KBN

April 30, 1996

Mr. Ed Svec
Florida Department of Environmental Protection
2600 Blair Stone Road, Mail Station 5505
Twin Towers Office Building
Tallahassee, Florida 32399-2400

RE: Application for Permit to Construct an Air Pollution Source
Project No. 0250470, DERM No. P-1348
Cypress Energy Cogeneration Plant
Dade County Government Center

Dear Mr. Svec:

As requested in the draft permit for the above-cited project, a public notice was published on April 8, 1996. Attached is a certified copy of that publication.

If you have any questions, please contact me in the KBN Tampa office at (813) 287-1717.

Sincerely,

Albert W Morneault

Albert W. Morneault, P.E.
Staff Engineer

AWM/dbf.2(1)

Enclosure

cc: Mr. Kennard Kosky, P.E.
15272-0300 (2.4)
CC: I. Goldman, SED
P. Wong, DERM

BEST AVAILABLE COPY

PUBLISHED DAILY
MIAMI-DADE-FLORIDA

STATE OF FLORIDA
COUNTY OF DADE

The Miami Herald Publishing Company

Before the undersigned authority personally appeared:

SILVIA ACOSTA

who on oath says that he/she is"

CUSTODIAN OF RECORDS

of The Miami Herald, a daily newspaper published at Miami in Dade County, Florida; that the attached copy of advertisement was published in said newspaper in the issues of:

APRIL 8, 1996

Affiant further says that the said The Miami Herald is a newspaper published at Miami, in the said Dade County, Florida and that the said newspaper has heretofore been continuously published in said Dade County, Florida each day and has been entered as second class mail matter at the post office in Miami, in said Dade County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspapers(s).

Sworn to and subscribed before me this

9TH day of APRIL, 1996

My Commission Expires: October 17, 1997
Virginia J. Gallon

OFFICIAL NOTARY SEAL
VIRGINIA J GALLON
NOTARY PUBLIC STATE OF FLORIDA
COMMISSION NO. CC325842
MY COMMISSION EXP. OCT. 17,1997

Notary

RECEIVED
MAY 01 1996
BUREAU OF
AIR REGULATION

PROTECTION
NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

DRAFT Permit No. 0250470-001-AC
Dade County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit to Cypress Cogeneration Company for the construction of a combustion turbine located at the Dade County Government Center, Miami, Dade County, Florida 33128. A Best Achievable Control Technology (BACT) determination was not required. The applicant's name and address are: Mr. Leonard Shapiro, Project Manager, Cypress Cogeneration Company, 2707 North Loop, 8th Floor, Houston, Texas 77251.

The Department will issue the FINAL Permit, in accordance with the conditions of the enclosed DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of this Notice. Written comments should be provided to Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another ~~Public Notice~~.

In addition, any person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (FS). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commenwealth Boulevard, Tallahassee, Florida 32399-3000, within 14 (fourteen) 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, F.S.

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 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 each petitioner, if any; (e) A statement of the facts which each petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of the rules or statutes each petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by each 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 DRAFT Permit. 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, Florida Administrative Code.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at Dade County Environmental Resources Management, 33 Southwest Second Avenue, Suite 900, Miami, Florida 33130-1540 and the Department of Environmental Protection, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. The complete file includes the Draft Permit, the application, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact Edward J. Svec at the Department's address and at (904)488-1344 for additional information.

KBN

March 29, 1996

Mr. A.A. Linero, P.E., Administrator
New Source Review Section
Bureau of Air Regulations
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Cypress Cogeneration Company
Combustion Turbine - 0250470-001-AC

Dear Mr. Linero:

KBN Engineering and Applied Sciences, Inc. (KBN), has reviewed the letter submitted to Mr. Leonard Shapiro, Cypress Cogeneration Company dated February 29, 1996, and has the following comments:

Technical Evaluation

Page 2, Section I-C, Process and Controls

a. In the first sentence as follows, the proposed GE LM 2500 CT combustion turbine will operate in simple-cycle mode and use water injection to control NO_x emissions.

b. In the fifth sentence, the word "normal" should be "nominal" and the maximum heat input should be "174.7" MMBtu/hr.

c. In the last sentence, the turbine is a minor emission source of sulfur dioxide, particulate matter, nitrogen oxides, carbon monoxide, and volatile organic compounds. (Eliminate beryllium and inorganic arsenic because they do not exist in natural gas.)

Page 2, Section II

a. The second paragraph should read, "the application was received on December 4, 1995, and deemed complete on January 6, 1996."

Page 3, Section II, Forth Paragraph

a. In the first sentence, remove the words "except ozone."

b. In the second sentence, change the words "moderate nonattainment" to "maintenance" and "62-275.410" to "62-275.600."

KBN ENGINEERING AND APPLIED SCIENCES, INC.

6241 Northwest 23rd Street, Suite 500, Gainesville, Florida 32653-1500, 352-336-5600 FAX 352-336-6603
5405 West Cypress Street, Suite 215, Tampa, Florida 33607, 813-287-1717 FAX 813-287-1716
1801 Clint Moore Road, Suite 105, Boca Raton, Florida 33487, 407-994-9910, FAX 407-994-9393
7785 Baymeadows Way, Suite 105, Jacksonville, Florida 32256, 904-739-5600 FAX 904-739-7777
1616 'P' Street NW, Suite 350, Washington, DC 20036, 202-462-1100, FAX 202-462-2270

The previous changes are necessary because, EPA redesignated this area (Dade County) in the Federal Register on February 14, 1995, effective on April 25, 1995.

Page 3, Section II, Seventh Paragraph

a. Insert the following sentence at the end of this paragraph:

The project NO_x emission rate is 0.155 lb/MMBtu and, therefore, complies with the RACT rule.

Page 4, Section III, Table

PM Visible emissions should be changed from "10%" to "20%."

CO The lbs/hr should be "57.4" to "57.7."

SO_2 Add a note under standard as follows:

Emissions are based on 1 grain/100 cf of natural gas.

PM_{10} Visible emissions should be changed from "10%" to "20%."

In the note below the table, the maximum heat input should be changed from "174.1" to "174.7."

Draft Permit

Page 1, Second Paragraph

The word "county" should be capitalized "County," and the maximum heat input should be changed from "174.1" to "174.7."

Page 5, Specific Conditions

Propose changes as follows:

SC No 1.

The combustion turbine shall operate no more than 7,000 hours per year at the maximum heat input of 174.7 MMBtu/hr (184,672 cf/hr).

SC No 3.

The heat input to the combustion turbine shall not exceed 174.7 million Btu/hr (LHV).

SC No 4 through 14, renumber to 5 - 15.

SC No 5. Table

SO_2 Change the standard to "0.015% by volume sulfur in fuel (Natural Gas)."

CO Change the lb/hr from "57.4" to "57.7."

SC No 6

The EPA method for CO is not specified. Specify as Method 10.

In addition, I have enclosed a marked-up copy showing where the above comments should be inserted.

If, in your review of the above items, you need further clarification, please call me at the Tampa KBN office at (813) 287-1717.

Sincerely,

Albert W Morneault

Albert W. Morneault, P.E.
Staff Engineer

AWM/vdp.1(1)

Attachments

xc: Mr. Leonard Shapiro, Cypress Cogeneration Company
Mr. Edward Svec, FDEP
Mr. Christopher Bodin, Dade County DERM
15272-0300(2.1)

CC: I. Goldman, SED

ATTACHMENTS

Department of Environmental Protection

Intent Permit 3/1/96

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

February 29, 1996

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Leonard Shapiro
Project Manager
Cypress Cogeneration Company
2707 North Loop, 8th Floor
Houston, Texas 77251

Re: Cypress Cogeneration Company
Combustion Turbine - 0250470-001-AC

Dear Mr. Shapiro:

Enclosed is one copy of the Preliminary Determination and draft Air Construction Permit for the Dade County Government Center Cogeneration Facility Combustion Turbine located at Dade County Downtown Government Center, Miami, Florida 33128, Dade County is enclosed. The Department's Notice of Intent to Issue Air Construction Permit and the "*Public Notice*" are also included. The "*Public Notice*" must be published within 30 days of receipt of this letter.

Please submit any written comments you wish to have considered concerning the Department's proposed action to A. A. Linero, P.E., Administrator, New Source Review Section at the above address. If you have any other questions, please contact Edward Svec at (904)488-1344.

Sincerely,

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

CHF/ES/t

Enclosures

cc: I. Goldman, SED
P. Wong, DERM

NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

In the Matter of an
Application for Permit by:

Mr. Leonard Shapiro
Project Manager
Cypress Cogeneration Company
2707 North Loop, 8th Floor
Houston, Texas 77251

DRAFT Permit No.: 0250470-001-AC
Dade County

/

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit (copy of DRAFT Permit enclosed) for the source detailed in the application specified above, for the reasons stated below.

The applicant, Cypress Cogeneration Company, applied on December 4, 1995 to the Department for a permit to construct for a combustion turbine located at the Dade County Downtown Government Center, Miami, Dade County, Florida 33128.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212. The source is not exempt from permitting procedures. The Department has determined that an air construction permit is required at the described facility.

The Department intends to issue this air construction permit based on the belief that reasonable assurances have been provided to indicate that operation of the source will not adversely impact air quality, and the source will comply with all appropriate provisions of Chapters 62-4, 62-210, 62-212, 62-296, and 62-297, F.A.C.

Pursuant to Sections 403.815 and 403.0872, F.S., and Rules 62-103.150 and 62-210.350(3), F.A.C., you (the applicant) are required to publish at your own expense the enclosed "*Public Notice.*" The notice shall be published one time only within 30 (thirty) days in the legal advertisement section of a newspaper of general circulation in the area affected. For the purpose of these rules, "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. Where there is more than one newspaper of general circulation in the county, the newspaper used must be one with significant circulation in the area that may be affected by the permit. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation at 2400 Blair Stone Road, Tallahassee, Florida 32399-2400 within 7 (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 FINAL Permit, in accordance with the conditions of the enclosed DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of 30 (thirty) days from the date of publication of the "*Public Notice.*" Written comments should be provided to the Department's Bureau of Air Regulation at 2400 Blair Stone Road, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

In addition, any persons 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, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000. Petitions filed by the permit applicant and the parties listed below must be filed within 14 (fourteen) 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 the 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, F.S.

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 proposed source will operate; (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 the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes the petitioner contends require reversal or modification of the Department's action or proposed action; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the 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 DRAFT Permit. 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 receipt of this intent in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000. 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 PROTECTION

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
(904)488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this **NOTICE OF INTENT TO ISSUE PERMIT** and all copies were mailed before the close of business on 3-1-96 to the listed persons.

Clerk Stamp
FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(11), F.S., with the designated Department Clerk, receipt of which is hereby acknowledged.

(Clerk) 3-1-96 (Date)

Copies furnished to:
I. Goldman, SED
P. Wong, DERM

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

DRAFT Permit No.: 0250470-001-AC
Dade County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit to Cypress Cogeneration Company for the construction of a combustion turbine located at the Dade County Government Center, Miami, Dade County, Florida 33128. A Best Achievable Control Technology (BACT) determination was not required. The applicant's name and address are: Mr. Leonard Shapiro, Project Manager, Cypress Cogeneration Company, 2707 North Loop, 8th Floor, Houston, Texas 77251.

The Department will issue the FINAL Permit, in accordance with the conditions of the enclosed DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of this Notice. Written comments should be provided to Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

In addition, any person whose substantial interests are affected by this proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (FS). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000 within 14 (fourteen) 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, F.S.

The Petition shall contain the following information; (a) The name, address, and the 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 warrants 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.

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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 receipt of this notice, in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000. Failure to petition within the allotted time frame constitutes a waiver of any rights 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, Florida Administrative Code.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at Dade County Department of Environmental Resources Management, 33 Southwest Second Avenue, Suite 900, Miami, Florida 33130-1540 and the Department of Environmental Protection, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. The complete project file includes the Draft Permit, the application, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact Edward J. Svec at the Department's address and at (904)488-1344 for additional information.

Technical Evaluation
and
Preliminary Determination

Cypress Cogeneration Company
Dade County
Miami, Florida

Construction Permit Number
0250470-001-AC

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

March 1, 1996

I. Application

A. Applicant and Address

Cypress Cogeneration Company
2707 North Loop, 8th Floor
Houston, Texas 77251

B. Project and Location

The applicant intends to install and operate a combustion turbine at the Dade County Downtown Government Center in Miami, Dade County, Florida. The combustion turbine, a GE LM 2500 CT unit, will be capable of generating approximately 17.1 megawatts of electricity. The power generated will be used to comply with the requirements of existing power purchase agreements with Florida Power & Light Company and Dade County. The UTM coordinates of the project are Zone 17, 580.5 km East and 2850.9 km North.

C. Process and Controls

to control NO_x emissions — nominal — use water injection

The proposed GE LM 2500 CT combustion turbine will operate in simple-cycle mode and ~~will be an advanced dry low NO_x unit.~~ The other components of the unit are a compressed gas skid, a water injection skid and step-up transformers. The unit will burn natural gas as the primary fuel. No backup fuel has been proposed. The proposed unit will have a normal electrical output of 17.1 MW and a maximum heat input of 174.7 MMBtu/hr at average ambient conditions. The turbine is a minor emission source of sulfur dioxide, particulate matter, nitrogen oxides, carbon monoxide, volatile organic compounds, ~~beryllium, and inorganic arsenic.~~ and

D. SIC and SCC

1. The Standard Industrial Code is:

o 4911: Electric Services

2. The Source Classification Code is:

o Internal Combustion - Electric Generation 2-01-002-01 10^6 cubic feet natural gas burned (turbine)

II. Rule Applicability

The proposed project is subject to preconstruction review in accordance with Chapter 403, Florida Statutes, Florida Administrative Code (F.A.C.) Chapters 62-210, 62-212, and 62-296 and 40 CFR (July 1994 version).

The application package was deemed complete on ~~December 4, 1995.~~ received on December 4, 1995 and January 6, 1996.

The existing facility is a major facility (emits 100 tons per year or more of any pollutant) for nitrogen oxides and carbon monoxide pursuant to F.A.C. Rule 62-296.200 (106) Definitions.

The facility is located in Dade County which is an area designated as attainment for all pollutants ~~except ozone~~ pursuant to F.A.C. Rule 62-275.400. Dade County is designated as a ~~moderate nonattainment~~ maintenance area for the air pollutant ozone pursuant to F.A.C. Rule 62-275.~~410~~ .600

The following table exhibits the net potential / allowable pollutant emissions from the proposed project in tons per year (TPY):

Table 1

Source	Net Potential / Allowable Pollutant Emissions (TPY) PM	NO_x	CO	VOC	SO_2	PM_{10}
Turbine:	10.5	104.7	202.1	25.6	1.8	10.5

Note: Potential Annual Allowable Emissions are based on an actual annual use limit of 7,000 hours per year at maximum capacity as proposed by the applicant.

Since the facility category is not listed in Table 212.400-1 Major Facility Categories, the current permitted allowable emissions for any pollutant are less than 250 TPY and the potential emissions of any pollutant are less than 250 TPY, the proposed project is considered a minor modification to a minor facility and is exempted from the preconstruction review requirements of F.A.C. Rule 62-212. However the proposed project is subject to the requirements of F.A.C. Rule 62-296 Stationary Sources - Emission Standards and the Federal Standards of Performance for New Stationary Sources (NSPS) 40 CFR 60 Subpart GG Standards of Performance for Stationary Gas Turbines.

F.A.C. Rule 62-296.500(1)(b) requires that major NO_x (greater than or equal to 100 TPY) in Dade County are subject to the Reasonably Available Control Technology (RACT) rules in F.A.C. Rule 62-296-570. This rule requires annual emissions tests for units not equipped with a continuous emission monitoring system and limits the NO_x emissions from any gas turbine to 0.50 pounds per million Btu while firing natural gas. The project NO_x emission rate is 0.155 lb/MMBtu and, thus Since, complies with the RACT rule.

40 CFR 60.330 Subpart GG Standards of Performance for Stationary Gas Turbines, adopted by reference in F.A.C. Rule 62-296.800, applies to the proposed gas turbine because its heat input exceeds 10 million Btu and greater than one third of the electric output will be sold to a utility power distribution system. The NSPS limits the emissions of NO_x from the proposed gas turbine to 100.3 PPM dry basis corrected to 15% oxygen, SO_2 to 0.015% by volume dry basis at 15% oxygen and the sulfur content of the fuel to no more than 0.8% by weight. Additionally, since water injection is proposed to control NO_x, the fuel consumption and water to fuel ratio must be continuously monitored.

Initial and annual nitrogen oxides, sulfur dioxide and oxygen concentrations compliance tests shall be conducted using EPA Method 20 pursuant to F.A.C. Rule 62-297 and 40 CFR 60, Appendix A.

Initial and annual carbon monoxide emissions compliance tests shall be conducted using EPA Method 10 as requested by the applicant and pursuant to F.A.C. Rule 62-297 and 40 CFR 60, Appendix A.

Visible emissions shall be less than 20% opacity, pursuant to F.A.C. Rule 62-296.310(2)(a). Initial and annual compliance tests shall be conducted using EPA Method 9 pursuant to F.A.C. Rule 62-297 and 40 CFR 60, Appendix A.

The proposed project is subject to the provisions of F.A.C. Rules 62-210.650: Circumvention and 62-210.700: Excess Emissions.

III. Summary of Emissions

The proposed project will have allowable emission limits and standards for the pollutants PM, NO_x, CO, VOC, SO_2, and PM_{10}. The maximum allowable emissions from the proposed gas turbine shall not exceed the following limits except during periods of startup, shutdown and malfunction pursuant to F.A.C. Rule 62-210.700. The emission limits are based on the applicant's request and vendor specifications provided to the Department.

MAXIMUM ALLOWABLE EMISSION LIMITS

Pollutant	Standard	Lbs/Hr	TPY
PM	Good combustion; visible emissions shall not exceed ~~10%~~ 20% opacity	3.0	10.5
NO_x	42 ppmvd @ 15% Oxygen	29.9	104.7
CO	Good Combustion	57.7	202.1
VOC	Good Combustion and not exceed CO limits	7.31	25.6
SO_2	0.015% by volume dry basis @ 15% Oxygen Based on 1 gram/100 cf natural gas.	0.53	1.8
PM_{10}	Good combustion; visible emissions shall not exceed ~~10%~~ 20% opacity	3.0	10.5

These values are calculated using 7,000 hours of operation, a maximum heat input of 174.7 MMBtu/hr, and a flow of 99,978 dscfm.

B. Ambient Air Quality Analysis

Based on a review of the proposed project, an air quality analysis was not required.

IV. Conclusion

Based on the information provided by Cypress Cogeneration Company, The Department has reasonable assurance that the modification of the facility by installing the proposed gas turbine, 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 62-212 of the Florida Administrative Code.

Department of Environmental Protection

Lawton Chiles
Governor

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

Not Signed
Virginia B. Wetherell
Secretary

Permittee:
Cypress Cogeneration Company
2702 North Loop, 8th Floor
Houston, Texas 77251

Permit Number: 0250470-001-AC
Expiration Date: 12/31/96
County: Dade
Latitude/Longitude: 25°46'32"
80°11'50"
Project: GE LM 2500 CT
Combustion Turbine

This permit is issued under the provision of Chapter 403, Florida Statues (F.S.), and Chapters 62-4 and 62-212, Florida Administrative Code (F.A.C.). The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawings, plans, and other documents attached hereto and specifically described as follows:

For modification of the existing facility by installing a GE LM 2500 CT combustion turbine located at the Dade County Downtown Government Center in Miami, Dade County, Florida. The UTM coordinates of the site are Zone 17, 580.5 km E and 2850.9 km N. The combustion turbine will burn only natural gas, have a maximum heat input ~~of~~ 174.2 million Btu per hour and be capable of ~~generating~~ 17.1 megawatts of electric power.

174.7

The emission units shall be constructed (modified) in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachment listed below:

1. Application received December 4, 1995.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of F.S. and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

a. Have access to and copy any records that must be kept under the conditions of the permit;

b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and,

c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

a. A description of and cause of non-compliance; and,

b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the F.S. or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and F.S. after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by F. S. or Department rules.

11. This permit is transferable only upon Department approval in accordance with Rules 62-4.120 and 62-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

( ) Determination of Best Available Control Technology (BACT)
( ) Determination of Prevention of Significant Deterioration (PSD)
(X) Compliance with New Source Performance Standards (NSPS)

14. The permittee shall comply with the following:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- The date, exact place, and time of sampling or measurements;
- The person responsible for performing the sampling or measurements;
- The dates analyses were performed;
- The person responsible for performing the analyses;
- The analytical techniques or methods used; and,
- The results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

1. The combustion turbine shall operate no more than 7,000 hours per year, as requested by the permitee.
at the maximum heat input rate of 174.7 MM Btu/hr (184,672 cf/hr).
2. The combustion turbine shall burn only natural gas.

3. The heat input to the combustion turbine shall not exceed 174.1 million Btu per hour (LHV).

4. The permittee shall comply with all applicable requirements in 40 CFR 60, Subpart GG- Standards of Performance for Stationary Gas Turbines.

5. Maximum emissions from the combustion turbine shall not exceed any of the following:

Pollutant	Emission Standard	lbs/hr	TPY
SO_2	~~0.8% by weight~~ sulfur in fuel (Natural gas) 0.015 % by volume	0.53	1.8
NO_x	42 ppmvd @ 15% O_2	29.9	104.7
CO	Good combustion	57.47	202.1
VOC	Good combustion and not exceed the CO limits	7.31	25.6

Visible emissions shall not exceed 20 percent opacity, F.A.C. Rule 62-296.310(2)(a).

6. Initial and annual compliance tests for NO_x shall be conducted using EPA Method 20 in accordance with F.A.C Rule 62-297 and 40 CFR 60 Appendix A.

7. Initial and annual compliance tests for CO shall be conducted using EPA Method 10 in accordance with F.A.C. Rule 62-297 and 40 CFR 60 Appendix A.

8. Initial and annual compliance tests for visible emissions shall be conducted using EPA Method 9 in accordance with F.A.C. Rule 62-297 and 40 CFR 60 Appendix A.

9 ~~8~~. Initial and annual compliance with the SO_2 limits and the fuel sulfur content will be determined through fuel analysis in accordance with 40 CFR 60.335.

10 ~~9~~. The unit will be assumed to be in compliance with the VOC standard provided the CO emissions are met.

11 ~~10~~. The compliance test reports shall be submitted to the Department's Southeast District office and Dade County Department of Environmental Management within 45 days of completion of the last test run.

12 ~~11~~. The Department's Southeast District office and Dade County Department of Environmental Management shall be notified in writing at least 15 days in advance of any emission test required by this permit. Testing of emissions shall be conducted with the source operating at capacity. Capacity is defined as 95-100 percent of the manufacturer's rated heat input achievable for the average ambient (or conditioned) air temperature during the test. If it is impracticable to test at capacity, then sources may be tested at less than capacity. In such cases, the entire heat input vs. inlet temperature curve will be adjusted by the increment equal to the difference between the design heat input value and 105 percent of the value reached during the test. Data, curves, and calculations necessary to demonstrate the heat input rate correction at both design and test conditions shall be submitted to the Department with the compliance test report.

13 ~~12~~. An annual operation report shall be submitted to the Department's Southeast District office and Dade County Department of Environmental Management by March 1 of each year pursuant to Rule 62-210.370(2), F.A.C.

14 ~~13~~. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation prior to 60 days before the expiration of the permit (Rule 62-4.090, F.A.C.).

15 ~~14~~. An Application for an operation permit must be submitted to the Department's Southeast District office and Dade County Department of Environmental Management at least 90 days prior to the expiration date of this construction permit. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed while noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rules 17-4.055 and 17-4.220).

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

_____

Howard L. Rhodes, Director
Division of Air Resources
Management

March 11, 1996

Mr. Ed Svec
Florida Department of Environmental Protection
2600 Blair Stone Road
Twin Towers Office Building
Tallahassee, FL 32399-2400

Re: Application for Permit to Construct an Air Pollution Source
Project No. 0250470. DERM No. P-1348
Cypress Energy Cogeneration Plant
Dade County Government Center

Dear Mr. Svec:

In regard to the concerns of the Dade County Department of Environmental Resources Management (DERM) in its letter dated January 22, 1996, KBN Engineering and Applied Sciences, Inc (KBN), has performed an air dispersion model of the proposed stack for the LM 2500 combustion turbine unit.

The analysis was performed for a new stack height of 60 feet (ft) in lieu of the 40 ft height originally proposed. In the attached report, the model study shows that the maximum concentrations due to the project, with a 60 ft stack both by itself and together with other sources, are predicted to comply with all applicable AAQS and PSD increments.

KBN is requesting that a new stack height of 60 ft be evaluated instead of the original stack height.

If you have any questions, please contact me or Mr. Richard Zwolak in the KBN Tampa office at (813) 287-1717.

Sincerely,

Albert W. Morneault, P.E.
Staff Engineer

for Richard A. Zwolak, AICP
Principal Environmental Planner

CO - 57.4 #/hr
202.1 tpy
operating capacity
comment
"actual maximum heat
input rate = 174.7.

RAZ:AWM/vdp.1(1)

Attachment

cc: Mr. Kennard Kosky, P.E.
Mr. Christopher Bodin, Dade County DERM
15272-0300(2.4)

KBN ENGINEERING AND APPLIED SCIENCES, INC.

6241 Northwest 23rd Street
Suite 500
Gainesville, Florida 32653-1500
352-336-5600 FAX 352-336-6603

5405 West Cypress Street
Suite 215
Tampa, Florida 33607
813-287-1717 FAX 813-287-1716

1801 Clint Moore Road, Suite 105
Boca Raton, Florida 33487
407-994-9910
FAX 407-994-9393

7785 Baymeadows Way
Suite 105
Jacksonville, Florida 32256
904-739-5600 FAX 904-739-7777

1616 'P' Street NW, Suite 350
Washington, DC 20036
202-462-1100
FAX 202-462-2270

Dade County Cogeneration Project
LM 2500 Combustion Turbine
Air Quality Impact Analyses

OBJECTIVES

Air quality impact analyses have been performed for the Dade County Cogeneration Project to assure the Florida Department of Environmental Protection (FDEP) that the project's impacts will comply with ambient air quality standards (AAQS) and Prevention of Significant Deterioration (PSD) increments. A complete description of the project is presented in the "Application to Construct an Air Pollution Source, Dade County Government Center, Miami, Florida," November 1995. As noted in the air construction permit application, Cypress Energy Company is proposing to install a temporary combustion turbine, GE LM 2500 CT, to provide 17.1 MW of supplemental power to the network prior to removal and reconstruction of the existing Rolls-Royce CT unit. Based on maximum potential emissions, the project is considered a minor modification of a facility that is classified as minor source and does not require PSD review. However, the FDEP shall not permit the construction or modification of any emission unit or facility that would cause or contribute to a violation of any ambient air quality standard [Rule 62-212.300(1), Florida Administrative Code (F.A.C.)]. Because the proposed stack height is lower than nearby buildings, air quality impact analyses were conducted to address the project's impacts for comparison to ambient air quality standards.

ASSUMPTIONS

The air quality modeling analyses were based on the following assumptions and methods that are recommended for use by FDEP and applicable to this project:

1. Concentrations were predicted following the technical air modeling assumptions and methods recommendations by FDEP as provided by EPA in "Guideline to Air Quality Models (Revised)," 1995. These concentrations were predicted using the latest version of the Industrial Source Complex Short-Term Model (ISCST3), Version 95250, approved for use by FDEP to address impacts from sources such as combustion turbines.
2. Maximum concentrations for each pollutant and applicable averaging time were predicted using 5 years of meteorological data from the National Weather Service (NWS) station in Miami. The data from this station are recommended for use by FDEP to address impacts from sources located in Dade County.
3. Land use around project site can be classified as urban since there is significant commercial, industrial, and residential development within 3 km of the project site. As a result, the urban mode option in the model was selected to predict impacts.
4. Emission, operating, and stack data used in the modeling analysis are presented in the air construction permit application;
5. Stack height for the proposed combustion turbine was modeled at a height of 60 ft (a slight change from the height presented in the air construction permit application).
6. Building downwash effects were included; the existing turbine building is the main building to affect downwash calculation with building height, length, and width of 120, 114, and 80 ft, respectively.
7. Annual impacts were based on 7,000 hours of operation in a year (maximum hours of operation in permit application).
8. Maximum NO_2 concentrations were based on the assumption that 75 percent of predicted NO_x concentrations in the modeling analyses are NO_2 concentrations since the AAQS is established for NO2 [following recommended procedures in EPA's "Guideline to Air Quality Models (Revised)", 1995].
9. Total air quality impacts were estimated by adding the project's impacts to a background concentration obtained from monitoring data.

SUMMARY OF IMPACTS

A summary of the maximum impacts due to the project alone is presented in Tables 1 and 2. The results in Table 1 compare the project's impacts to significant impact levels. The results presented in this table are the highest concentrations predicted for all averaging periods. If a project's impacts are less than significant, no additional analyses are required and a source is presumed to comply with ambient standards. If a project's impacts are greater than significant impact levels, then additional analyses may be needed to determine if the project will interfere with compliance with the ambient standards.

Based on the results presented in Table 1, the project's impacts are predicted to be:

1. Less than significant impact levels for SO_2 and CO (1-hour average);
2. Greater than the significant impact levels for NO_2, PM, and CO (8-hour average).

As a result, more analyses were performed for all pollutants to determine compliance with ambient standards, even though the project's impacts were less than significant for SO_2 and CO (1-hour average).

From the results presented in Table 2, the predicted impacts from the project alone are predicted to be lower than PSD Class II increments and AAQS. The results presented in this table are the highest concentrations predicted for the annual averaging period and highest, second-highest concentrations for a 24-hour averaging period or less. Because there are a limited number of PSD sources that could interact with the project and the proposed source will be temporary (i.e., 7,000 hours or less), no additional analyses were performed since the project's impacts with those from other sources are expected to comply with PSD Class II increments.

To address compliance with AAQS, total air quality impacts were estimated by adding the project's impacts to a background concentration that was estimated from ambient air quality data. The data were obtained from FDEP and are based on the highest observed concentrations from about five monitors in Dade County (for SO_2, one monitor in Broward County was used since there are no monitors in Dade County that measure SO_2 concentrations). These results, which are summarized in Table 3, show that the project will comply with AAQS.

Based on these results, the maximum concentrations due to the project by itself and together with other sources are predicted to comply with all applicable AAQS and PSD increments.

Table 1. Summary of Maximum Air Quality Impacts Due to the Dade County Cogeneration Project Alone (60 ft stack, urban), LM 2500 Combustion Turbine--comparison to PSD Class II Significant Impact Levels

Pollutant	Emission Rate (lb/hr) ^a	Averaging Period	Maximum Predicted Concentration (ug/m^3) ^b	Significant Impact Level (ug/m^3)
Generic	7.94	1-hour	110.5	NA
		3-hour	103.3	NA
		8-hour	79.3	NA
		24-hour	58.2	NA
		Annual	6.88	NA
Carbon Monoxide	57.7	1-hour	803	2,000
		8-hour	577	500
Nitrogen Dioxide	29.9	Annual	19.4 ^c	1
Sulfur Dioxide	0.53	3-hour	6.9	25
		24-hour	3.89	5
		Annual	0.46	1
Particulate Matter (PM10)	3.0	24-hour	22.0	5
		Annual	2.60	1

^a For short-term and annual average periods, maximum emissions are based on firing natural gas for base-load operating conditions. For annual average, maximum emissions are based on the short-term average emissions and 7,000 hours of operation per year.
^b Highest concentration predicted for all averaging periods.
^c Includes NO2/NOx ratio of 0.75 based on recommendations from EPA's Guideline on Air Quality Models (1995).

Table 2. Summary of Maximum Air Quality Impacts Due to the Dade County Cogeneration Project Alone (60 ft stack, urban), LM 2500 Combustion Turbine–comparison to PSD Class II Increments and Ambient Air Quality Standards

Pollutant	Emission Rate (lb/hr) ^a	Averaging Period	Maximum Predicted Concentration (ug/m^3) ^b	PSD Class II Increment (ug/m^3)	Ambient Air Quality Standard (ug/m^3)
Generic	7.94	1-hour	110.5	NA	NA
		3-hour	98.6	NA	NA
		8-hour	74.7	NA	NA
		24-hour	51.0	NA	NA
		Annual	6.88	NA	NA
Carbon Monoxide	57.7	1-hour	803	NA	40,000
		8-hour	543	NA	10,000
Nitrogen Dioxide	29.9	Annual	19.4 ^c	25	100
Sulfur Dioxide	0.53	3-hour	6.58	512	1,300
		24-hour	3.41	91	260
		Annual	0.46	20	60
Particulate Matter (PM10)	3.0	24-hour	19.3	30	150
		Annual	2.60	15	50

^a For short-term and annual average periods, maximum emissions are based on firing natural gas for base-load operating conditions. For annual average, maximum emissions are based on the short-term average emissions and 7,000 hours of operation per year.

^b Highest concentration predicted for the annual averaging period; highest, second-highest concentration for the short-term (24 hours or less) averaging periods.

^c Includes NO2/NOx ratio of 0.75 based on recommendations from EPA's Guideline on Air Quality Models (1995).

Table 3. Summary of Maximum Total Air Quality Impacts Due to the Dade County Cogeneration Project (60 ft stack, urban) and Background Concentrations--comparison to Ambient Air Quality Standards

Pollutant	Emission Rate (lb/hr) ^a	Averaging Period	Concentration (ug/m^3) Maximum Predicted due to Project ^b (a)	Background ^d (b)	Total (a + b)	Ambient Air Quality Standard (ug/m^3)
Generic	7.94	1-hour	110.5	NA	NA	NA
		3-hour	98.6	NA	NA	NA
		8-hour	74.7	NA	NA	NA
		24-hour	51.0	NA	NA	NA
		Annual	6.88	NA	NA	NA
Carbon Monoxide	57.7	1-hour	803	14,950	15,753	40,000
		8-hour	543	8,050	8,593	10,000
Nitrogen Dioxide	29.9	Annual	19.4 ^	27	46.4	100
Sulfur Dioxide	0.53	3-hour	6.58	159	166	1,300
		24-hour	3.41	39	42.4	260
		Annual	0.46	5	5.5	60
Particulate Matter (PM10)	3	24-hour	19.3	79	98.3	150
		Annual	2.60	27	29.6	50

^a For short-term and annual average periods, maximum emissions are based on firing natural gas for base-load operating conditions. For annual average, maximum emissions are based on the short-term average emissions and 7,000 hours of operation per year.

^b Highest concentration predicted for the annual averaging period; highest, second-highest concentration for the short-term (24 hours or less) averaging periods.

^c Includes NO2/NOx ratio of 0.75 based on recommendations from EPA's Guideline on Air Quality Models (1995).

^d Based on the highest concentrations measured at ambient monitoring stations in Dade County (except SO2 data from Broward County) as reported by FDEP, 1994.

METROPOLITAN **DADE** COUNTY, FLORIDA

METRO-DADE

DERM

ENVIRONMENTAL RESOURCES MANAGEMENT
ENVIRONMENTAL MONITORING DIVISION
SUITE 900
33 S.W. 2nd AVENUE
MIAMI, FLORIDA 33130-1540
(305) 372-6925

January 22, 1996

Mr. Ed Svec
Florida Department of Environmental Protection
2600 Blair Stone Road
Twin Towers Office Building
Tallahassee, Florida 32399-2400

RE: Application for Permit to Construct an Air Pollution Source
Project # 0250470, DERM P-1348

Applicant: Cypress Cogeneration Company

Location: Dade Cnty. Gov. Cntr. Cogen. Plant
Downtown Miami; NW 3rd Ave & NW 2nd ST
Miami, Florida 33128

Pollution Source: Gas Fired, Combustion Turbine, LM2500

Pollution Control Device: None

Dear Mr. Svec

The referenced application has reviewed and has been disapproved for the following reason.

- The proposed stack height of 40' and location of the emission unit will preclude diffusion of exhaust pollutants. Exhaust stacks are required to be a minimum 3' above any roof elevation within a 25' radius.

Sincerely,

Christopher Bodin, Engineer
Air Section, DERM

cc: Kennard F. Kosky P.E.

FAC 62-296.570 Reasonably Available Control Technology Requirements for Major VOC and NO_x Emitting Facilities

1.) Without CEM, annual compliance test required, with CEM - 30 day Rolling Average

2.) NO_x from gas turbine shall not exceed 0.50 lb/MM Btu while firing natural gas

62-296.200 Definitions

3.) Major Facility emits 100 TPy any pollutant 62-256.200 (106)

62-256.500 RACT VOC & NO_x emitting Facilities

4.) Major NO_x source in Dade County is subject to RACT Rules in 62-296.570

62-212.300 General Preconstruction Review Requirements

62-210.370 (3) (a) 3. requires annual Operating reports

Guidance document DARM-EM-05 on Testing conditions

40 CFR 60.330 Subpart GG Standards of Performance for Stationary Gas Turbines

1.) Applies to g.t. ≥ 10 mm Btu input

2.) Electric utility stationary gas turbine – > 1/3 electric output for sale to utility power distribution system.

3.) if heat input > 100 mm Btu/hr & electric utility stationary gas turbine, $STD = 0.0075 \frac{14.4}{\eta} + F$ for NO_x

4.) SO_2 emissions not exceed 0.015% by volume @ 15% O_2 and on a dry basis & no fuel excess of 0.8% by weight sulfur

5.) If using water injection to control NO_x must monitor fuel consumption and water to fuel ratio continuous

6.) Monitor sulfur and nitrogen content of fuel

Department of
Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

3/1/96

February 29, 1996

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Leonard Shapiro
Project Manager
Cypress Cogeneration Company
2707 North Loop, 8th Floor
Houston, Texas 77251

Re: Cypress Cogeneration Company
Combustion Turbine - 0250470-001-AC

Dear Mr. Shapiro:

Enclosed is one copy of the Preliminary Determination and draft Air Construction Permit for the Dade County Government Center Cogeneration Facility Combustion Turbine located at Dade County Downtown Government Center, Miami, Florida 33128, Dade County is enclosed. The Department's Notice of Intent to Issue Air Construction Permit and the *"Public Notice"* are also included. The *"Public Notice"* must be published within 30 days of receipt of this letter.

Please submit any written comments you wish to have considered concerning the Department's proposed action to A. A. Linero, P.E., Administrator, New Source Review Section at the above address. If you have any other questions, please contact Edward Svec at (904)488-1344.

Sincerely,

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

CHF/ES/t

Enclosures

cc: I. Goldman, SED
P. Wong, DERM

NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

In the Matter of an
Application for Permit by:

Mr. Leonard Shapiro
Project Manager
Cypress Cogeneration Company
2707 North Loop, 8th Floor
Houston, Texas 77251

DRAFT Permit No.: 0250470-001-AC
Dade County

/

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit (copy of DRAFT Permit enclosed) for the source detailed in the application specified above, for the reasons stated below.

The applicant, Cypress Cogeneration Company, applied on December 4, 1995 to the Department for a permit to construct for a combustion turbine located at the Dade County Downtown Government Center, Miami, Dade County, Florida 33128.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212. The source is not exempt from permitting procedures. The Department has determined that an air construction permit is required at the described facility.

The Department intends to issue this air construction permit based on the belief that reasonable assurances have been provided to indicate that operation of the source will not adversely impact air quality, and the source will comply with all appropriate provisions of Chapters 62-4, 62-210, 62-212, 62-296, and 62-297, F.A.C.

Pursuant to Sections 403.815 and 403.0872, F.S., and Rules 62-103.150 and 62-210.350(3), F.A.C., you (the applicant) are required to publish at your own expense the enclosed "*Public Notice.*" The notice shall be published one time only within 30 (thirty) days in the legal advertisement section of a newspaper of general circulation in the area affected. For the purpose of these rules, "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. Where there is more than one newspaper of general circulation in the county, the newspaper used must be one with significant circulation in the area that may be affected by the permit. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation at 2400 Blair Stone Road, Tallahassee, Florida 32399-2400 within 7 (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 FINAL Permit, in accordance with the conditions of the enclosed DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of 30 (thirty) days from the date of publication of the "*Public Notice.*" Written comments should be provided to the Department's Bureau of Air Regulation at 2400 Blair Stone Road, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

In addition, any persons 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, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000. Petitions filed by the permit applicant and the parties listed below must be filed within 14 (fourteen) 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 the 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, F.S.

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 proposed source will operate; (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 the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes the petitioner contends require reversal or modification of the Department's action or proposed action; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the 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 DRAFT Permit. 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 receipt of this intent in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000. 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 PROTECTION

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
(904)488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this **NOTICE OF INTENT TO ISSUE PERMIT** and all copies were mailed before the close of business on 3-1-96 to the listed persons.

Clerk Stamp
FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(11), F.S., with the designated Department Clerk, receipt of which is hereby acknowledged.

(Clerk) 3-1-96 (Date)

Copies furnished to:
I. Goldman, SED
P. Wong, DERM

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

DRAFT Permit No.: 0250470-001-AC
Dade County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit to Cypress Cogeneration Company for the construction of a combustion turbine located at the Dade County Government Center, Miami, Dade County, Florida 33128. A Best Achievable Control Technology (BACT) determination was not required. The applicant's name and address are: Mr. Leonard Shapiro, Project Manager, Cypress Cogeneration Company, 2707 North Loop, 8th Floor, Houston, Texas 77251.

The Department will issue the FINAL Permit, in accordance with the conditions of the enclosed DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of this Notice. Written comments should be provided to Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

In addition, any person whose substantial interests are affected by this proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (FS). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000 within 14 (fourteen) 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, F.S.

The Petition shall contain the following information; (a) The name, address, and the 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 warrants 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 DRAFT Permit. 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 receipt of this notice, in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000. Failure to petition within the allotted time frame constitutes a waiver of any rights 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, Florida Administrative Code.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at Dade County Department of Environmental Resources Management, 33 Southwest Second Avenue, Suite 900, Miami, Florida 33130-1540 and the Department of Environmental Protection, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. The complete project file includes the Draft Permit, the application, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact Edward J. Svec at the Department's address and at (904)488-1344 for additional information.

Technical Evaluation
and
Preliminary Determination

Cypress Cogeneration Company
Dade County
Miami, Florida

Construction Permit Number
0250470-001-AC

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

March 1, 1996

I. Application

A. Applicant and Address

Cypress Cogeneration Company
2707 North Loop, 8th Floor
Houston, Texas 77251

B. Project and Location

The applicant intends to install and operate a combustion turbine at the Dade County Downtown Government Center in Miami, Dade County, Florida. The combustion turbine, a GE LM 2500 CT unit, will be capable of generating approximately 17.1 megawatts of electricity. The power generated will be used to comply with the requirements of existing power purchase agreements with Florida Power & Light Company and Dade County. The UTM coordinates of the project are Zone 17, 580.5 km East and 2850.9 km North.

C. Process and Controls

to control NO_x emissions — nominal — use water injection

The proposed GE LM 2500 CT combustion turbine will operate in simple-cycle mode and ~~will be an advanced dry low NO_x unit.~~ The other components of the unit are a compressed gas skid, a water injection skid and step-up transformers. The unit will burn natural gas as the primary fuel. No backup fuel has been proposed. The proposed unit will have a normal electrical output of 17.1 MW and a maximum heat input of 174.2 MMBtu/hr at average ambient conditions. The turbine is a minor emission source of sulfur dioxide, particulate matter, nitrogen oxides, carbon monoxide, volatile organic compounds, ~~beryllium, and inorganic arsenic.~~

174.7

and

D. SIC and SCC

1. The Standard Industrial Code is:

o 4911: Electric Services

2. The Source Classification Code is:

o Internal Combustion - Electric Generation 2-01-002-01 10^6 cubic feet natural gas burned (turbine)

II. Rule Applicability

The proposed project is subject to preconstruction review in accordance with Chapter 403, Florida Statutes, Florida Administrative Code (F.A.C.) Chapters 62-210, 62-212, and 62-296 and 40 CFR (July 1994 version).

The application package was deemed complete on ~~December 4, 1995.~~ received on December 4, 1995 and January 6, 1996.

The existing facility is a major facility (emits 100 tons per year or more of any pollutant) for nitrogen oxides and carbon monoxide pursuant to F.A.C. Rule 62-296.200 (106) Definitions.

The facility is located in Dade County which is an area designated as attainment for all pollutants ~~except ozone~~ pursuant to F.A.C. Rule 62-275.400. Dade County is designated as a ~~moderate nonattainment~~ maintenance area for the air pollutant ozone pursuant to F.A.C. Rule 62-275.~~410~~ .600

The following table exhibits the net potential / allowable pollutant emissions from the proposed project in tons per year (TPY):

Table 1

Source	Net Potential / Allowable Pollutant Emissions (TPY) PM	NO_x	CO	VOC	SO_2	PM_{10}
Turbine:	10.5	104.7	202.1	25.6	1.8	10.5

Note: Potential Annual Allowable Emissions are based on an actual annual use limit of 7,000 hours per year at maximum capacity as proposed by the applicant.

Since the facility category is not listed in Table 212.400-1 Major Facility Categories, the current permitted allowable emissions for any pollutant are less than 250 TPY and the potential emissions of any pollutant are less than 250 TPY, the proposed project is considered a minor modification to a minor facility and is exempted from the preconstruction review requirements of F.A.C. Rule 62-212. However the proposed project is subject to the requirements of F.A.C. Rule 62-296 Stationary Sources - Emission Standards and the Federal Standards of Performance for New Stationary Sources (NSPS) 40 CFR 60 Subpart GG Standards of Performance for Stationary Gas Turbines.

F.A.C. Rule 62-296.500(1)(b) requires that major NO_x (greater than or equal to 100 TPY) in Dade County are subject to the Reasonably Available Control Technology (RACT) rules in F.A.C. Rule 62-296-570. This rule requires annual emissions tests for units not equipped with a continuous emission monitoring system and limits the NO_x emissions from any gas turbine to 0.50 pounds per million Btu while firing natural gas. The project NO_x emission rate is 0.155 LB/MMBTU and, therefore, complies with the RACT rule.

40 CFR 60.330 Subpart GG Standards of Performance for Stationary Gas Turbines, adopted by reference in F.A.C. Rule 62-296.800, applies to the proposed gas turbine because its heat input exceeds 10 million Btu and greater than one third of the electric output will be sold to a utility power distribution system. The NSPS limits the emissions of NO_x from the proposed gas turbine to 100.3 PPM dry basis corrected to 15% oxygen, SO_2 to 0.015% by volume dry basis at 15% oxygen and the sulfur content of the fuel to no more than 0.8% by weight. Additionally, since water injection is proposed to control NO_x, the fuel consumption and water to fuel ratio must be continuously monitored.

Initial and annual nitrogen oxides, sulfur dioxide and oxygen concentrations compliance tests shall be conducted using EPA Method 20 pursuant to F.A.C. Rule 62-297 and 40 CFR 60, Appendix A.

Initial and annual carbon monoxide emissions compliance tests shall be conducted using EPA Method 10 as requested by the applicant and pursuant to F.A.C. Rule 62-297 and 40 CFR 60, Appendix A.

Visible emissions shall be less than 20% opacity, pursuant to F.A.C. Rule 62-296.310(2)(a). Initial and annual compliance tests shall be conducted using EPA Method 9 pursuant to F.A.C. Rule 62-297 and 40 CFR 60, Appendix A.

The proposed project is subject to the provisions of F.A.C. Rules 62-210.650: Circumvention and 62-210.700: Excess Emissions.

III. Summary of Emissions

The proposed project will have allowable emission limits and standards for the pollutants PM, NO_x, CO, VOC, SO_2, and PM_{10}. The maximum allowable emissions from the proposed gas turbine shall not exceed the following limits except during periods of startup, shutdown and malfunction pursuant to F.A.C. Rule 62-210.700. The emission limits are based on the applicant's request and vendor specifications provided to the Department.

MAXIMUM ALLOWABLE EMISSION LIMITS

Pollutant	Standard	Lbs/Hr	TPY
PM	Good combustion; visible emissions shall not exceed ~~10~~ 20% opacity	3.0	10.5
NO_x	42 ppmvd @ 15% Oxygen	29.9	104.7
CO	Good Combustion	57.4 7	202.1
VOC	Good Combustion and not exceed CO limits	7.31	25.6
SO_2	0.015% by volume dry basis @ 15% Oxygen Based on 1 gram /100 cf natural gas.	0.53	1.8
PM_{10}	Good combustion; visible emissions shall not exceed ~~10~~ 20% opacity	3.0	10.5

These values are calculated using 7,000 hours of operation, a maximum heat input of 174.1 7 MMBtu/hr, and a flow of 99,978 dscfm.

B. Ambient Air Quality Analysis

Based on a review of the proposed project, an air quality analysis was not required.

IV. Conclusion

Based on the information provided by Cypress Cogeneration Company, The Department has reasonable assurance that the modification of the facility by installing the proposed gas turbine, 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 62-212 of the Florida Administrative Code.

Department of
Environmental Protection

Not Signed

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

Permittee:
Cypress Cogeneration Company
2702 North Loop, 8th Floor
Houston, Texas 77251

Permit Number: 0250470-001-AC
Expiration Date: 12/31/96
County: Dade
Latitude/Longitude: 25°46'32"
80°11'50"
Project: GE LM 2500 CT
Combustion Turbine

This permit is issued under the provision of Chapter 403, Florida Statues (F.S.), and Chapters 62-4 and 62-212, Florida Administrative Code (F.A.C.). The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawings, plans, and other documents attached hereto and specifically described as follows:

For modification of the existing facility by installing a GE LM 2500 CT combustion turbine located at the Dade County Downtown Government Center in Miami, Dade County, Florida. The UTM coordinates of the site are Zone 17, 580.5 km E and 2850.9 km N. The combustion turbine will burn only natural gas, have a maximum heat input of ~~174~~ 174.2 million Btu per hour and be capable of generating 17.1 megawatts of electric power.

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The emission units shall be constructed (modified) in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachment listed below:

1. Application received December 4, 1995.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of F.S. and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

a. Have access to and copy any records that must be kept under the conditions of the permit;

b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and,

c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

a. A description of and cause of non-compliance; and,

b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the F.S. or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and F.S. after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by F. S. or Department rules.

11. This permit is transferable only upon Department approval in accordance with Rules 62-4.120 and 62-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

( ) Determination of Best Available Control Technology (BACT)
( ) Determination of Prevention of Significant Deterioration (PSD)
(X) Compliance with New Source Performance Standards (NSPS)

14. The permittee shall comply with the following:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- The date, exact place, and time of sampling or measurements;
- The person responsible for performing the sampling or measurements;
- The dates analyses were performed;
- The person responsible for performing the analyses;
- The analytical techniques or methods used; and,
- The results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

1. The combustion turbine shall operate no more than 7,000 hours per year, as requested by the permitee.
at the maximum heat input rate of 174.7 MM Btu/hr (184,672 cf/hr).
2. The combustion turbine shall burn only natural gas.

3. The heat input to the combustion turbine shall not exceed 174.1 million Btu per hour (LHV).

4. The permittee shall comply with all applicable requirements in 40 CFR 60, Subpart GG- Standards of Performance for Stationary Gas Turbines.

5. Maximum emissions from the combustion turbine shall not exceed any of the following:

Pollutant	Emission Standard	lbs/hr	TPY
SO_2	~~0.8% by weight~~ sulfur in fuel (Natural gas 0.015 % by volume)	0.53	1.8
NO_X	42 ppmvd @ 15% O_2	29.9	104.7
CO	Good combustion	57.7	202.1
VOC	Good combustion and not exceed the CO limits	7.31	25.6

Visible emissions shall not exceed 20 percent opacity, F.A.C. Rule 62-296.310(2)(a).

6. Initial and annual compliance tests for NO_x shall be conducted using EPA Method 20 in accordance with F.A.C Rule 62-297 and 40 CFR 60 Appendix A.

7. Initial and annual compliance tests for CO shall be conducted using EPA Method 10 in accordance with F.A.C. Rule 62-297 and 40 CFR 60 Appendix A.

8. Initial and annual compliance tests for visible emissions shall be conducted using EPA Method 9 in accordance with F.A.C. Rule 62-297 and 40 CFR 60 Appendix A.

9 ~~8~~. Initial and annual compliance with the SO_2 limits and the fuel sulfur content will be determined through fuel analysis in accordance with 40 CFR 60.335.

10 ~~9~~. The unit will be assumed to be in compliance with the VOC standard provided the CO emissions are met.

11 ~~10~~. The compliance test reports shall be submitted to the Department's Southeast District office and Dade County Department of Environmental Management within 45 days of completion of the last test run.

12 ~~11~~. The Department's Southeast District office and Dade County Department of Environmental Management shall be notified in writing at least 15 days in advance of any emission test required by this permit. Testing of emissions shall be conducted with the source operating at capacity. Capacity is defined as 95-100 percent of the manufacturer's rated heat input achievable for the average ambient (or conditioned) air temperature during the test. If it is impracticable to test at capacity, then sources may be tested at less than capacity. In such cases, the entire heat input vs. inlet temperature curve will be adjusted by the increment equal to the difference between the design heat input value and 105 percent of the value reached during the test. Data, curves, and calculations necessary to demonstrate the heat input rate correction at both design and test conditions shall be submitted to the Department with the compliance test report.

13 ~~12~~. An annual operation report shall be submitted to the Department's Southeast District office and Dade County Department of Environmental Management by March 1 of each year pursuant to Rule 62-210.370(2), F.A.C.

14 ~~13~~. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation prior to 60 days before the expiration of the permit (Rule 62-4.090, F.A.C.).

15 ~~14~~. An Application for an operation permit must be submitted to the Department's Southeast District office and Dade County Department of Environmental Management at least 90 days prior to the expiration date of this construction permit. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed while noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rules 17-4.055 and 17-4.220).

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

_____

Howard L. Rhodes, Director
Division of Air Resources
Management

APPLICATION TO CONSTRUCT AN AIR POLLUTION SOURCE DADE COUNTY GOVERNMENT CENTER MIAMI, FLORIDA

Prepared For:

Cypress Cogeneration Company
2707 North Loop, 8th Floor
Houston, TX 77251

Prepared By:

KBN Engineering and Applied Sciences, Inc.
5405 West Cypress Street, Suite 215
Tampa, Florida 33607

T15272B2
November 1995

FOR Patty Adams

DATE 12/15/95 TIME 12:05 ~~A.M.~~ P.M.

FROM Al Morneault

FIRM KBN Tampa

PHONE (813) 87-1717
AREA CODE NUMBER EXTENSION

☐ FAX

☐ MOBILE
AREA CODE NUMBER TIME TO CALL

TELEPHONED	✓	PLEASE CALL	✓
RETURNED YOUR CALL		WILL CALL AGAIN	
CAME TO SEE YOU		RUSH	
WANTS TO SEE YOU		SPECIAL ATTENTION	
WAITING TO SEE YOU		HOLDING LINE	

MESSAGE Re: The permit application submitted - Tallahassee Office
Cypress Co Gen Co.

SIGNED JK

TOPS FORM 4007 MADE IN U.S.A.

MESSAGE

Department of Environmental Protection

DIVISION OF AIR RESOURCES MANAGEMENT

APPLICATION FOR AIR PERMIT - LONG FORM

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

I. APPLICATION INFORMATION

This section of the Application for Air Permit form provides general information on the scope of this application, the purpose for which this application is being submitted, and the nature of any construction or modification activities proposed as a part of this application. This section also includes information on the owner of the facility (or the responsible official in the case of a Title V source) and the necessary statements for the applicant and professional engineer, where required, to sign and date for formal submittal of the Application for Air Permit to the Department. If the application form is submitted to the Department on diskette, this section of the Application for Air Permit must also be submitted in hard-copy form.

Identification of Facility Addressed in This Application

Enter the name of the corporation, business, governmental entity, or individual that has ownership or control of the facility; the facility name, if any; and a brief reference to the facility's physical location. If known, also enter the ARMS or AIRS facility identification number. This information is intended to give a quick reference, on the first page of the application form, to the facility addressed in this application. Elsewhere in the form, numbered data fields are provided for entry of the facility data in computer-input format.

Dade County Government Center Cogeneration Facility No. 50DAD130470

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	12-4-95
2. Permit Number:	0250470-001-AC
3. PSD Number (if applicable):	
4. Siting Number (if applicable):	

Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible Official:
   Leonard Shapiro, Project Manager

2. Owner/Authorized Representative or Responsible Official Mailing Address:

Organization/Firm: **Cypress Cogeneration Company**
Street Address: **2707 North Loop, 8th Floor**
City: **Houston** State: **TX** Zip Code: **77251**

3. Owner/Authorized Representative or Responsible Official Telephone Numbers:

(Local Numbers)

Telephone: **(407) 368-4241** Fax: **(407) 368-5108**

4. Owner/Authorized Representative or Responsible Official Statement:

I, the undersigned, am the owner or authorized representative of the facility (non-Title V source) addressed in this Application for Air Permit or the responsible official, as defined in Chapter 62-213, F.A.C., 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. Further, I agree to operate and maintain the air pollutant emissions units and air pollution control equipment described in this application 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. If the purpose of this application is to obtain an air operation permit or operation permit revision for one or more emissions units which have undergone construction or modification, I 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. 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 source.*

Signature _____ Date 11/30/95

* Attach letter of authorization if not currently on file.

Scope of Application

This Application for Air Permit addresses the following emissions unit(s) at the facility (or Title V source). An Emissions Unit Information Section (a Section III of the form) must be included for each emissions unit listed.

Emissions Unit ID / Description of Emissions Unit

Unit #	ARMS ID	Emissions Unit Name/Description
1		Combustion Turbine - LM2500

See individual Emissions Unit sections for more detailed Emissions Unit descriptions. Multiple ARMS IDs are indicated with an asterisk (*)

Purpose of Application and Category

Check one (except as otherwise indicated):

Category I: All Air Operation Permit Applications Subject to Processing Under Chapter 62-213, F.A.C.

This Application for Air Permit is submitted to obtain:

[ ] Initial air operation permit under Chapter 62-213, F.A.C., for an existing facility which is classified as a Title V source.

[ ] Initial air operation permit under Chapter 62-213, F.A.C., 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: _____

[ ] Air operation permit renewal under Chapter 62-213, F.A.C., for a Title V source.

Operation permit to be renewed: _____

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

Current construction permit number: _____

Operation permit to be renewed: _____

[ ] Air operation permit revision or administrative correction for a Title V source to address one or more proposed new or modified emissions units and to be processed concurrently with the air construction permit application. Also check Category III.

Operation permit to be revised/corrected: _____

_____

[ ] Air operation permit revision for a Title V source 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 to be revised: _____

Reason for revision: _____

_____

Category II: All Air Construction Permit Applications Subject to Processing Under Rule 62-210.300(2)(b),F.A.C.

This Application for Air Permit is submitted to obtain:

[ ] Initial air operation permit under Rule 62-210.300(2)(b), F.A.C., for an existing facility seeking classification as a synthetic non-Title V source.

Current operation/construction permit number(s): _____

_____

[ ] Renewal air operation permit under Rule 62-210.300(2)(b), F.A.C., for a synthetic non-Title V source.

Operation permit to be renewed: _____

[ ] Air operation permit revision for a synthetic non-Title V source. Give reason for revision; e.g.; to address one or more newly constructed or modified emissions units.

Operation permit to be revised: _____

Reason for revision: _____

_____

Category III: All Air Construction Permit Applications for All Facilities and Emissions Units.

This Application for Air Permit is submitted to obtain:

[x] Air construction permit to construct or modify one or more emissions units within a facility (including any facility classified as a Title V source).

Current operation permit number(s), if any: AO13-127283

_____

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

Current operation permit number(s): _____

_____

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

Application Processing Fee

Check one:

[x] Attached - Amount: $ _____ [ ] Not Applicable.

Construction/Modification Information

1. Description of Proposed Project or Alterations: **Installation of LM2500 Gas Turbine Unit**
2. Projected or Actual Date of Commencement of Construction (DD-MON-YYYY): **1 Dec 1995**
3. Projected Date of Completion of Construction (DD-MON-YYYY): **1 Jan 1996**

Professional Engineer Certification

1. Professional Engineer Name: **Kennard F. Kosky**
   Registration Number: **14996**

2. Professional Engineer Mailing Address:
   Organization/Firm: **KBN Eng and Applied Sciences**
   Street Address: **6241 NW 23rd Street, Suite 500**
   City: **Gainesville** State: **FL** Zip Code: **32653-1500**

3. Professional Engineer Telephone Numbers:
   Telephone: **(904) 336-5600** Fax: **(904) 336-6603**

4. Professional Engineer's Statement:

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

(1) To the best of my knowledge, there is reasonable assurance (a) 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; or (b) for any application for a Title V source air operation permit, 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;

(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; and

(3) For any application for an air construction permit for one or more proposed new or modified emissions units, 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.

Signature (seal) Date: 11/13/96

* Attach any exception to certification statement.

Application Contact

1. Name and Title of Application Contact:

   Leonard Shapiro, Project Manager

2. Application Contact Mailing Address:

   Organization/Firm: **Cypress Cogeneration Company**
   Street Address: **2707 North Loop, 8th Floor**
   City: **Houston** State: **TX** Zip Code: **77251**

3. Application Contact Telephone Numbers: **(Local Numbers)**

   Telephone: **(407) 368-4241** Fax: **(407) 368-5108**

Application Comment

See Attachment DCGC-TV-A1

ATTACHMENT DCGC-TV-A1

ATTACHMENT DCGC-TV-A1

This Title V air construction permit is for the Dade County Government Center Facility in Miami, Florida. The application is structured as follows:

General	One Combustion turbine unit
(CT)	
	(temporary for 9 months)
Emission Point	One stack for the CT
Fuel Segments	Natural gas only
Pollutants	NO_x, CO, PM/PM10, VOC
Visible Emissions (VE)	VE limits applicable

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Name, Location, and Type

1. Facility Owner or Operator: **Cypress Cogeneration Company/South FL Cogen Assoc**

2. Facility Name: **South Florida Cogeneration**

3. Facility Identification Number: **50DAD130470** [ ] Unknown

4. Facility Location Information:
   Facility Street Address: **Dade Co. Downtown Govt. Center**
   City: **Miami** County: **Dade** Zip Code: **33128**

5. Facility UTM Coordinates:
   Zone: **17** East (km): **580.5** North (km): **2850.9**

6. Facility Latitude/Longitude:
   Latitude (DD/MM/SS): **25 / 46 / 32** Longitude: (DD/MM/SS): **80 / 11 / 50**

7. Governmental Facility Code:	8. Facility Status Code:	9. Relocatable Facility?	10. Facility Major Group SIC Code:
0	**C**	[X] Yes [ ] No	**49**

11. Facility Comment:
The Dade County Downtown Government Center consists of an existing 22-MW Rolls Royce combustion turbine with a Heat Recovery Steam Boiler. A GE LM 2500 Combustion Turbine Unit will be installed to supplement power. Natural gas fuel will be burned in this unit.

Facility Contact

1. Name and Title of Facility Contact:
   Leonard Shapiro, Project Manager

2. Facility Contact Mailing Address:
   Organization/Firm: **Cypress Cogeneration Company**
   Street Address: **2707 North Loop, 8th Floor**
   City: **Houston** State: **TX** Zip Code: **77251**

3. Facility Contact Telephone Numbers:
   Telephone: **(407) 368-4241** Fax: **(407) 368-5108** **(Local Numbers)**

Facility Regulatory Classifications

1. Small Business Stationary Source? [ ] Yes [x] No [ ] Unknown
2. Title V Source? [x] Yes [ ] No
3. Synthetic Non-Title V Source? [ ] Yes, [x] No
4. Major Source of Pollutants Other than Hazardous Air Pollutants (HAPs)? [ ] Yes [x] No
5. Synthetic Minor Source of Pollutants Other than HAPs? [ ] Yes [X] No
6. Major Source of HAPs? [ ] Yes [x] No [ ] Possible
7. Synthetic Minor Source of HAPs? [ ] Yes [x] No
8. One or More Emissions Units Subject to NSPS? [x] Yes [ ] No
9. One or More Emissions Units Subject to NESHAP? [ ] Yes [x] No
10. Title V Source by EPA Designation? [ ] Yes [x] No
11. Facility Regulatory Classifications Comment: **The new temporary GELM 2500 CT is subject to NSPS for stationary gas turbine (40 CFR 60 Subpart GG).**

B. FACILITY REGULATIONS

Depending on the application category, this subsection of the Application for Air Permit form provides either a brief analysis or detailed listing of federal, state, and local regulations applicable to the facility as a whole. (Regulations applicable to individual emissions units within the facility are addressed in Subsection III-B of the form.)

Rule Applicability Analysis (Required for Category II applications and Category III applications involving non Title-V sources. See Instructions.)

Not Applicable

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

See Attached List

Dade County Government Center Facility - Applicable Requirements List - Page 1

Chapter 4 Permits	
62-4.030	General Prohibition.
62.4.040	Exemptions.
62-4.060	Consultation.
62-4.070	Standards for Issuing or Denying Permits; Issuance; Denial.
62-4.080	Modification of Permit Conditions.
62-4.090	Renewals.
62-4.100	Suspensions and Revocation.
62-4.110	Financial Responsibility.
62-4.120	Transfer of Permits.
62-4.130	Plant Operations - Problems.
62-4.160	Permit Conditions.
62-4.210	Construction Permits.
62-4.220	Operational Permits for New Sources.

Chapter 103 Rules of Administrative Procedure	
62-103.150	Public Notice of Application and Proposed Agency Action.
62-103.155	Petition for Administrative Hearing.

Dade County Government Center Facility - Applicable Requirements List - Page 2

Chapter 210 Stationary Sources -- General Requirements	
62-210.200	Definitions.
62-210.300	Permits Required.
	(1) Air Construction Permits
	(2) Air Operation Permits.
	(b) Additional Requirements for Federally Enforceable Operation Permits for Non-Title V Sources.
	(3) Exemptions.
	(4) Temporary Exemptions.
	(5) Notice of Startup.
62-210.350	Public Notice and Comment.
	(1) Public Notice of Proposed Agency Action.
	(3) Additional Public Notice Requirements for Facilities Subject to Operation Permits for Title V Sources.
62-210.360	Administrative Permit Corrections.
62-210.370	Reports.
	(3) Annual Operating Report for Air Pollutant Emitting Facility.
62-210.400	Emission Estimates.
	(1) Applicability
	(2) General Provisions.
62-210.650	Circumvention.
62-210.700	Excess Emissions.
62-210.900	Forms and Instructions; (1), and (5).

Dade County Government Center Facility - Applicable Requirements List - Page 3

Chapter 212 Stationary Sources - Preconstruction Review.	
62-212.300	General Preconstruction Review Requirements.
	(1) General Prohibitions.
62-212.700	Emission Unit Reclassification.

Chapter 296 Stationary Sources -- Emission Standards	
62-296.310	General Particulate Emission Limiting Standards.
	(2) General Visible Emission Standard.
	(3) Unconfined Emissions of Particulate Matter.
62-296.320	General Pollutant Emission Limiting Standards.
	(2) Objectionable Odor Prohibited
62-296.400	Specific Emission Limiting and Performance Standards

C. FACILITY POLLUTANT INFORMATION

This subsection of the Application for Air Permit form allows for the reporting of potential and estimated emissions of selected pollutants on a facility-wide basis. It must be completed for each pollutant for which the applicant proposes to establish a facility-wide emissions cap and for each pollutant for which emissions are not reported at the emissions-unit level.

Facility Pollutant Information: Pollutant _____ of _____

1. Pollutant Emitted:		
2. Estimated Emissions:		(tons/yr)
3. Requested Emissions Cap:	(lb/hr)	(tons/yr)
4. Basis for Emissions Cap Code:		
5. Facility Pollutant Comment:		

Facility Pollutant Information Pollutant _____ of _____

1. Pollutant Emitted:		
2. Estimated Emissions:		(tons/yr)
3. Requested Emissions Cap:	(lb/hr)	(tons/yr)
4. Basis for Emissions Cap Code:		
5. Facility Pollutant Comment:		

Facility Pollutant Information: Pollutant _____ of _____

1. Pollutant Emitted:		
2. Estimated Emissions:		(tons/yr)
3. Requested Emissions Cap:	(lb/hr)	(tons/yr)
4. Basis for Emissions Cap Code:		
5. Facility Pollutant Comment:		

Facility Pollutant Information: Pollutant _____ of _____

1. Pollutant Emitted:		
2. Estimated Emissions:		(tons/yr)
3. Requested Emissions Cap:	(lb/hr)	(tons/yr)
4. Basis for Emissions Cap Code:		
5. Facility Pollutant Comment:		

D. FACILITY SUPPLEMENTAL INFORMATION

This subsection of the Application for Air Permit form provides supplemental information related to the facility as a whole. (Supplemental information related to individual eissions units within the facility is provided in Subsection III-I of the form.) Supplemental information must be submitted as an attachment to each copy of the form, in hard-copy or computer-readable form.

Supplemental Requirements for All Applications

1. Area Map Showing Facility Location:
   [X] Attached, Document ID: DCGC-FD-1
   [ ] Not Applicable [ ] Waiver Requested

2. Facility Plot Plan:
   [X] Attached, Document ID: DCGC-FD-2
   [ ] Not Applicable [ ] Waiver Requested

3. Process Flow Diagram(s):
   [X] Attached, Document ID(s): DCGC-FD-3
   [ ] Not Applicable [ ] Waiver Requested

4. Precautions to Prevent Emissions of Unconfined Particulate Matter:
   [X] Attached, Document ID: DCGC-FD-4
   [ ] Not Applicable

5. Fugitive Emissions Identification:
   [ ] Attached, Document ID: _____
   [X] Not Applicable

6. Supplemental Information for Construction Permit Application:
   [X] Attached, Document ID: DCGC-FD-6
   [ ] Not Applicable

Additional Supplemental Requirements for Category I Applications Only

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

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

9. Alternative Methods of Operation:
[ ] Attached, Document ID: _____
[x] Not Applicable

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

11. Enhanced Monitoring Plan:
[ ] Attached, Document ID: _____
[x] Not Applicable

12. Risk Management Plan Verification:

[ ] Plan Submitted to Implementing Agency - Verification Attached
Attached, Document ID: _____

[ ] Plan to be Submitted to Implementing Agency by Required Date

[x] Not Applicable

13. Compliance Report and Plan
[ ] Attached, Document ID: _____
[x] Not Applicable

14. Compliance Statement (Hard-copy Required)
[ ] Attached, Document ID: _____
[x] Not Applicable

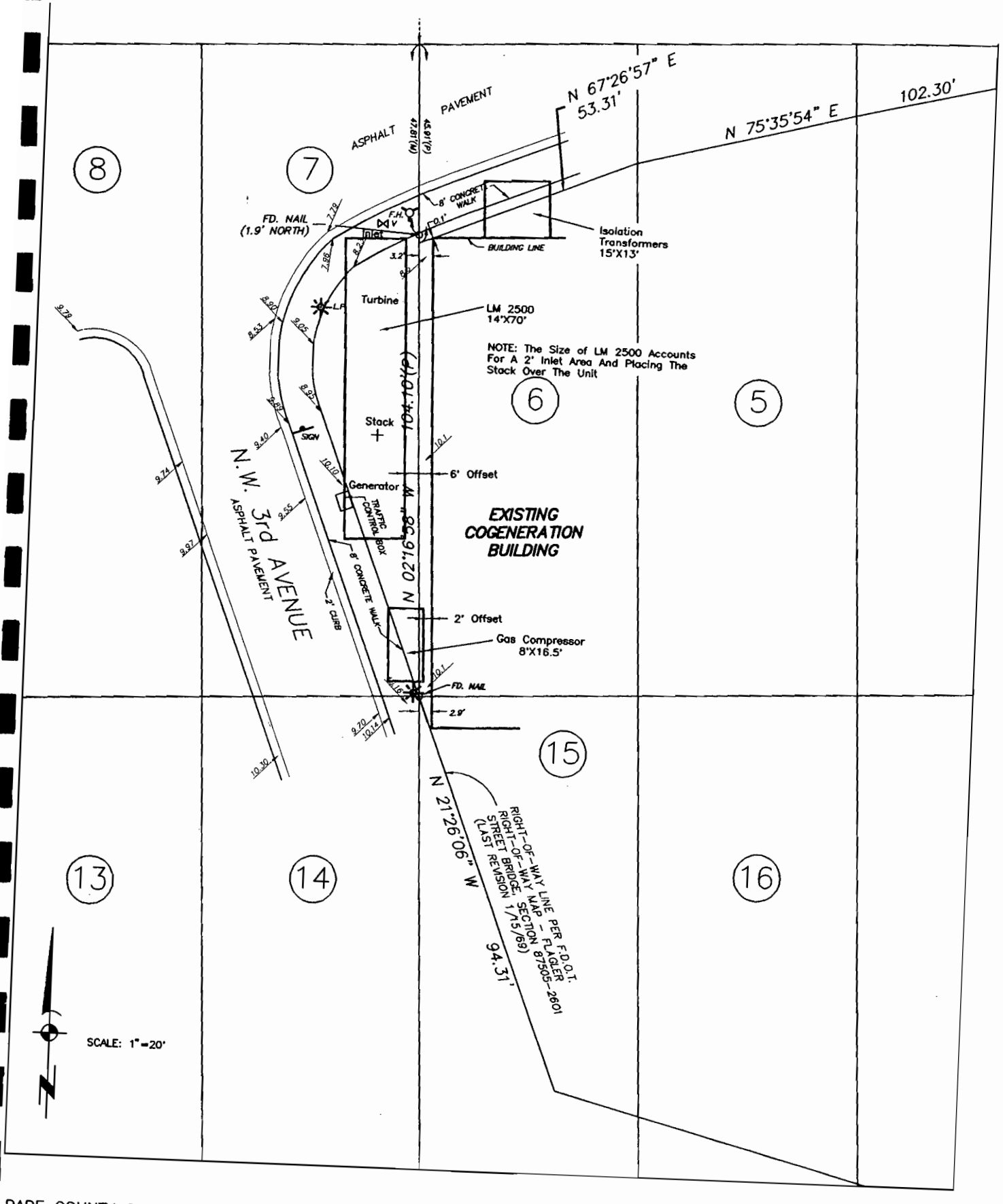
ATTACHMENT DCGC-FD-1

AREA MAP

SITE LOCATION
DADE COUNTY GOVERNMENT CENTER

ATTACHMENT DCGC-FD-2

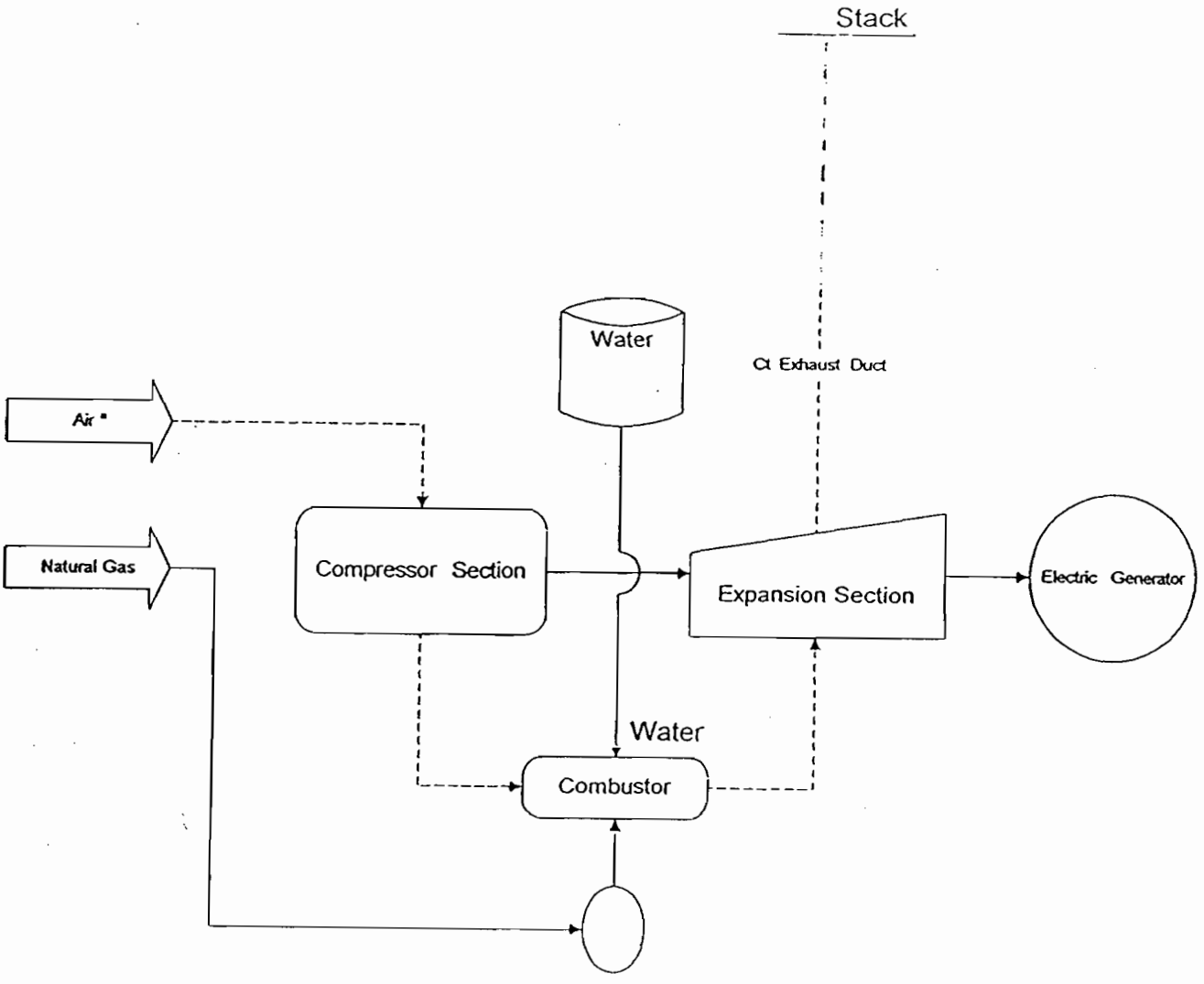
FACILITY PLOT PLAN



DADE COUNTY GOVERNMENT CENTER
TEMPORARY GAS TURBINE UNIT

ATTACHMENT DCGC-FD-3

PROCESS FLOW DIAGRAM



Notes:
(a) cooled from ambient

Flow Diagram of Emission Unit

ATTACHMENT DCGC-FD-4

PRECAUTION TO PREVENT FUGITIVE EMISSIONS/UNCONFINED PM

ATTACHMENT DCGC-FD-4
PRECAUTIONS TO PREVENT EMISSIONS OF UNCONFINED PARTICULATE MATTER

The Dade County Government Center (DCGC) Facility has negligible amounts of unconfined particulate emissions as a result of the current operations ongoing at this facility. Operational measures are undertaken at the facility which also minimize particulate emissions, in accordance with Rule 62-296.310(3), F.A.C.:

- Maintenance of paved areas as needed, and
- Daily clean-up of work areas,
- Regular mowing of grass and care of vegetation, and
- Limited access to plant property by unauthorized vehicles.

During construction acitivities, reasonable precautions will be taken to limit fugitive emissions by the following acitivities:

- Wetting down areas that construction traffic uses,
- Limiting access to work area by unauthorized vehicles, and
- Minimize dusturbance of vegitated areas.

ATTACHMENT DCGC-FD-6

SUPPLEMENTAL INFORMATION FOR CONSTRUCTION PERMIT APPLICATION

1.0 INTRODUCTION

Cypress Energy Company and South Florida Cogeneration Associates are proposing to repower an existing cogeneration facility located in the Dade County Downtown Government Center in Miami, Florida (see Figure 1). Stewart & Stevenson Operations, Inc., a wholly owned subsidiary of Stewart & Stevenson Services, Inc., will provide operation and maintenance services under a contract with Cypress Energy Company, who is under contract to operate this facility. KBN Engineering and Applied Sciences, Inc. (KBN), has been contracted by Cypress Acquisition Inc. and South Florida Cogeneration Associates to provide air permitting services for the project.

The existing facility (Facility Identification No. 50DAD130470, Permit No. A013-127283) is referred to as the Dade County Government Center Cogeneration Facility. It consists of a Rolls-Royce SK-30-C1, 239 million British thermal units per hour (MMBtu/hr) combined-cycle combustion turbine (CT) unit with a heat recovery steam generator (HRSG). The CT unit generates 32 megawatts (MW), and the HRSG supplies steam for an additional 10 MW, for a total existing power generation of 42 MW.

To comply with the requirements of the existing power purchase agreements, and based on the delivery of approximately 65 MW of power energy to Florida Power & Light Company (FPL) and Dade County commencing January 1, 1996, Cypress Energy Company intends to pursue air permitting for this project in two phases:

- Phase One--Pursue an air construction permit for the installation of a temporary GE LM 2500 to provide 17.1 MW of supplemental power energy to the network prior to removal and reconstruction of the existing Rolls-Royce CT unit.
- Phase Two--Pursue an air construction permit for permanent installation of a GE LM 6000 CT rated at 42 MW and to upgrade the existing 10 MW steam generator to 25 MW. This will replace the existing Rolls-Royce CT and upgrade the HRSG.

To meet the terms of the existing power purchase agreements, Cypress Energy Company must install a temporary unit to provide supplemental energy to meet the 70 percent capacity factor on a 12-month, rolling-average basis. To meet this agreement, the existing Rolls-Royce CT will operate with the HRSG to deliver approximately 21.4 MW to FPL and 7 MW to Dade County. The difference will be made up by the temporary unit, which will consist of a GE LM 2500 CT unit producing approximately 17.1 MW.

During Phase Two, the replacement of the Rolls-Royce CT unit with a GE LM 6000 CT will result in a reduction of nitrogen oxides (NO_x) emissions by approximately 80 percent because the GE unit is expected to emit less than 25 parts per million (ppm) of NO_x. Even with the expansion of the facility, the annual emissions is expected to decrease or be less than the Prevention of Significant Deterioration (PSD) emission levels.

The existing Rolls-Royce CT and HRSG cogeneration facilities are located in an enclosed building in the Dade County Downtown Government Center. This existing facility burns clean natural gas for fuel. The installation of the temporary GE LM 2500 will be located outside the building on the west side along Northwest 3rd Avenue at the corner of Northwest 1st Street (see Figure 2).

The remainder of this report presents a general description of the proposed operation (Section 2.0) and the air quality review requirements and applicability of the project to PSD and nonattainment regulations and New Source Performance Standards (NSPS) (Section 3.0).

2.0 PROJECT DESCRIPTION

Phase One will include the installation of a GE LM 2500 CT consisting of a single combustion turbine unit with a single stack. The unit will operate in simple-cycle mode and will be an advanced dry low-NO_x CT unit. A flow diagram is presented in Figure 3. Stack, operating, and emission data are presented in Table 1. A plot plan of the addition to the facility is presented in Figure 4. Other components that will be included with this unit are a compressed gas skid, a water injection skid, and step-up transformer areas.

The new temporary GE LM 2500 will burn natural gas as the primary fuel. No back-up fuel is proposed. Peoples Gas System has the ability to deliver sufficient quantities of gas to the Dade County Downtown Government Center to meet the fuel needs of both the temporary and existing cogeneration facility.

The temporary unit is intended to operate until the commencement of the installation of the new GE LM 6000 machine and then will be removed. Figures 5 through 8 show the layout of the GE LM 2500.

With the addition of the temporary CT unit, NO_x emissions will increase for the short time during which the temporary unit will operate.

The GE LM 2500 CT will have a normal electrical output of 17.1 MW and a maximum heat input of about 174.1 MMBtu/hr at average ambient conditions.

3.0 AIR QUALITY REVIEW REQUIREMENTS AND APPLICABILITY

The following discussion pertains to the federal and state regulatory requirements and their applicability to the proposed project. These regulations must be satisfied before the proposed facility modification can begin operation. The specific applicability of adding a minor source to the existing facility's maximum potential emissions and evaluation of PSD and nonattainment applicability is presented in Section 3.1. General discussions concerning the PSD review requirements, nonattainment rules, and NSPS are presented in Sections 3.2 through 3.4.

3.1 SOURCE APPLICABILITY

3.1.1 Area Classification

The project site is located in Dade County, which has been designated by the U.S. Environmental Protection Agency (EPA) and Florida Department of Environmental Protection (FDEP) as an attainment area for all criteria pollutants. Dade and surrounding counties are designated as PSD Class II areas for sulfur dioxide (SO_2), total suspended particulate matter [PM(TSP)], and NO_x.

3.1.2 Pollutant Applicability

A "major facility" is defined as any one of 28 named source categories that has the potential to emit 100 tons per year (TPY) or more, or any other stationary facility that has the potential to emit 250 TPY or more of any pollutant regulated under the Clean Air Act (CAA). The existing source at this site is currently categorized as a minor air pollution source for PSD since the existing facility is not one of the named 28 source categories and potential emissions will not exceed 250 TPY of any pollutants. This project is considered to be a modification to a minor source; thus, current rules allow an increase of 250 TPY for each pollutant. A listing of emissions for the current facility and the proposed new temporary LM 2500 is presented in Table 2 . The proposed project, utilizing 7,000 hours of operation, has emission levels below the allowable limit; therefore, PSD review is not required for any pollutant. As shown, potential emissions from the proposed project are below significant emission rates for SO_2, PM(TSP), NO_x, carbon monoxide (CO), volatile organic compounds (VOCs), beryllium (Be), and inorganic arsenic (As). The emissions calculations and rates in pounds per hour (lb/hr) and TPY are listed in Table 3.

3.2 PSD REVIEW

In accordance with FDEP Rule 62-212(3),Florida Administrative Code (F.A.C.), the minor modification of a minor source does not require PSD review. The existing facility is a minor source under PSD rules and the proposed modification is below the PSD criteria (i.e., 250 TPY).

3.3 NONATTAINMENT REVIEW

The project is located in Dade County, which was reclassified on April 25, 1995, from a moderate nonattainment area to an air quality maintenance area for the air pollutant ozone. Therefore, nonattainment review for the project does not apply.

3.4 EMISSION STANDARD RULES

There are two areas requiring further review that are applicable to the CT units: (1) Reasonably Available Control Technology (RACT) for VOC and NO_x emitting facilities, and (2) NSPS.

3.4.1 Reasonably Available Control Technology (RACT)

RACT rules applicable to this project are found in Rule 62-296.500, F.A.C., which require major sources of NO_x and VOC in Dade, Broward, and Palm Beach Counties to meet RACT regulations in Rule 62-296.570, F.A.C. The proposed facility is not major for VOC, but will exceed 100 TPY threshold for classification of a major NO_x source. The requirement for emissions for NO_x for CT units is 0.5 pound per million British thermal units (lb/MMBtu) while firing gas [Rule 62-296.570(4)(b)(5), F.A.C.]. The NO_x emissions from this project are below this limit and meet the RACT requirements (i.e., 0.155 Lb/MMBtu, 29.9 Lb/hr ÷ 193.2 MMBtu/hr).

3.4.2 New Source Performance Standards (NSPS)

The applicable NSPS for gas turbines are codified in 40 CFR 60, Subpart GG. The applicable NSPS limits for NO_x are 75 parts per million volume, dry (ppmvd) corrected for heat rate and 15 percent oxygen. For the CT being considered for this project, the NSPS emission limit with the NSPS heat rate correction would be 100 ppmvd corrected to 15 percent oxygen (NSPS correction = 14.4/10.77 x 75 = 100.3 ppm). The proposed emission limit will be much lower than NSPS.

T15272B2
10/26/95

Table 1. Design Information and Stack Parameters for Dade County Cogeneration Facility, Temporary Unit, LM 2500

Data	LM 2500 Natural Gas
General	
Power (MW)	17.1
Heat Input (MMBtu/hr; HHV)	193.2
Heat Input (MMBtu/hr; LHV)	174.7
Estimated Heat Rate (Btu/kwh; LHV)	10,210
Hours of Operation	7,000.0
Fuel Data	
Heat Content, LHV (Btu/lb)	19,000
Heat Content, LHV (Btu/cf)	946
Sulfur Content (gr/100 scf), Maximum	1
Stack Data	
Stack Height (ft)	40
Diameter (ft)	6.7
Exit Gas Conditions (CT Exhaust Flow)	
Mass Flow (lb/hr)	487,432
Temperature (oF)	897
Moisture (% Vol.)	10.20
Oxygen (% Vol.)	13.50
Molecular Weight	28.12
Water Injection (lb/hr)	7,618
Fuel Consumption (lb/hr) = Heat Input (MMBtu/hr) x 1,000,000 Btu/MMBtu ÷ Fuel Heat Content, LHV (Btu/lb)	
Heat Input (MMBtu/hr, LHV)	174.7
Heat Content (Btu/lb, LHV)	19,000
Fuel Usage(lb/hr)	9,195
Fuel Usage (gal/hr; MMcf/hr)	0.1847
Fuel Usage (1,000 gal/yr; MMcf/yr)	1,293

T15272B2
10/26/95

Table 1. Design Information and Stack Parameters for Dade County Cogeneration Facility, Temporary Unit, LM 2500

Data	LM 2500 Natural Gas
Volume Flow (acfm) = [(Mass Flow (lb/hr) x 1,545 x (Temp. (°F) + 460°F)] ÷ [Molecular weight x 2116.8] ÷ 60 min/hr	
Mass Flow (lb/hr)	487,432
Temperature (°F)	897
Molecular Weight	28.12
Volume Flow (acfm)	286,138
Volume Flow (dscfm) = [(Mass Flow (lb/hr) x 1,545 x (68°F + 460°F)] ÷ [Molecular weight x 2116.8] ÷ 60 min/hr x [(1 − Moisture(%)/100)]	
Mass Flow (lb/hr)	487,432
Temperature (°F)	68
Molecular Weight	28.12
Moisture (% Vol.)	10.20
Volume Flow (dscfm)	99,978
Stack	
Velocity (ft/sec) = Volume flow (acfm) ÷ [((diameter)²÷ 4) x 3.14159] ÷ 60 sc/min	
Volume Flow (acfm)	286,138
Diameter (ft)	6.7
Velocity (ft/sec)	135.3

Source: Stewart & Stevenson International, Inc, 1995.

Notes: Universal gas constant = 1,545 ft−lb(force)/°R;
Atmospheric pressure = 2,116.8 lb(force)/ft²

Table 2. Potential to Emit Criteria Regulated Pollutants for Dade County Cogeneration Facility, Temporary Unit, LM 2500

Pollutant/ Units	Existing Rolls–Royce CT		LM 2500 CT
	PTE (TPY)	Ave (2yrs) (TPY)	PTE (TPY)
Run Hours	8360.0		7000.0
Actual Hours (Average last two years)		3676.5	
Sulfur Dioxide (SO2)	3.0	0.3	1.8
Nitrogen Oxides (NOX)	227.5	119.6	104.7
Carbon Monoxide (CO)	237.5	52.2	202.1
Particulate Matter (PM / PM10)	12.5	6.9	10.5
Volatile Organic Compounds (VOC)	14.4	6.2	25.6

Table 3. Maximum Emissions for Criteria Pollutants for Dade County Cogeneration Facility, Temporary Unit, LM 2500

Pollutant/Units	Natural Gas
Hours of Operation	7,000
Sulfur Dioxide (lb/hr) = Fuel oil (lb/hr) x sulfur content(fraction) x (lb SO2/lb S)	
Basis (1) (2)	Calculation
Fuel Usage (lb/hr; cf/hr)	184,672
Sulfur content (%; gr/100 cf)	1.00
lb SO2/lb S (64/32)	2.0
lb/hr	0.53
TPY	1.8
Particulate (lb/hr) = Emission rate (lb/hr) from manufacturer	
Basis (including H2SO4)	Manufacturer
Emission Rate (lb/MMBtu) (LHV)	0.017
HIR (MMBtu/hr) (LHV)	174.7
lb/hr	3.0
TPY	10.5
Particulate (lb/hr) (PM−10) = Emission rate (lb/hr) from manufacturer	
Basis (including H2SO4)	Manufacturer
Emission Rate (lb/MMBtu) (LHV)	0.017
HIR (MMBtu/hr) (LHV)	174.7
lb/hr	3.0
TPY	10.5
Nitrogen Oxides (lb/hr) = NOx(ppm) x {[20.9 x (1 − Moisture(%)/100)] − Oxygen(%)} x 2116.8 x Volume flow (acfm 46 (mole. wgt NOx) x 60 min/hr ÷ [1545 x (CT temp. (°F) + 460°F) x 5.9 x 1,000,000 (ppr	
Basis (1)	Manufacturer
Basis, ppmvd @15% O2	42.0
Moisture (%)	10.20
Oxygen (%)	13.5
Volume Flow (acfm)	286,138
Temperature (°F)	897
lb/hr	29.9
TPY	104.7

Table 3. Maximum Emissions for Criteria Pollutants for Dade County Cogeneration Facility, Temporary Unit, LM 2500

Pollutant/Units	Natural Gas
Carbon Monoxides (lb/hr) = CO(ppm) x (1 − Moisture(%)/100) x 2116.8 x Volume flow (acfm) x 28 (mole. wgt CO) x 60 min/hr ÷ [1545 x (CT temp. (°F) + 460°F) x 1,000,000 (ppm)]	
Basis (1)	Manufacturer
Emission Rate Basis (ppmvd @ 15 % O2)	133
Moisture (%)	10.20
Volume Flow (acfm)	286,138
Temperature (°F)	897
lb/hr	57.7
TPY	202.1
VOCs (lb/hr) = VOC(% by wet mass flow) x Mass flow (lb/hr) x 2.5	
Basis (1)	Manufacturer
Basis, % of wet flow	0.0006
Mass Flow (lb.hr)	487,432
Corection factor	2.5
lb/hr	7.31
TPY	25.6
Lead (lb/hr) = Lead (lb/10E+6 Btu) x Heat Input Rate (MMBtu/hr)	
Basis (3)	NA
Emission Rate Basis, lb/10E+6 Btu	NA
HIR (MMBtu/hr)	NA
lb/hr	NA
TPY	NA

Sources: (1) Emission limit established as recommended by manufacturer.
(2) Calculation from sulfur content in natural gas obtained from Florida Gas Transmission Data.

Note: Universal gas constant = 1,545 ft−lb(force)/°R;
Atmospheric pressure = 2,116.8 lb(force)/ft²
ppmvd= parts per million, volume dry.
O2= oxygen

FIGURE 1
SITE LOCATION
DADE COUNTY GOVERNMENT CENTER

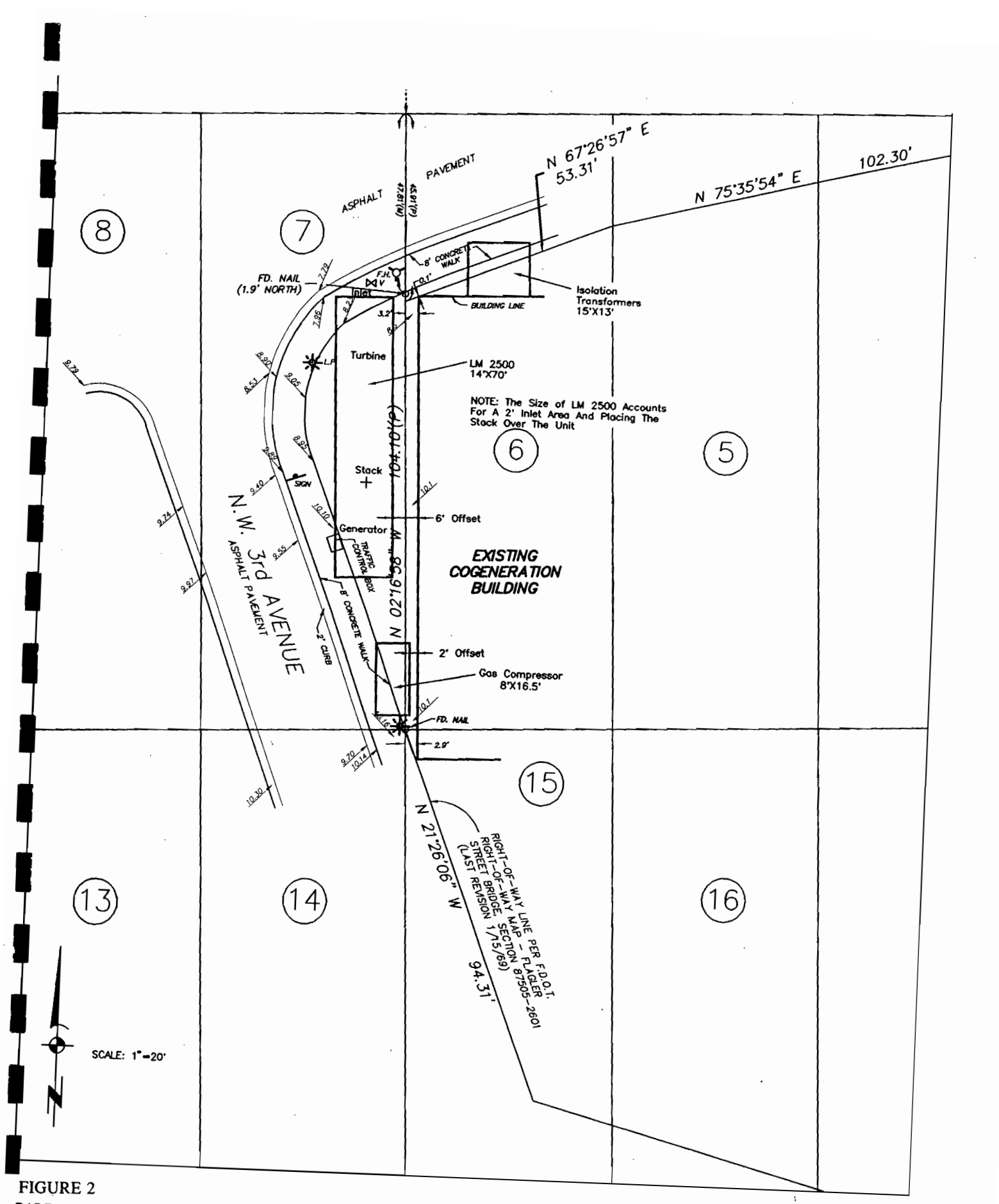
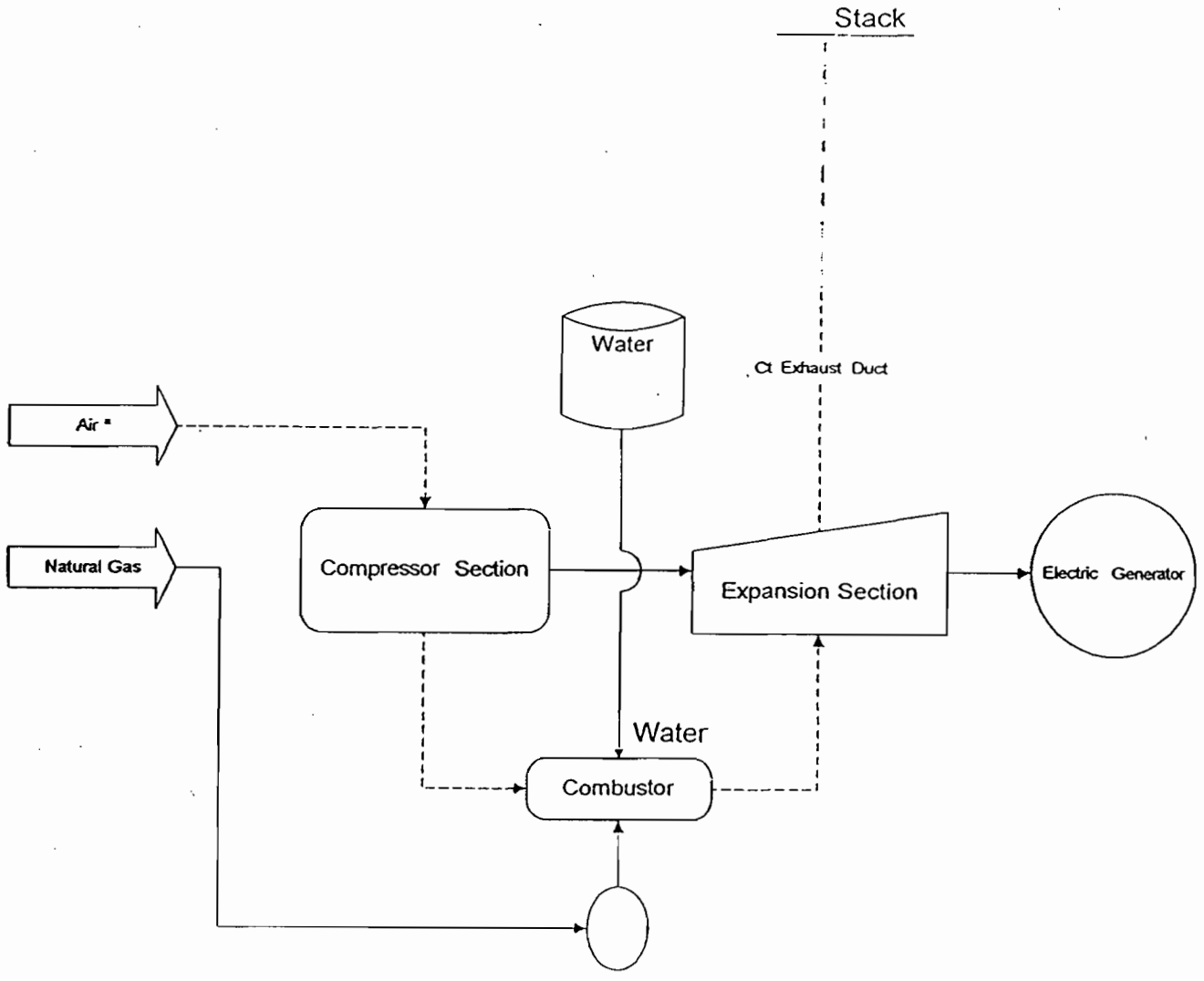


FIGURE 2

DADE COUNTY GOVERNMENT CENTER
TEMPORARY GAS TURBINE UNIT



Notes:
(a) cooled from ambient

Figure 3
Flow Diagram of Emission Unit

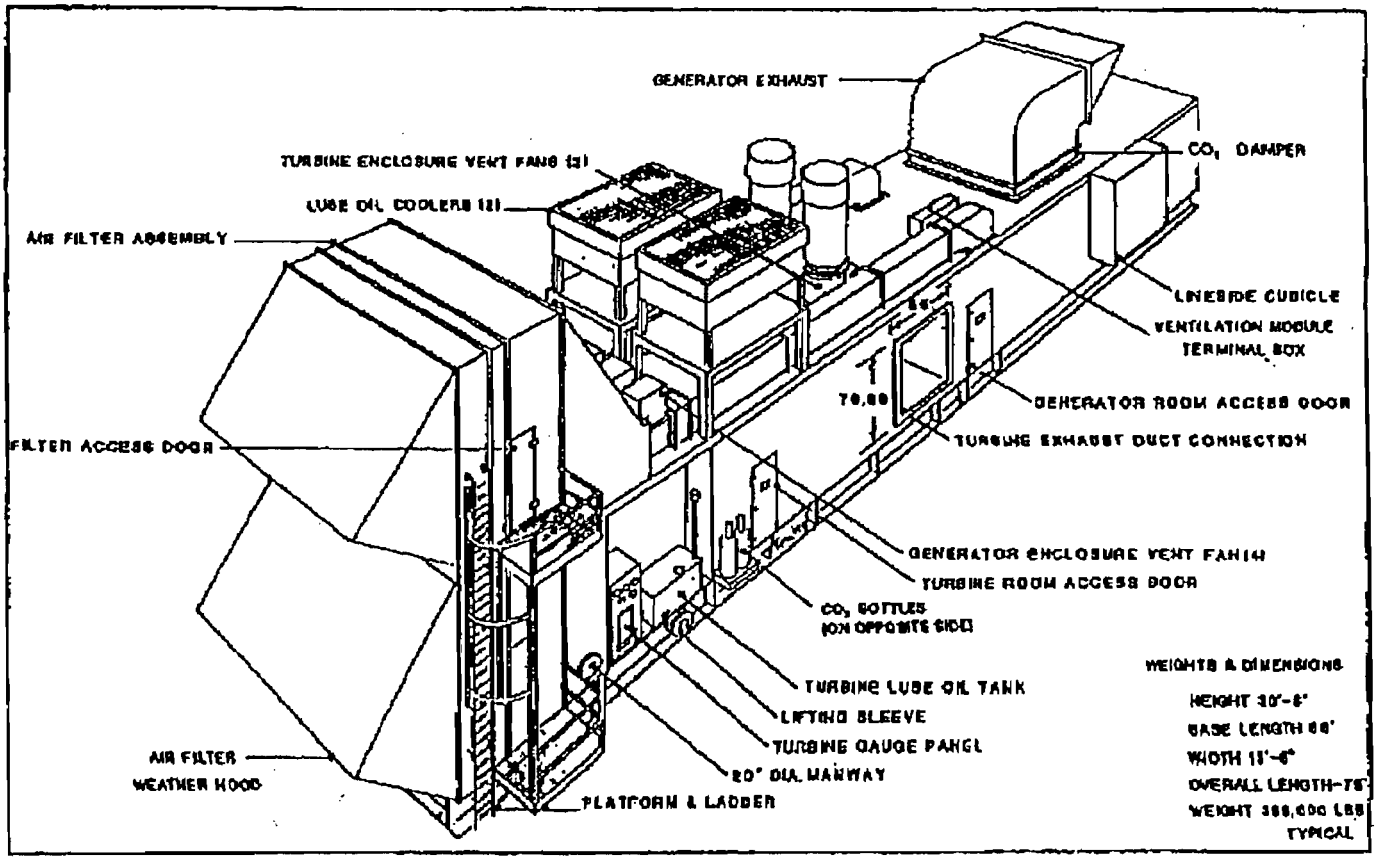
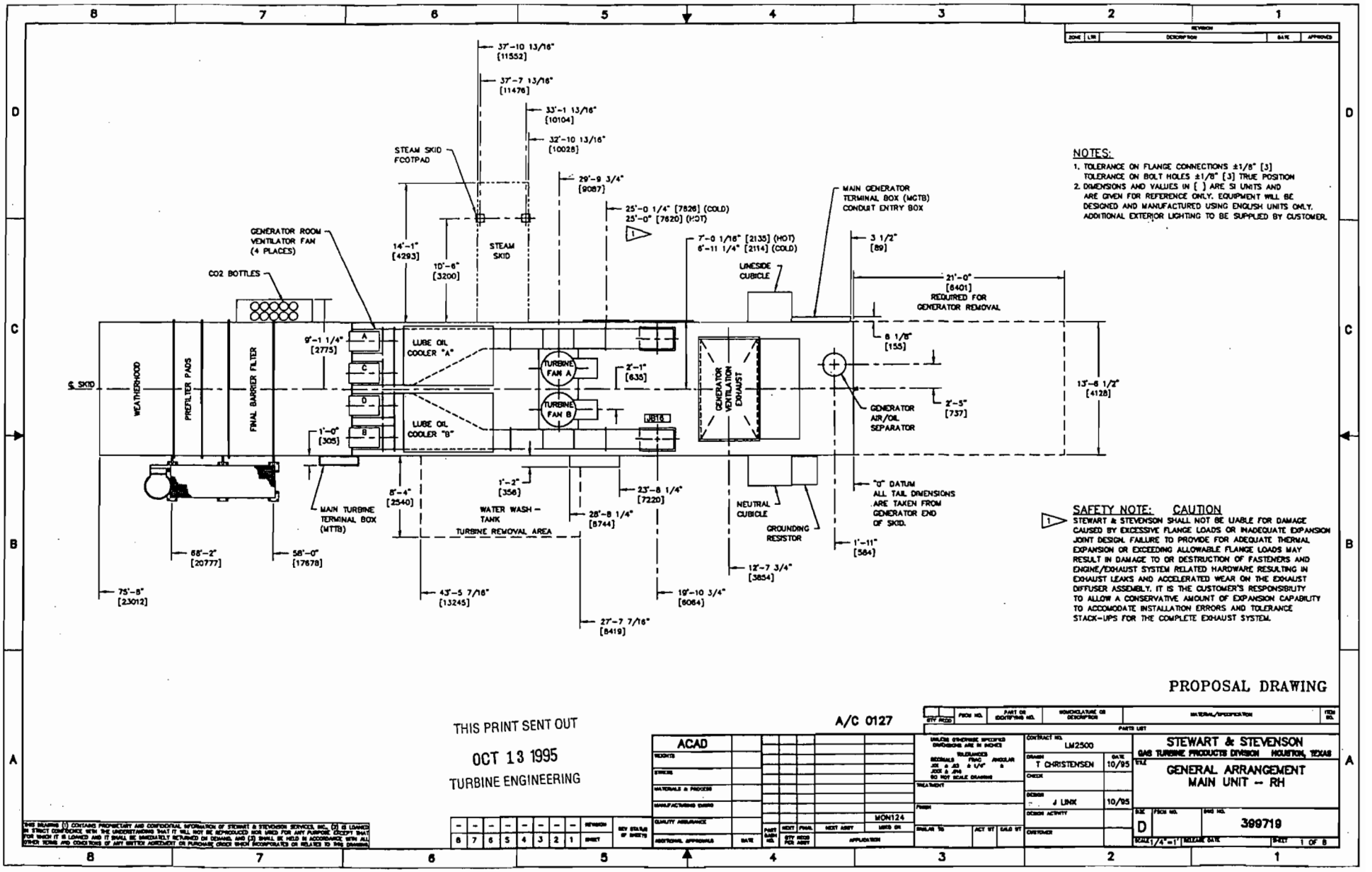


Figure 4
Typical LM 2500 Combustion Turbine

Figure 5
Combustion Turbine Top View



NOTES:
1. TOLERANCE ON FLANGE CONNECTIONS ±1/8" [3]
   TOLERANCE ON BOLT HOLES ±1/8" [3] TRUE POSITION
2. DIMENSIONS AND VALUES IN [ ] ARE SI UNITS AND ARE GIVEN FOR REFERENCE ONLY. EQUIPMENT WILL BE DESIGNED AND MANUFACTURED USING ENGLISH UNITS ONLY. ADDITIONAL EXTERIOR LIGHTING TO BE SUPPLIED BY CUSTOMER.

1 SAFETY NOTE: CAUTION
STEWART & STEVENSON SHALL NOT BE LIABLE FOR DAMAGE CAUSED BY EXCESSIVE FLANGE LOADS OR INADEQUATE EXPANSION JOINT DESIGN. FAILURE TO PROVIDE FOR ADEQUATE THERMAL EXPANSION OR EXCEEDING ALLOWABLE FLANGE LOADS MAY RESULT IN DAMAGE TO OR DESTRUCTION OF FASTENERS AND ENGINE/EXHAUST SYSTEM RELATED HARDWARE RESULTING IN EXHAUST LEAKS AND ACCELERATED WEAR ON THE EXHAUST DIFFUSER ASSEMBLY. IT IS THE CUSTOMER'S RESPONSIBILITY TO ALLOW A CONSERVATIVE AMOUNT OF EXPANSION CAPABILITY TO ACCOMODATE INSTALLATION ERRORS AND TOLERANCE STACK-UPS FOR THE COMPLETE EXHAUST SYSTEM.

PROPOSAL DRAWING

THIS PRINT SENT OUT
OCT 13 1995
TURBINE ENGINEERING

A/C 0127

ACAD

CONTRACT NO.	LM2500	
DRAWN	T CHRISTENSEN	10/95
CHECK		
DESIGN	J LINK	10/95
DESIGN ACTIVITY		
CUSTOMER		

STEWART & STEVENSON
GAS TURBINE PRODUCTS DIVISION HOUSTON, TEXAS

TITLE: GENERAL ARRANGEMENT MAIN UNIT -- RH

SIZE D | FSCM NO. | DWG NO. 399719

SCALE 1/4"=1' | RELEASE DATE | SHEET 1 OF 8

MON124

Figure 6
Combustion Turbine Right-Hand View

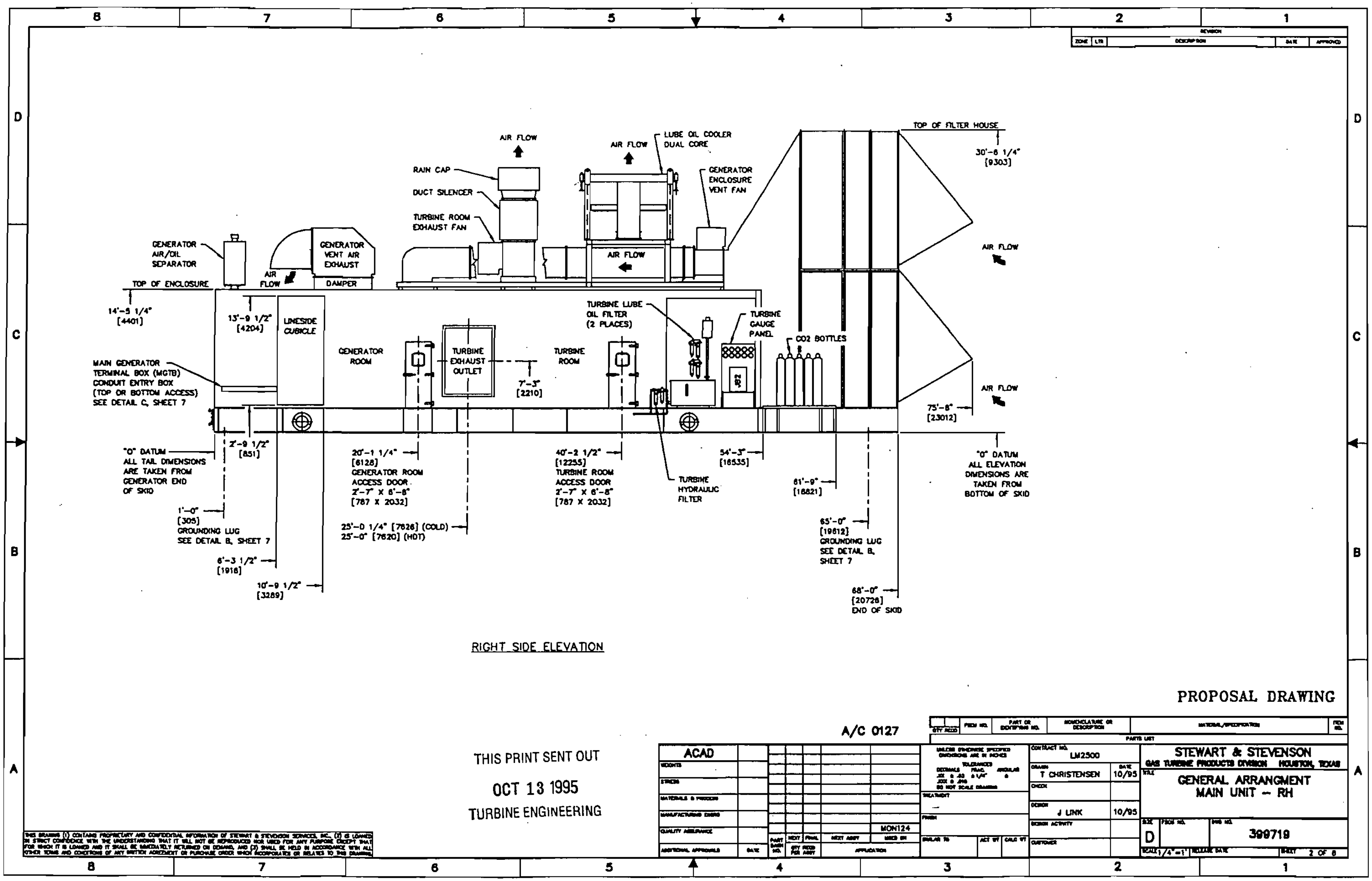


Figure 7
Combustion Turbine Left-Hand View

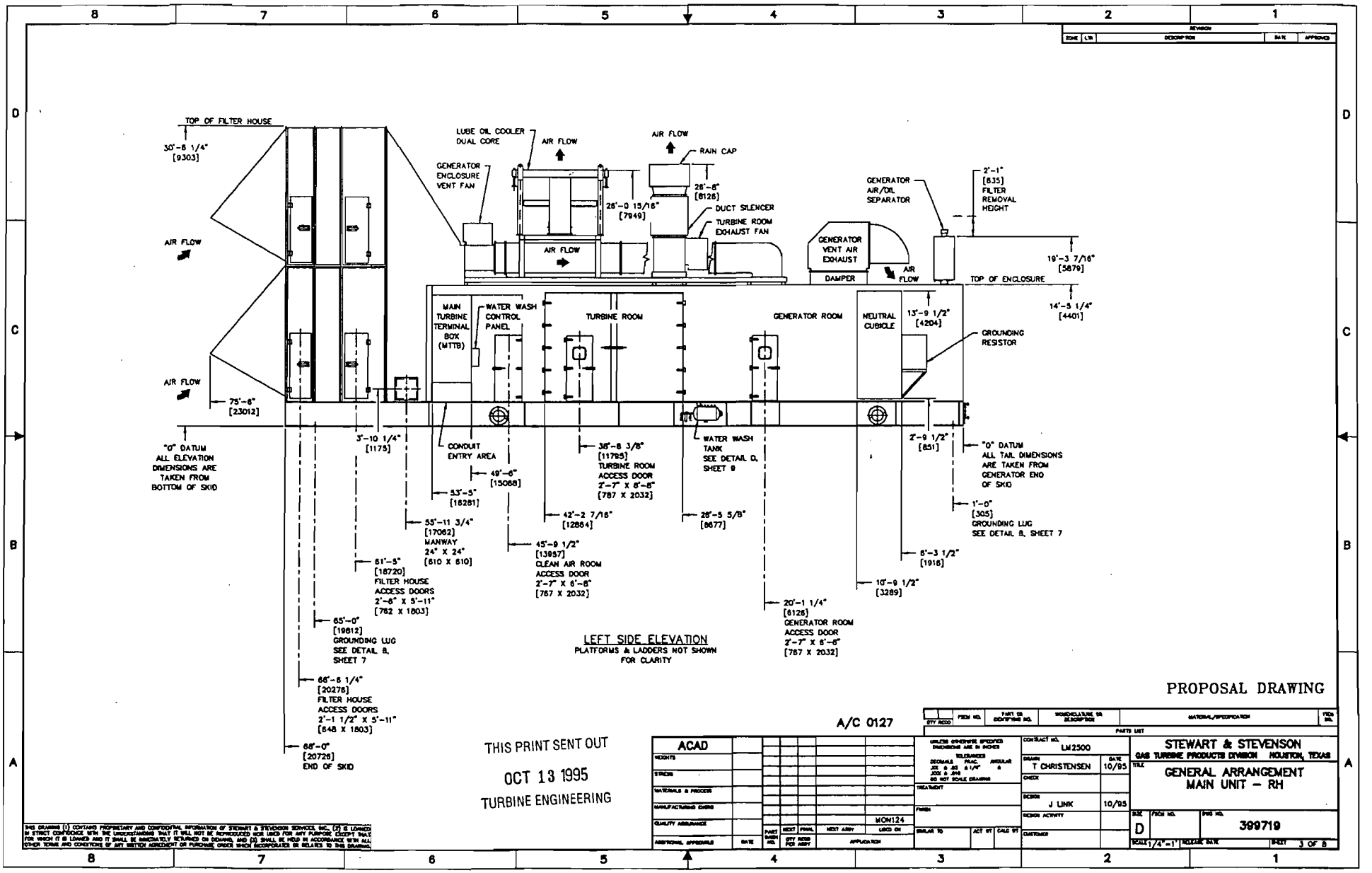
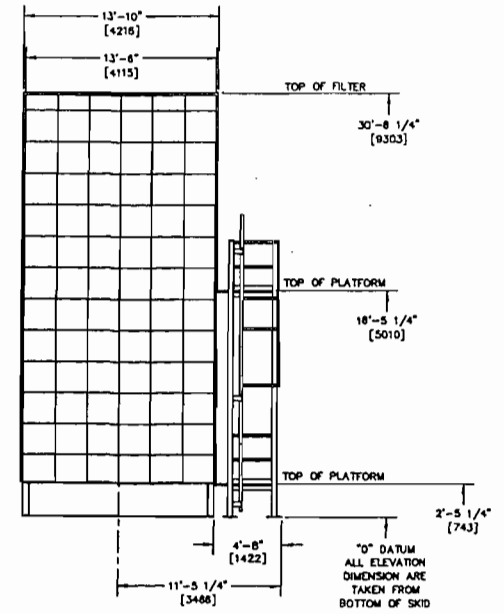
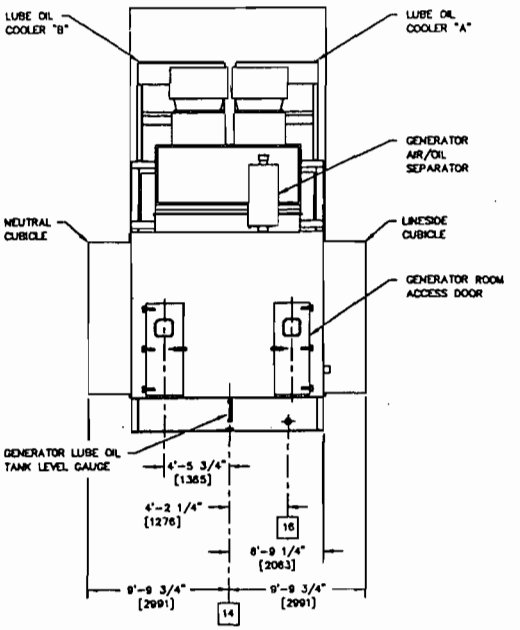


Figure 8
Combustion Turbine End Views



VIEW FROM AIR FILTER END
WEATHERHOODS NOT SHOWN FOR CLARITY



VIEW FROM GENERATOR END

PROPOSAL DRAWING

A/C 0127

THIS PRINT SENT OUT
OCT 13 1995
TURBINE ENGINEERING

CONTRACT NO.	LM2500		STEWART & STEVENSON		
DRAWN	T CHRISTENSEN	10/95	GAS TURBINE PRODUCTS DIVISION HOUSTON, TEXAS		
CHECK			TITLE	GENERAL ARRANGEMENT MAIN UNIT – RH	
DESIGN	J LINK	10/95			
DESIGN ACTIVITY			SIZE	DWG NO.	
CUSTOMER			D	399719	
			SCALE 1/4"=1"	RELEASE DATE	SHEET 4 OF 8

ACAD
MON124

EMISSION UNIT 1

COMBUSTION TURBINE UNIT

Emissions Unit Information Section 1 of 1

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through I 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

This subsection of the Application for Air Permit form provides general information on the emissions unit addressed in this Emissions Unit Information Section, including information on the type, control equipment, operating capacity, and operating schedule of the emissions unit..

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, an individually-regulated emission point (stack or vent) serving a single process or production unit, or activity, which also has other individually-regulated emission points.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a collectively-regulated 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.

Emissions Unit Description and Status

1. Description of Emissions Unit Addressed in This Section:

   Combustion Turbine - LM2500

2. ARMS Identification Number: [ ] No Corresponding ID [x] Unknown

3. Emissions Unit Status Code:	4. Acid Rain Unit?	5. Emissions Unit Major Group SIC Code:
C	[x] Yes [ ] No	49

6. Initial Startup Date (DD-MON-YYYY):

   1 Jan 1996

7. Long-term Reserve Shutdown Date (DD-MON-YYYY):

8. Package Unit:

   Manufacturer: **General Electric**

   Model Number: **LM2500**

9. Generator Nameplate Rating: **17** MW

10. Incinerator Information:

    Dwell Temperature: °F
    Dwell Time: seconds
    Incinerator Afterburner Temperature: °F

11. Emissions Unit Comment:

    The CT exhaust through a single stack. The existing facility is a Title V source. Actual nameplate rating = 17.1 MW

Emissions Unit Control Equipment Information

A.

1. Description:

Water injection

2. Control Device or Method Code: 28

B.

1. Description:

2. Control Device or Method Code:

C.

1. Description:

2. Control Device or Method Code:

Emissions Unit Operating Capacity

1. Maximum Heat Input Rate: 175 mmBtu/hr

2. Maximum Incineration Rate:
   lbs/hr tons/day

3. Maximum Process or Throughput Rate:

4. Maximum Production Rate:

5. Operating Capacity Comment:
   Maximum heat input based on firing natural gas at a rate of 0.185 MMCF/hr and heat content of 946 Btu/CF as lower heating value (LHV). Actual maximum heat input rate = 174.7.

Emissions Unit Operating Schedule

1. Requested Maximum Operating Schedule:

24	hours/day,	7	days/week,
26	weeks/yr	7,000	hours/yr

B. EMISSIONS UNIT REGULATIONS

Depending on the application category, this subsection of the Application for Air Permit form provides either a brief analysis or detailed listing of all federal, state, and local regulations applicable to the emissions unit addressed in this Emissions Unit Information Section.

Rule Applicability Analysis (Required for Category II Applications and Category III applications involving non Title-V sources. See Instructions.)

Not Applicable

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

See Attached List

Dade County Government Center - EU 1 - Applicable Requirements List - Page 1

Chapter 210 Stationary Sources -- General Requirements	
62-210.300	Permits Required.
	(1) Air Construction Permits.
62-210.650	Circumvention.
62-210.700	Excess Emissions; (1).

Chapter 296 Stationary Sources -- Emission Standards	
62-296.500	Reasonably Available Control Technology (RACT) - Volitile Organic Compounds (VOC) and Nitrogen Oxides (NOx) Emitting Facilities.
	(1) Applicability.
62-296.570	Reasonably Available Control Technology (RACT) - Requirements for Major VOC- and NOx-Emitting Facilities.
	(1) Applicability.
	(2) Compliance Requirements.
	(3) Operation Permit Requirements.
	(4) RACT Emission Limiting Standards.
62-296.800	Standards of Performance for New Stationary Sources (NSPS).
	(3) General Provisions Adopted.
	(a) The following Standards of Performance for New Stationary Sources contained in 40 CFR 60, revised as of July 1, 1993, or later as specifically indicated.
	37. 40 CFR 60.330 Subpart GG, Stationary Gas Turbines.
	(4) Appendices Adopted. The following appendices of 40 CFR Part 60, revised as of July 1, 1993 or later as specifically indicated, are adopted and incorporated by reference.
	(a) 40 CFR 60 Appendix A, Test Methods, are adopted by reference.
	(b) 40 CFR 60 Appendix B, Performance Specifications.
	(e) 40 CFR 60 Appendix F, Quality Assurance Procedures.

Dade County Government Center - EU 1 - Applicable Requirements List - Page 2

Chapter 297 Stationary Sources -- Emission Monitoring	
62-297.310	General Test Requirements.
62-297.330	Applicable Test Procedures.
62-297.340	Frequency of Compliance Tests.
	(1) General.
62-297.345	Stack Sampling Facilities Provided by the Owner of an Emissions Unit.
	(1) Permanent Test Facilities.
	(3) Test Facilities.
62-297.570	Test Reports.
62-297.350	Determination of Process Variables.

Part 60 - EPA Regulations on Standards of Performance for New Stationary Sources	
Subpart A — General Provisions	
60.7	Notification and record keeping.
60.8	Performance tests.
60.11	Compliance with standards and maintenance requirements.
60.12	Circumvention.
60.13	Monitoring requirements.
60.19	General notification and reporting requirements.
Subpart GG — Standards of Performance for Stationary Gas Turbines	
60.332	Standard for nitrogen oxides.
60.333	Standard for sulfur dioxide.
60.334	Monitoring of operations.
60.335	Test methods and procedures.

C. EMISSION POINT (STACK/VENT) INFORMATION

This subsection of the application for Air Permit form provides information about the emission point associated with the emissions unit addressed in this Emissions Unit Information Section. An emission point is typically a stack or vent but can be any identifiable location at which air pollutants, including fugitive emissions, are discharged into the atmosphere.

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram:

   Stack

2. Emission Point Type Code:

   [x] 1 [ ] 2 [ ] 3 [ ] 4

3. Descriptions of Emissions Points Comprising this Emissions Unit:

   One emission unit exhausts through this stack.

4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:

   EU1 - Combustion Turbine (CT).

5. Discharge Type Code:

   [ ] D [ ] F [ ] H [ ] P
   [ ] R [x] V [ ] W

6. Stack Height:	40	ft
7. Exit Diameter:	7	ft
8. Exit Temperature:	897	°F
9. Actual Volumetric Flow Rate:	286,138	acfm
10. Percent Water Vapor:		%
11. Maximum Dry Standard Flow Rate:		dscfm
12. Nonstack Emission Point Height:		ft

13. Emission Point UTM Coordinates:

Zone: 17 East (km): 580.5 North (km): 2850.9

14. Emission Point Comment:

Emission Point Calculations based on 75°F. See Attachment DCGC-EU1-E10.

D. SEGMENT (PROCESS/FUEL) INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of segment data (Fields 1-10) must be completed for each segment required to be reported and for each alternative operating method or mode (emissions trading scenario) under Chapter 62-213, F.A.C., for which the maximum hourly or annual segment-related rate would vary. A segment is a material handling, process, fuel burning, volatile organic liquid storage, production, or other such operation to which emissions of the unit are directly related. See instructions for further details on this subsection of the Application for Air Permit.

Segment Description and Rate Information: Segment 1 of 1

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode): **Internal Combustion Engine, Electric Generation, Natural Gas, Turbine**	
2. Source Classification Code (SCC): **2-01-002-01**	
3. SCC Units: **Million Cubic Feet Burned**	
4. Maximum Hourly Rate: **0.186**	5. Maximum Annual Rate: **804**
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit: **946**	
10. Segment Comment: **This unit is fired on natural gas only. Heat content (million Btu/scc) based on lower heating value (LHV). Maximum percent sulfur in fuel: 1** grain/100 CF gas.	

Segment Description and Rate Information: Segment _____ of _____

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode):	
2. Source Classification Code (SCC):	
3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment:	

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 1 of 6

1. Pollutant Emitted: PM
2. Total Percent Efficiency of Control: %
3. Primary Control Device Code:
4. Secondary Control Device Code:
5. Potential Emissions: 3 lbs/hr 10.5tons/yr
6. Synthetically Limited? [x] Yes [ ] No
7. Range of Estimated Fugitive/Other Emissions: [ ]1 [ ]2 [ ]3 _____ to _____ tons/yr
8. Emission Factor: 0.017 lb/MMBtu Reference: Manufacturer
9. Emissions Method Code (check one): [ ]1 [x]2 [ ]3 [ ]4 [ ]5
10. Calculation of Emissions: See Attachment DCGC-EU1-E10.
11. Pollutant Potential/Estimated Emissions Comment: Potential annual emissions based on annual limit of 7,000 hours of operation at maximum capacity.

Emissions Unit Information Section 1 **of** 1

Allowable Emissions (Pollutant identification on front page)

A.

1. Basis for Allowable Emissions Code: OTHER			
2. Future Effective Date of Allowable Emissions:			
3. Requested Allowable Emissions and Units: 0.017 lb/MMBtu			
4. Equivalent Allowable Emissions:	3 lbs/hr	10.5 tons/yr	
5. Method of Compliance: EPA Method 5			
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): Request no PM testing due to minor source if visible emissions (VE) are less than 10%.			

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 2 of 6

1. Pollutant Emitted: **NOX**
2. Total Percent Efficiency of Control: **90** %
3. Primary Control Device Code: **028**
4. Secondary Control Device Code:
5. Potential Emissions: **29.9** lbs/hr **104.7** tons/yr
6. Synthetically Limited? [**X**] Yes [ ] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
8. Emission Factor: **42 ppmvd** Reference: **Manufacturer**
9. Emissions Method Code (check one): [ ] 1 [**X**] 2 [ ] 3 [ ] 4 [ ] 5
10. Calculation of Emissions: **See Attachment DCGC-EU1-E10**
11. Pollutant Potential/Estimated Emissions Comment: **Potential emissions based on 75°F operating condition. Control efficiency based on theoretical NOX reduction in turbine without water injection NOX control system. This unit will have water injection to control NOX emissions. See page 27, PM emissions comment.**

Emissions Unit Information Section 1 **of** 1

Allowable Emissions (Pollutant identification on front page)

A.

1. Basis for Allowable Emissions Code: OTHER	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: 29.9 lb/hr	
4. Equivalent Allowable Emissions:	29.9 lbs/hr 104.7 tons/yr
5. Method of Compliance: EPA Method 20	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): The CT unit will be operated with water injection designed to produce 42 ppmvd @ 15 % O2.	

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 3 of 6

1. Pollutant Emitted: CO
2. Total Percent Efficiency of Control: %
3. Primary Control Device Code:
4. Secondary Control Device Code:
5. Potential Emissions: 57.4 lbs/hr 202.1 tons/yr
6. Synthetically Limited? [x] Yes [ ] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
8. Emission Factor: 133 ppmvd Reference: Manufacturer
9. Emissions Method Code (check one): [ ] 1 [x] 2 [ ] 3 [ ] 4 [ ] 5
10. Calculation of Emissions: **See Attachment DCGC-EU1-E10.**
11. Pollutant Potential/Estimated Emissions Comment: **See page 27, PM emissions comment.**

Emissions Unit Information Section 1 **of** 1

Allowable Emissions (Pollutant identification on front page)

A.

1. Basis for Allowable Emissions Code: OTHER	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: 133 ppmvd	
4. Equivalent Allowable Emissions:	57.4 lbs/hr 202.1 tons/yr
5. Method of Compliance: EPA Method 10	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):	

B.

1. Basis for Allowable Emissions Code:	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units:	
4. Equivalent Allowable Emissions:	lbs/hr tons/yr
5. Method of Compliance:	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):	

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 4 of 6

1. Pollutant Emitted: VOC
2. Total Percent Efficiency of Control: %
3. Primary Control Device Code:
4. Secondary Control Device Code:
5. Potential Emissions: 7.31 lbs/hr 25.6 tons/yr
6. Synthetically Limited? [x] Yes [ ] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
8. Emission Factor: 0.0006 % of Wet Flow Reference: Manufacturer
9. Emissions Method Code (check one): [ ] 1 [x] 2 [ ] 3 [ ] 4 [ ] 5
10. Calculation of Emissions: See Attachment DCGC-EU1-E10.
11. Pollutant Potential/Estimated Emissions Comment: See page 27 on PM emissions.

Emissions Unit Information Section 1 **of** 1

Allowable Emissions (Pollutant identification on front page)

A.

1. Basis for Allowable Emissions Code: OTHER	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: 7.31 lb/hr	
4. Equivalent Allowable Emissions:	7.31 lbs/hr 25.6 tons/yr
5. Method of Compliance: EPA Method 25A	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): Request of VOC testing not required if CO emissions are met.	

B.

1. Basis for Allowable Emissions Code:	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units:	
4. Equivalent Allowable Emissions:	lbs/hr tons/yr
5. Method of Compliance:	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):	

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 5 of 6

1. Pollutant Emitted: SO2
2. Total Percent Efficiency of Control: %
3. Primary Control Device Code:
4. Secondary Control Device Code:
5. Potential Emissions: 0.53 lbs/hr 1.8 tons/yr
6. Synthetically Limited? [x] Yes [ ] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
8. Emission Factor: 1 grain/100 cf Reference: Based on Natural Gas
9. Emissions Method Code (check one): [ ] 1 [x] 2 [ ] 3 [ ] 4 [ ] 5
10. Calculation of Emissions: See Attachment DCGC-EU1-E10.
11. Pollutant Potential/Estimated Emissions Comment: Potential SO2 emissions are limited by the sulfur in natural gas. See page 27, PM emissions comment.

Emissions Unit Information Section 1 **of** 1

Allowable Emissions (Pollutant identification on front page)

A.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 6 of 6

1. Pollutant Emitted: **PM10**
2. Total Percent Efficiency of Control: %
3. Primary Control Device Code:
4. Secondary Control Device Code:
5. Potential Emissions: **3** lbs/hr **10.5** tons/yr
6. Synthetically Limited? [x] Yes [ ] No
7. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/yr
8. Emission Factor: **0.017 lb/MMBtu** Reference: **Manufacturer**
9. Emissions Method Code (check one): [ ] 1 [x] 2 [ ] 3 [ ] 4 [ ] 5
10. Calculation of Emissions: **See Attachment DCGC-EU1-E10.**
11. Pollutant Potential/Estimated Emissions Comment: Potential annual emissions based on annual use limit of 7,000 hours of operation at maximum capacity.

Emissions Unit Information Section 1 **of** 1

Allowable Emissions (Pollutant identification on front page)

A.

1. Basis for Allowable Emissions Code: OTHER		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units: 0.017 lb/MMBtu		
4. Equivalent Allowable Emissions:	3 lbs/hr	10.5 tons/yr
5. Method of Compliance: EPA Method 5		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): Request no PM10 testing due to minor source if visible emissions (VE) are less than 10%.		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lbs/hr	tons/yr
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

F. VISIBLE EMISSIONS INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are subject to a visible emissions limitation. The intent of this subsection of the form is to identify each activity associated with the emissions unit addressed in this section for which a separate opacity limitation would be applicable. Visible emission subtype codes for each such activity are listed in the instructions for Field 1. Most emissions units will be subject to a "subtype VE" limit only.

Visible Emissions Limitations: Visible Emissions Limitation 1 of 2

1.	Visible Emissions Subtype: VE
2.	Basis for Allowable Opacity: [X] Rule [ ] Other
3.	Requested Allowable Opacity Normal Conditions: 20 % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4.	Method of Compliance: EPA Method 9
5.	Visible Emissions Comment: 62-296.310(2)(a),F.A.C.

Visible Emissions Limitations: Visible Emissions Limitation 2 of 2

1.	Visible Emissions Subtype: **VEX**
2.	Basis for Allowable Opacity: [ ] Rule [X] Other
3.	Requested Allowable Opacity Normal Conditions: % Exceptional Conditions: **100** % Maximum Period of Excess Opacity Allowed: **60** min/hour
4.	Method of Compliance: **EPA Method 9**
5.	Visible Emissions Comment: Excess emissions allowed for start-up and shut-down pursuant to FDEP Rule 62-210.700(1) for 2 hours/24 hours; equivalent to 5 min/hr average.

Visible Emissions Limitations: Visible Emissions Limitation _____ of _____

1.	Visible Emissions Subtype:
2.	Basis for Allowable Opacity: [ ] Rule [ ] Other
3.	Requested Allowable Opacity Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4.	Method of Compliance:
5.	Visible Emissions Comment:

G. CONTINUOUS MONITOR INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are required by rule or permit to install and operate one or more continuous emission, opacity, flow, or other type monitors. A separate set of continuous monitor information (fields 1-6) must be completed for each monitoring system required.

Continuous Monitoring System Continuous Monitor _____ of _____

1. Parameter Code:
2. CMS Requirement: [ ] Rule [ ] Other
3. Monitor Information: Monitor Manufacturer: Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment:

Continuous Monitoring System Continuous Monitor _____ of _____

1.	Parameter Code:
2.	CMS Requirement: [ ] Rule [ ] Other
3.	Monitor Information: Monitor Manufacturer: Model Number: Serial Number:
4.	Installation Date (DD-MON-YYYY):
5.	Performance Specification Test Date (DD-MON-YYYY):
6.	Continuous Monitor Comment:

Continuous Monitoring System Continuous Monitor _____ of _____

1.	Parameter Code:
2.	CMS Requirement: [ ] Rule [ ] Other
3.	Monitor Information: Monitor Manufacturer: Model Number: Serial Number:
4.	Installation Date (DD-MON-YYYY):
5.	Performance Specification Test Date (DD-MON-YYYY):
6.	Continuous Monitor Comment:

H. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT TRACKING INFORMATION

This subsection of the Application for Air Permit form must be completed for all applications, not just those undergoing prevention-of-significant-deterioration (PSD) review persuant to Rule 62-212.400, F.A.C. The intent of this subsection is to make a preliminary determination as to whether the emissions unit addressed in this Emissons Unit Information Section consumes PSD increment. PSD increment is consumed (or expanded) as a result of emission increases (decreases) occurring after pollutant-specific baseline dates. Pollutants for which baseline dates have been established are sulfur dioxide, particulate matter, and nitrogen dioxide.

PSD Increment Consumption Determination

1. Increment Consuming for Particulate Matter or Sulfur Dioxide?

   If the emissions unit addressed in this section emits particulate matter or sulfur dioxide, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for particulate matter or sulfur dioxide. Check the first statement, if any, that applies and skip remaining statements.

   [X] The emissions unit is undergoing PSD review as part of this application, or has undergone PSD review previously, for particulate matter or sulfur dioxide. If so, emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after January 6, 1975. If so, baseline emissions are zero, and the emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source and the emissions unit began initial operation after January 6, 1975, but before December 27, 1977. If so, baseline emissions are zero, and the emissions unit consumes increment.

   [ ] For any facility, the emissions unit began (or will begin) initial operation after December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

2. Increment Consuming for Nitrogen Dioxide?

If the emissions unit addressed in this section emits nitrogen oxides, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for nitrogen dioxide. Check first statement, if any, that applies and skip remaining statements.

[X] The emissions unit addressed in this section is undergoing PSD review as part of this application, or has undergone PSD review previously, for nitrogen dioxide. If so, emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after February 8, 1988. If so, baseline emissions are zero, and the source consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source and the emissions unit began initial operation after February 8, 1988, but before March 28, 1988. If so, baseline emissions are zero, and the source consumes increment.

[ ] For any facility, the emissions unit began (or will begin) initial operation after March 28, 1988. If so, baseline emissions are zero, and the emissions unit consumes increment.

[ ] None of the above apply. If so, baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

3. Increment Consuming/Expanding Code:

PM	[X] C	[ ] E	[ ] Unknown
SO_2	[X] C	[ ] E	[ ] Unknown
NO_2	[X] C	[ ] E	[ ] Unknown

4. Baseline Emissions:

PM	0 lbs/hr	0 tons/yr
SO_2	0 lbs/hr	0 tons/yr
NO_2		0 tons/yr

5. PSD Comment:

PSD review exempted by FDEP Rule 62-212.400(2)(d)(1), Minor Sources.

I. EMISSIONS UNIT SUPPLEMENTAL INFORMATION

This subsection of the Application for Air Permit form provides supplemental information related to the emissions unit addressed in this Emissions Unit Information Section. Supplemental information must be submitted as an attachment to each copy of the form, in hard-copy or computer-readable form.

Supplemental Requirements for All Applications

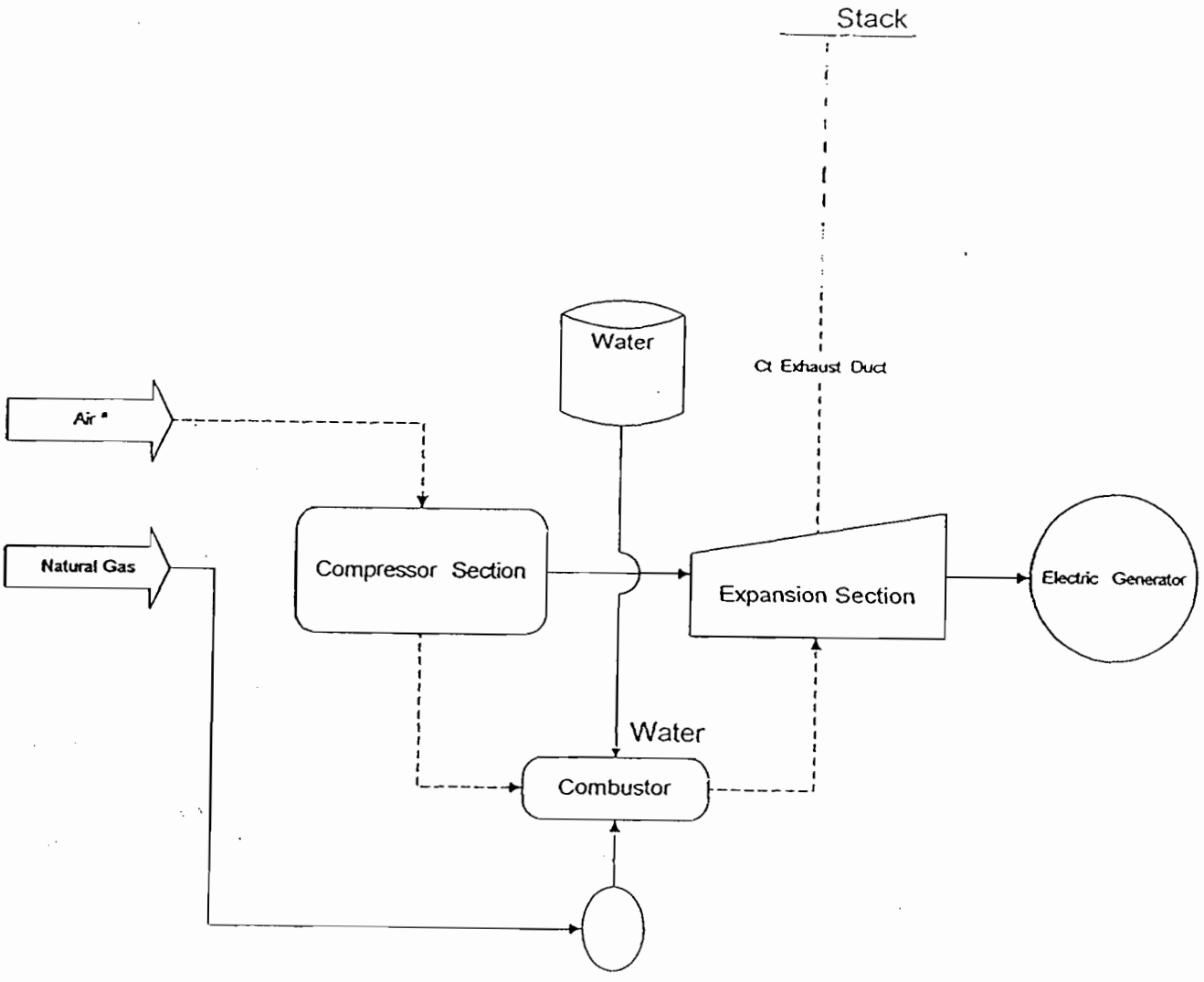
1.	Process Flow Diagram	
	[X] Attached, Document ID: DCGC-EU1-I1	
	[ ] Not Applicable	[ ] Waiver Requested
2.	Fuel Analysis or Specification	
	[X] Attached, Document ID: DCGC-EU1-I2	
	[ ] Not Applicable	[ ] Waiver Requested
3.	Detailed Description of Control Equipment	
	[ ] Attached, Document ID: _____	
	[X] Not Applicable	[ ] Waiver Requested
4.	Description of Stack Sampling Facilities	
	[X] Attached, Document ID: DCGC-EU1-I4	
	[ ] Not Applicable	[ ] Waiver Requested
5.	Compliance Test Report	
	[ ] Attached, Document ID: _____	[X] Not Applicable
	[ ] Previously Submitted, Date: _____	
6.	Procedures for Startup and Shutdown	
	[ ] Attached, Document ID: _____	[X] Not Applicable
7.	Operation and Maintenance Plan	
	[ ] Attached, Document ID: _____	[X] Not Applicable
8.	Supplemental Information for Construction Permit Application	
	[ ] Attached, Document ID: _____	[X] Not Applicable
9.	Other Information Required by Rule or Statute	
	[ ] Attached, Document ID: _____	[X] Not Applicable

Additional Supplemental Requirements for Category I Applications Only

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.	Enhanced Monitoring Plan [ ] Attached, Document ID: _____ [x] Not Applicable
13.	Identification of Additional Applicable Requirements [ ] Attached, Document ID: _____ [x] Not Applicable
14.	Acid Rain Permit Application [ ] 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: _____ [x] Not Applicable

ATTACHMENT DCGC-EU1-I1

PROCESS FLOW DIAGRAM



Notes:
(a) cooled from ambient

Flow Diagram of Emission Unit

ATTACHMENT DCGC-EU1-E10

CALCULATION OF EMISSIONS (METHODS)

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Table 1. Design Information and Stack Parameters for Dade County Cogeneration Facility, Temporary Unit, LM 2500

Data	LM 2500 Natural Gas
General	
Power (MW)	17.1
Heat Input (MMBtu/hr; HHV)	193.2
Heat Input (MMBtu/hr; LHV)	174.7
Estimated Heat Rate (Btu/kwh; LHV)	10,210
Hours of Operation	7,000.0
Fuel Data	
Heat Content, LHV (Btu/lb)	19,000
Heat Content, LHV (Btu/cf)	946
Sulfur Content (gr/100 scf), Maximum	1
Stack Data	
Stack Height (ft)	40
Diameter (ft)	6.7
Exit Gas Conditions (CT Exhaust Flow)	
Mass Flow (lb/hr)	487,432
Temperature (oF)	897
Moisture (% Vol.)	10.20
Oxygen (% Vol.)	13.50
Molecular Weight	28.12
Water Injection (lb/hr)	7,618
Fuel Consumption (lb/hr) = Heat Input (MMBtu/hr) x 1,000,000 Btu/MMBtu ÷ Fuel Heat Content, LHV (Btu/lb)	
Heat Input (MMBtu/hr, LHV)	174.7
Heat Content (Btu/lb, LHV)	19,000
Fuel Usage(lb/hr)	9,195
Fuel Usage (gal/hr; MMcf/hr)	0.1847
Fuel Usage (1,000 gal/yr; MMcf/yr)	1,293

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Table 1. Design Information and Stack Parameters for Dade County Cogeneration Facility, Temporary Unit, LM 2500

Data	LM 2500 Natural Gas
Volume Flow (acfm) = [(Mass Flow (lb/hr) x 1,545 x (Temp. (°F)+ 460°F)] ÷ [Molecular weight x 2116.8] ÷ 60 min/hr	
Mass Flow (lb/hr)	487,432
Temperature (°F)	897
Molecular Weight	28.12
Volume Flow (acfm)	286,138
Volume Flow (dscfm)= [(Mass Flow (lb/hr) x 1,545 x (68°F + 460°F)] ÷ [Molecular weight x 2116.8] ÷ 60 min/hr x [(1− Moisture(%)/100)]	
Mass Flow (lb/hr)	487,432
Temperature (°F)	68
Molecular Weight	28.12
Moisture (% Vol.)	10.20
Volume Flow (dscfm)	99,978
Stack	
Velocity (ft/sec) = Volume flow (acfm) ÷ [((diameter)²÷ 4) x 3.14159] ÷ 60 sc/min	
Volume Flow (acfm)	286,138
Diameter (ft)	6.7
Velocity (ft/sec)	135.3

Source: Stewart & Stevenson International, Inc, 1995.

Notes: Universal gas constant = 1,545 ft−lb(force)/°R;
Atmospheric pressure = 2,116.8 lb(force)/ft²

Table 2. Maximum Emissions for Criteria Pollutants for Dade County Cogeneration Facility, Temporary Unit, LM 2500

Pollutant/Units	Natural Gas
Hours of Operation	7,000
Sulfur Dioxide (lb/hr) = Fuel oil (lb/hr) x sulfur content(fraction) x (lb SO2/lb S)	
Basis (1) (2)	Calculation
Fuel Usage (lb/hr; cf/hr)	184,672
Sulfur content (%; gr/100 cf)	1.00
lb SO2/lb S (64/32)	2.0
lb/hr	0.53
TPY	1.8
Particulate (lb/hr) = Emission rate (lb/hr) from manufacturer	
Basis (including H2SO4)	Manufacturer
Emission Rate (lb/MMBtu) (LHV)	0.017
HIR (MMBtu/hr) (LHV)	174.7
lb/hr	3.0
TPY	10.5
Particulate (lb/hr) (PM−10) = Emission rate (lb/hr) from manufacturer	
Basis (including H2SO4)	Manufacturer
Emission Rate (lb/MMBtu) (LHV)	0.017
HIR (MMBtu/hr) (LHV)	174.7
lb/hr	3.0
TPY	10.5
Nitrogen Oxides (lb/hr) = NOx(ppm) x {[20.9 x (1 − Moisture(%)/100)] − Oxygen(%)} x 2116.8 x Volume flow (acfm) x 46 (mole. wgt NOx) x 60 min/hr ÷ [1545 x (CT temp. (°F) + 460°F) x 5.9 x 1,000,000 (ppm)]	
Basis (1)	Manufacturer
Basis, ppmvd @15% O2	42.0
Moisture (%)	10.20
Oxygen (%)	13.5
Volume Flow (acfm)	286,138
Temperature (°F)	897
lb/hr	29.9
TPY	104.7

Table 2. Maximum Emissions for Criteria Pollutants for Dade County Cogeneration Facility, Temporary Unit, LM 2500

Pollutant/Units	Natural Gas
Carbon Monoxides (lb/hr) = CO(ppm) x (1 − Moisture(%)/100) x 2116.8 x Volume flow (acfm) x 28 (mole. wgt CO) x 60 min/hr ÷ [1545 x (CT temp. (°F) + 460°F) x 1,000,000 (ppm)]	
Basis (1)	Manufacturer
Emission Rate Basis (ppmvd @ 15 % O2)	133
Moisture (%)	10.20
Volume Flow (acfm)	286,138
Temperature (°F)	897
lb/hr	57.7
TPY	202.1
VOCs (lb/hr) = VOC(% by wet mass flow) x Mass flow (lb/hr) x 2.5	
Basis (1)	Manufacturer
Basis, % of wet flow	0.0006
Mass Flow (lb.hr)	487,432
Corection factor	2.5
lb/hr	7.31
TPY	25.6
Lead (lb/hr) = Lead (lb/10E+6 Btu) x Heat Input Rate (MMBtu/hr)	
Basis (3)	NA
Emission Rate Basis, lb/10E+6 Btu	NA
HIR (MMBtu/hr)	NA
lb/hr	NA
TPY	NA

Sources: (1) Emission limit established as recommended by manufacturer.
(2) Calculation from sulfur content in natural gas obtained from Florida Gas Transmission Data.

Note: Universal gas constant = 1,545 ft−lb(force)/°R;
Atmospheric pressure = 2,116.8 lb(force)/ft²
ppmvd= parts per million, volume dry.
O2= oxygen

Table SUM–1. Summary of Maximum Emissions for Regulated Pollutants for Dade County Cogeneration Facility, Temporary Unit, LM 2500.

Pollutant/Parameter	Emission Units	LM 2500 Natural Gas
Hours of Operation		7,000
Sulfur Dioxide	lb/hr	0.528
	TPY	1.847
Particulate Matter	lb/hr	3.000
	TPY	10.500
PM–10	lb/hr	3.000
	TPY	10.500
Nitrogen Oxides	lb/hr	29.903
	TPY	104.661
Carbon Monoxide	lb/hr	57.750
	TPY	202.124
Volatile Organic Compounds	lb/hr	7.311
	TPY	25.590
Lead	lb/hr	NA
	TPY	NA

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Table SUM-2. Natural Gas Combustion for Combustion Turbines- Summary of Emission Factors

Pollutant	Units	FCG- Recommendation Natural Gas	Basis	Selected Factor
Criteria And Precursor Pollutants				
Sulfur Dioxide (1)	lb/MMBtu	.94*(S%)	AP-42, 1994, Table 3.1-1	0.94*(S%)
Particulate Matter	lb/MMBtu	4.19E-02	AP-42, 1994, Table 3.1-1	0.0419
Particulate Matter (PM10)	lb/MMBtu	1.68E-02	AP-42, 1994, Table 3.1-1	0.0168
Nitrogen Oxides	lb/MMBtu	0.44	AP-42, 1994, Table 3.1-1	0.44
Carbon Monoxide	lb/MMBtu	0.11	AP-42, 1994, Table 3.1-1	0.11
Volatile Organic Compounds	lb/MMBtu	0.024	AP-42, 1994, Table 3.1-1	0.024
Lead	lb/MMBtu	NA	NA	NA
Designated Pollutants (NSPS)				
Dioxins/Furans	lb/MMBtu	1.20E-06	EPRI, 1994, Table B-12	1.20E-06
Fluorides	lb/MMBtu	NA	NA	NA
Hydrogen Chloride	lb/MMBtu	NA	NA	NA
Sulfuric Acid Mist	lb/MMBtu	NA	NA	NA
Hazardous Air Pollutants				
Acetaldehyde	lb/MMBtu	NA	NA	NA
Acrolein	lb/MMBtu	NA	NA	NA
Antimony	lb/MMBtu	NA	NA	NA
Arsenic	lb/MMBtu	NA	NA	NA
Benzene	lb/10^12 Btu	8.00E-01	EPRI, 1994, Table B-12	8.00E-01
Beryllium	lb/MMBtu	NA	NA	NA
Cadmium	lb/MMBtu	NA	NA	NA
Chromium	lb/MMBtu	NA	NA	NA
Cobalt	lb/MMBtu	NA	NA	NA
Formaldehyde	lb/10^12 Btu	3.40E+01	EPRI, 1994, Table B-12	3.40E+01
Manganese	lb/MMBtu	NA	NA	NA
Mercury	lb/10^12 Btu	7.80E-07	FCG, 1995	7.80E-07
Nickel	lb/MMBtu	NA	NA	NA

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Table SUM–2. Natural Gas Combustion for Combustion Turbines– Summary of Emission Factors

Pollutant		Units	FCG– Recommendation Natural Gas	Basis	Selected Factor
Phosphorous		lb/MMBtu	NA	NA	NA
Polycyclic Organic Matter		lb/MMBtu	NA	NA	NA
Radionuclides		pCi/gram	NA	NA	NA
Selenium		lb/MMBtu	NA	NA	NA
Toluene		lb/MMBtu	1.00E+01	EPRI, 1994, Table B–12	1.00E+01
Xylene		lb/MMBtu	NA	NA	NA
Regulated – Toxic and Flammable Substances (112(r))					
Methane		lb/MMBtu	0.024	AP–42, 1994, Table 3.1–1	2.40E–02
Sulfur Trioxide		lb/MMBtu	NA	NA	NA
Non–regulated Pollutants					
Carbon Dioxide (3)		lb/MMBtu	112	AP–42, 1994, Table 3.1–1	1.12E+02
Controlled Emission Factors (2)					
Nitrogen Oxides	SCR with WI	lb/MMBtu	0.03	AP–42, 1994, Table 3.1–3	0.03
	SI at 1.2 water/fuel ratio	lb/MMBtu	0.12	AP–42, 1994, Table 3.1–3	0.12
	WI at 0.8 water/fuel ratio	lb/MMBtu	0.14	AP–42, 1994, Table 3.1–3	0.14
Carbon Monoxide	SCR with WI	lb/MMBtu	0.0084	AP–42, 1994, Table 3.1–3	0.0084
	SI at 1.2 water/fuel ratio	lb/MMBtu	0.16	AP–42, 1994, Table 3.1–3	0.16
	WI at 0.8 water/fuel ratio	lb/MMBtu	0.28	AP–42, 1994, Table 3.1–3	0.28

Sources:
(1) S = percent sulfur in fuel
(2) SCR– selective catalytic reduction, SI – steam injection, WI – water injection
(3) Based on 3.67 x Carbon (fraction) / Energy content fuel (MMBtu/lb) [C = 0.7; E = 0.0239 MMBtu/lb]

ATTACHMENT DCGC-EU1-I2

FUEL ANALYSIS OR SPECIFICATIONS

ANALYSIS

DATE: 05/19/92 ANALYSIS TIME: 345 STREAM SEQUENCE: 12
TIME: 13:02 CYCLE TIME: 360 STREAM#[illegible]27
ANALYZER#[illegible]1/ MODE: RUN CYCLE START TIME: 12:56

COMP NAME	COMP CODE	MOLE %	GAL/MCF**	B.T.U.*	SP. GR.*
HEXANE +	151	0.024	0.0105	1.24	0.000(
PROPANE	152	0.189	0.0521	4.77	0.002(
I-BUTANE	153	0.015	0.0048	0.47	0.000:
N-BUTANE	154	0.012	0.0038	0.39	0.000:
IPENTANE	155	4932.21-6	0.0018	0.20	0.000:
NPENTANE	156	3461.10-6	0.0013	0.14	0.000:
NITROGEN	157	0.405	0.0000	0.00	0.003(
METHANE	158	96.505	0.0000	976.92	0.534(
CO2	159	0.725	0.0000	0.00	0.011(
ETHANE	160	2.117	0.5662	37.54	0.022(
TOTALS		100.000	0.6404	1021.68	0.575(

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

** @ 14.730 & 60 DEG. F

COMPRESSIBILITY FACTOR (1/Z) = 1.0021
DRY B.T.U. @ 14.730 PSIA & 60 DEG. F CORRECTED FOR (1/Z) = 1023.8
WET B.T.U. @ 14.730 PSIA & 60 DEG. F CORRECTED FOR (1/Z) = 1006.0
REAL SPECIFIC GRAVITY = 0.5768
UNNORMALIZED TOTAL = 99.83

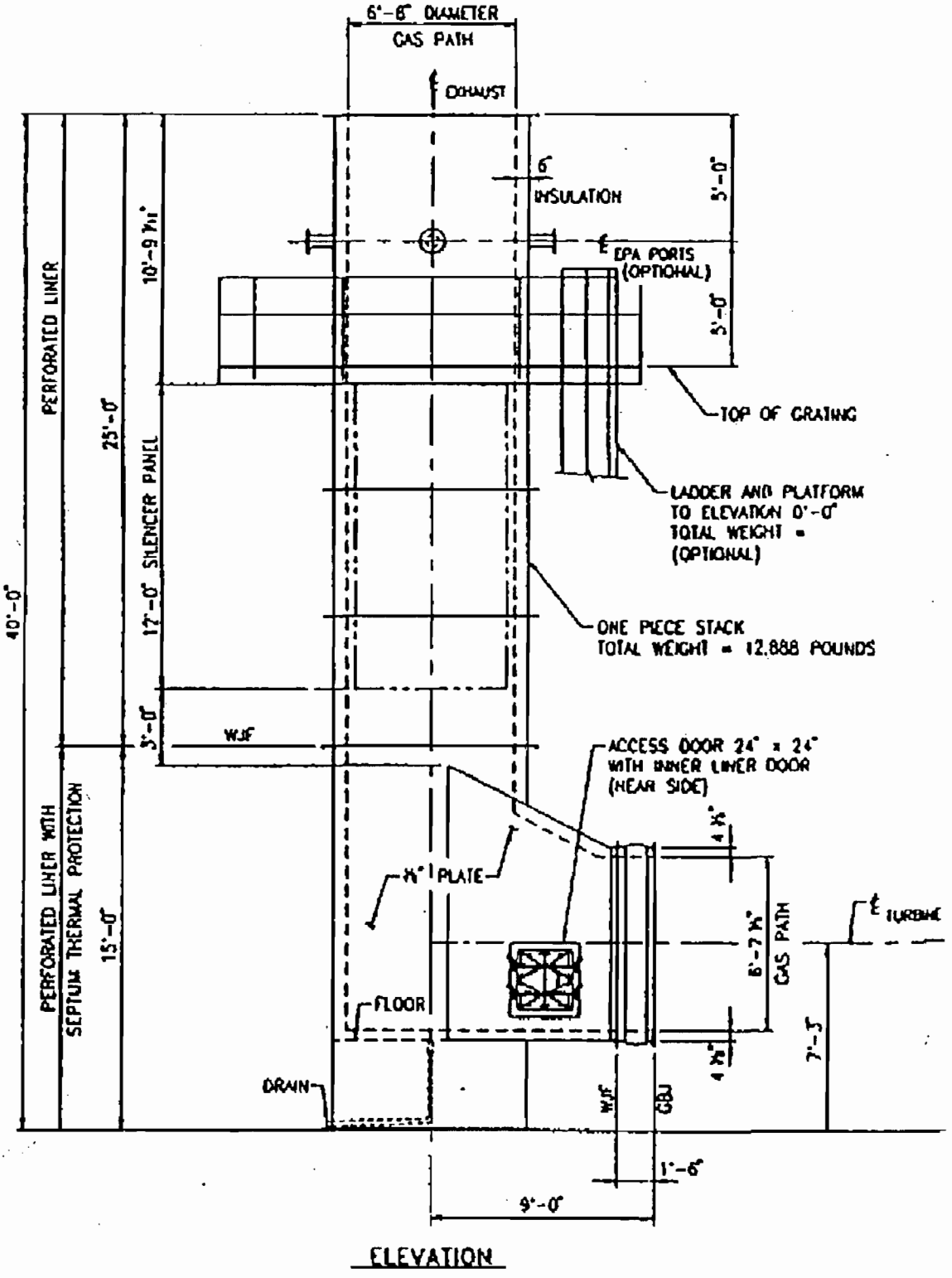
ACTIVE ALARMS

NONE

FLORIDA GAS TRANSMISSION CO.
BROOKER LAB- Comm.
STANDARD GAS 1041.8/0.5939
CERTIFIED VALUE BTU 1041.9 GRAV. 0.5939
TOTAL SULFUR 0.30 GR/CCF H^2S 0.05 GR/CCF
H^2O 1.1 #/MMCF BY [signature]

ATTACHMENT DCGC-EU1-I4

STACK SAMPLING FACILITIES


6'-6" DIAMETER
GAS PATH
EXHAUST
6"
INSULATION
5'-0"
EPA PORTS
(OPTIONAL)
5'-0"
TOP OF GRATING
LADDER AND PLATFORM
TO ELEVATION 0'-0"
TOTAL WEIGHT =
(OPTIONAL)
ONE PIECE STACK
TOTAL WEIGHT = 12,888 POUNDS
40'-0"
PERFORATED LINER
25'-0"
10'-9 7/8"
17'-0" SILENCER PANEL
3'-0"
W.P.
PERFORATED LINER WITH
SEPTUM THERMAL PROTECTION
15'-0"
ACCESS DOOR 24" x 24"
WITH INNER LINER DOOR
(REAR SIDE)
4 1/2"
1/4" PLATE
8'-7 1/2"
GAS PATH
TURBINE
FLOOR
4 1/2"
7'-3"
DRAIN
W.P.
GBJ
1'-6"
9'-0"

ELEVATION