for all the criteria pollutants (Rule 62-204.360, F.A.C.).

The emission units affected by this permit shall comply with all applicable provisions of the Florida Administrative Code.

Tampa Electric Company  
F. J. Gannon Station

Permit No.: 0570040-012-AC

# **TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION**

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## **5. AIR POLLUTION CONTROL TECHNIQUES**

No emission limits or compliance requirements will change as a result of this Permit.

## **6. CONCLUSION**

Based on the foregoing technical evaluation of the application and additional information submitted by the applicant and other available information, the Department has made a preliminary determination that the proposed Permit will comply with all applicable state and federal air pollution regulations. The Department will issue a draft AC permit to the applicant that provides for the above changes.

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