

TECHNICAL EVALUATION

AND

PRELIMINARY DETERMINATION

Tampa Electric Company  
Gannon Units 1, 2, 3, and 4  
Oil-Coal Conversion  
Tampa, Florida  
Hillsborough County

Construction Permit  
Application Numbers  
AC29-41943  
AC29-41942  
AC29-41941  
AC29-41940

FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION  
Division of Permitting  
Southwest District  
Tampa, FL

June 23, 1981

I. Proposed Department Action

The Department intends to issue the requested construction permit to Tampa Electric Company's (Gannon Units 1,2,3,4) to convert from oil to coal combustion for energy saving requirements.

This plant is located at Port Sutton Road in Tampa, Florida and is subject to public comment received as a result of this notice.

Any person wishing to file comments on this proposed action, may do so by submitting such comments in writing to:

D.A. Williams, P.E.  
Florida Department of Environmental Regulation  
Division of Permitting Southwest District  
7601 Highway 301 North  
Tampa, Florida 33610

Any comments received prior to July 00, 1981 will be considered and noted in the Department's final determination.

II. Emission Limitations:

- A. Particulate matter is to be controlled by the use of an eletrostatic precipitator. The design factor is such that the 0.1 lb/MMBTU limit will not be violated.
- B. The sulfur dioxide emission limiting standard for Units 1-4 will be changed from 1.1 lb/MMBTU on liquid fuel to 2.4 lb/MMBTU, weekly average, on solid fuel while imposing a sulfur dioxide emissions cap of 10.6 tons/hour, weekly average, on Units 1-6 combined.

The sulfur dioxide cap of 10.6 tons per hour is equivalent to the total emission allowed under the current State Implementation Plan (SIP), that is, Units 1-4 (5,989 MMBTU/hour) at 1.1 lb/MMBTU plus Units 5-6 (6,082 MMBTU/hour) at 2.4 lb/MMBTU. Compliance with the cap will be demonstrated by combining the results of the weekly composite fuel analysis with the weekly average operating rate for Units 1-6.

While compliance with the emissions cap will result in no increase in SIP-allowable sulfur dioxide emissions for averaging periods of one week or longer, shorter term emissions could run as high as 14.5 tons per hour (12,071 MMBTU/hour at 2.4 lb/MMBTU). For this reason, a modeling analysis was performed to assess compliance with short-term (3-hour and 24-hour) sulfur dioxide ambient air quality standards with all units emitting at the rate of 2.4 lb/MMBTU.

The modeling analysis indicated that the Florida 24-hour ambient sulfur dioxide standard of 260 ug/m<sup>3</sup> could be exceeded at plant operating rates of 10,500 MMBTU/hour or greater with all units emitting at the weekly average rate of 2.4 lb/MMBTU. However, an analysis of sulfur variability in the compliance coal indicated that

short-term emissions at or near a rate of 2.4 lb/MMBTU will occur infrequently. To avoid violating ambient standards under such conditions, Tampa Electric Company will implement a regulatory compliance plan featuring predaily fuel analysis and load shifting when peak loads are projected to exceed 10,500 MMBTU/hour. The compliance plan will be made a part of the operating permit of each unit at the station.

- C. Tampa Electric Company plans to meet the particulate emission limiting standard through the use of add-on electrostatic precipitators for units 1-4. Stack sampling in accordance with EPA-approved test methods will be used to demonstrate compliance.

The sulfur dioxide emission limiting standard of 2.4 lb/MMBTU will be met through the use of low-sulfur coal (nominally 1.3% S), a firm supply of which is available to Tampa Electric Company from TECO Energy, Inc. owned mines in East Kentucky. Compliance with the sulfur dioxide emission limiting standard will be demonstrated by weekly composite fuel analysis, the technique currently used to assess the compliance status of Units 5 and 6.

### III. Synopsis of Application:

#### A. NAME AND ADDRESS OF APPLICANT

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

#### B. DESCRIPTION OF PROJECT AND CONTROLS

The four steam generators used to produce steam energy for electrical power are to be modified to burn coal instead of oil for energy conservation. Electrostatic precipitators will be used to control TSP. Low sulfur coal will be used to control SO<sub>2</sub>.

### IV. Rule Applicability:

A petition to amend Chapter 17-2, Florida Administrative Code (FAC) was filed by Tampa Electric Company in anticipation of a prohibition order under the Fuel Use Act. Units 1 through 4 at Tampa Electric Company's Francis J. Gannon Generating Station, now operating on low-sulfur No. 6 fuel oil, were originally coal-fired units and therefore, natural candidates for such an order. Units 5 and 6 at the Gannon Station presently burn coal, and all six units will be equipped with electrostatic precipitators to control particulate emissions.

On October 23, 1980, the Florida Environmental Regulation Commission (ERC) amended Section 17-2.05 FAC to establish emission limiting standards for the Gannon Station upon conversion of Units 1-4 to solid fuel. Subsection 17-2.05(6), Table II, E. (1)(b)1.e. had specified emission limiting standards for Units 1-4 on liquid fuel. It was amended to specify that the emission limiting standards would apply to each unit prior to conversion. Subsection 17-2.05(6), Table II, E.(1)(b)2.a. had specified emission limiting standards for Units 5 and 6 on solid fuel. It was amended to include Units 1-4 upon their conversion to solid fuel and add new conditions.

The effect of the amendments is to allow no increase in total particulate or sulfur dioxide emissions to occur at the Gannon Station as a result of the conversion of Units 1-4. This is done by:

1. Maintaining the particulate emission limiting standard at 0.1 lb/MMBTU, two-hour average, for all units.
2. Maintaining the sulfur dioxide emission limiting standard at 2.4 lb./MMBTU weekly average, for Units 5 and 6.
3. Raising the sulfur dioxide emission limiting standard for Units 1-4 from 1.1 lb/MMBTU on liquid fuel to 2.4 lb/MMBTU, weekly average, on solid fuel while imposing a sulfur dioxide emissions cap of 10.6 tons/hour, weekly average, on Units 1-6 combined.

V. Proviso:

A. Emission Limits

1. SO<sub>2</sub>: 2.4 lb/MMBTU heat input for each unit and a cap of 10.6 tons/hr. calendar weekly average for the station.
2. TSP: 0.1 lb/MMBTU heat input, two hour average for all units.

B. Daily samples shall be taken of coal while being bunkered and a composite of these samples shall be analyzed on a calendar week basis. However, in the case of high production (10,500 MMBTU or over) a daily analysis shall be made for SO<sub>2</sub>.

C. Vendor performance tests for TSP shall be made to verify compliance of the ESP. The Department shall receive a copy of this analysis within thirty (30) days of test.

D. SO<sub>2</sub> emission reports shall be submitted on a quarterly basis.

E. Stack testing for particulates shall be on a minimum of a yearly basis. The actual number of times per year to be tested will be determined prior to issuance of the operating permit.

F. The best available techniques shall be used to control fugitive dust from construction operations, the coal handling (receiving and delivery), and including general good housekeeping.

G. An SO<sub>2</sub> continuous monitor shall be installed for six (6) months as a check<sup>2</sup> against the statistical sampling recommended to determine sulfur content.

VI. Conclusion:

It is recommended that these construction permits be issued with the provisos listed above.