Florida Gas Transmission Company

Capital Projects Field Office, 111 Kelsey Lane, Ste. A., Tampa, FL 33619
813.655.7441 / 800.381.1477

November 4, 2002

Mr. Clair H. Fancy, P.E.
Bureau of Air Regulation
Florida Department of Environmental Protection
Twin Towers Office Bldg.
2600 Blairstone
Tallahassee, FL 32399-2400

Reference: Facility: 1230034
Compressor Station No. 15, Perry, Taylor County

Dear Mr. Fancy:

Subject: Application for Air Construction Permit

Florida Gas Transmission Company (FGT) is proposing to upgrade an existing compressor turbine from 13,000ISO bhp to 15,000 bhp ISO at the above referenced facility. The existing facility is a major source under New Source Review definitions; however, the proposed modifications do not result in emissions that are significant under Prevention of Significant Deterioration requirements. Therefore, a state only construction permit is required.

Enclosed is an Application for an Air Construction Permit for the proposed modifications. FGT understands that no processing fee is required since this facility is operated under a Part 70 Permit.

If you have any questions or need additional information, please call me at (800) 381-1477.

Sincerely,

Jim Thompson
Project Manager, Environmental

CC: James Alexander, Phase V w/o attachments
Rick Craig, w/o attachments
Jim Thompson, Phase V
Jake Krautsch, FGT
V. Duane Pierce, Ph.D., AQMcs, LLC
Larry Parrish, Compressor Station No. 15

Florida Gas Transmission Company

Phase V Expansion Project

Compressor Station No. 15

APPLICATION
For
AIR CONSTRUCTION
PERMIT

NOVEMBER 2002

Prepared by AQMcs, LLC

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1.0 INTRODUCTION

Florida Gas Transmission Company (FGT), a Delaware Corporation and ENRON/EL PASO affiliate of Houston, Texas, is proposing to expand its existing natural gas pipeline facility near Perry in Taylor County, Florida (Compressor Station No. 15). This proposed modification is part of FGT's Phase VI Expansion Project, aimed at increasing the supply capacity of FGT's network servicing domestic, commercial, and industrial customers in Florida. The scope of work for the Phase VI Expansion Project includes expansion through the addition of state-of-the-art compressor engines at three existing compressor stations. The basic project components include:

- Mainline loops, additions, and replacements;
- Lateral loops and additions;
- Meter station additions, modifications, and expansions;
- Regulator additions, modifications, and expansions; and
- Compressor station additions and modifications.

Compressor Station No. 15 is located in Taylor County, Florida, on Pisgah Road approximately 1 mile east of U.S. Highway 19. Figure 1-1 shows the location of the existing compressor station.

The proposed modification involves the upgrading of an existing compressor turbine from 13,000 bhp to 15,000 bhp (ISO). The compressor turbine is used solely for transporting natural gas by pipeline for distribution to markets in Florida. The existing engine is a Solar Mars 100-T15000S equipped with dry low NO_X (oxides of nitrogen) combustion and derated to 13,000 bhp. Under current federal and state air quality regulations, the proposed modification will constitute a minor modification of an existing major source. Based on the projected annual emission rates, there will be no PSD (Prevention of Significant Deterioration) significant increase in any emissions.

Engineering designs for the proposed expansion project include selection of an engine incorporating dry low NO_X combustion technology. Dry low NO_X technology for control of NO_X emissions would represent Best Available Control Technology (BACT) for the proposed turbine engine under PSD requirements.

This application contains two additional sections. Descriptions of the existing operation at FGT's Compressor Station No. 24 and the proposed upgraded turbine are presented in Section 2.0. The air quality review requirements and applicability of state and federal regulations are discussed in Section 3.0. References are included in Section 4.0.

AQMcs

FDEP permit application forms are presented in Attachment A. Attachment B contains a plot plan of the facility. Attachment C contains vendor information and Attachment D contains emission calculations.

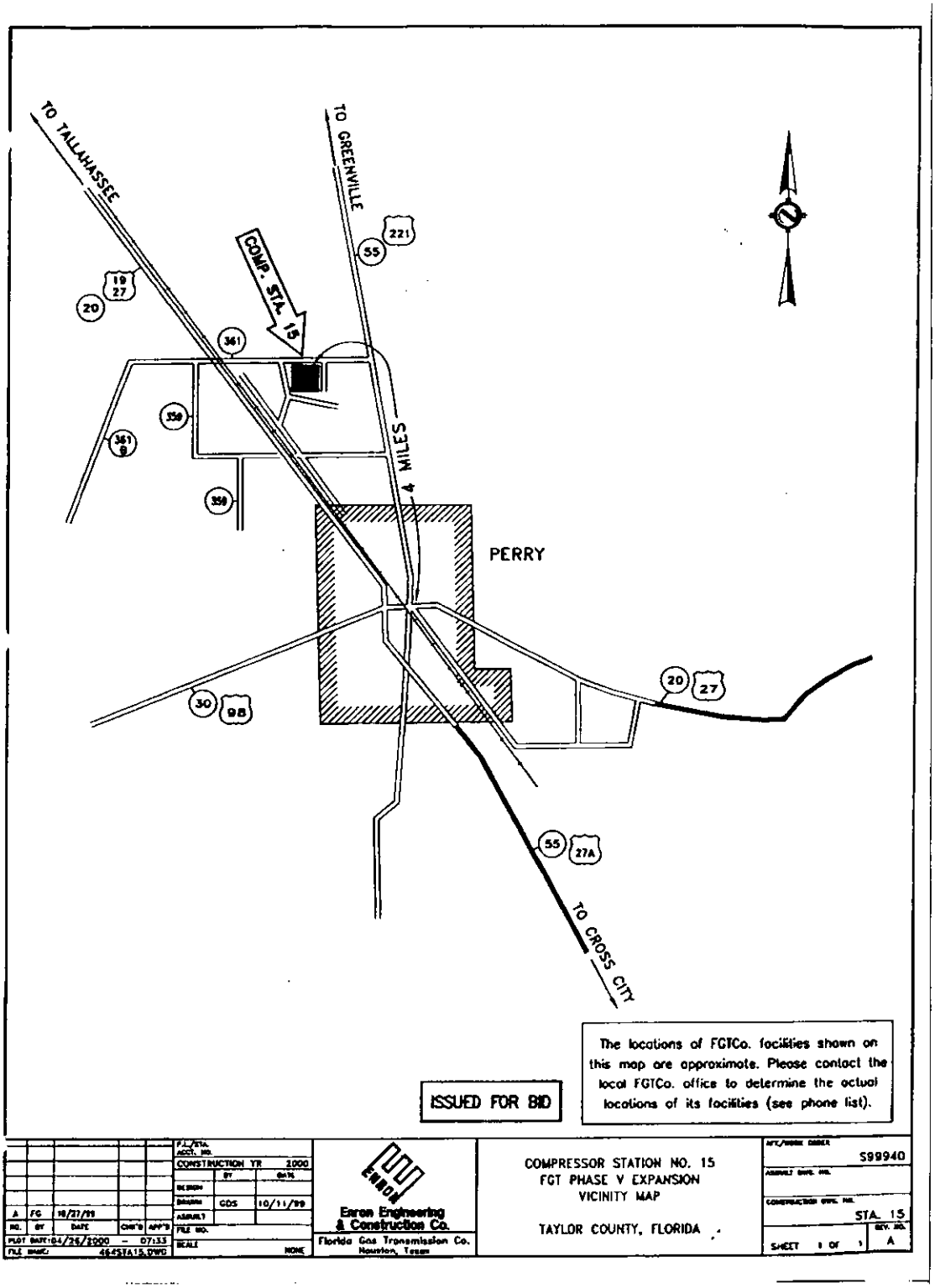


Figure 1-1 Area Map

2.0 PROJECT DESCRIPTION

A plot plan of FGT's Compressor Station No. 15, showing the location of the plant boundaries, the existing emission sources, and the location of the proposed new engine, is presented in Attachment B. The following sections provide a description of the existing operations at this location, as well as a description of the proposed project.

2.1 Existing Operations

FGT's existing Compressor Station No. 15 consists of five 2,000 bhp and one 4,000 bhp natural-gas-fired reciprocating internal combustion (IC) engines. Compressor Station No. 15 also has one 13,000 bhp gas-fired turbine which is the engine being modified. Table 2-1 summarizes engine manufacturer, model, and the date of installation for each of the existing engines. The original installation was made in 1962 (Compressor Engines 1501 through 1503). Other engines were added in 1966 and 1968 (Compressor Engines 1504 and 1505). These engines were installed before the CAA Amendments of 1977. An addition referred to as Phase II was constructed in 1991 (Compressor Engine 1506) and was subject to PSD review. The turbine (compressor engine 1507) was added in 1994 as part of the Phase III Expansion Project and was also subject to PSD review. It was upgraded to 13,000 bhp in 2002 as part of the Phase V Expansion Project. Except for Engine 1507 which is having its horsepower raised from 13,000 to 15,000 bhp (ISO), the existing engines are not being modified as part of this expansion project

The existing facility also has supporting equipment including lube and used oil storage tanks, air compressors and emergency generators.

2.2 Proposed Compressor Station Addition

FGT proposes to increase the horsepower capacity of Compressor Station No. 15, as part of the Phase VI Expansion Project. This will involve up-grading one existing gas-fired turbine (Compressor Engine 1507). The proposed new horsepower will be used to increase the volumetric delivery capacity by driving gas compressors that are a part of a gas transmission line that transports natural gas from source wells in Texas and Louisiana for delivery throughout Florida. Without the proposed engine upgrade, it would not be possible to increase the volumetric delivery capacity necessary to meet both short and long-term demands for natural gas in Florida.

Table 2-1 Summary of Existing Compressor Engines

Engine #	Date of Installation	Type	Manufacturer	Model #	Brake Horse Power (bhp)
1501	1962	Reciprocating	Worthington	SEHG-8	2,000
1502	1962	Reciprocating	Worthington	SEHG-8	2,000
1503	1962	Reciprocating	Worthington	SEHG-8	2,000
1504	1966	Reciprocating	Worthington	SEHG-8	2,000
1505	1968	Reciprocating	Worthington	SEHG-8	2,000
1506	1991	Reciprocating	Cooper - Bessemer	8W-330-C2	4,000
1507	1994 2002 modified	Turbine	Solar	Mars 100	13,000
1508	2002	Turbine	Rolls Royce	501-KC-7	7,222

2.2.1 Upgraded Compressor Turbine

FGT proposes to upgrade one existing natural gas-fired turbine engine compressor unit at Compressor Station No. 15. The engine is a Solar Mars 100 T-15000S turbine compressor unit derated to 13,000 bhp that will be upgraded to 15,000 bhp (ISO). Fuel will be exclusively natural gas from FGT's natural gas pipeline. Engine specifications and stack parameters for the proposed engine are presented in Table 2-2.

Table 2-2 Proposed Upgraded Turbine (1507) Specifications and Stack Parameters

Parameter	Design
Compressor Engine	1507
Type	Gas Turbine
Manufacturer	Solar
Model	Mars 100 T-15000S
Unit Size	15,000 bhp (ISO) 14,510 bhp (site)
Heat Input [a]	122,948 MMBtu/hr
Specific Heat Input	7,703 Btu/hp-hr
Maximum Fuel Consumption [b]	0.1182 MMscf/hr
Speed	8,893 rpm
Stack Parameters	
Stack Height	60 ft
Stack Diameter	7.55 ft x 7.55 ft (rectangular)
Exhaust Gas Flow	191,841 acfm
Exhaust Temperature	909 °F
Exhaust Gas Velocity	56.1 ft/sec

NOTE:

acfm	=	actual cubic feet per minute.
bhp	=	brake horsepower.
Btu/hp-hr	=	British thermal units per brake horsepower per hour.
°F	=	degrees Fahrenheit.
ft	=	feet.
ft/sec	=	feet per second.
MMscf/hr	=	million standard cubic feet per hour.
rpm	=	revolutions per minute.

[a] Based on vendor fuel flow rate value plus 10% to adjust to higher heating value.
[b] Based on vendor fuel flow value plus 10% and heating value for natural gas of 1040 British thermal units per standard cubic foot (Btu/scf).

Hourly and annual emissions of regulated pollutants from the proposed engine under normal operating conditions are presented in Table 2-4. Emissions of NO_X, CO and VOCs are based

on the engine manufacturer's supplied data (See Attachment C).

Typically, turbine vendors do not provide information on particulate matter (PM), sulfur dioxide (SO_2) or hazardous air pollutant (HAP) emissions; therefore, particulate matter and HAP emissions are based upon USEPA publication AP-42 Table 3.1-2a (USEPA, 2000) and emissions of SO_2 are based on FGT's Federal Energy Regulatory Commission (FERC) certificate limit of 10 grains sulfur per 100 cubic feet of natural gas.

Table 2-3 Proposed Upgraded Turbine (1507) Compressor Engine Emissions

Pollutant	Emission Factor	Reference	lb/hr	TPY
Nitrogen Oxides	48.70 tpy	Manufacturer Data	11.12	48.7
Carbon Monoxide	59.30 tpy	Manufacturer Data	13.54	59.3
Volatile Organic Compounds	1.70 tpy*	Manufacturer Data	0.39	1.70
Particulate Matter**	0.0066 lb/MMBtu	AP-42, Table 3.1-2a	0.81	3.6
Sulfur Dioxide**	10 grains/100 scf	FERC Limit	3.38	14.8
HAPs*	0.00103 lb/MMBtu See Attachment D	AP-42, Table 3.1-3	0.13	0.6

* VOCs assumed to be 10% of vendor's unburned hydrocarbon (UHC) value of 16.98 tpy
** Emissions based on vendor provided heat rate plus 10 per cent

2.2.2 Emissions Summary

The total changes in emissions resulting from the project are listed on Table 2-5. As can be seen from the table, the emission increases are not significant under PSD. The calculations used to estimate these emissions are presented in Attachment D.

Table 2-4 Potential Annual Emissions (tpy) Summary

SOURCE ID	DESCRIPTION	NO_x	CO	VOC[a]	SO_2	PM
	EXISTING FACILITY					
1501	2000 bhp Recip. Engine	227.8	30.9	13.9	1.8	0.3
1502	2000 bhp Recip. Engine	227.8	30.9	13.9	1.8	0.3
1503	2000 bhp Recip. Engine	227.8	30.9	13.9	1.8	0.3
1504	2000 bhp Recip. Engine	227.8	30.9	13.9	1.8	0.3
1505	2000 bhp Recip. Engine	227.8	30.9	13.9	1.8	0.3
1506	4000 bhp Recip. Engine	77.2	96.6	38.6	3.3	0.6
1507	13,000 bhp Turbine	43.8	53.4	1.8	13.6	3.1
1508	7,222 bhp Turbine Engine	25.0	30.5	1.5	7.6	1.8
GEN01	150 bhp Recip. Engine	0.6	2.3	0.0	0.0	0.0
GEN02	220 bhp Recip. Engine	1.1	0.1	0.0	0.0	0.0
GEN03	670 bhp Recip. Engine	0.7	0.5	0.1	0.0	0.0
	OTHER SOURCES: [b]			3.8		
EXISTING ANNUAL POTENTIALTOTALS:		**1287.4**	**337.9**	**115.3**	**33.5**	**7**
	PROPOSED MODIFIED FACILITY					
1501	2000 bhp Recip. Engine	227.8	30.9	13.9	1.8	0.3
1502	2000 bhp Recip. Engine	227.8	30.9	13.9	1.8	0.3
1503	2000 bhp Recip. Engine	227.8	30.9	13.9	1.8	0.3
1504	2000 bhp Recip. Engine	227.8	30.9	13.9	1.8	0.3
1505	2000 bhp Recip. Engine	227.8	30.9	13.9	1.8	0.3
1506	4000 bhp Recip. Engine	77.2	96.6	38.6	3.3	0.6
1507	15,000 bhp Turbine - modified	48.7	59.3	1.7	14.8	3.6
1508	7,222 bhp Turbine Engine	25.0	30.5	1.5	7.6	1.8
GEN01	150 bhp Recip. Engine	0.6	2.3	0.0	0.0	0.0
GEN02	220 bhp Recip. Engine	1.1	0.1	0.0	0.0	0.0
GEN03	670 bhp Recip. Engine	0.7	0.5	0.1	0.0	0.0
	OTHER SOURCES: [b]			3.8		
PROPOSED ANNUAL POTENTIAL TOTALS:		**1292.3**	**343.8**	**115.2**	**34.7**	**7.5**
NET CHANGES IN POTENTIAL EMISSIONS:		**4.9**	**5.9**	**-0.1**	**1.2**	**0.5**

(a) VOC = Non-methane/non-ethane HC
(b) Other Sources Includes ancillary equipment, storage tanks and equipment leaks

3.0 REGULATORY ANALYSIS

This section presents a review of federal and Florida State air quality regulations, which govern the operations and proposed modifications to be conducted at Compressor Station No. 15.

3.1 Federal Regulations Review

The federal regulatory programs administered by the USEPA have been developed under the authority of the Clean Air Act. The following subsections review the essential elements of the federal regulatory program and the impact they have on the operations and proposed modifications at Compressor Station No. 15.

3.1.1 Classification of Ambient Air Quality

The 1970 Amendments to the CAA gave the USEPA specific authority to establish the minimum level of air quality that all states would be required to achieve. These minimum values or standards were developed in order to protect the public health (primary) and welfare (secondary). The federally promulgated standards and additional state standards are presented on Table 3-1.

Areas of the country that have air quality equal to or better than these standards (i.e., ambient concentrations less than a standard) are designated as "Attainment Areas", while those where monitoring indicates air quality is worse than the standards are known as "Non-attainment Areas." The designation of an area has particular importance for a proposed project as it determines the type of permit review to which the application will be subject.

Major new sources or major modifications to existing major sources located in attainment areas are required to obtain a PSD permit before initiation of construction. Similar sources located in areas designated as non-attainment or that adversely impact such areas undergo more stringent Non-attainment New Source Review (NNSR). In either case, it is necessary, as a first step, to determine the air quality classification of a project site.

All areas of all states are classified as either attainment, non-attainment or unclassifiable for each criteria pollutant. Taylor County in designated as unclassifiable or attainment for all criteria pollutants. These designations were obtained from 40 CFR 81.310, as updated in the June 5, 1998 Federal Register (FR31036) and 62-204.340 F.A.C.

Table 3-1 National and State Ambient Air Quality Standards ($\mu g/m^3$)

POLLUTANT	AVERAGING PERIOD	EPA STANDARDS		FLORIDA STANDARDS
		PRIMARY	SECONDARY	
PM_{10}	24-hour[1]	150	150	150
	annual[2]	50	50	50
SO_2	3-hour[1]	---	1,300	1,300
	24-hour[1]	365	---	260
	Annual[2]	80	---	60
CO	1-hour[1]	40,000	---	40,000
	8-hour[1]	10,000	---	10,000
NO_2	Annaul[2]	100	100	100
O_3	1-hour[3]	235	235	235
Lead	Quarterly Average	1.5	1.5	1.5

1) Not to be exceeded more than once per year.
2) Never to be exceeded.
3) Not to be exceeded on more than 3 days over 3 years.

Sources: 40 CFR 50; FAC 62-272.300

The designation of Unclassifiable indicates that there is insufficient monitoring data to prove that the area has attained the federal standards; however, the limited data available indicate that the standard has been achieved. Areas with this classification are treated as attainment areas for permitting purposes.

3.1.2 PSD Applicability

The 1977 CAA Amendments added Part C: Prevention of Significant Deterioration to the Act. This part required proposed new major stationary sources or existing sources planning a major modification in an area that has attained the National AAQS, to conduct a preconstruction review that includes a detailed analysis of the impacts from the source's emissions.

Federal air quality permitting regulations for attainment areas are codified in the Code of Federal Regulations (CFR), Title 40- Protection of the Environment, Part 52.21 - Prevention of Significant Deterioration (40 CFR 52.21).

For the PSD regulations to apply to a given project the proposed location must be in a PSD area, i.e., an area that has been classified as attainment or as unclassifiable for a particular

pollutant. Taylor County is designated as attainment area for all criteria pollutants. A project's potential to emit is then reviewed to determine whether it constitutes a major stationary source or major modification to an existing major stationary source.

A major stationary source is defined as either one of the 28 sources identified in 40 CFR 52.21 that has a potential to emit 100 tons or more per year of any regulated pollutant, or any other stationary source that has the potential to emit 250 tons or more per year of a regulated pollutant. "Potential to emit" is determined on an annual basis after the application of air pollution control equipment, or any other federally enforceable restriction.

According to the "Draft New Source Review Workshop (NSR) Manual (USEPA, October 1990)," for a modification to be classified as major and therefore, subject to PSD review:

(1) The modification must occur at an existing major stationary source, and

(2) The net emissions increase of any pollutant emitted by the source, as a result of modification, is "significant", or

(3) The modification results in emissions increases, which if considered alone would constitute a major stationary source.

"Significant" emission rates are defined as amounts equal to or greater than the emission rates given in Table 3-2.

Since Compressor Station No. 15 is not one of the 28 named source categories, but does emit >250 TPY of at least one regulated pollutant, it is considered a major source. The increase in emissions resulting from the proposed action will not exceed the PSD significant rate; therefore, the action proposed for Compressor Station No. 15 is a minor modification of an existing major stationary source and is not subject to PSD pre-construction review.

Table 3-2 Applicability of PSD Significant Emission Rates

Pollutant	Emission Rate Tons/Year
Carbon Monoxide	100
Nitrogen Oxides	40
Sulfur Dioxide	40
Particulate Matter (PM/PM_{10})	25/15
Ozone (VOC)	40
Lead	0.6
Fluorides	3
Reduced Sulfur including Hydrogen Sulfide	10
Total Reduced Sulfur including Hydrogen Sulfide	10
Sulfuric Acid Mist	7
Lead	0.6
Mercury	0.1
VOC = Volatile Organic Compounds Sources:40 CFR 52.21(b)(23); Table 212.400-2 62-212 F.A.C.	

3.1.3 Combined Emission Changes for Recent Expansion Project

FGT has had three recent expansion projects with modifications at several compressor stations. The changes in Potential to Emit (PTE) at Compressor Station No. 15 are listed below.

Table 3-3 Recent Potential To Emit (PTE) Changes at CS No. 15

	Emission Rate Changes	
Project	NOx Tons/Year	CO Tons/Year
Phase IV	0.0	0.0
Phase V	26.4	34.8
Phase VI	4.9	5.9
Total Changes	**31.3**	**40.7**

As can be seen, the combined projects do not exceed the PSD significant emission rates given in Table 3-2.

3.1.4 Non-Attainment New Source Review (NSR) Applicability

Based on the current non-attainment provisions, all new major stationary sources, or major modifications to such sources, located in a non-attainment area must undergo non-attainment New Source Review, if they have the potential to emit above an NSR significant threshold. For major new sources or major modifications in an attainment or unclassifiable area, the non-attainment provisions apply if the source or modification is located within the area of influence of a non-attainment area. The area of influence is defined as an area, which is outside the boundary of a non-attainment area, but within the locus of all points that are 50 kilometers outside the non-attainment area.

Compressor Station No. 15 is located in an area that is designated as either attainment or not classifiable for all criteria pollutants and is not located in an area of influence outside a non-attainment area. Therefore, this compressor station is not subject to federal non-attainment New Source Review.

3.1.5 Applicability of New Source Performance Standards (NSPS)

The regulation of new sources through the development of standards applicable to a specific category of sources was a significant step taken by the 1970 CAA Amendments. The Administrator was directed to publish a proposed regulation establishing a Standard of Performance for any category of new sources that cause or contribute significantly to air pollution and which may reasonably be anticipated to endanger public health. All Standards apply to all sources within a given category, regardless of geographic location or ambient air quality at the location.

Performance standards are published in 40 CFR 60. Both the new turbine to be installed at Compressor Station No. 15 and the one to be upgraded are subject to Subpart GG, Standards of Performance for Stationary Gas Turbines, because they both will have a maximum heat input at peak load of >10.7 gigajoules/hour (10 MMBtu/hr) based on the lower heating value of the natural gas fuel. This regulation establishes emission limits for NO_X and SO_2 and requires performance testing and daily monitoring of fuel nitrogen and sulfur. The applicable emission standards are provided in Table 3-4.

The NO_x emission limit for Subpart GG is calculated as follows:

$$STD = 0.0150\ (14.4/Y) + F$$

STD = Allowable NO_x emissions

Y = Heat rate at peak load not to exceed 14.4 *Kj/watt-hour*

F = NO_x emission allowance

The fuel bound nitrogen in natural gas is less than 0.015% by weight. Therefore, the value of F as defined in 40 CFR 60.332(3) is equal to zero.

For uprated Engine No. 1507

Y = Btu/bhp-hr x 1.055 *Kj/Btu x hp-hr/745.7 watt-hour*

= 7,941 Btu/bhp-hr x 1.055 *Kj/Btu x hp-hr/745.7 watt-hour*

= 11.23 Kj/watt-hr

STD = 0.0150 (14.4/11.23) + 0

= 0.019 %

= 190 ppm_v

The turbine will both meet the NSPS for NO_X of 190 ppmv (i.e., manufacturer's estimation of 25 ppmv), and for SO_2 of 150 ppmv (estimated for these turbines to be 4 ppmv).

Table 3-4 Applicability of New Source Performance Standards

NSPS Subpart	NSPS Regulations	Equipment	Fuel	Pollutant	Heat Input Applicability	Equipment Design Maximum*	NSPS Emission Limits	Equipment Emissions
GG	60.332(a)(2)	Engine No. 1507 Gas Turbine	Gas	NO_2	>10 MM Btu/hr	112 MM Btu/hr	190 ppm_v	25 ppm_v
GG	60.333(a)	Engine No. 1507 Gas Turbine	Gas	SO_2	>10 MM Btu/hr	112 MM Btu/hr	150 ppm_v	~4 ppm_v

* Based on vendor data.

3.1.2.6 Good Engineering Practice (GEP) Stack Height Analysis

The 1977 CAA Amendments require that the emission limitation required for control of any pollutant not be affected by a stack that exceeds GEP height. Further, no dispersion credit is given during air quality modeling for stacks that exceed GEP. GEP stack height is defined as the highest of:

- 65 meters; or
- a height established by applying the formula

  HGEP = H + 1.5 L

  Where:

  HGEP = GEP Stack Height,
  H = Height of the structure or nearby structure, and
  L = Lesser dimension (height or projected width) of the nearby structure; or
- a height demonstrated by fluid modeling or field study.

A structure or terrain feature is considered nearby if a stack is within a distance of five times the structure's height or maximum projected width. Only the smaller value of the height or projected width is used and the distance to the structure cannot be greater than 0.8 kilometers. Although GEP stack height regulations require that the stack height used in modeling for determining compliance with National AAQS and PSD increments not exceed GEP stack height, the actual stack height may be greater.

The stack height regulations also increase GEP stack height beyond that resulting from the formula in cases where plume impaction occurs. Plume impaction is defined as concentrations measured or modeled to occur when the plume interacts with elevated terrain. Elevated terrain is defined as terrain that exceeds the height calculated by the GEP stack height formula. Because terrain in the vicinity of the project site is generally flat, plume impaction was not considered in determining the GEP stack height.

The stack at Compressor Station No. 15 is 60 feet (18.3 meters) tall. Based on the proposed building dimensions, the calculated GEP stack height is less than 65 meters; therefore, GEP stack height is 65 meters. Since the stacks are less than GEP stack height, they comply with the regulatory requirement.

3.2 Florida State Air Quality Regulations

Compressor Station No. 15 is currently operating under Permit No. 0070012-002-AV and is subject to the provisions of that permit. Rule 62, F.A.C., contains the air quality rules and regulations for the State of Florida. The primary federal regulations that affect Compressor Station No. 15 have been incorporated into or are referenced by these rules. The significant state regulations that are applicable to the new emission units are briefly listed below.

3.2.1 Rule 62-210.300 Permits Required

FGT is required to obtain a construction permit prior to construction of new emission units. This requirement is being met by the submittal of this application.

3.2.2 Rule 62-204.240 Ambient Air Quality Standards

FGT must not violate any of the ambient air quality standards listed under this rule.

3.2.3 Rule 62-296.320(2) Objectionable Odors

This rule prohibits the discharge of pollutants that will cause or contribute to an objectionable odor.

3.2.4 Rule 62-296.320(4)(b)1 General Particulate Emission Limiting Standards.

FGT is prohibited from allowing the new compressor engine to discharge into the atmosphere the emissions of air pollutants, the density of which is equal to or greater than that designated as Number 1 on the Ringelmann Chart (20 percent opacity).

4.0 REFERENCES

U.S. Environmental Protection Agency (USEPA). 1980. PSD Workshop Manual. Research Triangle Park, NC.

U.S. Environmental Protection Agency (USEPA). 2000. Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources (5th Ed.) AP-42. Supplement E, Research Triangle Park, NC.

Attachment A

DEP Forms

Department of
Environmental Protection

Division of Air Resources Management

APPLICATION FOR AIR PERMIT - TITLE V SOURCE

See Instructions for Form No. 62-210.900(1)

I. APPLICATION INFORMATION

Identification of Facility

1. Facility Owner/Company Name: Florida Gas Transmission Company	
2. Site Name: Compressor Station No. 15	
3. Facility Identification Number: 1230034 [ ] Unknown	
4. Facility Location: Street Address or Other Locator: P.O. Box 8 City: Perry County: Taylor Zip Code: 32347-0930	
5. Relocatable Facility? [ ] Yes [X] No	6. Existing Permitted Facility? [X] Yes [ ] No

Application Contact

1. Name and Title of Application Contact: Jim Thompson, Environmental Project Manager
2. Application Contact Mailing Address: Organization/Firm: Florida Gas Transmission Company Street Address: 111 Kelsey Lane, Ste. A City: Tampa State: FL Zip Code: 33619
3. Application Contact Telephone Numbers: Telephone: (800) 381-1477 Fax: (813) 655-3951

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	11-6-02
2. Permit Number:	1230034-011-AC
3. PSD Number (if applicable):	
4. Siting Number (if applicable):	

Purpose of Application

Air Operation Permit Application

This Application for Air Permit is submitted to obtain: (Check one)

[ ] Initial Title V air operation permit for an existing facility which is classified as a Title V source.

[ ] Initial Title V air operation permit for a facility which, upon start up of one or more newly constructed or modified emissions units addressed in this application, would become classified as a Title V source.

Current construction permit number:_____

[ ] Title V air operation permit revision to address one or more newly constructed or modified emissions units addressed in this application.

Current construction permit number:_____

Operation permit number to be revised:_____

[X] Title V air operation permit revision or administrative correction to address one or more proposed new or modified emissions units and to be processed concurrently with the air construction permit application. (Also check Air Construction Permit Application below.)

Operation permit number to be revised/corrected:____1230034-00*-AV_____

[ ] Title V air operation permit revision for reasons other than construction or modification of an emissions unit. Give reason for the revision; e.g., to comply with a new applicable requirement or to request approval of an "Early Reductions" proposal.

Operation permit number to be revised:_____

Reason for revision:_____

Air Construction Permit Application

This Application for Air Permit is submitted to obtain: (Check one)

[X] Air construction permit to construct or modify one or more emissions units.

[ ] Air construction permit to make federally enforceable an assumed restriction on the potential emissions of one or more existing, permitted emissions units.

[ ] Air construction permit for one or more existing, but unpermitted, emissions units.

Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible Official:
   Richard Craig, Vice President, Southeast Operations

2. Owner/Authorized Representative or Responsible Official Mailing Address:
   Organization/Firm: Florida Gas Transmission Company
   Street Address: 1400 Smith Street
   City: Houston State: TX Zip Code: 77002

3. Owner/Authorized Representative or Responsible Official Telephone Numbers:
   Telephone: (713) 646-6128 Fax:

4. Owner/Authorized Representative or Responsible Official Statement:

   I, the undersigned, am the owner or authorized representative(check here [ ], if so) or the responsible official (check here [X], if so) of the Title V source addressed in this application, whichever is applicable. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof. I understand that a permit, if granted by the Department, cannot be transferred without authorization from the Department, and I will promptly notify the Department upon sale or legal transfer of any permitted emissions unit.*

   Richard D. Craig — Signature

   10/5/02 — Date

* Attach letter of authorization if not currently on file.

Professional Engineer Certification

1. Professional Engineer Name: Kevin McGlynn
   Registration Number: 50908

2. Professional Engineer Mailing Address:
   Organization/Firm: McGlynn Consulting Company
   Street Address: 1967 Commonwealth Lane
   City: Tallahassee State: FL Zip Code: 32303

3. Professional Engineer Telephone Numbers:
   Telephone: (850)380-5035 Fax: (850) 350-5001

4. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this Application for Air Permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

If the purpose of this application is to obtain a Title V source air operation permit (check here [X], if so), I further certify that each emissions unit described in this Application for Air Permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance schedule is submitted with this application.

If the purpose of this application is to obtain an air construction permit for one or more proposed new or modified emissions units (check here [X], if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

If the purpose of this application is to obtain an initial air operation permit or operation permit revision for one or more newly constructed or modified emissions units (check here [ ], if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

[signature], P.E. #50908 — Signature

November 1, 2002 — Date

(seal) KEVIN J. MC GLYNN CERTIFICATE NO. 50908 STATE OF FLORIDA PROFESSIONAL ENGINEER

* Attach any exception to certification statement.

Scope of Application

Emissions Unit ID	Description of Emissions Unit	Permit Type	Processing Fee
	Solar Mars 100 T-15000S, Natural Gas-fired Turbine rated at 14,510 bhp, Engine No. 1507	AC1D	$0.00

Application Processing Fee

Check one: [ ] Attached - Amount: $_____ [X] Not Applicable

Construction/Modification Information

1. Description of Proposed Project or Alterations:

Upgrading of an existing Solar Mars 100 T-13000S (13,000 bhp ISO) to a T-15000S (15,000 bhp ISO).

2. Projected or Actual Date of Commencement of Construction: 01/02/03

3. Projected Date of Completion of Construction: 03/01/03

Application Comment

This proposed modification is part of FGT's Phase V Expansion Project, aimed at increasing the supply capacity of FGT's network servicing domestic, commercial, and industrial customers in Florida.

The existing facility is currently operating under Permit No.1230034-00*-AV.

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates: Zone: 17	East (km): 249.02	North (km): 3339.60	
2. Facility Latitude/Longitude: Latitude (DD/MM/SS): 30/09/54		Longitude (DD/MM/SS): 83/36/33	
3. Governmental Facility Code: 0	4. Facility Status Code: A	5. Facility Major Group SIC Code: 49	6. Facility SIC(s): 4922
7. Facility Comment (limit to 500 characters): Compressor Station No. 15 is an existing natural gas pipeline compressor station with six reciprocating compressor engines and two turbine compressor engines. One of the turbines is being installed under the Phase V Expansion Project. It is classified as a major source under New Source Review and Title V definitions.			

Facility Contact

1. Name and Title of Facility Contact: Larry Parrish, Team Environmental Leader			
2. Facility Contact Mailing Address: Organization/Firm: Florida Gas Transmission Company Street Address: Rt. 5, Box 48610 CR. 361 or Pisgah Rd. City: Perry	State: FL	Zip Code: 32347-0930	
3. Facility Contact Telephone Numbers: Telephone: (850) 350-5350	Fax: (850) 350-5351		

Facility Regulatory Classifications

Check all that apply:

1. [ ] Small Business Stationary Source?	[ ] Unknown
2. [X] Major Source of Pollutants Other than Hazardous Air Pollutants (HAPs)?	
3. [ ] Synthetic Minor Source of Pollutants Other than HAPs?	
4. [X] Major Source of Hazardous Air Pollutants (HAPs)?	
5. [ ] Synthetic Minor Source of HAPs?	
6. [X] One or More Emissions Units Subject to NSPS?	
7. [ ] One or More Emission Units Subject to NESHAP?	
8. [ ] Title V Source by EPA Designation?	

I. Facility Regulatory Classifications Comment (limit to 200 characters):

Facility is a major source for PSD and Title V purposes. The upgraded turbine will be subject to NSPS Subpart GG. The project is not subject to PSD since the increases in emissions are less than the significant levels.

List of Applicable Regulations

FDEP Title V Core List	
62-296.320 General Visible Emissions Standards	
40 CFR 60, Subpart GG Standards of Performance for Stationary Gas-fired Turbines	

B. FACILITY POLLUTANTS

List of Pollutants Emitted

1. Pollutant Emitted	2. Pollutant Classif.	3. Requested Emissions Cap lb/hour	tons/year	4. Basis for Emissions Cap	5. Pollutant Comment
NO_X	A				
CO	A				
VOC	B				
SO_2	B				
PM	B				

C. FACILITY SUPPLEMENTAL INFORMATION

Supplemental Requirements

1. Area Map Showing Facility Location: [X] Attached, Document ID: *Narrative Fig. 1-1*[ ] Not Applicable [ ] Waiver Requested
2. Facility Plot Plan: [X] Attached, Document ID:_*Att. B*_ [ ] Not Applicable [ ] Waiver Requested
3. Process Flow Diagram(s): [ ] Attached, Document ID:_____ [ ] Not Applicable [X] Waiver Requested
4. Precautions to Prevent Emissions of Unconfined Particulate Matter: [ ] Attached, Document ID:_____ [X] Not Applicable [ ] Waiver Requested
5. Fugitive Emissions Identification: [ ] Attached, Document ID:_____ [X] Not Applicable [ ] Waiver Requested
6. Supplemental Information for Construction Permit Application: [X] Attached, Document ID:_*Attachment C* [ ] Not Applicable
7. Supplemental Requirements Comment:

Additional Supplemental Requirements for Title V Air Operation Permit Applications

8. List of Proposed Insignificant Activities:
   [ ] Attached, Document ID:_____ [X] Not Applicable

9. List of Equipment/Activities Regulated under Title VI:
   [ ] Attached, Document ID:_____
   [ ] Equipment/Activities On site but Not Required to be Individually Listed
   [X] Not Applicable

10. Alternative Methods of Operation:
    [ ] Attached, Document ID:_____ [X] Not Applicable

11. Alternative Modes of Operation (Emissions Trading):
    [ ] Attached, Document ID:_____ [X] Not Applicable

12. Identification of Additional Applicable Requirements:
    [ ] Attached, Document ID:_____ [X] Not Applicable

13. Risk Management Plan Verification:
    [ ] Plan previously submitted to Chemical Emergency Preparedness and Prevention Office (CEPPO). Verification of submittal attached (Document ID:_____) or previously submitted to DEP (Date and DEP Office:_____)
    [ ] Plan to be submitted to CEPPO (Date required:_____)
    [X] Not Applicable

14. Compliance Report and Plan:
    [ ] Attached, Document ID:_____ [X] Not Applicable

15. Compliance Certification (Hard-copy Required):
    [ ] Attached, Document ID:_____ [X] Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in This Section: (Check one)

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Regulated or Unregulated Emissions Unit? (Check one)

[X] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

[ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

3. Description of Emissions Unit Addressed in This Section (limit to 60 characters):

15,000 bhp ISO natural gas fired turbine compressor unit, Engine No. 1507

4. Emissions Unit Identification Number: [X] No ID
ID: 006 [ ] ID Unknown

5. Emissions Unit Status Code:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A	12/15/02	49	[ ]

9. Emissions Unit Comment: (Limit to 500 Characters)

The existing Solar Mars 100 T-13000S turbine engine will be uprated from 13,000 bhp ISO to 15,000 bhp ISO. Fuel will be exclusively natural gas from the FGT's gas pipeline. The proposed engine will incorporate dry, low NO_X combustion technology.

Emissions Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method):

The proposed engine will incorporate dry, low NO_X combustion technology.

2. Control Device or Method Code(s): NA

Emissions Unit Details

1. Package Unit:
   Manufacturer: Solar Model Number: Mars 100-T15000S
2. Generator Nameplate Rating: MW
3. Incinerator Information:
   Dwell Temperature: °F
   Dwell Time: seconds
   Incinerator Afterburner Temperature: °F

B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:	122.947	mmBtu/hr	
2. Maximum Incineration Rate:	NA	lb/hr	tons/day
3. Maximum Process or Throughput Rate:	NA		
4. Maximum Production Rate:	NA		
5. Requested Maximum Operating Schedule:			
	24 hours/day		7 days/week
	52 weeks/year		8760 hours/year

6. Operating Capacity/Schedule Comment (limit to 200 characters):

Heat input is 122.947 MM Btu/hr based on vendor specifications of 111.77 MMBtu/hr fuel flow plus 10%.

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

FDEP Title V Core List	
62-296.320 General Visible Emissions Standards	
40 CFR 60, Subpart GG Standards of Performance for Stationary Gas-fired	

D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? 1507	2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): NA		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: None		
5. Discharge Type Code: V	6. Stack Height: 60 feet	7. Exit Diameter: 7.55 x 7.55 feet
8. Exit Temperature: 909 °F	9. Actual Volumetric Flow Rate: 191,841 acfm	10. Water Vapor:
11. Maximum Dry Standard Flow Rate: dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates: Zone: 17 East (km): 249.02 North (km): 3339.60		
14. Emission Point Comment (limit to 200 characters):		

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment __1__ of __1__

1. Segment Description (Process/Fuel Type) (limit to 500 characters):		
Natural gas fired turbine engine driving a natural gas compressor, operating full time.		
2. Source Classification Code (SCC): 2-02-002-01	3. SCC Units: million cubic feet burned	
4. Maximum Hourly Rate: 0.1182	5. Maximum Annual Rate: 1035.4	6. Estimated Annual Activity Factor: NA
7. Maximum % Sulfur: 0.03	8. Maximum % Ash: 0.0	9. Million Btu per SCC Unit: 1040
10. Segment Comment (limit to 200 characters): Fuel use based on vendor data plus 10%. Percent Sulfur is based on maximum Federal Energy Regulatory Commission (FERC) limit of 10 gr S/100scf and gas density of 0.0455 lb/scf.		

Segment Description and Rate: Segment _NA__ of _____

1. Segment Description (Process/Fuel Type) (limit to 500 characters):		
2. Source Classification Code (SCC):	SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):		

F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
VOC			NS
SO_2			EL
PM			NS
NO_X			EL
CO			NS
HAPs			NS

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: NOX	2. Total Percent Efficiency of Control:
3. Potential Emissions: 11.12 lb/hour 48.7 tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: 48.70 tpy Reference: Vendor's data	7. Emissions Method Code: 5
8. Calculation of Emissions (limit to 600 characters): (48.70 tpy)(2000 lb/1 ton) / (1 yr/8760 hr) = 11.12 lb/hr	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Vendor's data based on ISO conditions with site elevation.	

Allowable Emissions Allowable Emissions ___1_ of __1__

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions: NA
3. Requested Allowable Emissions and Units: 25 ppmv	4. Equivalent Allowable Emissions: 11.12 lb/hour 48.7 tons/year
5. Method of Compliance (limit to 60 characters): Initial performance test.	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): 40 CFR 60.332(a) (2) limits NOX emissions to 190 ppmv.	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: CO	2. Total Percent Efficiency of Control:
3. Potential Emissions: 13.54 lb/hour 59.3 tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: 59.30 tpy Reference: Vendor's data	7. Emissions Method Code: 5
8. Calculation of Emissions (limit to 600 characters): (59.30 tpy)(2000 lb/1 ton) / (1 yr/8760 hr) = 13.54 lb/hr	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Vendor emission factor is based on a value of 50 ppmv.	

Allowable Emissions Allowable Emissions __NA__ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions: NA
3. Requested Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance (limit to 60 characters):	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: VOC	2. Total Percent Efficiency of Control:
3. Potential Emissions: 0.39 lb/hour 1.7 tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: 16.98 tpy UHC Reference: Vendor's data	7. Emissions Method Code: 5
8. Calculation of Emissions (limit to 600 characters): Vendor factor for unburned hydrocarbons (UHC) = 16.98 tpy. Assume 10% is VOC. (1.70 tpy)(2000 lb/1 ton) / (1 yr/8760 hr) = 0.39 lb/hr	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions __NA__ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance (limit to 60 characters):	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: SO2	2. Total Percent Efficiency of Control:
3. Potential Emissions: 3.38 lb/hour 14.8 tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: 10 gr/100scf Reference: Vendor's fuel use and FERC limitation	7. Emissions Method Code: 3
8. Calculation of Emissions (limit to 600 characters): (10 gr S/100 scf)(0.1182 MMscf/hr)(1 lb/7000 gr) = 1.69 lb S/hr (1.69 lb S/hr)(2 lb SO2/lb S) = 3.38 lb SO2/hr (3.38 lb SO2/hr)(8760 hr/yr)(1 ton/2000 lb) = 14.79 ton/yr	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Based on vendor's fuel use data plus 10%. SO2 emission factor is based on maximum Federal Energy Regulatory Commission (FERC) limit of 10 gr S/100 scf and gas density of 0.0455 lb/scf.	

Allowable Emissions Allowable Emissions ___1_ of __1__

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 4 ppmv	4. Equivalent Allowable Emissions: 3.38 lb/hour 14.8 tons/year
5. Method of Compliance (limit to 60 characters): Initial performance test and fuel monitoring.	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): 40 CFR 60.332(a) limits SO2 emissions to 150 ppmv.	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: PM	2. Total Percent Efficiency of Control:
3. Potential Emissions: 0.81 lb/hour 3.6 tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: 0.0066 lb/MM Btu Reference: Table 3.1-2a, AP-42 4/00 Supplement E	7. Emissions Method Code: 4
8. Calculation of Emissions (limit to 600 characters): (0.0066 lb/MM Btu)(122.95 MM Btu/hr) = 0.81 lb/hr (0.81 lb/hr)(8760 hr/yr)(1 ton/2000 lb) = 3.55 ton/y	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Based on vendor's fuel use data plus 10%.	

Allowable Emissions Allowable Emissions ___NA_ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance (limit to 60 characters):	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: HAPS	2. Total Percent Efficiency of Control:
3. Potential Emissions: 0.13 lb/hour 0.6 tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: 0.001027 lb/MMBtu Reference: Table 3.1-3, AP-42, 04/00	7. Emissions Method Code: 5
8. Calculation of Emissions (limit to 600 characters): (0.001027 lb/MM Btu)(122.947 MM Btu/hr) = 0.126 lb/hr (0.126/lb/hr)(8760 hr/yr)(1 ton/2000 lb) = 0.55 ton/yr	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions __NA__ of _____

1. Basis for Allowable Emissions Code: NA	2. Future Effective Date of Allowable Emissions: NA
3. Requested Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance (limit to 60 characters):	
6. Allowable Emissions Comment (Desc. Of Operating Method) (limit to 200 characters):	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

1. Visible Emissions Subtype: VE10	2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: 10 % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: EPA Method 9	
5. Visible Emissions Comment (limit to 200 characters):	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor __NA_ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement: [ ] Rule [ ] Other	
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment (limit to 200 characters):	

J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements

1. Process Flow Diagram [ ] Attached, Document ID:_____ [ ] Not Applicable [X] Waiver Requested
2. Fuel Analysis or Specification [ ] Attached, Document ID:_____ [ ] Not Applicable [X] Waiver Requested
3. Detailed Description of Control Equipment [ ] Attached, Document ID:_____ [X] Not Applicable [ ] Waiver Requested
4. Description of Stack Sampling Facilities [ ] Attached, Document ID:_____ [ ] Not Applicable [X] Waiver Requested
5. Compliance Test Report [ ] Attached, Document ID:_____ [ ] Previously submitted, Date:_____ [X] Not Applicable
6. Procedures for Startup and Shutdown [ ] Attached, Document ID:_____ [ ] Not Applicable [X] Waiver Requested
7. Operation and Maintenance Plan [ ] Attached, Document ID:_____ [X] Not Applicable [ ] Waiver Requested
8. Supplemental Information for Construction Permit Application [X] Attached, Document ID:_*Attach. C*__ [ ] Not Applicable
9. Other Information Required by Rule or Statute [ ] Attached, Document ID:_____ [X] Not Applicable
10. Supplemental Requirements Comment: Supplemental information is provided in the narrative description and Attachment C accompanying these forms. Emissions testing has not been performed on this unit.

Additional Supplemental Requirements for Title V Air Operation Permit Applications

11. Alternative Methods of Operation
[ ] Attached, Document ID:_____ [X] Not Applicable

12. Alternative Modes of Operation (Emissions Trading)
[ ] Attached, Document ID:_____ [X] Not Applicable

13. Identification of Additional Applicable Requirements
[ ] Attached, Document ID:_____ [X] Not Applicable

14. Compliance Assurance Monitoring Plan
[ ] Attached, Document ID:_____ [X] Not Applicable

15. Acid Rain Part Application (Hard-copy Required) NA

[ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
Attached, Document ID:_____

[ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
Attached, Document ID:_____

[ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
Attached, Document ID:_____

[ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
Attached, Document ID:_____

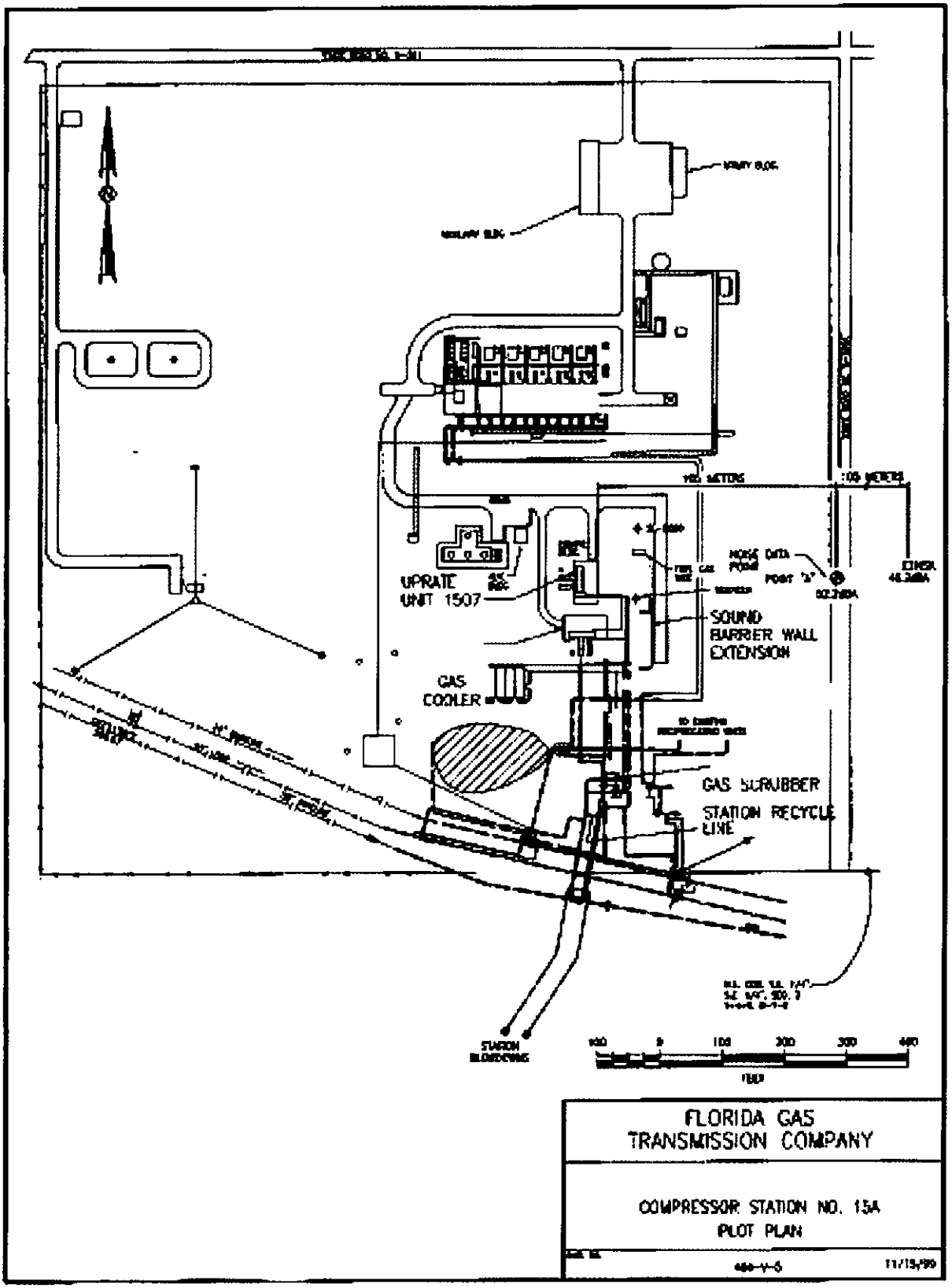
[ ] Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
Attached, Document ID:_____

[ ] Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
Attached, Document ID:_____

[ ] Not Applicable

Attachment B

Plot Plan


UPRATE
UNIT 1507
SOUND
BARRIER WALL
EXTENSION
GAS
COOLER
GAS SCRUBBER
STATION RECYCLE
LINE
FLORIDA GAS
TRANSMISSION COMPANY
COMPRESSOR STATION NO. 15A
PLOT PLAN
11/15/99

ATTACHMENT C

Vendor Information

Solar Mars 100 T-15000S Turbine

PREDICTED EMISSION PERFORMANCE

Customer: **Enron**	Engine Model: **MARS 100-T15000S CS/MD 122F MATCH SHIPMENTS AFTER 1/95**
Job ID: **NO2-271P**	
Inquiry Number: **NO2-271P**	Fuel Type: **SD NATURAL GAS** / Water Injection: **NO**
Run By: **John D. Wilson** / Date Run: **26-Sep-02**	Engine Emissions Data: **REV. 0.0** / Engines Tested: **0**

	NOx EMISSIONS Nominal	NOx EMISSIONS Maximum	CO EMISSIONS Nominal	CO EMISSIONS Maximum	UHC EMISSIONS Nominal	UHC EMISSIONS Maximum
1 — 14510 Hp 100.0% Load / Elev. 100 ft / Rel. Humidity 60.0% / Temperature						
PPMvd at 15% O2	*	25.00	*	50.00	*	25.00
ton/yr	*	48.70	*	59.30	*	16.98
lbm/(MW-hr)	*	1.03	*	1.25	*	0.36
(gas turbine shaft pwr) g/(BHp-hr)	*	0.00	*	0.00	*	0.00
2 — 12812 Hp 100.0% Load / Elev. 100 ft / Rel. Humidity 60.0% / Temperature						
PPMvd at 15% O2	*	25.00	*	50.00	*	25.00
ton/yr	*	43.76	*	53.29	*	15.26
lbm/(MW-hr)	*	1.05	*	1.27	*	0.36
(gas turbine shaft pwr) g/(BHp-hr)	*	0.00	*	0.00	*	0.00

Important Notes

1. For short-term emission limits such as lbs/hr., Solar recommends using "worst case" anticipated operating conditions specific to the application and the site conditions. Worst case for one pollutant is not necessarily the same for another. The emission values on this form are only predicted emissions at the specific operating conditions listed.
2. Solar's typical SoLoNOx warranty is for greater than 0 deg F, and between 50% and 100% load for gas fuel, and between 80% and 100% load for liquid fuel. An emission warranty for non-SoLoNOx equipment is for greater than 0 deg F and between 80% and 100% load.
3. Fuel must meet Solar standard fuel specification ES 9-98. Predicted emissions are based on the attached fuel composition, or, San Diego natural gas or equivalent.
4. If needed, Solar can provide generic documents to address turbine operation outside typical warranty ranges, as well as non-warranted emissions of SO2, PM10/2.5, VOC, and formaldehyde.
5. Solar can optionally provide factory testing in San Diego to ensure the actual unit(s) meet the above values within the tolerances quoted. Pricing and schedule impact will be provided upon request.

PREDICTED ENGINE PERFORMANCE

Customer: *Enron*	Model: **MARS 100-T15000S**
Job ID: **NO2-271P**	Package Type: **CS/MD**
Run By: **John D. Wilson** / Date Run: **26-Sep-02**	Match: **122F MATCH**
Engine Performance Code: **REV. 2.88** / Engine Performance Data: **REV. 3.1**	Fuel System: **GAS**
	Fuel Type: **SD NATURAL GAS**

Elevation	feet	100	
Inlet Loss	in H20	4.0	
Exhaust Loss	in H20	4.0	
		1	2
Engine Inlet Temperature	deg F	60.0	95.0
Relative Humidity	%	60.0	60.0
Driven Equipment Speed	RPM	8893	8735
Specified Load	HP	FULL	FULL
Net Output Power	HP	14075	12427
Heat Rate	Btu/HP-hr	7941	8201
Nominal Net Output Power	HP	14510	12812
Nominal Heat Rate	Btu/HP-hr	7703	7955
Fuel Flow	mmBtu/hr	111.77	101.92
Engine Exhaust Flow	lbm/hr	332195	304648
Exhaust Temperature	deg F	909	938

Attachment D

Emission Calculations

Engine No. 1507 EPN: 003

NOx Emissions: (Based on Vendor Data)
tons NOx/yr
= 48.70

lb NOx/hr = (tons NOx/yr)(2000 lb/1 ton)(yr/hr)
= (48.70 tpy)(2000 lb/1 ton) / (1 yr/8760 hr)
= 11.12

CO Emissions: (Based on Vendor Data)
tons CO/yr = 59.3

lb CO/hr = (tons CO/yr)(2000 lb/1 ton)(yr/hr)
= (59.30 tpy)(2000 lb/1 ton) / (1 yr/8760 hr)
= 13.54

VOC Emissions: (Based on Vendor Data)
tons VOC/yr
= 1.698

lb VOC/hr = (tons VOC/yr)(2000 lb/1 ton)(yr/hr)
= (1.70 tpy)(2000 lb/1 ton) / (1 yr/8760 hr)
= 0.39

SO2 Emissions: (Based on FERC Limits)

lb S/hr = (gr S/100 scf)(MMscf/hr)(1 lb/7000 gr)
(10 gr S/100 scf)(0.1182 MMscf/hr)(1 lb/7000
= gr)
= 1.69

lb SO2/hr = (lb S/hr)(2 lb SO2/lb S)
= (1.69 lb S/hr)(2 lb SO2/lb S)
= 3.38

tons SO2/yr = (lb SO2/hr)(hr/yr)(1 ton/2000 lb)
= (3.38 lb SO2/hr)(8760 hr/yr)(1 ton/2000 lb)
= 14.79

PM 10/2.5 Emissions: (Based on AP-42 Table 3.1-2a, 4/00)
lb PM/hr = (lb PM/MMBtu)(MMBtu/hr)

= (0.0066 lb/MMBtu)(122.95 MMBtu/hr)
= 0.81

tons PM/yr = (lb PM/hr)(hr/yr)(1 ton/2000 lb)
= (0.81 lb PM/hr)(8760 hr/yr)(1 ton/2000 lb)
= 3.55

HAPs Emissions: (Based on AP-42 Table 3.1-3, 4/00)
lb HAP/hr = (lb HAP/MMBtu)(MMBtu/hr)
= (0.00102733 lb/MMBtu)(122.9470 MMBtu/hr)
= 0.1263

tons HAP/yr = (lb HAP/hr)(hr/yr)(1 ton/2000 lb)
= (0.13 lb PM/hr)(8760 hr/yr)(1 ton/2000 lb)
= 0.55

HAP Emission Factors

HAP	4 cycle lean		4 cycle rich		2 cycle lean		Turbine	
	lb/MMBtu	Ref.	lb/MMBtu	Ref.	lb/MMBtu	Ref.	lb/MMBtu	Ref.
1,1,2,2-Tetrachloroethane	4.00E-05	a	2.53E-05	b	6.63E-05	c		
1,1,2-Trichloroethane	3.18E-05	a	1.53E-05	b	5.27E-05	c		
1,3-Butadiene	2.67E-04	a	6.63E-04	b	8.20E-04	c	4.30E-07	d
1,3-Dichloropropene	2.64E-05	a	1.27E-05	b	4.38E-05	c		
2,2,4-Trimethylpentane	2.50E-04	a			8.46E-04	c		
2-Methylnaphthalene	3.32E-05	a			2.14E-05	c		
Acenaphthene	1.25E-06	a			1.33E-06	c		
Acenaphthylene	5.53E-06	a			3.17E-06	c		
Acetaldehyde	8.36E-03	a	2.79E-03	b	7.76E-03	c	4.00E-05	d
Acrolein	5.14E-03	a	2.63E-03	b	7.78E-03	c	6.40E-06	d
Anthracene					7.18E-07	c		
Benz(a)anthracene					3.36E-07	c		
Benzene	4.40E-04	a	1.58E-03	b	1.94E-03	c	1.20E-05	d
Benzo(a)pyrene					5.68E-09	c		
Benzo(b)fluoranthene	1.66E-07	a			8.51E-09	c		
Benzo(e)pyrene	4.15E-07	a			2.34E-08	c		
Benzo(g,h,i)perylene	4.14E-07	a			2.48E-08	c		
Benzo(k)fluoranthene					4.26E-09	c		
Biphenyl	2.12E-04	a			3.95E-06	c		
Carbon Tetrachloride	3.67E-05	a	1.77E-05	b	6.07E-05	c		
Chlorobenzene	3.04E-05	a	1.29E-05	b	4.44E-05	c		
Chloroform	2.85E-05	a	1.37E-05	b	4.71E-05	c		
Chrysene	6.93E-07	a			6.72E-07	c		
Ethylbenzene	3.97E-05	a	2.48E-05	b	1.08E-04	c	3.20E-05	d
Ethylene Dibromide	4.43E-05	a	2.13E-05	b	7.34E-05	c		
Fluoranthene	1.11E-06	a			3.61E-07	c		
Fluorene	5.67E-06	a			1.69E-06	c		
Formaldehyde	5.28E-02	a	2.05E-02	b	5.52E-02	c	7.10E-04	d
Indeno(1,2,3-c,d)pyrene					9.93E-09	c		
Methanol	2.50E-03	a	3.06E-03	b	2.48E-03	c		
Methylene Chloride	2.00E-05	a	4.12E-05	b	1.47E-04	c		
n-Hexane	1.11E-03	a			4.45E-04	c		
Naphthalene	7.44E-05	a	9.71E-05	b	9.63E-05	c	1.30E-06	d
PAH	2.69E-05	a	1.41E-04	b	1.34E-04	c	2.20E-06	d
Perylene					4.97E-09	c		
Phenanthrene	1.04E-05	a			3.53E-06	c		
Phenol	2.40E-05	a			4.21E-05	c		
Propylene Oxide							2.90E-05	d
Pyrene	1.36E-06	a			5.84E-07	c		
Styrene	2.36E-05	a	1.19E-05	b	5.48E-05	c		
Tetrchloroethane	2.48E-06	a						
Toluene	4.08E-04	a	5.58E-04	b	9.63E-04	c	1.30E-04	d
Vinyl Chloride	1.49E-05	a	7.18E-06	b	2.47E-05	c		
Xylenes	1.84E-04	a	1.95E-04	b	2.68E-04	c	6.40E-05	d
Total Hazardous Cmpds	**7.22E-02**		**3.24E-02**		**7.95E-02**		**1.027E-03**	

References:
a - AP-42, 5th Edition, Supplement F, 07/00, Table 3.2-2
b - AP-42, 5th Edition, Supplement F, 07/00, Table 3.2-3
c - AP-42, 5th Edition, Supplement F, 07/00, Table 3.2-1
d - AP-42, 5th Edition, Supplement F, 04/00, Table3.1-3