



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

March 14, 1991

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. William R. Osborne, Project Environmentalist
Environmental Affairs
Florida Gas Transmission Company
P. O. Box 1188
Houston, Texas 77251-1188

Dear Mr. Osborne:

Attached is one copy of the Technical Evaluation and Preliminary Determination and proposed permit to install one natural gas fired engine.

Please submit any written comments you wish to have considered concerning the Department's proposed action to Mr. Barry Andrews of the Bureau of Air Regulation.

Sincerely,

C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/TH/plm

Attachments

c: Charles Collins, CD
David Buff, P.E.
Brian Beals, U.S. EPA
Dennis Nester, Orange Cty.

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of
Application for Permit by:

Florida Gas Transmission Company
P. O. Box 1188
Houston, Texas 77251-1188

DER File No. AC 48-189456
PSD-FL-163

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its intent to issue an air construction permit (copy attached) for the proposed project as detailed in the application specified above. The Department is issuing this Intent to Issue for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, Florida Gas Transmission Company, applied on November 20, 1990, to the Department of Environmental Regulation for a permit to install one natural gas fired engine.

The Department has permitting jurisdiction under Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 17-2 and 17-4. The project is not exempt from permitting procedures. The Department has determined that an air construction permit is required for the proposed work.

Pursuant to Section 403.815, F.S. and DER Rule 17-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Notice of Intent to Issue Permit. The notice shall be published one time only within 30 days, in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. The applicant shall provide proof of publication to the Department, at the address specified within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

The Department will issue the permit with the attached conditions unless a petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information:

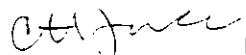
- (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
- (b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
- (d) A statement of the material facts disputed by Petitioner, if any;
- (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
- (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and
- (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application(s) have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office in General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under

Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION



C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

Copies furnished to:

Charles Collins, CD
David Buff, P.E.
Brian Beals, U.S. EPA
Dennis Nester, Orange Cty.

State of Florida
Department of Environmental Regulation
Notice of Intent to Issue

The Department of Environmental Regulation hereby gives notice of its intent to issue a permit to Florida Gas Transmission Company, P. O. Box 1188, Houston, Texas 77251-1188, to install one natural gas fired engine. The Company's facility is located at 7990 Steer Lake Road, Orlando, Orange County, Florida. The maximum annual NO₂ Class II increment consumed is 4.0%. A determination of Best Available Control Technology (BACT) was required. The Department is issuing this Intent to Issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within fourteen (14) days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information:

- (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
- (b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
- (d) A statement of the material facts disputed by Petitioner, if any;
- (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
- (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and
- (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any

decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

The application is available for public inspection during business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Department of Environmental Regulation
Central District
3319 Maguire Blvd., Suite 232
Orlando, Florida 32803-3767

Any person may send written comments on the proposed action to Mr. Barry Andrews at the Department's Tallahassee address. All comments mailed within 30 days of the publication of this notice will be considered in the Department's final determination. Further, a public hearing can be requested by any person. Such requests must be submitted within 30 days of this notice.

Technical Evaluation
and
Preliminary Determination

Florida Gas Transmission Company
Orange County
Orlando, Florida
Station No. 18

Natural Gas Compressor Engine
Permit No. AC 48-189456
PSD-FL-163

Department of Environmental Regulation
Division of Air Resources Management
Bureau of Air Regulation

March 14, 1991

SYNOPSIS OF APPLICATION

I.1 Applicant Name and Address

Florida Gas Transmission Company
P. O. Box 1188
Houston, Texas 77251-1188

I.2 Reviewing and Process Schedule

Date of Receipt of Application: November 20, 1990.

30 Days Completeness Review: December 18, 1990.

Additional Information Received: December 18, 1990.

Application Completeness Date: December 18, 1990.

II. FACILITY INFORMATION

II.1 Facility Location

Florida Gas Transmission Company's (FGTC) facility is located at 7990 Steer Lake Road in Orlando, Orange County, Florida. The UTM coordinates are Zone 17, 451.86 km E and 3154.79 km N.

II.2 Standard Industrial Classification Code

This facility is classified as follows:

Major Group No. 49 - Electric, Gas and Sanitary Services

Group No. 492 - Gas Production and Distribution

Industry No. 4922 - Natural Gas Transmission

II.3 Facility Category

The FGTC site, in Orlando, is classified as a major emitting facility for nitrogen oxides (NO_x) and carbon monoxide (CO). The proposed project will increase NO_x emissions by 46 tons per year and CO emissions by 49 tons per year. The total permitted emissions for this facility shall not exceed 896 tons NO_x per year and 157 tons CO per year.

III. PROJECT DESCRIPTION

The FGTC proposed to install one natural gas fired engine (Copper-Bessemer Model GMVR-12C2 integral engine compressor unit). The engine has 12 power cylinders and is rated at 2,400 bhp at 330 revolutions per minute (rpm). The engine is turbocharged,

increasing the air inlet manifold pressure, which allows the engine to operate at a high air-to-fuel ratio. This turbocharging produces more power output from the engine than would otherwise be attained without having to use a larger size engine. A flow diagram of the integral engine compressor unit is presented in the attached figure 2.2.

III.1 Background Information

The FGTC existing compressor station consists of four 2,000 bhp natural gas fired reciprocating IC engines. All of the engines are Worthington Model SEHG-8 integral engine compressor units. These engines were installed before the CAA amendment of 1977: three engines were installed in 1959, and the fourth engine was installed in 1968. These existing engines are not being modified as part of this Phase II expansion project.

In general, the FGTC Phase II expansion project will be increasing the natural gas transport capacity of the existing Florida gas pipeline system. The scope of work for Phase II includes expansions by the addition of state-of-the-art compressor engines at light existing compressor stations and at a newly proposed compressor station. The proposed engines would be used solely for the purpose of transporting natural gas in the pipeline for distribution in Florida. The main gas pipeline and the approximate locations of the existing and proposed compressor stations along the main pipeline are shown in Figure 1-1.

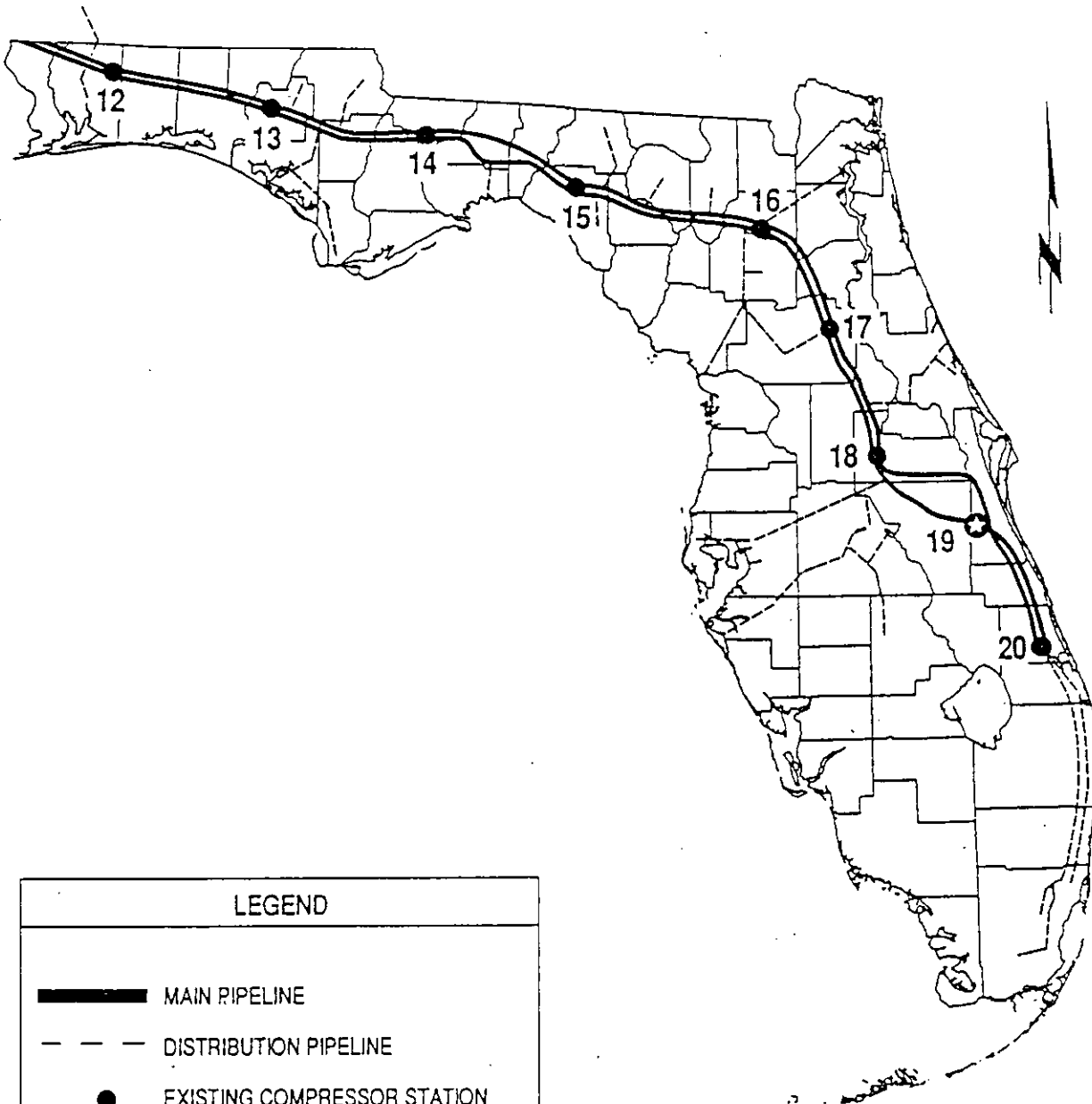
IV. RULE APPLICABILITY

The proposed project is subject to preconstruction review under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code (F.A.C.) Chapter 17-2.

This plant is located in an area (Orange County) designated air quality maintenance for ozone pursuant to F.A.C. Rule 460 and attainment for all the other criteria pollutants in accordance with F.A.C. Rule 17-2.420.

The proposed project will be reviewed in accordance with F.A.C. Rule 17-2.500, Prevention of Significant Deterioration, because it will be a major modification to a major facility. This review consists of a determination of Best Available Control Technology (BACT) and unless otherwise exempted, an air quality impact of the increased emissions. The review also includes a review of the project's impacts on soils, vegetation, visibility and air quality impact resulting from residential and industrial growth.

The proposed facility shall comply with applicable provisions of F.A.C. Rule 17-2.700, Emission Test Procedures; F.A.C. Rule 17-2.630, Best Available Control Technology; and F.A.C. Rule 17-2.500, Prevention of Significant Deterioration.







LEGEND	
	MAIN PIPELINE
	DISTRIBUTION PIPELINE
	EXISTING COMPRESSOR STATION
	PROPOSED COMPRESSOR STATION

Figure 1-1 FGTC'S GAS TRANSMISSION SYSTEM



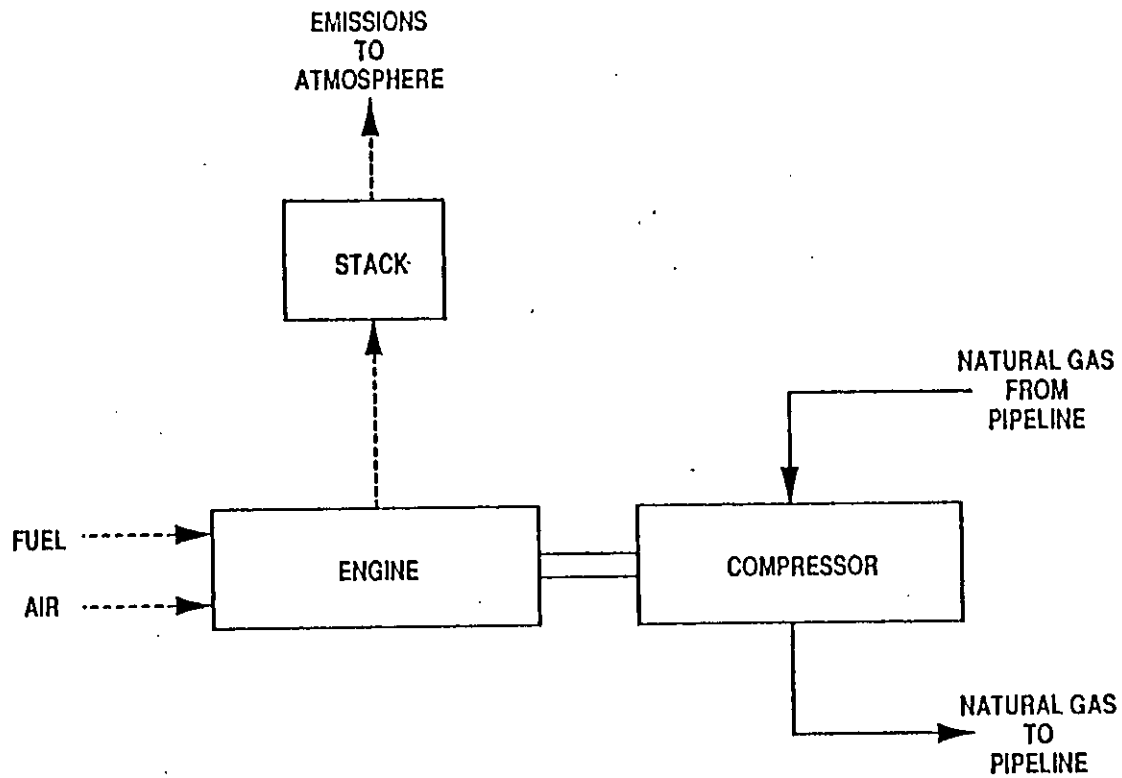


Figure 2-2 PROCESS FLOW DIAGRAM OF AN INTEGRAL ENGINE-COMPRESSOR UNIT

V. SOURCE IMPACT ANALYSIS

V.1 Control Technology Review

A complete BACT evaluation was submitted with the application. This evaluation included analyzing technologies involving engine modification and technologies involving exhaust gas treatment. Furthermore, the evaluation also included the feasibility of the different NO_x control methods and a comparison of the technical environmental, energy and economic impacts. Based on this approach, the lean-burn engine was determined to represent BACT.

The proposed engine will incorporate "lean-burn" technology, which is state-of-the-art design for minimizing air pollutant concentration in the exhaust gases from gas-fired reciprocating IC engines. In the lean-burn design, a small, fuel-rich mixture is combusted in a preignition chamber. The hot combustion gases from the preignition then pass to the main combustion chamber, where they ignite a lean mixture of fuel. Since most of the fuel entering the engine is burned in a lean state (i.e., high ratio of air to fuel), exhaust NO_x emissions are minimized. However, volatile organic compound (VOC) emissions are approximately 40 to 50 percent higher than the standard "rich-burn" engines.

V.2 Emission Limitations

The operation of this source will produce emissions of NO_x, CO, VOCs, particulates, and SO₂ from the burning of natural gas. Table I summarizes the proposed emissions and Table II summarizes the existing emissions from this facility.

TABLE I
SUMMARY OF EMISSIONS
(Unit No. 5)

Pollutant	Maximum Potential Emissions From Proposed Compressor Engine		Significant Emission Rate (TPY)
	(lbs/hr)	(TPY)	
Nitrogen Oxides	10.6	46.3	40
Carbon Monoxide	11.1	48.7	100
Volatile Organic Compounds (non-methane)	2.6	11.6	40
Particulate Matter (TSP)	0.08	0.36	25
Particulate Matter (PM ₁₀)	0.08	0.36	15
Sulfur Dioxide	0.47	2.1	40

TABLE II
SUMMARY OF EXISTING EMISSIONS

Pollutant	Per Each Engine		Total (TPY)
	(lbs/hr)	(TPY)	
NOx	48.5	212.4	849.6
CO	6.2	27.0	108.0
VOC (non-methane)	1.9	8.5	34.0
PM	0.07	0.3	1.3
SO ₂	0.41	1.8	7.3

V.3 Air Quality Analysis

a. Introduction

The operation of the proposed engine will result in emissions increases which are projected to be greater than the PSD significant rate for NOx. Therefore, the project is subject to the PSD review requirements contained in F.A.C. Rule 17-2.500 for NOx. Part of the requirements is an air quality impact analysis for NOx which includes:

- o An analysis of existing air quality.
- o A PSD increment analysis.
- o An Ambient Air Quality Standards (AAQS) analysis.
- o An analysis of impacts on soils, vegetation, visibility and growth-related air quality impacts.
- o A Good Engineering Practice (GEP) stack height determination.

The analysis of existing air quality generally relies on preconstruction monitoring data collected in accordance with EPA-approved methods. The PSD increment and AAQS analyses are based on air quality dispersion modeling completed in accordance with the EPA guidelines. Based on these required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or contribute to a violation of any PSD increment or AAQS. A brief description of the modeling method used and results of the required analyses follow. A more complete description is contained in the permit application on file.

b. Analysis of the Existing Air Quality

Preconstruction ambient air quality monitoring may be required for pollutants subject to PSD review. However, an exemption to the monitoring requirement can be obtained if the maximum air quality impact resulting from the projected emissions increase, as determined through air quality modeling, is less than a pollutant-specific de minimus concentration. The predicted maximum increase for NOx is 0.99 ug/m³, annual average which is less than the de minimus concentration for NOx of 14 ug/m³ annual coverge. Therefore, no preconstruction monitoring is required for NOx.

c. Modeling Method

The EPA-approved Industrial Source Complex Long-Term (ISCLT) dispersion model was used by the applicant to predict the impact of NO_x emissions from the proposed project on the surrounding ambient air. All recommended EPA default options were used. Downwash parameters were used because the proposed stack was less than the good engineering practice (GEP) stack height. Five years of surface weather observations (1982-1986) from the National Weather Service (NWS) station located at Orlando used. These data were input into the National Climatic Data Center (NCDC) stability array (STAR) preprocessor program for use as input to the ISCLT model. The STAR program converts the hourly data into the joint frequency of occurrence of wind direction, windspeed and atmospheric stability. The STAR program can produce monthly, seasonal and annual stability arrays for input into ISCLT. The highest predicted yearly impact from the proposed NO_x emissions was compared with the standards.

d. Modeling Results

The applicant evaluated the potential increase in ambient ground-level concentration associated with the project to determine if these projected ambient concentration increases would be greater than the specified PSD significant impact level for NO_x. Dispersion modeling was performed with 128 receptors located on 16 radials centered on the proposed engine's stack location and at downwind differences of 100, 200, 300, 400, 500, 750, 1000, and 1250m. In addition, to account for plant boundaries in all directions, 36 discrete receptors were located along 36 radials separated by 10-degree increments. These discrete receptors were located at the nearest plant boundary in each direction. The maximum predicted annual NO₂ impact from this modeling was 0.99 ug/m³, which is less than the NO₂ significant impact level of 1 ug/m³ annual average concentration. Because the maximum predicted NO₂ concentration is less than the significant impact level, further modeling for NO₂ for comparison with the AAQS and the Class II PSD increment was not required in this case.

e. Additional Impacts Analysis

The increased emissions from the proposed project are not expected to affect the Chassahowitzka National Wilderness Area since this area is greater than 100 km from the project. Because the impacts from NO_x emissions are less than the PSD significant

impact level, no harmful effects on soils and vegetation is expected. In addition, the proposed modification will not significantly change employment, population, housing or commercial/industrial development.

VI. CONCLUSION

Based on the information provided by Florida Gas Transmission Company, the Department has reasonable assurance that the proposed project, as described in this evaluation, and subject to the conditions proposed herein, will not cause or contribute to a violation of any air quality standard, PSD increment, or any other technical provision of Chapter 17-2 of the Florida Administrative Code.

Barry D. Antone
36624
3-15-91

impact level, no harmful effects on soils and vegetation is expected. In addition, the proposed modification will not significantly change employment, population, housing or commercial/industrial development.

VI. CONCLUSION

Based on the information provided by Florida Gas Transmission Company, the Department has reasonable assurance that the proposed project, as described in this evaluation, and subject to the conditions proposed herein, will not cause or contribute to a violation of any air quality standard, PSD increment, or any other technical provision of Chapter 17-2 of the Florida Administrative Code.

Barry D. Anderson
36024
3-15-91

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF INTENT TO ISSUE and all copies were mailed before the close of business on 3-15-91.

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to
§120.52(9), Florida Statutes, with
the designated Department Clerk,
receipt of which is hereby
acknowledged.

Terri Baker
Clerk

3-15-91
Date