Memorandum

Florida Department of Environmental Protection

BAR

TO: Howard Rhodes

THRU: ~~Clair Fancy/Al Linero~~

FROM: John Reynolds

DATE: May 18, 2001

SUBJECT: Florida Power Corporation/University of Florida Cogen Plant
Replacement of 43 MW Combustion Turbine
DEP File No. 0010001-003-AC

Attached is the final permit for replacement of a 43 MW combustion turbine at the University of Florida Cogen Plant in Gainesville. The project involves the replacement of the existing 43 MW GE LM6000 turbine with a new more efficient model incorporating GE's SPRay INTercooling (SPRINT) technology. This technology was developed for GE's LM6000 machines to address the limiting factor of high discharge temperatures and their adverse effect on operating life of the unit. The technology involves water spray injection at the low-pressure compressor inlet as well as between the low and high-pressure compressors.

Nitrogen Oxides (NO_X) emissions from the new gas turbine will be controlled by the water injection system and the emission limit will remain the same (25 ppmvd) @15% O_2 for gas firing and 42 ppmvd for fuel oil firing. Since the new turbine has a maximum operating capacity of about 48 MW vs. 43 MW for the existing unit, allowable annual operating hours at maximum rates have been reduced from 8147 to 7211. The current annual NOx emission cap for the facility, which includes the combustion turbine, the duct burner, and two backup boilers, remains at 194.3 tons per year.

Due to the combustion characteristics of the replacement turbine, Carbon Monoxide (CO) emissions will be lower and will limited to 36 ppmvd (corrected to 15% oxygen) for natural gas firing vs. the current 42 ppmvd. This amounts to a decrease in allowable CO emissions from 158 to 127.5 tons per year.

Emissions of carbon monoxide, volatile organic compounds, sulfur dioxide, sulfuric acid mist, and particulate matter (PM/PM_{10}) will be very low because of the inherently clean pipeline quality natural gas, limited fuel oil use and, the design of the GE unit.

The only significant comments received on the draft permit were from the applicant relating to fuel usage. The fuel input limit for the turbine was changed to a total BTU basis for fuel oil and natural gas with a maximum usage of fuel oil.

I recommend your approval of the attached final permit.

Attachments

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. J. Michael Kennedy
Manager Air Programs
Florida Power Corp.
One Power Plaza, 263-13th Ave.S.
St. Petersburg, FL 33701-5511

COMPLETE THIS SECTION ON DELIVERY

A. Received by (Please Print Clearly): A. ROGER — B. Date of Delivery: 5/4

C. Signature: X [signature] ☐ Agent ☐ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Copy from service label)
7000 0600 0026 4129 9389

PS Form 3811, July 1999 Domestic Return Receipt 102595-99-M-1789

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7000 0600 0026 4129 9389

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Re
St. Mr. J. Michael Kennedy
Ci One Power Plaza, 263-13th Ave. S.
St. Petersburg, FL 33701-5511

PS Form 3800, February 2000 See Reverse for Instructions

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
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- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Kris Edmondson
Florida Power Corporation
PO Box 112295
Gainesville, FL 32611-2295

COMPLETE THIS SECTION ON DELIVERY

A. Received by *(Please Print Clearly)* B. Date of Delivery
MAY 21 2001

C. Signature
Carl Willean ☒ Agent ☐ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Copy from service label)*
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PS Form 3811, July 1999 Domestic Return Receipt 102595-99-M-1789

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7000 0600 0026 4129 9372

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

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Mr. Kris Edmondson
Florida Power Corporation
PO Box 112295
Gainesville, FL 32611-2295

PS Form ... rse for Instructions

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Dave Newport, Chair
Alachua County Commission
PO Box 2877
Gainesville, FL 32602-2877

COMPLETE THIS SECTION ON DELIVERY

A. Received by *(Please Print Clearly)* J. Crow

B. Date of Delivery 5-22-01

C. Signature

X J. Crow ☐ Agent ☐ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Copy from service label)*
7099 3400 0000 1453 1965

PS Form 3811, July 1999 Domestic Return Receipt 102595-99-M-1789

7099 3400 0000 1453 1965

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

Article Sent To:

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Nam
Stree
City,

Mr. Dave Newport, Chair
Alachua County Commission
PO Box 2877
Gainesville, FL 32602-2877

PS F for Instructions

FINAL DETERMINATION

Florida Power Corporation/University of Florida
Cogeneration Plant
48 MW Turbine Replacement Project
Permit No. 0010001-003-AC

The Department distributed a public notice package on April 18, 2001 for the replacement of a 43 MW combustion turbine at the University of Florida campus in Gainesville, Florida, with a more efficient 48 MW turbine. The Public Notice of Intent to Issue was published in the Gainesville Sun on April 21, 2001.

Comments were received from Florida Power Corporation on April 12 and May 9 requesting that fuel use limits be removed from the draft permit or that the separate fuel use limits for the turbine and duct burner be replaced with a combined fuel use limit for both the turbine and duct burner. It was also requested that the emission factors for Boilers 4 and 5 be established from actual test data instead of AP-42 emission factors to determine compliance with the facility-wide NOx cap.

The subject combustion turbine is regulated under Subpart GG of 40CFR60 while the duct burner is regulated by Subpart Db for boilers. Since the duct burner NOx emission limit is based on its own fuel input, it is appropriate to maintain separate fuel usage limits for the turbine and duct burner. The request concerning the emission factors for Boilers 4 and 5 was granted.

CONCLUSION

The final action of the Department is to issue the permit with the changes described above.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF PERMIT

In the Matter of an
Application for Permit by:

Mr. Kris Edmondson
Florida Power Corporation
P.O. Box 112295
Gainesville, Florida 32611-2295

DEP File No. 0010001-003-AC
University of Florida Cogen Plant
Alachua County

/

Enclosed is the Final Permit Number 0010001-003-AC to replace the existing 43 MW combustion turbine at the University of Florida Gogen Plant with a more efficient 48 MW unit. This facility is located at Mowry Road, Building 82, in Gainesville, Alachua County. The permit establishes emissions limits for nitrogen oxides (NOx), carbon monoxide (CO), sulfur dioxide (SO_2), and visible emissions with an emission cap of 194.3 tons of NOx per year for the facility. This permit is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, F.S., by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Legal Office; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 (thirty) days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

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

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF FINAL PERMIT (including the FINAL permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 5/18/01 to the person(s) listed:

Kris Edmondson, FPC*
J. Michael Kennedy, FPC*
Scott Osbourn, Project Manager, ENSR
Chair, Alachua County BCC*
Chris Bird, Alachua County EPD
Chris Kirts, DEP NED
Pat Reynolds, DEP Gainesville
Blair Burgess, P.E.

Clerk Stamp

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

Charlotte J. Hayes (Clerk) 5/18/01 (Date)

Department of Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

PERMITTEE:

Florida Power Corporation/UF Cogen Plant
Mowry Road, Building 82
University of Florida
Gainesville, Florida 32611-2295

Permit No. 0010001-003-AC
File No. 0010001-003-AC
SIC No. 4911
Expires: December 31, 2002

Authorized Representative:

Kris Edmondson – Plant Manager

PROJECT AND LOCATION:

This Air Construction Permit is pursuant to the requirements for the installation of a nominal 48 megawatt (MW) combustion turbine (GE LM6000-PC-ESPRINT) to replace the existing 43 MW combustion turbine (GE LM6000-PA) that has been operated at the permittee's facility since 1994. The new model will utilize spray intercooling to maximize throughput thus reducing supplemental firing in the duct burner for meeting steam and power requirements. This unit will be located at the University of Florida Cogen Plant, Mowry Road, Building 82, UF, Gainesville, Alachua County. UTM coordinates are: Zone 17; 369.4 km E; 3,279.3 km N.

STATEMENT OF BASIS:

This Air Construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The above named permittee is authorized to modify the facility in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

Attached Appendices and Tables made a part of this permit:

Appendix GC - Construction Permit General Conditions
Appendix GG - NSPS Subpart GG Requirements

Howard L. Rhodes, Director
Division of Air Resources
Management

SECTION 1 – FACILITY INFORMATION

FACILITY DESCRIPTION

This existing University of Florida Cogen Plant consists of a single combustion turbine (CT), heat recovery steam generator (HRSG), duct burners (DB) located between the CT and the HRSG, and Boilers Nos. 4 and 5 utilized for backup only. This facility was permitted originally in 1992 to provide power and steam for the University of Florida. That project (PSD-FL-181) involved the construction of the cogen facility along with the permanent shutdown of Boilers Nos. 1, 2 and 3. This project is for the replacement of the original 43 Megawatt CT with a more efficient model that is moderately higher in capacity (48 MW).

EMISSIONS UNITS

This permit addresses the following emissions units:

E.U. No.	EMISSION UNIT DESCRIPTION
001	GE LM6000-PC-ESPRINT Combustion Turbine
002	Duct Burner System/HRSG
003	No. 4 Boiler
004	No. 5 Boiler

REGULATORY CLASSIFICATION

The facility is classified as a Major or Title V Source of Air Pollution as defined in Rule 62-210.200. It is within an industry included in the list of the 28 Major Facility Categories per Table 62-212.400-1, F.A.C. and is a Major Facility with respect to Rule 62-212.400, Prevention of Significant Deterioration (PSD).

PSD review and a Best Available Control Technology (BACT) determination are not required for this project since the net emissions increases are less than PSD-significant levels for all pollutants. The new CT is subject to the New Source Performance Standard for Stationary Gas Turbines at 40CFR60, Subpart GG.

This facility is also subject to certain Acid Rain provisions of Title IV of the Clean Air Act.

PERMIT SCHEDULE/RELEVANT DOCUMENTS:

The documents listed below provide the basis of the permit. They are specifically related to this permitting action, but not all are incorporated into this permit. All documents are on file with the Department.

- Application received January 29, 2001
- Department's letter to the applicant dated February 9, 2001
- Applicant's response letter dated March 5, 2001
- Public Notice Package including Technical Evaluation and Preliminary Determination, April 18, 2001
- Department's Final Determination and BACT Determination issued May 18, 2001.

SECTION II – ADMINISTRATIVE REQUIREMENTS

GENERAL AND ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: All documents related to applications for permits to construct, operate or modify an emissions unit should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (FDEP), at 2600 Blairstone Road, Tallahassee, Florida 32399-2400 and phone number (850)488-0114.
2. Compliance Authority: All documents related to reports, tests, and notifications should be submitted to the DEP Northeast District Office, 7825 Baymeadows Way, Suite 200B, Jacksonville, Florida 32256-7590, phone 904/448-4300 and Northeast District Branch Office, 101 NW 75th Street, Suite 3, Gainesville, Florida, phone 352/333-2850.
3. General Conditions: The owner and operator is subject to and shall operate under the attached General Permit Conditions G.1 through G.15 listed in Appendix GC of this permit. General Permit Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [Rule 62-4.160, F.A.C.]
4. Terminology: The terms used in this permit have specific meanings as defined in the corresponding chapters of the Florida Administrative Code.
5. Forms and Application Procedures: The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. [Rule 62-210.900, F.A.C.]
6. Modifications: The permittee shall give written notification to the Department when there is any modification to this facility. This notice shall be submitted sufficiently in advance of any critical date involved to allow sufficient time for review, discussion, and revision of plans, if necessary. Such notice shall include, but not be limited to, information describing the precise nature of the change; modifications to any emission control system; production capacity of the facility before and after the change; and the anticipated completion date of the change. [Chapters 62-210 and 62-212, F.A.C.]
7. New or Additional Conditions: Pursuant to Rule 62-4.080, F.A.C., for good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]
8. Completion of Construction: The permit expiration date is December 31, 2002. Physical construction shall be complete by September 30, 2002. The additional time provides for testing, submittal of results, and submittal of the Title V permit to the Department.
9. Permit Expiration Date Extension: The permittee, for good cause, may request that this PSD permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (Rule 62-4.080, F.A.C.).

SECTION II – ADMINISTRATIVE REQUIREMENTS (CONT'D)

10. BACT Determination: In conjunction with extension of the 18 month periods to commence or continue construction, the extension of the permit expiration date, or any increases in MW generated by steam, heat input limits, hours of operation, oil firing, low or baseload operation, short-term or annual emission limits, annual fuel heat input limits or similar changes; the permittee may be required to demonstrate the adequacy of any previous determination of best available control technology for the source. [Note: Pursuant to PSD-FL-181, the permittee requested and received a 39.7 TPY net increase in NO_X emissions. Therefore, any net increase in NO_X emissions of 0.3 TPY above the allowable limitation established in PSD-FL-181 will initiate preconstruction review requirements pursuant to Rule 62-212.400(5), F.A.C., for NO_X as if construction of these emissions units had not yet begun. [Rules 62-212.400(2)(g) and 62-212.400(5), F.A.C.]

11. Application for Title IV Permit: An application for a Title IV Acid Rain Permit must be submitted to the U.S. Environmental Protection Agency Region IV office in Atlanta, Georgia and a copy to the Department's Bureau of Air Regulation in Tallahassee at least 24 months before the date on which the new unit begins serving an electrical generator greater than 25 MW. [40 CFR 72]

12. Application for Title V Permit: An application for a Title V operating permit, pursuant to Chapter 62-213, F.A.C., must be submitted to the Department's Bureau of Air Regulation, and a copy to the Department's Southeast District Office. [Chapter 62-213, F.A.C.]

OPERATIONAL REQUIREMENTS

13. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]

14. Operating Procedures: Operating procedures shall include good operating practices and proper training of all operators and supervisors. The good operating practices shall meet the guidelines and procedures as established by the equipment manufacturers. All plant operators (including supervisors) of air pollution control devices shall be properly trained in plant specific equipment. [Rule 62-4.070(3), F.A.C.]

15. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without the applicable air control device operating properly. [Rule 62-210.650, F.A.C.]

16. Unconfined Particulate Matter Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

SECTION II – ADMINISTRATIVE REQUIREMENTS (CONT'D)

TESTING REQUIREMENTS

17. Test Notification: The permittee shall notify each Compliance Authority in writing at least 30 days prior to any initial NSPS performance tests and at least 15 days prior to any other required tests. Notification shall include the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and conducting the test. [Rule 62-297.310(7)(a)9., F.A.C. and 40 CFR 60.7, 60.8]

18. Calculation of Emission Rate: For each emissions performance test, the indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. [Rule 62-297.310(3), F.A.C.]

19. Applicable Test Procedures

    (a) *Required Sampling Time.* Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes. The minimum observation period for a visible emissions compliance test shall be sixty (60) minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur. [Rule 62-297.310(4)(a)1. and 2., F.A.C.]

    (b) *Minimum Sample Volume.* Unless otherwise specified in the applicable rule or test method, the minimum sample volume per run shall be 25 dry standard cubic feet. [Rule 62-297.310(4)(b), F.A.C.]

    (c) *Calibration of Sampling Equipment.* Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1, F.A.C. [Rule 62-297.310(4)(d), F.A.C.]

20. Determination of Process Variables

    (a) *Required Equipment.* The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards. [Rule 62-297.310(5)(a), F.A.C.]

    (b) *Accuracy of Equipment.* Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value. [Rule 62-297.310(5)(b), F.A.C.]

21. Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]

SECTION II – ADMINISTRATIVE REQUIREMENTS (CONT'D)

22. Stack Testing Facilities: Stack sampling facilities shall be installed in accordance with Rule 62-297.310(6), F.A.C. [Rule 62-297.310]

23. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. [Rule 62-297.310(2)(b), F.A.C.]

RECORDS

24. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rules 62-4.160(14) and 62-213.440(1)(b)2., F.A.C.]

REPORTS

25. Emissions Performance Test Results Reports: A report indicating the results of any required emissions performance test shall be submitted to each Compliance Authority no later than 45 days after completion of the last test run. The test report shall provide sufficient detail on the tested emission unit and the procedures used to allow the Department to determine if the test was properly conducted and if the test results were properly computed. At a minimum, the test report shall provide the applicable information listed in Rule 62-297.310(8)(c), F.A.C. [Rule 62-297.310(8), F.A.C.]

26. Annual Operating Reports: The permittee is required to submit annual reports on the actual operating rates and emissions from this facility. Annual operating reports shall be sent to the Department's Northeast District Office by March 1st of each year. [Rule 62-210.370(2), F.A.C.]

SECTION III – EMISSIONS UNITS SPECIFIC CONDITIONS

APPLICABLE STANDARDS AND REGULATIONS

1. Regulations: Unless otherwise indicated in this permit, the construction and operation of the subject emission units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of Chapter 403, F.S. and Florida Administrative Code Chapters 62-4, 62-17, 62-204, 62-210, 62-212, 62-213, 62-214, 62-296, and 62-297; and the applicable requirements of the Code of Federal Regulations Section 40, Parts 52, 60, 72, 73, and 75.

2. Applicable Requirements: Issuance of a permit does not relieve the owner or operator of an emissions unit from complying with any applicable requirements, any emission limiting standards or other requirements of the air pollution rules of the Department or any other such requirements under federal, state, or local law, notwithstanding that these applicable requirements are not explicitly stated in this permit. In cases where there is an ambiguity or conflict in the specific conditions of this permit with any of the above-mentioned regulations, the more stringent local, state, or federal requirement applies. [Rules 62-204.800 and Rules 62-210.300 and 62-4.070 (3) F.A.C.]

3. NSPS Requirements: The combustion turbine (EU 001) shall comply with the applicable provisions of 40 CFR 60, Subpart GG, Standards of Performance for Stationary Gas Turbines, adopted by reference in Rule 62-204.800(7)(b), F.A.C. The duct burner (EU 002) shall comply with the applicable provisions of 40 CFR 60, Subpart Db, Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units, adopted by reference in Rule 62-204.800(7)(b), F.A.C. The Emissions units subject to a specific NSPS subpart shall also comply with the applicable requirements of 40 CFR 60, Subpart A, General Provisions including:

   - 40CFR60.7 Notification and Record Keeping
   - 40CFR60.8 Performance Tests
   - 40CFR60.11 Compliance with Standards and Maintenance Requirements
   - 40CFR60.12 Circumvention
   - 40CFR60.13 Monitoring Requirements
   - 40CFR60.19 General Notification and Reporting requirements

GENERAL OPERATION REQUIREMENTS

4. Authorized Fuels: The combustion turbine shall fire only pipeline-quality natural gas or No. 2 distillate oil (or a superior grade) containing no more than 0.5% sulfur by weight. The permittee shall monitor sulfur content and nitrogen content of No. 2 fuel oil. The frequency of determinations of these values shall be as follows: (a) If the emissions unit is supplied its fuel from a bulk storage tank, the values shall be determined on each occasion that fuel is transferred to the storage tank from any other source (b) If the emissions unit is supplied its fuel oil without intermediate bulk storage the values shall be determined and recorded daily. Owners, operators or fuel vendors may develop custom schedules for determination of the values based on the design and operation of the affected facility and the characteristics of the fuel supply. These custom fuel monitoring schedule requests shall be substantiated with data and submitted to the Department. The Department will submit the request to the Administrator, who must approve the custom fuel monitoring schedule before it can be used to comply with 40 CFR 60.334(b). [40 CFR 60.334(b)(1) and (2)]

5. Combustion Turbine/Duct Burner Capacity: The heat input to the combustion turbine shall not exceed 392 million Btu per hour (mmBtu/hr) when firing natural gas and 384 mmBtu/hr when firing

SECTION III – EMISSIONS UNITS SPECIFIC CONDITIONS (CONT'D)

fuel oil. The heat input to the duct burner system shall not exceed 188 MMBtu/hr on natural gas (no oil firing). The maximum heat input limits are based on the lower heating value (LHV) of each fuel, 100% load, and ambient conditions of 59°F temperature, 60% relative humidity, and 14.7 psia. These maximum heat input rates will vary depending upon ambient conditions and the combustion turbine characteristics. Manufacturer's curves corrected for site conditions or equations for correction to other ambient conditions shall be provided to the Department within 45 days of completing the initial compliance testing. [Rule 62-210.200, F.A.C. (Potential to Emit), Permit 0010001-001-AV]

6. Hours of Operation/Fuel Usage Limitations: Combustion turbine/duct burner operation at maximum firing rates shall be limited to 7,211 hours per year (to prevent retroactive PSD applicability for NOx under PSD-FL-181, pursuant to Rule 62-212.400(5), F.A.C., by reaching the 40 tons per year PSD applicability threshold). The turbine/duct burner may operate at lower than maximum rates for more hours per year provided that the annual fuel consumption limitations are not exceeded and that facility-wide NOx emissions do not exceed 194.3 TPY. The total annual fuel usage for the combustion turbine and the duct burner combined shall not exceed 3.48 trillion BTU (includes up to 635,100 gallons No. 2 fuel oil fired in the turbine). The annual fuel usage by the duct burner is limited to 519.5 million ft^3 natural gas.

   EU 003 and 004 (Boilers Nos. 4 and 5) shall be allowed to operate as required for backup only as long as the facility-wide NOx cap of 194.3 TPY is not exceeded for any calendar year. Emission factors pursuant to condition C.14 of the facility's Title V permit shall be applied to the fuel consumed by Boilers Nos. 4 and 5 to determine compliance with the facility cap. The NOx emissions calculations shall be submitted to the Compliance Authority with the Annual Operating Report. The permittee shall install and operate a continuous monitoring system to monitor and record fuel consumption as required by 40 CFR 60.334. [Applicant Request, Rules 62-210.200 (Definitions), 62-212.400(5), F.A.C., 40 CFR 60 Subpart GG]

CONTROL TECHNOLOGY

7. Wet Injection: A wet injection system shall be installed to reduce NO_X emissions from the combustion turbine exhaust. The permittee shall install and operate a continuous monitoring system to monitor and record the ratio of water to fuel being fired in the combustion turbine. [Rule 62-212.400, F.A.C., 40 CFR 60, Subpart GG]

8. Nitrogen Oxides (NOx): [The NOx emissions limits include oxides of nitrogen consisting of both Nitric Oxide (NO) and Nitrogen Dioxide (NO_2). By convention, total NOx on a mass basis is expressed as equivalent NO_2. NOx concentration (ppm) is measured as NO by EPA stack sampling methods 7E and 20 and as NO_2 by the CEM analyzer. The NOx concentration is converted to mass emissions by applying the molecular weight of NO_2 to the total flow rate.]
   a. Combustion Turbine (EU 001):
   1. When firing natural gas, NO_X emissions from the combustion turbine shall not exceed any of the following: 25 ppmvd (corrected to 15% oxygen), 39.6 pounds per hour, 141* tons per year. [Applicant Request*, Rule 62-212.400, F.A.C., Permit 0010001-001-AV]

   2. When firing distillate oil, NO_X emissions from the combustion turbine shall not exceed any of the following: 42.0 ppmvd corrected to 15% oxygen, 66.3 pounds per hour, 7.3 tons per year. The nitrogen content of the fuel oil shall be monitored in accordance with 40 CFR 60.334(b). [40 CFR 60 Subpart GG, Rule 62-212.400, F.A.C., Permit 0010001-001-AV]

SECTION III – EMISSIONS UNITS SPECIFIC CONDITIONS (CONT'D)

3. The performance test shall be determined in accordance with EPA Method 7E or EPA Method 20. Ongoing and annual compliance thereafter shall be determined by the existing NOx CEM system using hourly heat input rates applied to actual operating hours according to the procedures outlined in the facility's current Title V permit. [40 CFR 60, Subpart GG, Permit 0010001-001-AV]

b. Duct Burner (EU 002):

1. NO_X emissions from firing natural gas in the duct burner shall not exceed any of the following: 0.1 lb/MMBtu, 18.7 pounds per hour, 24.6 tons per year. [Rule 62-212.400, F.A.C., Permit 0010001-001-AV]

2. The initial performance test and annual compliance tests shall be conducted as required in Specific Condition 8.a.3. above for EU 001 [40CFR60, Subpart GG]

c. CEM System (EU 001):

1. When firing natural gas, NO_X emissions from the combustion turbine shall not exceed 25.0 ppmvd corrected to 15% oxygen. [40CFR60, Subpart GG]

2. When firing distillate oil, NO_X emissions from the combustion turbine shall not exceed 42.0 ppmvd corrected to 15% oxygen. [40CFR60, Subpart GG]

3. Ongoing and annual compliance for EU 001 and shall be determined by the existing NOx CEM system on a 30-day rolling average basis and reported as required by the current Title V permit, except for the following addition/revision: *To verify facility-wide compliance with the 194.3 TPY cap for NOx emissions including EU 003 and 004 (Boilers Nos. 4 and 5), and to provide reasonable assurance that NOx emissions will not be PSD-significant, CEM records along with cumulative fuel consumption records for EU 003 and 004 shall be kept and maintained by the permittee. Total NOx emissions for the calendar year shall be reported in the facility's annual operating report.* [PSD-FL-181, Rule 62-212.400, F.A.C., Permit 0010001-001-AV]

9. Carbon Monoxide (CO) Emissions:

a. Combustion Turbine (EU 001):

1. When firing natural gas, CO emissions from the combustion turbine shall not exceed any of the following: 36 ppmvd (corrected to 15% oxygen), 35.8 pounds per hour, 127.5 tons per year. [Applicant Request, Rule 62-212.400, F.A.C.]

2. When firing distillate oil, CO emissions from the combustion turbine shall not exceed any of the following: 75.0 ppmvd (corrected to 15% oxygen), 70.5 pounds per hour, 7.7 tons per year. [Rule 62-212.400, F.A.C.]

3. Performance and annual compliance shall be determined in accordance with EPA Method 10. [40CFR60, Subpart GG and Appendix A]

b. Duct Burner (EU 002):

1. When firing natural gas, CO emissions from the duct burner shall not exceed any of the following: 0.15 lb/MMBtu, 28.1 pounds per hour, 36.9 tons per year. [Rule 62-212.400, Permit 0010001-001-AV]

2. Performance and annual compliance with the above limits shall be determined in accordance with EPA Method 10. [40CFR60, Subpart GG and Appendix A]

SECTION III – EMISSIONS UNITS SPECIFIC CONDITIONS (CONT'D)

10. Sulfur Dioxide (SO_2) Emissions:

a. SO_2 emissions from the combustion turbine shall not exceed 0.015 percent by volume at 15 percent oxygen and on a dry basis. [40 CFR 60.333(a), Subpart GG]

b. The SO_2 performance test shall be conducted using EPA Method 20 in accordance with 40 CFR 60.335. [40 CFR 60, Subpart GG]

c. In lieu of an annual compliance test for SO_2, the fuels fired in the combustion turbine and/or duct burner shall have the following sulfur limits:

Natural Gas – 1.0 grain sulfur per 100 standard cubic feet

Fuel Oil – 0.5 percent (wt.) sulfur [PSD-FL-181], 0.8 percent (wt.) sulfur [40 CFR 60.333, Subpart GG]

d. Ongoing compliance with the fuel sulfur limit for natural gas and fuel oil shall be demonstrated by the fuel supplier's analysis reports containing the sulfur content of the fuel being supplied. Methods for determining the sulfur content of natural gas shall be ASTM methods D4084-82, D3246-81 or more recent versions. Ongoing compliance with the fuel oil sulfur limits shall be demonstrated by fuel analyses certified according to the provisions of 40 CFR 75 Appendix D by the fuel supplier. At the request of the Compliance Authority, the permittee shall perform additional sampling and analysis for the fuel sulfur content. [40 CFR 60, Subpart Db, Rules 62-4.070(3) and 62-4.160(15), F.A.C.]

11. Visible Emissions (VE):

a. When firing natural gas in the combustion turbine (EU 001) and/or duct burner (EU 002), visible emissions shall not exceed 10 percent opacity as determined by EPA Method 9. [Permit 0010001-001-AV, Rule 62-212.400, F.A.C.]

b. When firing fuel oil in the combustion turbine (EU 001), visible emissions shall not exceed 20 percent opacity as determined by EPA Method 9. [Permit 0010001-001-AV, Rule 62-212.400, F.A.C.]

c. Ongoing compliance with the above visible emissions limits shall be determined in accordance with EPA Method 9. [40 CFR 60, Appendix A]

12. Performance Tests: The combustion turbine and duct burner shall be stack-tested as required above when firing each authorized fuel to demonstrate compliance with the emission standards for NOx, SO_2, CO and visible emissions. The tests must be conducted within 60 days after achieving at least 90% of the maximum permitted capacity, but not later than 180 days after initial operation of the emissions units. Tests for NOx, SO_2 and CO shall be conducted concurrently. [Rule 62-297.310(7)(a)1., F.A.C.; 40 CFR 60.335]

13. Annual Compliance Tests: During each federal fiscal year (October 1st to September 30th), the combustion turbine/duct burner shall be tested when firing natural gas to demonstrate compliance with the emission limits for NOx, CO and visible emissions. If the combustion turbine fires fuel oil more than 400 hours during the federal fiscal year, it shall also be tested for visible emissions when firing oil. [Rule 62-212.400, F.A.C.; Permit 0010001-001-AC]

SECTION III – EMISSIONS UNITS SPECIFIC CONDITIONS (CONT'D)

EXCESS EMISSIONS

14. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction are prohibited. These emissions shall be included in the 24-hour compliance averages for NO_X and for CO emissions.
[Rule 62-210.700(4), F.A.C.]

15. Excess Emissions Defined: During startup, shutdown, and documented unavoidable malfunction of the combined cycle gas turbine, the following permit conditions allow excess emissions or the exclusion of monitoring data for specifically defined periods of operation. These conditions apply only if operators employ the best operational practices to minimize the amount and duration of excess emissions during such incidents. If a CEM system reports emissions in excess of the standard, the permittee shall notify the Compliance Authority within (1) working day with a preliminary report of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Department may request a written summary report of the incident.
[Turbine Manufacturer Data; Rule 62-210.700, F.A.C.]

16. Best operational practices: Best operational practices shall be used to minimize hourly emissions that occur during episodes of startup, shutdown and malfunction. Emissions of any quantity or duration that occur entirely or in part from poor maintenance, poor operation, or any other equipment or process failure, which may reasonably be prevented, shall be prohibited. [Rule 62-210.700, F.A.C.]

MONITORING REQUIREMENTS

17. Continuous Emission Monitoring System: The owner or operator shall install, calibrate, maintain, and operate a continuous emission monitoring (CEM) system in the stack to measure and record the emissions of NOx from these emissions units in a manner sufficient to demonstrate compliance with the CEM emission limits of this permit. The oxygen content or the carbon dioxide (CO_2) content of the flue gas shall also be monitored at the location where NOx is monitored to correct the measured NOx emissions rates to 15% oxygen. [Rule 62-210.700, F.A.C., 40 CFR 60, Subpart GG]

18. Fuel Consumption Monitoring of Operations: To demonstrate compliance with the fuel consumption limits, the permittee shall monitor and record the rates of consumption of each allowable fuel in accordance with the provisions of 40 CFR 75 Appendix D. To demonstrate compliance with the turbine capacity requirements, the permittee shall monitor and record the operating rate of the combustion turbine on a daily average basis, considering the number of hours of operation during each day (including the times of startup, shutdown and malfunction). Such monitoring shall be made using a monitoring component of the CEM system required above, or by monitoring daily rates of consumption and heat content of each allowable fuel in accordance with the provisions of 40 CFR 75 Appendix D. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

19. Fuel Consumption Rates Monthly Monitoring: By the fifth calendar day of each month, the permittee shall record the monthly fuel consumption and hours of operation for the combustion turbine. The information shall be recorded in a verifiable manner and shall summarize the previous month of operation and the previous 12 months of operation. Information recorded and stored as an electronic file shall be available for inspection and printing within at least three days of a request by the Department or the Compliance Authority. [Rule 62-4.070(3), F.A.C.]

SECTION III – EMISSIONS UNITS SPECIFIC CONDITIONS (CONT'D)

NOTIFICATION, REPORTING, AND RECORDKEEPING

20. Records: All measurements, records, and other data required to be maintained shall be recorded in a permanent form and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. These records shall be made available upon request. [Rules 62-4.160 and 62-213.440, F.A.C]

21. NSPS Notifications: All applicable notifications and reports required by 40 CFR 60, Subpart A shall be submitted to the Compliance Authority. [40 CFR 60, Subpart A]

22. Semi-Annual Reports: Semi-annual excess emission reports, in accordance with 40 CFR 60.7 (a)(7)(c) (2000 version), shall be submitted to each Compliance Authority. [40 CFR 60.7]

23. Addresses: The permittee shall submit all compliance related notifications and reports required of this permit to the Department's Northeast District Office and Branch Office: Department of Environmental Protection, Northeast District Office, 7825 Baymeadows Way, Suite 200-B, Jacksonville, FL 32256-7590, Telephone: 904/448-4300, Fax: 904/448-4363, and Department of Environmental Protection, Northeast District Branch Office, 101 NW 75th Street, Gainesville, FL 32607, Telephone: 352/333-2850, Fax: 352/333-2856.

TITLE V EMISSION LIMITS

(Summary of Emission Limits in Current Title V Permit 0010001-001-AV)

			CT/DB	
Pollutant	**Fuel Type**	**Basis of Limit (CT/DB)**	**lbs/hr**	**TPY**
NO_X[1]	Natural Gas	25 ppmvd/0.1 lb per MMBtu	39.6/18.7[3]	142.7/24.6[1,2]
	No.2 Fuel Oil	42 ppmvd/Not Applicable	66.3[3]/Not Applicable	7.3[1,2]/Not Applicable
SO_2	No.2 Fuel Oil	BACT	0.5% (wt.) Sulfur	
CO	Natural Gas	42 ppmvd/0.15 lb per MMBtu	38.8/28.1	158.0/36.9
	No.2 Fuel Oil	75 ppmvd/Not Applicable	70.5/Not Applicable	7.7/Not Applicable
VE	Natural Gas		10% opacity[4]	
VE	No. 2 Fuel Oil		20% opacity, except for one 6-min. period per hour of not more than 27% opacity[4]	

1 The NO_X limit was accepted by the applicant to escape PSD New Source Review.

2 Any net increase in NO_X emissions of 0.3 TPY above the combined allowable limits of the CT and DB (174.6 TPY; and, see Specific Conditions B.4. and D.2.b.) will initiate preconstruction review requirements pursuant to Rule 62-212.400(5), F.A.C., for NO_X for the CT and DB as if construction of these emissions units had not yet begun.

3 30-day rolling average, compliance timeframe. (See Specific Condition A.6.)

4 Since the CT and DB are in series, the opacity standard is applicable when the CT or the CT and DB are in operation, except when the CT is firing No. 2 distillate fuel oil, at which time the CT's opacity standard for fuel oil will be in effect. See Specific Condition B.4.

The permittee has elected to demonstrate compliance with the NO_X emissions limits using a continuous emissions monitor system (CEMS). Since the CT and DB are in series, the allowable emissions for both emissions units shall be combined for ongoing compliance demonstration purposes. For the purpose of demonstrating ongoing compliance with the applicable combined emissions limits for both the CT and DB, using the stack CEMS, compliance is considered to occur when the NO_X emissions are less than or equal to (1) 39.6 lbs/hr or 66.3 lbs/hr when only the CT is operating and firing natural gas or No. 2 distillate fuel oil, respectively; (2) 58.3 lbs/hr when both the CT and DB are operating and firing natural gas; or, (3) 85.0 lbs/hr when both the CT and DB are operating and the CT is firing No. 2 distillate fuel oil and the DB is firing natural gas. The daily rolling average compliance value shall be calculated based on the proportion of hours operated in a day (midnight to midnight) that the CT or both the CT and DB are operating. Any portion of an hour that the DB operates shall be recognized as an hour-period on the daily operation. For example, in a given daily timeframe, with 20 hours of CT operation only while firing natural gas and 4 hours of CT-DB operation while firing natural gas:

Calculated Daily NO_X Emissions Value =

[(39.6 lbs/hr x 20-hrs) + (58.3 lbs/hr x 4-hrs)]/24-hrs =

42.72 lbs/day NO_X emissions value

For the 30-day rolling average, this daily calculated emissions value will then be added to the previous 29-day period of daily calculated emission values and divided by 30 (days) to establish the 30-day average emissions value for comparing to the CEMS data over the same 30-day period.

Calculated 30-Day Average NO_X Emissions Value =

[42.72 lbs/day + "previous 29-daily emission values (lbs/day) summation"]/30-days =

lbs/30-day average NO_X emissions value

Compliance with the permitted NO_X emission limitation is considered satisfied as long as the NO_X emissions value from the stack CEMS is less than or equal to the calculated NO_X emissions value, averaged over the same 30-day period. [AC 01-204652/PSD-FL-181/PSD-FL-181(A); 40 CFR 60.44b(i); and, Rule 62-212.400(2)(g), F.A.C.]

APPENDIX GC
GENERAL PERMIT CONDITIONS [F.A.C. 62-4.160]

G.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, Florida Statutes. 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.

G.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 or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and 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 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.

G.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.

G.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 Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

G.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.

G.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 and 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.

G.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.

APPENDIX GC
GENERAL PERMIT CONDITIONS [F.A.C. 62-4.160]

G.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 Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extend it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

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

G.11 This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, 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.

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

G.13 This permit also constitutes:

a) Determination of Best Available Control Technology ( )
b) Determination of Prevention of Significant Deterioration ( ); and
c) Compliance with New Source Performance Standards (X).

G.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 or 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:

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

G.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.

APPENDIX GG
40 CFR 60 NSPS REQUIREMENTS FOR GAS TURBINES

NSPS SUBPART GG REQUIREMENTS

[Note: Inapplicable provisions have been deleted in the following conditions, but the numbering of the original rules has been preserved for ease of reference to the original rules. The term "Administrator" when used in 40 CFR 60 shall mean the Department's Secretary or the Secretary's designee. Department notes and requirements related to the Subpart GG requirements are shown in **bold** immediately following the section to which they refer. The rule basis for the Department requirements specified below is Rule 62-4.070(3), F.A.C.]

Pursuant to 40 CFR 60.332 Standard for Nitrogen Oxides:

(a) On and after the date of the performance test required by § 60.8 is completed, every owner or operator subject to the provisions of this subpart as specified in paragraph (b) of this section shall comply with:

(1) No owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any stationary gas turbine, any gases which contain nitrogen oxides in excess of:

$$STD = 0.0075 \frac{(14.4)}{Y} + F$$

where:

STD = allowable NOx emissions (percent by volume at 15 percent oxygen and on a dry basis).

Y = manufacturer's rated heat rate at manufacturer's rated load (kilojoules per watt hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NOx emission allowance for fuel-bound nitrogen as defined in paragraph (a)(3) of this section.

(3) F shall be defined according to the nitrogen content of the fuel as follows:

Fuel-bound nitrogen (percent by weight)	F (NOx percent by volume)
$N \leq 0.015$	0
$0.015 < N \leq 0.1$	0.04(N)
$0.1 < N \leq 0.25$	0.004+0.0067(N–0.1)
$N > 0.25$	0.005

Where, N = the nitrogen content of the fuel (percent by weight).

Department requirement: While firing gas, the "F" value shall be assumed to be 0.

[Note: This is required by EPA's March 12, 1993 determination regarding the use of NOx CEMS. The "Y" value for the LM6000 SPRINT is approximately 8.8. The equivalent emission standard is 123 ppmvd at 15% oxygen. The emissions standards of this permit are more stringent than this requirement.]

(b) Electric utility stationary gas turbines with a heat input at peak load greater than 107.2 gigajoules per hour (100 million Btu/hour) based on the lower heating value of the fuel fired shall comply with the provisions of paragraph (a)(1) of this section.

Pursuant to 40 CFR 60.333 Standard for Sulfur Dioxide:

On and after the date on which the performance test required to be conducted by 40 CFR 60.8 is completed, every owner or operator subject to the provision of this subpart shall comply with:

(b) No owner or operator subject to the provisions of this subpart shall burn in any stationary gas turbine any fuel which contains sulfur in excess of 0.8 percent by weight.

Pursuant to 40 CFR 60.334 Monitoring of Operations:

(b) The owner or operator of any stationary gas turbine subject to the provisions of this subpart shall monitor sulfur content and nitrogen content of the fuel being fired in the turbine. The frequency of determination of these values shall be as follows:

(1) If the turbine is supplied its fuel from a bulk storage tank, the values shall be determined on each occasion that fuel is transferred to the storage tank from any other source.

Department requirement: The owner or operator is allowed to use vendor analyses of the fuel as received to satisfy the sulfur content monitoring requirements of this rule for fuel oil. Alternatively, if the fuel oil storage tank is isolated from the combustion turbines while being filled, the owner or operator is allowed to determine the sulfur content of the tank after completion of filling of the tank, before it is placed back into service.

[Note: This is consistent with guidance from EPA Region 4 dated May 26, 2000 to Ronald W. Gore of the Alabama Department of Environmental Management.]

(2) If the turbine is supplied its fuel without intermediate bulk storage the values shall be determined and recorded daily. Owners, operators or fuel vendors may develop custom schedules for determination of the values based on the design and operation of the affected facility and the characteristics of the fuel supply. These custom schedules shall be substantiated with data and must be approved by the Administrator before they can be used to comply with paragraph (b) of this section.

Department requirement: The requirement to monitor the nitrogen content of pipeline quality natural gas fired is waived. The requirement to monitor the nitrogen content of fuel oil fired is waived because a NOx CEMS shall be used to demonstrate compliance with the NOx limits of this permit. For purposes of complying with the sulfur content monitoring requirements of this rule, the owner or operator shall obtain a monthly report from the vendor indicating the sulfur content of the natural gas being supplied from the pipeline for each month of operation.

[Note: This is consistent with EPA's custom fuel monitoring policy and guidance from EPA Region 4.]

(c) For the purpose of reports required under 40 CFR 60.7(c), periods of excess emissions that shall be reported are defined as follows:

(1) *Nitrogen oxides.* Any one-hour period during which the average water-to-fuel ratio, as measured by the continuous monitoring system, falls below the water-to-fuel ratio determined to demonstrate compliance with 40 CFR 60.332 by the performance test required in § 60.8 or any period during which the fuel-bound nitrogen of the fuel is greater than the maximum nitrogen content allowed by the fuel-bound nitrogen allowance used during the performance test required in § 60.8. Each report shall include the average water-to-fuel ratio, average fuel consumption, ambient conditions, gas turbine load, and nitrogen content of the fuel during the period of excess emissions, and the graphs or figures developed under 40 CFR 60.335(a).

Department requirement: NOx emissions monitoring by CEM system shall substitute for the requirements of paragraph (c)(1) because a NOx monitor is required to demonstrate compliance with the standards of this permit. Data from the NOx monitor shall be used to determine "excess emissions" for purposes of 40 CFR 60.7 subject to the conditions of the permit.

[Note: As required by EPA's March 12, 1993 determination, the NOx monitor shall meet the applicable requirements of 40 CFR 60.13, Appendix B and Appendix F for certifying, maintaining, operating and assuring the quality of the system; shall be capable of calculating NOx emissions concentrations corrected to 15% oxygen; shall have no less than 95% monitor availability in any given calendar quarter; and shall provide a minimum of four data points for each hour and calculate an hourly average. The requirements for the CEMS specified by the specific conditions of this permit satisfy these requirements.]

(2) *Sulfur dioxide.* Any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8 percent.

Pursuant to 40 CFR 60.335 Test Methods and Procedures:

(a) To compute the nitrogen oxides emissions, the owner or operator shall use analytical methods and procedures that are accurate to within 5 per-cent and are approved by the Administrator to determine the nitrogen content of the fuel being fired.

(b) In conducting the performance tests required in 40 CFR 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as pro-vided for in 40 CFR 60.8(b). Acceptable alternative methods and procedures are given in paragraph (f) of this section.

(c) The owner or operator shall determine compliance with the nitrogen oxides and sulfur dioxide standards in 40 CFR 60.332 and 60.333(a) as follows:

(1) The nitrogen oxides emission rate (NOx) shall be computed for each run using the following equation:

$$NOx = (NOxo)\,(Pr/Po)^{0.5}\, e^{19(Ho-0.00633)}\,(288°K/Ta)^{1.53}$$

where:

NOx	=	emission rate of NOx at 15 percent O2 and ISO standard ambient conditions, volume percent.
Noxo	=	observed NOx concentration, ppm by volume.
Pr	=	reference combustor inlet absolute pressure at 101.3 kilopascals ambient pressure, mm Hg.
Po	=	observed combustor inlet absolute pressure at test, mm Hg.
Ho	=	observed humidity of ambient air, g H2O/g air.
e	=	transcendental constant, 2.718.
Ta	=	ambient temperature, °K.

Department requirement: The owner or operator is not required to have the NOx monitor required by this permit continuously calculate NOx emissions concentrations corrected to ISO conditions. However, the owner or operator shall keep records of the data needed to make the correction, and shall make the correction when required by the Department or Administrator.

[Note: This is consistent with guidance from EPA Region 4.]

(2) The monitoring device of 40 CFR 60.334(a) shall be used to determine the fuel consumption and the water-to-fuel ratio necessary to comply with 40 CFR 60.332 at 30, 50, 75, and 100 percent of peak load or at four points in the normal operating range of the gas turbine, including the minimum point in the range and peak load. All loads shall be corrected to ISO conditions using the appropriate equations supplied by the manufacturer.

Department requirement: The owner or operator is allowed to conduct initial performance tests at a single load because a NOx monitor shall be used to demonstrate compliance with the BACT NOx limits of this permit.

[Note: This is consistent with guidance from EPA Region 4.]

(3) Method 20 shall be used to determine the nitrogen oxides, sulfur dioxide, and oxygen concentrations. The span values shall be 300 ppm of nitrogen oxide and 21 percent oxygen. The NOx emissions shall be determined at each of the load conditions specified in paragraph (c)(2) of this section.

Department requirement: The owner or operator is allowed to make the initial compliance demonstration for NOx emissions using certified CEM system data, provided that compliance be based on a minimum of three test runs representing a total of at least three hours of data, and that the CEMS be calibrated in accordance with the procedure in section 6.2.3 of Method 20 following each run. Alternatively, initial compliance may be demonstrated using data collected

during the initial relative accuracy test audit (RATA) performed on the NOx monitor. The span value specified in the permit shall be used instead of that specified in paragraph (c)(3) above.

[Note: These initial compliance demonstration requirements are consistent with guidance from EPA Region 4. The span value is changed pursuant to Department authority and is consistent with guidance from EPA Region 4.]

(d) The owner or operator shall determine compliance with the sulfur content standard in 40 CFR 60.333(b) as follows: ASTM D 2880-71 shall be used to determine the sulfur content of liquid fuels and ASTM D 1072-80, D 3031-81, D 4084-82, or D 3246-81 shall be used for the sulfur content of gaseous fuels (incorporated by reference – see 40 CFR 60.17). The applicable ranges of some ASTM methods mentioned above are not adequate to measure the levels of sulfur in some fuel gases. Dilution of samples before analysis (with verification of the dilution ratio) may be used, subject to the approval of the Administrator.

Department requirement: The permit specifies sulfur testing methods and allows the owner or operator to follow the requirements of 40 CFR 75 Appendix D to determine the sulfur content of liquid fuels.

[Note: This requirement establishes different methods than provided by paragraph (d) above, but the requirements are equally stringent and will ensure compliance with this rule.]

(e) To meet the requirements of 40 CFR 60.334(b), the owner or operator shall use the methods specified in paragraphs (a) and (d) of this section to determine the nitrogen and sulfur contents of the fuel being burned. The analysis may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency.

[Note: The fuel analysis requirements of the permit meet or exceed the requirements of this rule and will ensure compliance with this rule.

Florida Power
CORPORATION

RECEIVED

MAY 16 2001

BUREAU OF AIR REGULATION

May 14, 2001

Mr. John Reynolds, P.E.
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Rd.
Tallahassee, Florida 32399-2400

Dear Mr. Reynolds:

Re: University of Florida Construction Permit - Proof of Publication

I have enclosed the proof of publication of the Public Notice of Intent to Issue Air Construction Permit for Florida Power Corporation's University of Florida facility.

Please contact me at (727) 826-4334 if you have any questions.

Sincerely,

J. Michael Kennedy, Q.E.P.
Manager, Air Programs

ONE POWER PLAZA, 263 - 13th Avenue South, BB1A, St. Petersburg, FL 33701-5511 •
P.O. Box 14042, BB1A • St. Petersburg • Florida 33733-4042 • (727) 820-5151
A Progress Energy Company

Florida Power
A Progress Energy Company

fax

To: John Reynolds

From: Mike Kennedy

Company:

Phone No.: (727) 826-4334

Fax No.: (850) 922-6979

Date: 5/14/01

Subject:

Pages: 3

Comments:
U of F Proof of Publication. Original is in the mail to you. Thanks.

20017

NO_____

THE GAINESVILLE SUN
Published Daily and Sunday
GAINESVILLE, FLORIDA

STATE OF FLORIDA
COUNTY OF ALACHUA

Before the undersigned authority appeared Naomi Williams-Jordan
Classified Assistant Manager
Who on oath says that he/she is .....of THE GAINESVILLE SUN, a daily

newspaper published at Gainesville in Alachua County, Florida, that the attached copy of advertisement, being a
Public Notice of Intent
in the matter of.....

in the.....Court, was published in said newspaper in the issue of
April 21,
.....2001

Affiant further says that the said THE GAINESVILLE SUN is a newspaper published at Gainesville, in said Alachua County, Florida, and that the said newspaper has heretofore been continuously published in said Alachua County, each day, and has been entered as second class mail matter at the post office in Gainesville, in Said Alachua 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 for publication in the said newspaper.

Sworn to and subscribed before me this
24 day of April A.D.,2001
Sharon K. Williams
(seal) Notary Public

SHARON K. WILLIAMS
MY COMMISSION # CC 814219
EXPIRES: March 3, 2003
Bonded Thru Notary Public Underwriters

Naomi Williams-Jordan

RECEIVED
MAY 14 2001
BUREAU OF AIR REGULATION

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP File No. 0010001-003-AC University of Florida Cogen Facility Alachua County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit to Florida Power Corporation. The permit is for the replacement of a 43 MW combustion power turbine at the University of Florida with a more efficient unit related at 48 MW. A Best Available Control Technology (BACT) determination was not required. The applicant's name and address are Florida Power Corporation, Post Office Box 112295, Gainesville, Florida 32611-2295.

The existing unit is a General Electric LM6000 PA aeroderivative combustion turbine with a supplementally-fired heat recovery steam generator. The unit was installed in 1994 and will be replaced with the larger and more efficient LM6000 PC ESPRINT.

Nitrogen Oxides (NOx) emissions will be controlled by steam injection to achieve 25 parts per million by volume (dry) at 15 percent oxygen (ppmvd) while burning natural gas and 42 ppmvd while burning distillate fuel oil. Emissions of carbon monoxide (CO) will be controlled to 25 and 75 ppmvd while burning gas and fuel oil respectively. Emissions of particulate matter (PM/PM10), sulfur dioxide (SO2), sulfuric acid mist, volatile organic compounds (VOC), and hazardous air pollutants (HAP) will be controlled to very low levels by good combustion and use of inherently clean pipeline quality natural gas and No. 2 distillate fuel oil.

The Department determined that the Rules for the Prevention of Significant Deterioration of Air Quality (PSD) do not apply to this project because the modification will not result in emissions increases greater than the significant emission rates given in Table 212.400-2, F.A.C. An air quality impact analysis was not required.

The Department will issue the FINAL permit with the attached conditions 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 fourteen (14) days from the date of publication of "Public Notice of Intent to Issue Air Construction Permit." Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

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:

Dept. of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida, 32301
Telephone: 850/488-0114
Fax: 850/922-6979

Dept. of Environmental Protection
Northeast District Office
7825 Baymeadows Way, Suite 200B
Jacksonville, FL 32256-7590
Telephone: 904/448-4300
Fax: 904/448-4363

Dept. of Environmental Protection
Northeast District Branch Office
101 NW 75th Street, Suite 3
Gainesville, FL 32607
Telephone: 352/333-2850
Fax: 352/333-2856

The complete project file includes the application, technical evaluations, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Source Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-0114, for additional information. The Department's technical evaluations and Draft Permit can be viewed at the following Internet address: www.dep.state.fl.us/air/permitting/construction/ by clicking on "Utility and Other Facility Permits".

BEST AVAILABLE COPY

NO 20017

THE GAINESVILLE SUN
Published Daily and Sunday
GAINESVILLE, FLORIDA

Naomi Williams-Jordan

...nority appeared..

Classified Assistant Manager

.....................................of THE GAINESVILLE SUN, a daily

...in Alachua County, Florida, that the attached copy of advertisement, being a

...ntent

....

.....................Court, was published in said newspaper in the issue of

....2001

...E GAINESVILLE SUN is a newspaper published at Gainesville, in said ...he said newspaper has heretofore been continuously published in said ...been entered as second class mail matter at the post office in Gainesville, in ... period of one year next preceding the first publication of the attached copy ...r says that he has neither paid nor promised any person, firm or corporation ...said newspaper.

...this

...01

Naomi Williams-Jordan

Florida Department of Environmental Protection

Memorandum

TO: ~~Clair Fancy~~ ag for eff

THRU: Al Linero 4/18

FROM: John Reynolds

DATE: April 18, 2001

SUBJECT: Florida Power Corporation/University of Florida Cogen Plant
Replacement of 43 MW Combustion Turbine
DEP File No. 0010001-003-AC

Attached is the public notice package for replacement of a 43 MW combustion turbine at the University of Florida Cogen Plant in Gainesville. The applicant is applying to replace the existing 43 MW GE LM6000 turbine with a new more efficient model incorporating GE's SPRay INTercooling (SPRINT) technology. This technology was developed for GE's LM6000 machines to address the limiting factor of high discharge temperatures and their adverse effect on operating life of the unit. The technology involves water spray injection at the low-pressure compressor inlet as well as between the low and high-pressure compressors.

Nitrogen Oxides (NO_X) emissions from the new gas turbine will be controlled by the water injection system and the emission limit will remain the same (25 ppmvd) @15% O_2 for gas firing and 42 ppmvd for fuel oil firing. Since the new turbine has a maximum operating capacity of about 48 MW vs. 43 MW for the existing unit, allowable annual operating hours at maximum rates have been reduced from 8147 to 7211. The current annual NOx emission cap for the facility, which includes the combustion turbine, the duct burner, and two backup boilers, remains at 194.3 tons per year.

Due to the combustion characteristics of the replacement turbine, Carbon Monoxide (CO) emissions will be lower and will limited to 36 ppmvd (corrected to 15% oxygen) for natural gas firing vs. the current 42 ppmvd. This amounts to a decrease in allowable CO emissions from 158 to 127.5 tons per year.

Emissions of carbon monoxide, volatile organic compounds, sulfur dioxide, sulfuric acid mist, and particulate matter (PM/PM_{10}) will be very low because of the inherently clean pipeline quality natural gas, limited fuel oil use and, the design of the GE unit.

Today (April 18) is day 41. I recommend your approval of the attached Intent to Issue.

Attachments

Florida Power
CORPORATION

RECEIVED
APR 16 2001
BUREAU OF AIR REGULATION

April 12, 2001

Mr. Al Linero, P.E.
Florida Department of Environmental Protection
2600 Blair Stone Rd.
Tallahassee, Florida 32399-2400

Dear Mr. Linero:

Re: Florida Power University of Florida Facility
Draft Permit No. 0010001-003-AC

Florida Power has received the preliminary draft construction permit referenced above. This letter serves to provide comments on the draft permit. These comments are as follows:

1. Authorized Representative: The correct spelling is Kris Edmondson.

2. Specific Condition 6: This condition contains both a total fuel use requirement and an annual NOx emissions cap. Given that the NOx emissions cap is the over-arching requirement, and CEMs will be used to track compliance with the cap, the fuel use limit appears somewhat superfluous. Florida Power requests that the fuel use limit be removed, and that compliance with the emissions cap using the CEMs be retained in this condition. Fuel use data would still be used to calculate the emissions from the back-up boilers, which would be added to the CEMs data for the combustion turbine (CT) and duct burner (DB).

3. Specific Condition 8.c.: Items 1 and 2 of this condition limit the NOx emissions from the CT/DB combination to 25 ppmvd corrected to 15% O_2 while on natural gas and 42 ppmvd corrected to 15% O_2 while burning distillate oil. These ppmvd limits would actually apply to the CT only. Since Specific Conditions 8.a. and 8.b. already limit the emissions of the CT and DB in terms of ppmvd, lbs/hr, and tons/year, Specific Conditions 8.c.1. and 8.c.2. may not be necessary. Another alternative is to state the additive emission limits for the CT and DB together in this condition.

4. Specific Condition 8.c.3.: Specific Condition 8.c.3. requires that the total NOx emissions for the calendar year be reported in the annual operating report for the facility. Specific Condition 6 requires that the NOx cap not be exceeded in any federal fiscal year. Florida Power requests that the time frame reflected in Specific Condition 6 be changed to a calendar year in order for Specific Condition 8.c.3. to be meaningful in terms of tracking compliance with the NOx cap.

One Power Plaza • 263 – 13th Avenue South • St. Petersburg, Florida 33701-5511
P.O. Box 14042 • St. Petersburg, Florida 33733-4042 • (727) 820-5151
A Progress Energy Company

Florida Power appreciates the opportunity to review and comment on the draft permit. Please contact Mike Kennedy at (727) 826-4334 if you have any questions.

Sincerely,

Kris Edmondson
Plant Manager

bcc: J. M. Kennedy
S. H. Osbourn, ENSR

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Kris Edmondson
Plant Manager - FPC
PO Box 112295
Gainesville, FL 32611-2295

COMPLETE THIS SECTION ON DELIVERY

A. Received by *(Please Print Clearly)* B. Date of Delivery
APR 23 2001

C. Signature
Karl Williams ☒ Agent ☐ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Copy from service label)*
7099 3400 0000 1450 2798

PS Form 3811, July 1999 Domestic Return Receipt 102595-00-M-0952

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

Article Sent To:

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

7099 3400 0000 1450 2798

Name (Please Print Clearly) (to be completed by mailer)
Mr. Kris Edmondson, Plant Mgr.-FPC
Street, Apt. No., or PO Box No.
PO Box 112295
City, State, ZIP+4
Gainesville, FL 32611-2295

PS Form 3800, July 1999 See Reverse for Instructions

Department of Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

April 18, 2001

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Kris Edmondson, Plant Manager
Florida Power Corporation
Post Office Box 112295
Gainesville, Florida 32611-2295

Re: DEP File No. 0010001-003-AC
University of Florida Cogeneration Facility
Combustion Turbine Project

Dear Mr. Edmonson:

Enclosed is one copy of the Draft Permit and Technical Evaluation and Preliminary Determination for the replacement of the combustion turbine at the University of Florida Cogen Plant located at Mowry Road, Building 82, Gainesville, Alachua County. The Department's Intent to Issue Air Construction Permit and the "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT" are also included.

The "PUBLIC NOTICE" must be published one time only as soon as possible in a newspaper of general circulation in the area affected, pursuant to Chapter 50, Florida Statutes. Proof of publication, i.e., newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office 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.

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 letterhead address. If you have any questions, please call John Reynolds at 850/921-9530.

Sincerely,

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

CHF/JR

Enclosures

In the Matter of an
Application for Permit by:

Mr. Kris Edmondson
Florida Power Corporation
Post Office Box 112295
Gainesville, Florida 32611-2295

DEP File No. 0010001-003-AC
University of Florida Cogen Plant
Alachua County

/

INTENT TO ISSUE AIR CONSTRUCTION PERMIT

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit (copy of DRAFT Permit attached) for the proposed project, detailed in the application specified above and the attached Technical Evaluation and Preliminary Determination, for the reasons stated below.

The applicant, Florida Power Corporation, applied on January 29, 2001 to the Department to replace a combustion turbine at the University of Florida combined cycle electrical power generating plant. The project involves replacing the existing 43 MW combustion turbine with a more efficient unit rated at approximately 48 MW. The project will be located at Mowry Road, Building 82 at the University of Florida, Alachua County.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (F.A.C.). The above actions are not exempt from permitting procedures. The Department has determined that an air construction permit is required to perform proposed work. The Department intends to issue this air construction permit based on the belief that the applicant has provided reasonable assurances to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C.

Pursuant to Section 403.815, F.S., and Rule 62-110.106(7)(a)1., F.A.C., you (the applicant) are required to publish at your own expense the enclosed Public Notice of Intent to Issue Air Construction Permit. The notice shall be published one time only in the legal advertisement section of a newspaper of general circulation in the area affected. Rule 62-110.106(7)(b), F.A.C., requires that the applicant cause the notice to be published as soon as possible after notification by the Department of its intended action. 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. 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 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 850/488-0114 / Fax 850/ 922-6979). You must provide proof of publication within seven days of publication, pursuant to Rule 62-110.106(5), F.A.C. No permitting action for which published notice is required shall be granted until proof of publication of notice is made by furnishing a uniform affidavit in substantially the form prescribed in section 50.051, F.S. to the office of the Department issuing the permit. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rules 62-110.106(9) & (11), F.A.C.

The Department will issue the final permit with the attached conditions 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 14 (fourteen) days from the date of publication of Public Notice of Intent to Issue Air Construction Permit. Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Mediation is not available in this proceeding. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of

the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tallahassee, Florida.

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

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this INTENT TO ISSUE AIR CONSTRUCTION PERMIT (including the PUBLIC NOTICE, Technical Evaluation and Preliminary Determination, and the DRAFT permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 4/19/01 to the person(s) listed:

Kris Edmondson, FPC*
Scott Osborn, ENSR
Gregg Worley, EPA
John Bunyak, NPS
Chris Kirts, DEP NED
Pat Reynolds, DEP NED Gainesville
Chris Bird, Alachua County EPD*
Blair Burgess, P.E., ENSR

Clerk Stamp

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

Charlotte J Hayes 4/19/01
(Clerk) (Date)

NOTICE TO BE PUBLISHED IN THE NEWSPAPER

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP File No. 0010001-003-AC

University of Florida Cogen Facility

Alachua County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit to Florida Power Corporation. The permit is for the replacement of a 43 MW combustion power turbine at the University of Florida with a more efficient unit rated at 48 MW. A Best Available Control Technology (BACT) determination was not required. The applicant's name and address are Florida Power Corporation, Post Office Box 112295, Gainesville, Florida 32611-2295.

The existing unit is a General Electric LM6000 PA aeroderivative combustion turbine with a supplementally-fired heat recovery steam generator. The unit was installed in 1994 and will be replaced with the larger and more efficient LM6000 PC ESPRINT.

Nitrogen Oxides (NO_X) emissions will be controlled by steam injection to achieve 25 parts per million by volume (dry) at 15 percent oxygen (ppmvd) while burning natural gas and 42 ppmvd while burning distillate fuel oil. Emissions of carbon monoxide (CO) will be controlled to 36 and 75 ppmvd while burning gas and fuel oil respectively. Emissions of particulate matter (PM/PM_{10}), sulfur dioxide (SO_2), sulfuric acid mist, volatile organic compounds (VOC), and hazardous air pollutants (HAP) will be controlled to very low levels by good combustion and use of inherently clean pipeline quality natural gas and No. 2 distillate fuel oil.

The Department determined that the Rules for the Prevention of Significant Deterioration of Air Quality (PSD) do not apply to this project because the modification will not result in emissions increases greater than the significant emission rates given in Table 212.400-2, F.A.C. An air quality impact analysis was not required.

The Department will issue the FINAL permit with the attached conditions 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 fourteen (14) days from the date of publication of "Public Notice of Intent to Issue Air Construction Permit." Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station # 35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be

filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

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:

Dept. of Environmental Protection Bureau of Air Regulation 111 S. Magnolia Drive, Suite 4 Tallahassee, Florida, 32301 Telephone: 850/488-0114 Fax: 850/922-6979	Dept. of Environmental Protection Northeast District Office 7825 Baymeadows Way, Suite 200B Jacksonville, Florida 32256-7590 Telephone: 904/448-4300 Fax: 904/448-4363	Dept. of Environmental Protection Northeast District Branch Office 101 NW 75 Street, Suite 3 Gainesville, FL 32607 Telephone: 352/333-2850 Fax: 352/333-2856

The complete project file includes the application, technical evaluations, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-0114, for additional information. The Department's technical evaluations and Draft Permit can be viewed at the following Internet address: www8.myflorida.com/licensingpermitting/learn/environment/air/airpermits.html by clicking on "Utility and Other Facility Permits".

TECHNICAL EVALUATION
AND
PRELIMINARY DETERMINATION

FLORIDA POWER CORPORATION
University of Florida Cogen Plant
Gainesville, Alachua County

48 MW GE LM6000-PC-ESPRINT TURBINE REPLACEMENT

Facility I.D. No. 0010001
Permit No. 0010001-003-AC

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

April 18, 2001

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

APPLICATION INFORMATION

Applicant Name and Address

Florida Power Corporation
University of Florida Cogen Plant
Mowry Road, Bldg. 82
University of Florida
Gainesville, Florida 32611-2295

Authorized Representative: Kris Edmondson – Plant Manager

Reviewing and Process Schedule

Date of receipt of application:	01-29-01
BAR incompleteness letter:	02-09-01
Received response to incompleteness letter:	03-08-01
Application deemed complete:	03-08-01

FACILITY INFORMATION

Facility Location

Florida Power Corporation's University of Florida Cogen Plant is located at Mowry Road, Bldg. 82 near the university's medical school in Gainesville, Alachua County. This site is approximately 100 kilometers (km) south of Okeefenokee National Wildlife Refuge (NWR), a PSD Class I Area and approximately 100 km northeast of the Chassahowitzka NWR Class I PSD Area. The UTM coordinates of this facility are Zone 17; 369.4.0 km E; 3,279.3 km N.

Standard Industrial Classification Codes (SIC)

Industry Group No.	49	Electric, Gas, and Sanitary Services
Industry No.	4911	Electric Services

Facility Category

The facility is classified as a Major or Title V Source of air pollution because emissions of at least one regulated air pollutant, such as particulate matter (PM/PM_{10}), sulfur dioxide (SO_2), nitrogen oxides (NO_X), carbon monoxide (CO), or volatile organic compounds (VOC) exceeds 100 TPY. The facility is within an industry included in the list of the 28 Major Facility Categories per Table 212.400-1, F.A.C. Since present emissions are greater than 100 TPY for NO_X, the facility is also a Major Facility with respect to Rule 62-212.400, Prevention of Significant Deterioration (PSD).

As a Major Facility, project emissions greater than the significant emission rates given in Table 212.400-2 (100 TPY of CO; 40 TPY of NO_X, SO_2, or VOC, 25/15 TPY of PM/PM_{10}) require review per the PSD rules and a determination of Best Available Control Technology (BACT). This facility underwent PSD review and a BACT determination in 1994 (PSD-FL-181). This facility is also subject to the Title IV Acid Rain Program, 40 CFR 72.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

PROJECT DESCRIPTION

The applicant proposes to install a 48 megawatt (MW) combustion turbine (GE LM6000-PC-ESPRINT) to replace an existing 43 MW combustion turbine (GE LM6000-PA) that has been operated continuously at the facility since 1994. The existing turbine is in need of a significant amount of repair/maintenance. General Electric does not support the older "PA" model. FPC determined that the economics of the new engine vs. repair of the existing unit are favorable, and concluded that the replacement with the updated "PC ESPRINT" model is the best alternative.

This emissions unit (EU001) is indicated in the table below listing each emissions unit at the facility. The new model will utilize spray intercooling to maximize throughput thus reducing supplementary firing in the duct burner for meeting steam and power requirements.

E.U. No.	Emission Unit Description
001	GE LM6000-PC-ESPRINT Combustion Turbine
002	Duct Burner System/HRSG
003	No. 4 Boiler
004	No. 5 Boiler

According to information available from General Electric, the LM6000-PC-ESPRINT replacement turbine is a more fuel-efficient version of the existing GE LM6000 turbine presently installed. The GE SPRINT (R) technology selected for this project is based on an atomized water spray injected through spray nozzles located between the high-pressure and low-pressure compressors. Water is atomized using high-pressure air taken off of eighth-stage bleed. The water-flow rate is metered, using the appropriate engine control schedules. On high-pressure ratio gas turbines, such as the LM6000, the compressor discharge temperature is controlled because compressed air is used to cool the hot section components. By injecting an atomized water spray in front of the LM6000 high-pressure compressor, the compressor inlet temperature is significantly reduced. Utilizing the same compressor discharge temperature control limit, the compressor is able to pump more air, achieving a higher-pressure ratio. The result is higher output and better efficiency. It is estimated that GE SPRINT technology will increase the maximum power output at ISO conditions from the current 43 MW to about 48 MW.

CURRENT COMBUSTION TURBINE/DUCT BURNER EMISSION LIMITS (TITLE V PERMIT)

			CT/DB	
Pollutant	**Fuel Type**	**Basis of Limit (CT/DB)**	**lbs/hr**	**TPY**
NO_X[1]	Natural Gas	25 ppmvd/0.1 lb per MMBtu	39.6/18.7	142.7/24.6
	No.2 Fuel Oil	42 ppmvd/Not Applicable	66.3[3]/Not Applicable	7.3[1,2]/Not Applicable
SO_2	No.2 Fuel Oil	BACT	0.5% (wt.) Sulfur	
CO	Natural Gas	42 ppmvd/0.15 lb per MMBtu	38.8/28.1	158.0/36.9
	No.2 Fuel Oil	75 ppmvd/Not Applicable	70.5/Not Applicable	7.7/Not Applicable
VE	Natural Gas		10% opacity	
VE	No. 2 Fuel Oil		20% opacity, except for one 6-min. period per hour of not more than 27% opacity	

AIR POLLUTION EMISSIONS AND CONTROL TECHNIQUES

Regulated air pollutants of most concern that are emitted from natural gas-fired turbines include nitrogen oxides (NOx) and carbon monoxide (CO), while particulate matter (PM/PM10), sulfur dioxide (SO_2) and volatile organic compounds (VOC) are typically emitted in less significant amounts. As described below, water injection is the method used to control NOx emissions. Emissions of other pollutants are limited through combustion design and proper operation and maintenance, and by limiting hours of operation.

NITROGEN OXIDES (NOX) EMISSIONS

Oxides of nitrogen (NO and NO_2) are formed in the high temperature environment of the turbine combustion zone due to oxidation of molecular nitrogen in the combustion air. About 90-95% of the NOx is formed as nitric oxide (NO). Although some of the NO is subsequently oxidized in the exhaust environment and the atmosphere to nitrogen dioxide (NO_2), the residence time in the combustion zone is too short for significant amounts of NO to be oxidized to NO_2. An alternate source of nitrogen is the chemically bound nitrogen in the fuel. Thermal NOx forms in the high temperature area of the combustion zone, and increases exponentially with increasing flame temperature and linearly with increasing residence time. Flame temperature is dependent upon the ratio of fuel to air in the combustion zone. Prompt NOx forms near the flame front as an intermediate combustion product and is a relatively small fraction of the NOx formed under near-stoichiometric conditions. Fuel NOx is formed from the nitrogen content in the fuel and is not a significant contributor to total NOx when combusting natural gas or distillate fuel oil which contain little fixed nitrogen.

Actual emissions of NOx will vary with operating load and ambient (inlet) air conditions. Increasing the operating load increases the fuel requirement, so mass emissions will increase as operation increases. Because of the increased density of colder air, higher mass throughput can be achieved which requires more fuel resulting in higher emissions. Ambient humidity will also affect mass flow, fuel requirements and emissions, but to a lesser extent.

This type of combustion turbine is designed to control NOx emissions through the injection of water into the combustion zone. The injected water, through consumption of heat for vaporization, reduces the temperature in the combustion zone, thus controlling thermal NOx. There is a practical limit to the amount of water that may be injected before flame instability or poor combustion conditions result. The monitoring of the water injection and fuel consumption rates is required in order to properly maintain the water to fuel ratio at a constant level. The system is operated so that as more fuel is fired at higher loads or cooler ambient conditions, more water is injected to maintain NOx emissions at a constant exhaust concentration.

The turbine is designed to maintain an exhaust gas concentration of 25 ppmvd NOx while firing gas, or 42 ppmvd while firing oil (corrected to 15% oxygen at ISO conditions). This is equivalent to 39.6 lb/hr while burning gas and 66.3 lb/hr while burning oil. While NOx concentration is maintained at a near-constant level, mass emissions will vary with load and ambient temperature as discussed previously.

The permit will require that compliance be demonstrated annually with the total NOx emissions from the combustion turbine (EU001), duct burner (EU002), and the two boilers used for backup only (EU003 and EU004), being limited to 194.3 tons per year. Also required is that the water-to-fuel ratio be maintained at a level necessary to demonstrate compliance with the concentration standard during the latest annual compliance test (40 CFR 60, Subpart GG). Annual operation and compliance will be effected through the use of a NOx continuous emission monitor (CEMS).

CARBON MONOXIDE (CO) & VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS

CO and VOC emissions are formed in the combustion process as a result of incomplete fuel combustion. In general, CO emissions are inversely proportional to NOx emissions for turbines. The water injection system used to control NOx could, if not properly operated and maintained, increase CO emissions if combustion temperatures are quenched so that cold spots form in the combustion zone. Combustion design and proper operation and maintenance are the air pollution control techniques. The permit requires that facility staff are trained in proper operation and maintenance of the turbines, so that emissions are kept to a minimum. The permit requires that compliance be demonstrated annually with the maximum CO emission rate of 36 ppmvd @ 15% O_2, and 35.8 pounds per hour, and 127.5 tons per year. VOC emissions vary similarly with CO, although potential emissions of VOC are considerably lower than CO.

PARTICULATE MATTER (PM/PM_{10}) EMISSIONS

Particulate matter is generated by various physical and chemical processes during combustion and will be affected by the fuel type and the design and operation of the combustion system. The fuel fired will be primarily natural gas with distillate fuel oil used for backup (maximum sulfur content of 0.5%, by weight). Since natural gas is a very clean-burning fuel, it generates very little particulate matter. Likewise, distillate fuel oil with its low ash and sulfur content generates very low quantities of particulate matter. According to worst case estimates by the applicant, PM/PM_{10} emissions will be less than 10 tons per year.

SULFUR DIOXIDE (SO_2) & SULFURIC ACID MIST EMISSIONS

Emissions of sulfur dioxide and sulfuric acid mist vary with the sulfur content of the fuel. Fuel sulfur is oxidized during combustion to sulfur dioxide. Through further reaction with oxygen and the water vapor in the inlet air, some of the SO_2 is further oxidized to sulfur trioxide (SO_3) and the exhaust gas leads to the formation of sulfuric acid. Limiting the hours of operation on fuel oil and the sulfur content of the fuel are the most effective control measures. The sulfur content of the fuel oil is limited by this permit as well as the applicant's Title V permit to 0.5 % (wt.). Since annual emissions will not increase as a result of this project and therefore PSD does not apply, the current BACT limit of 0.05% sulfur for distillate fuel oil fired in gas turbines will not be required.

RULE APPLICABILITY

The proposed project is subject to preconstruction review requirements under the provisions of Chapter 403, Florida Statutes, and Chapters 62-4, 62-204, 62-210, 62-212, 62-214, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The Department determined that the Rules for the Prevention of Significant Deterioration of Air Quality (PSD) do not apply to this project because the modification will not result in emissions increases greater than the significant emission rates given in Table 212.400-2, F.A.C. Additionally, annual facility emissions after replacement of the turbine will be capped at currently permitted levels. These caps, in addition to other conditions, were imposed during the permitting of the original combustion turbine to avoid PSD applicability.

The Florida Statutes authorize the Department of Environmental Protection to establish rules and regulations regarding air quality as part of the Florida Administrative Code (F.A.C.). This project is subject to the following applicable requirements of the rules and regulations of the Florida Administrative Code as follows:

Chapter 62-4	Permitting Requirements
Chapter 62-204	Ambient Air Quality Protection and Standards, PSD Increments, and Federal Regulations Adopted by Reference
Chapter 62-210	Required Permits, Public Notice and Comments, Reports, Stack Height Policy, Circumvention, Excess Emissions, Forms and Instructions
Chapter 62-212	Preconstruction Review, PSD Requirements, BACT Determinations
Chapter 62-213	Operation Permits for Major Sources of Air Pollution
Chapter 62-214	Acid Rain Program Requirements
Chapter 62-296	Emission Limiting Standards
Chapter 62-297	Test Requirements, Test Methods, Supplementary Test Procedures, Capture Efficiency Test Procedures, Continuous Emissions Monitoring Specification and Alternate Sampling Procedures

The project is also subject to federal air pollution control rules including the applicable provisions of 40 CFR 60, Subpart GG, Standards of Performance for Stationary Gas Turbines, adopted by reference in Rule 62-204.800(7)(b), F.A.C. The duct burner (EU 002) shall comply with the applicable provisions of 40 CFR 60, Subpart Db, Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units, adopted by reference in Rule 62-204.800(7)(b), F.A.C. The Emissions Units subject to a specific NSPS subpart shall also comply with the applicable requirements of 40 CFR 60, Subpart A, General Provisions including:

- 40CFR60.7 Notification and Record Keeping
- 40CFR60.8 Performance Tests
- 40CFR60.11 Compliance with Standards and Maintenance Requirements
- 40CFR60.12 Circumvention
- 40CFR60.13 Monitoring Requirements
- 40CFR60.19 General Notification and Reporting requirements

SOURCE IMPACT ANALYSIS

An impact analysis was not required for this project because it is not subject to the requirements of PSD.

CONCLUSION

Based on the foregoing technical evaluation of the application and additional information submitted by the applicant and other available information, the Department has made a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations.

DEPARTMENT CONTACT FOR ADDITIONAL INFORMATION

John Reynolds, Permit Engineer
New Source Review Section
Bureau of Air Regulation, MS 5505
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
Phone: 850-921-9530
Fax: 850-921-6979

PERMITTEE:

Florida Power Corporation/UF Cogen Plant
Mowry Road, Building 82
University of Florida
Gainesville, Florida 32611-2295

Permit No.	0010001-003-AC
File No.	0010001-003-AC
SIC No.	4911
Expires:	December 31, 2002

Authorized Representative:

Kris Edmondson – Plant Manager

PROJECT AND LOCATION:

This Air Construction Permit is pursuant to the requirements for the installation of a nominal 48 megawatt (MW) combustion turbine (GE LM6000-PC-ESPRINT) to replace the existing 43 MW combustion turbine (GE LM6000-PA) that has been operated at the permittee's facility since 1994. The new model will utilize spray intercooling to maximize throughput thus reducing supplementary firing in the duct burner for meeting steam and power requirements. This unit will be located at the University of Florida Cogen Plant, Mowry Road, Building 82, UF, Gainesville, Alachua County. UTM coordinates are: Zone 17; 369.4 km E; 3,279.3 km N.

STATEMENT OF BASIS:

This Air Construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The above named permittee is authorized to modify the facility in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

Attached Appendices and Tables made a part of this permit:

Appendix GC - Construction Permit General Conditions
Appendix GG - NSPS Subpart GG Requirements

Howard L. Rhodes, Director
Division of Air Resources
Management

SECTION 1 – FACILITY INFORMATION

FACILITY DESCRIPTION

This existing University of Florida Cogen Plant consists of a single combustion turbine (CT), heat recovery steam generator (HRSG), duct burners (DB) located between the CT and the HRSG, and Boilers Nos. 4 and 5 utilized for backup only. This facility was permitted originally in 1992 to provide power and steam for the University of Florida. That project (PSD-FL-181) involved the construction of the cogen facility along with the permanent shutdown of Boilers Nos. 1, 2 and 3. This project is for the replacement of the original 43 Megawatt CT with a more efficient model that is moderately higher in capacity (48 MW).

EMISSIONS UNITS

This permit addresses the following emissions units:

E.U. No.	Emission Unit Description
001	GE LM6000-PC-ESPRINT Combustion Turbine
002	Duct Burner System/HRSG
003	No. 4 Boiler
004	No. 5 Boiler

REGULATORY CLASSIFICATION

The facility is classified as a Major or Title V Source of Air Pollution as defined in Rule 62-210.200. It is within an industry included in the list of the 28 Major Facility Categories per Table 62-212.400-1, F.A.C. and is a Major Facility with respect to Rule 62-212.400, Prevention of Significant Deterioration (PSD).

PSD review and a Best Available Control Technology (BACT) determination are not required for this project since the net emissions increases are less than PSD-significant levels for all pollutants. The new CT is subject to the New Source Performance Standard for Stationary Gas Turbines at 40CFR60, Subpart GG.

This facility is also subject to certain Acid Rain provisions of Title IV of the Clean Air Act.

PERMIT SCHEDULE/RELEVANT DOCUMENTS:

The documents listed below provide the basis of the permit. They are specifically related to this permitting action, but not all are incorporated into this permit. All documents are on file with the Department.

- Application received January 29, 2001
- Department's letter to the applicant dated February 9, 2001
- Applicant's response letter dated March 5, 2001
- Public Notice Package including Technical Evaluation and Preliminary Determination, April 18, 2001
- Department's Final Determination and BACT determination issued XX-XX-2001.

SECTION II – ADMINISTRATIVE REQUIREMENTS

GENERAL AND ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: All documents related to applications for permits to construct, operate or modify an emissions unit should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (FDEP), at 2600 Blairstone Road, Tallahassee, Florida 32399-2400 and phone number (850)488-0114.
2. Compliance Authority: All documents related to reports, tests, and notifications should be submitted to the DEP Northeast District Office, 7825 Baymeadows Way, Suite 200B, Jacksonville, Florida 32256-7590, phone 904/448-4300 and Northeast District Branch Office, 101 NW 75th Street, Suite 3, Gainesville, Florida, phone 352/333-2850.
3. General Conditions: The owner and operator is subject to and shall operate under the attached General Permit Conditions G.1 through G.15 listed in Appendix GC of this permit. General Permit Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [Rule 62-4.160, F.A.C.]
4. Terminology: The terms used in this permit have specific meanings as defined in the corresponding chapters of the Florida Administrative Code.
5. Forms and Application Procedures: The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. [Rule 62-210.900, F.A.C.]
6. Modifications: The permittee shall give written notification to the Department when there is any modification to this facility. This notice shall be submitted sufficiently in advance of any critical date involved to allow sufficient time for review, discussion, and revision of plans, if necessary. Such notice shall include, but not be limited to, information describing the precise nature of the change; modifications to any emission control system; production capacity of the facility before and after the change; and the anticipated completion date of the change. [Chapters 62-210 and 62-212, F.A.C.]
7. New or Additional Conditions: Pursuant to Rule 62-4.080, F.A.C., for good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]
8. Completion of Construction: The permit expiration date is December 31, 2002. Physical construction shall be complete by September 30, 2002. The additional time provides for testing, submittal of results, and submittal of the Title V permit to the Department.
9. Permit Expiration Date Extension: The permittee, for good cause, may request that this PSD permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (Rule 62-4.080, F.A.C.).

SECTION II – ADMINISTRATIVE REQUIREMENTS (CONT'D)

10. BACT Determination: In conjunction with extension of the 18 month periods to commence or continue construction, the extension of the permit expiration date, or any increases in MW generated by steam, heat input limits, hours of operation, oil firing, low or baseload operation, short-term or annual emission limits, annual fuel heat input limits or similar changes; the permittee may be required to demonstrate the adequacy of any previous determination of best available control technology for the source. [Note: Pursuant to PSD-FL-181, the permittee requested and received a 39.7 TPY net increase in NO_X emissions. Therefore, any net increase in NO_X emissions of 0.3 TPY above the allowable limitation established in PSD-FL-181 will initiate preconstruction review requirements pursuant to Rule 62-212.400(5), F.A.C., for NO_X as if construction of these emissions units had not yet begun. [Rules 62-212.400(2)(g) and 62-212.400(5), F.A.C.]

11. Application for Title IV Permit: An application for a Title IV Acid Rain Permit must be submitted to the U.S. Environmental Protection Agency Region IV office in Atlanta, Georgia and a copy to the Department's Bureau of Air Regulation in Tallahassee at least 24 months before the date on which the new unit begins serving an electrical generator greater than 25 MW. [40 CFR 72]

12. Application for Title V Permit: An application for a Title V operating permit, pursuant to Chapter 62-213, F.A.C., must be submitted to the Department's Bureau of Air Regulation, and a copy to the Department's Southeast District Office. [Chapter 62-213, F.A.C.]

OPERATIONAL REQUIREMENTS

13. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]

14. Operating Procedures: Operating procedures shall include good operating practices and proper training of all operators and supervisors. The good operating practices shall meet the guidelines and procedures as established by the equipment manufacturers. All plant operators (including supervisors) of air pollution control devices shall be properly trained in plant specific equipment. [Rule 62-4.070(3), F.A.C.]

15. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without the applicable air control device operating properly. [Rule 62-210.650, F.A.C.]

16. Unconfined Particulate Matter Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

SECTION II – ADMINISTRATIVE REQUIREMENTS (CONT'D)

TESTING REQUIREMENTS

17. Test Notification: The permittee shall notify each Compliance Authority in writing at least 30 days prior to any initial NSPS performance tests and at least 15 days prior to any other required tests. Notification shall include the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and conducting the test. [Rule 62-297.310(7)(a)9., F.A.C. and 40 CFR 60.7, 60.8]

18. Calculation of Emission Rate: For each emissions performance test, the indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. [Rule 62-297.310(3), F.A.C.]

19. Applicable Test Procedures

    (a) *Required Sampling Time.* Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes. The minimum observation period for a visible emissions compliance test shall be sixty (60) minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur. [Rule 62-297.310(4)(a)1. and 2., F.A.C.]

    (b) *Minimum Sample Volume.* Unless otherwise specified in the applicable rule or test method, the minimum sample volume per run shall be 25 dry standard cubic feet. [Rule 62-297.310(4)(b), F.A.C.]

    (c) *Calibration of Sampling Equipment.* Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1, F.A.C. [Rule 62-297.310(4)(d), F.A.C.]

20. Determination of Process Variables

    (a) *Required Equipment.* The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards. [Rule 62-297.310(5)(a), F.A.C.]

    (b) *Accuracy of Equipment.* Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value. [Rule 62-297.310(5)(b), F.A.C.]

21. Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]

SECTION II – ADMINISTRATIVE REQUIREMENTS (CONT'D)

22. Stack Testing Facilities: Stack sampling facilities shall be installed in accordance with Rule 62-297.310(6), F.A.C. [Rule 62-297.310]

23. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. [Rule 62-297.310(2)(b), F.A.C.]

RECORDS

24. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rules 62-4.160(14) and 62-213.440(1)(b)2., F.A.C.]

REPORTS

25. Emissions Performance Test Results Reports: A report indicating the results of any required emissions performance test shall be submitted to each Compliance Authority no later than 45 days after completion of the last test run. The test report shall provide sufficient detail on the tested emission unit and the procedures used to allow the Department to determine if the test was properly conducted and if the test results were properly computed. At a minimum, the test report shall provide the applicable information listed in Rule 62-297.310(8)(c), F.A.C. [Rule 62-297.310(8), F.A.C.]

26. Annual Operating Reports: The permittee is required to submit annual reports on the actual operating rates and emissions from this facility. Annual operating reports shall be sent to the Department's Northeast District Office by March 1st of each year. [Rule 62-210.370(2), F.A.C.]

SECTION III – EMISSIONS UNITS SPECIFIC CONDITIONS

APPLICABLE STANDARDS AND REGULATIONS

1. Regulations: Unless otherwise indicated in this permit, the construction and operation of the subject emission units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of Chapter 403, F.S. and Florida Administrative Code Chapters 62-4, 62-17, 62-204, 62-210, 62-212, 62-213, 62-214, 62-296, and 62-297; and the applicable requirements of the Code of Federal Regulations Section 40, Parts 52, 60, 72, 73, and 75.

2. Applicable Requirements: Issuance of a permit does not relieve the owner or operator of an emissions unit from complying with any applicable requirements, any emission limiting standards or other requirements of the air pollution rules of the Department or any other such requirements under federal, state, or local law, notwithstanding that these applicable requirements are not explicitly stated in this permit. In cases where there is an ambiguity or conflict in the specific conditions of this permit with any of the above-mentioned regulations, the more stringent local, state, or federal requirement applies. [Rules 62-204.800 and Rules 62-210.300 and 62-4.070 (3) F.A.C.]

3. NSPS Requirements: The combustion turbine (EU 001) shall comply with the applicable provisions of 40 CFR 60, Subpart GG, Standards of Performance for Stationary Gas Turbines, adopted by reference in Rule 62-204.800(7)(b), F.A.C. The duct burner (EU 002) shall comply with the applicable provisions of 40 CFR 60, Subpart Db, Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units, adopted by reference in Rule 62-204.800(7)(b), F.A.C. The Emissions units subject to a specific NSPS subpart shall also comply with the applicable requirements of 40 CFR 60, Subpart A, General Provisions including:

   - 40CFR60.7 Notification and Record Keeping
   - 40CFR60.8 Performance Tests
   - 40CFR60.11 Compliance with Standards and Maintenance Requirements
   - 40CFR60.12 Circumvention
   - 40CFR60.13 Monitoring Requirements
   - 40CFR60.19 General Notification and Reporting requirements

GENERAL OPERATION REQUIREMENTS

4. Authorized Fuels: The combustion turbine shall fire only pipeline-quality natural gas or No. 2 distillate oil (or a superior grade) containing no more than 0.5% sulfur by weight. The permittee shall monitor sulfur content and nitrogen content of No. 2 fuel oil. The frequency of determinations of these values shall be as follows: (a) If the emissions unit is supplied its fuel from a bulk storage tank, the values shall be determined on each occasion that fuel is transferred to the storage tank from any other source (b) If the emissions unit is supplied its fuel oil without intermediate bulk storage the values shall be determined and recorded daily. Owners, operators or fuel vendors may develop custom schedules for determination of the values based on the design and operation of the affected facility and the characteristics of the fuel supply. These custom fuel monitoring schedule requests shall be substantiated with data and submitted to the Department. The Department will submit the request to the Administrator, who must approve the custom fuel monitoring schedule before it can be used to comply with 40 CFR 60.334(b). [40 CFR 60.334(b)(1) and (2)]

5. Combustion Turbine/Duct Burner Capacity: The heat input to the combustion turbine shall not exceed 392 million Btu per hour (mmBtu/hr) when firing natural gas and 384 mmBtu/hr when firing

SECTION III – EMISSIONS UNITS SPECIFIC CONDITIONS (CONT'D)

fuel oil. The heat input to the duct burner system shall not exceed 188 mmBtu/hr on natural gas (no oil firing). The maximum heat input limits are based on the lower heating value (LHV) of each fuel, 100% load, and ambient conditions of 25°F temperature, 60% relative humidity, and 14.7 psia. These maximum heat input rates will vary depending upon ambient conditions and the combustion turbine characteristics. Manufacturer's curves corrected for site conditions or equations for correction to other ambient conditions shall be provided to the Department within 45 days of completing the initial compliance testing. [Rule 62-210.200, F.A.C. (Definitions - Potential Emissions), Permit 0010001-001-AV]

6. Hours of Operation/Fuel Usage Limitations: Combustion turbine/duct burner operation at maximum firing rates shall be limited to 7,211 hours per year (to prevent retroactive PSD applicability for NOx under PSD-FL-181, pursuant to Rule 62-212.400(5), F.A.C., by reaching the 40 tons per year PSD applicability threshold). The turbine/duct burner may operate at lower than maximum rates for more hours per year provided that the following annual fuel consumption limitations are not exceeded and that the following annual fuel consumption limitations do not result in NOx emissions greater than 194.3 TPY:

   Combustion Turbine (EU 001) – 2.99 billion ft^3 natural gas and 635,100 gallons No. 2 fuel oil
   Duct Burner (EU 002) – 519.5 million ft^3 natural gas

   EU 003 and 004 (Boilers Nos. 4 and 5) shall be allowed to operate as required for backup only as long as the facility-wide NOx cap of 194.3 TPY is not exceeded for any federal fiscal year. AP-42 NOx emission factors shall be applied to the fuel consumed by Boilers Nos. 4 and 5 to determine compliance with the facility cap. The NOx emissions calculations shall be submitted to the Compliance Authority with the Annual Operating Report. The permittee shall install and operate a continuous monitoring system to monitor and record fuel consumption as required by 40 CFR 60.334. [Applicant Request, Rules 62-210.200 (Definitions), 62-212.400(5), F.A.C., 40 CFR 60 Subpart GG]

CONTROL TECHNOLOGY

7. Wet Injection: A wet injection system shall be installed to reduce NO_X emissions from the combustion turbine exhaust. The permittee shall install and operate a continuous monitoring system to monitor and record the ratio of water to fuel being fired in the combustion turbine. [Rule 62-212.400, F.A.C., 40 CFR 60, Subpart GG]

8. Nitrogen Oxides (NOx): [The NOx emissions limits include oxides of nitrogen consisting of both Nitric Oxide (NO) and Nitrogen Dioxide (NO_2). By convention, total NOx on a mass basis is expressed as equivalent NO_2. NOx concentration (ppm) is measured as NO by EPA stack sampling methods 7E and 20 and as NO_2 by the CEM analyzer. The NOx concentration is converted to mass emissions by applying the molecular weight of NO_2 to the total flow rate.]
   a. Combustion Turbine (EU 001):
   1. When firing natural gas, NO_X emissions from the combustion turbine shall not exceed any of the following: 25 ppmvd (corrected to 15% oxygen), 39.6 pounds per hour, 141* tons per year. [Applicant Request*, Rule 62-212.400, F.A.C., Permit 0010001-001-AV]

   2. When firing distillate oil, NO_X emissions from the combustion turbine shall not exceed any of the following: 42.0 ppmvd corrected to 15% oxygen, 66.3 pounds per hour, 7.3 tons per year. The nitrogen content of the fuel oil shall be monitored in accordance with 40 CFR 60.334(b). [40 CFR 60 Subpart GG, Rule 62-212.400, F.A.C., Permit 0010001-001-AV]

SECTION III – EMISSIONS UNITS SPECIFIC CONDITIONS (CONT'D)

3. The performance test shall be determined in accordance with EPA Method 7E or EPA Method 20. Ongoing and annual compliance thereafter shall be determined by the existing NOx CEM system using hourly heat input rates applied to actual operating hours according to the procedures outlined in the facility's current Title V permit. [40 CFR 60, Subpart GG, Permit 0010001-001-AV]

b. Duct Burner (EU 002):

1. NO_X emissions from firing natural gas in the duct burner shall not exceed any of the following: 0.1 lb/MMBtu, 18.7 pounds per hour, 24.6 tons per year. [Rule 62-212.400, F.A.C., Permit 0010001-001-AV]

2. The initial performance test and annual compliance tests shall be conducted as required in Specific Condition 12.a.3. above for EU 001 [40CFR60, Subpart GG]

c. CEM System (EU 001 and 002):

1. When firing natural gas, NO_X emissions from the combustion turbine/duct burner shall not exceed 25.0 ppmvd corrected to 15% oxygen. [40CFR60, Subpart GG]

2. When firing distillate oil, NO_X emissions from the combustion turbine/duct burner shall not exceed 42.0 ppmvd corrected to 15% oxygen. [40CFR60, Subpart GG]

3. Ongoing and annual compliance for EU 001 and 002 and shall be determined by the existing NOx CEM system on a 30-day rolling average basis and reported as required by the current Title V permit, except for the following addition/revision: *To verify facility-wide compliance with the 194.3 TPY cap for NOx emissions including EU 003 and 004 (Boilers Nos. 4 and 5), and to provide reasonable assurance that NOx emissions will not be PSD-significant, CEM records along with cumulative fuel consumption records for EU 003 and 004 shall be kept and maintained by the permittee. Total NOx emissions for the calendar year shall be reported in the facility's annual operating report.* [PSD-FL-181, Rule 62-212.400, F.A.C., Permit 0010001-001-AV]

9. Carbon Monoxide (CO) Emissions:

a. Combustion Turbine (EU 001):

1. When firing natural gas, CO emissions from the combustion turbine shall not exceed any of the following: 36 ppmvd (corrected to 15% oxygen), 35.8 pounds per hour, 127.5 tons per year. [Applicant Request, Rule 62-212.400, F.A.C.]

2. When firing distillate oil, CO emissions from the combustion turbine shall not exceed any of the following: 75.0 ppmvd (corrected to 15% oxygen), 70.5 pounds per hour, 7.7 tons per year. [Rule 62-212.400, F.A.C.]

3. Performance and annual compliance shall be determined in accordance with EPA Method 10. [40CFR60, Subpart GG and Appendix A]

b. Duct Burner (EU 002):

1. When firing natural gas, CO emissions from the duct burner shall not exceed any of the following: 0.15 lb/MMBtu, 28.1 pounds per hour, 36.9 tons per year. [Rule 62-212.400, Permit 0010001-001-AV]

2. Performance and annual compliance with the above limits shall be determined in accordance with EPA Method 10. [40CFR60, Subpart GG and Appendix A]

SECTION III – EMISSIONS UNITS SPECIFIC CONDITIONS (CONT'D)

10. Sulfur Dioxide (SO_2) Emissions:

a. SO_2 emissions from the combustion turbine shall not exceed 0.015 percent by volume at 15 percent oxygen and on a dry basis. [40 CFR 60.333(a), Subpart GG]

b. The SO_2 performance test shall be conducted using EPA Method 20 in accordance with 40 CFR 60.335. [40 CFR 60, Subpart GG]

c. In lieu of an annual compliance test for SO_2, the fuels fired in the combustion turbine and/or duct burner shall have the following sulfur limits:

Natural Gas – 1.0 grain sulfur per 100 standard cubic feet

Fuel Oil – 0.5 percent (wt.) sulfur [PSD-FL-181], 0.8 percent (wt.) sulfur [40 CFR 60.333, Subpart GG]

d. Ongoing compliance with the fuel sulfur limit for natural gas and fuel oil shall be demonstrated by the fuel supplier's analysis reports containing the sulfur content of the fuel being supplied. Methods for determining the sulfur content of natural gas shall be ASTM methods D4084-82, D3246-81 or more recent versions. Ongoing compliance with the fuel oil sulfur limits shall be demonstrated by fuel analyses certified according to the provisions of 40 CFR 75 Appendix D by the fuel supplier. At the request of the Compliance Authority, the permittee shall perform additional sampling and analysis for the fuel sulfur content. [40 CFR 60, Subpart Db, Rules 62-4.070(3) and 62-4.160(15), F.A.C.]

a. Visible Emissions (VE):

b. When firing natural gas in the combustion turbine (EU 001) and/or duct burner (EU 002), visible emissions shall not exceed 10 percent opacity as determined by EPA Method 9. [Permit 0010001-001-AV, Rule 62-212.400, F.A.C.]

c. When firing fuel oil in the combustion turbine (EU 001), visible emissions shall not exceed 20 percent opacity as determined by EPA Method 9. [Permit 0010001-001-AV, Rule 62-212.400, F.A.C.]

d. Ongoing compliance with the above visible emissions limits shall be determined in accordance with EPA Method 9. [40 CFR 60, Appendix A]

11. Performance Tests: The combustion turbine and duct burner shall be stack-tested as required above when firing each authorized fuel to demonstrate compliance with the emission standards for NOx, SO_2, CO and visible emissions. The tests must be conducted within 60 days after achieving at least 90% of the maximum permitted capacity, but not later than 180 days after initial operation of the emissions units. Tests for NOx, SO_2 and CO shall be conducted concurrently. [Rule 62-297.310(7)(a)1., F.A.C.; 40 CFR 60.335]

12. Annual Compliance Tests: During each federal fiscal year (October 1st to September 30th), the combustion turbine/duct burner shall be tested when firing natural gas to demonstrate compliance with the emission limits for NOx, CO and visible emissions. If the combustion turbine fires fuel oil more than 400 hours during the federal fiscal year, it shall also be tested for visible emissions when firing oil. [Rule 62-212.400, F.A.C.; Permit 0010001-001-AC]

SECTION III – EMISSIONS UNITS SPECIFIC CONDITIONS (CONT'D)

EXCESS EMISSIONS

13. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction are prohibited. These emissions shall be included in the 24-hour compliance averages for NO_X and for CO emissions.
[Rule 62-210.700(4), F.A.C.]

14. Excess Emissions Defined: During startup, shutdown, and documented unavoidable malfunction of the combined cycle gas turbine, the following permit conditions allow excess emissions or the exclusion of monitoring data for specifically defined periods of operation. These conditions apply only if operators employ the best operational practices to minimize the amount and duration of excess emissions during such incidents. If a CEM system reports emissions in excess of the standard, the permittee shall notify the Compliance Authority within (1) working day with a preliminary report of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Department may request a written summary report of the incident.
[Turbine Manufacturer Data; Rule 62-210.700, F.A.C.]

15. Best operational practices: Best operational practices shall be used to minimize hourly emissions that occur during episodes of startup, shutdown and malfunction. Emissions of any quantity or duration that occur entirely or in part from poor maintenance, poor operation, or any other equipment or process failure, which may reasonably be prevented, shall be prohibited. [Rule 62-210.700, F.A.C.]

MONITORING REQUIREMENTS

16. Continuous Emission Monitoring System: The owner or operator shall install, calibrate, maintain, and operate a continuous emission monitoring (CEM) system in the stack to measure and record the emissions of NOx from these emissions units in a manner sufficient to demonstrate compliance with the CEM emission limits of this permit. The oxygen content or the carbon dioxide (CO_2) content of the flue gas shall also be monitored at the location where NOx is monitored to correct the measured NOx emissions rates to 15% oxygen. [Rule 62-210.700, F.A.C., 40 CFR 60, Subpart GG]

17. Fuel Consumption Monitoring of Operations: To demonstrate compliance with the fuel consumption limits, the permittee shall monitor and record the rates of consumption of each allowable fuel in accordance with the provisions of 40 CFR 75 Appendix D. To demonstrate compliance with the turbine capacity requirements, the permittee shall monitor and record the operating rate of the combustion turbine on a daily average basis, considering the number of hours of operation during each day (including the times of startup, shutdown and malfunction). Such monitoring shall be made using a monitoring component of the CEM system required above, or by monitoring daily rates of consumption and heat content of each allowable fuel in accordance with the provisions of 40 CFR 75 Appendix D. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

18. Fuel Consumption Rates Monthly Monitoring: By the fifth calendar day of each month, the permittee shall record the monthly fuel consumption and hours of operation for the combustion turbine. The information shall be recorded in a verifiable manner and shall summarize the previous month of operation and the previous 12 months of operation. Information recorded and stored as an electronic file shall be available for inspection and printing within at least three days of a request by the Department or the Compliance Authority. [Rule 62-4.070(3), F.A.C.]

SECTION III – EMISSIONS UNITS SPECIFIC CONDITIONS (CONT'D)

NOTIFICATION, REPORTING, AND RECORDKEEPING

19. Records: All measurements, records, and other data required to be maintained shall be recorded in a permanent form and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. These records shall be made available upon request. [Rules 62-4.160 and 62-213.440, F.A.C]

20. NSPS Notifications: All applicable notifications and reports required by 40 CFR 60, Subpart A shall be submitted to the Compliance Authority. [40 CFR 60, Subpart A]

21. Semi-Annual Reports: Semi-annual excess emission reports, in accordance with 40 CFR 60.7 (a)(7)(c) (2000 version), shall be submitted to each Compliance Authority. [40 CFR 60.7]

22. Addresses: The permittee shall submit all compliance related notifications and reports required of this permit to the Department's Northeast District Office and Branch Office: Department of Environmental Protection, Northeast District Office, 825 Baymeadows Way, Suite 200-B, Jacksonville, FL 32256-7590, Telephone: 904/448-4300, Fax: 904/448-4363, and Department of Environmental Protection, Northeast District Branch Office, 5700 Southwest 34th Street, Suite 1204, Gainesville, FL 32608, Telephone: 352/955-2095, Fax: 352/377-5671.

TITLE V EMISSION LIMITS

(Summary of Emission Limits in Current Title V Permit 0010001-001-AV)

			CT/DB	
Pollutant	**Fuel Type**	**Basis of Limit (CT/DB)**	**lbs/hr**	**TPY**
NO_X[1]	Natural Gas	25 ppmvd/0.1 lb per MMBtu	39.6/18.7[3]	142.7/24.6[1,2]
	No.2 Fuel Oil	42 ppmvd/Not Applicable	66.3[3]/Not Applicable	7.3[1,2]/Not Applicable
SO_2	No.2 Fuel Oil	BACT	0.5% (wt.) Sulfur	
CO	Natural Gas	42 ppmvd/0.15 lb per MMBtu	38.8/28.1	158.0/36.9
	No.2 Fuel Oil	75 ppmvd/Not Applicable	70.5/Not Applicable	7.7/Not Applicable
VE	Natural Gas		10% opacity[4]	
VE	No. 2 Fuel Oil		20% opacity, except for one 6-min. period per hour of not more than 27% opacity[4]	

[1] The NO_X limit was accepted by the applicant to escape PSD New Source Review.

[2] Any net increase in NO_X emissions of 0.3 TPY above the combined allowable limits of the CT and DB (174.6 TPY; and, see Specific Conditions B.4. and D.2.b.) will initiate preconstruction review requirements pursuant to Rule 62-212.400(5), F.A.C., for NO_X for the CT and DB as if construction of these emissions units had not yet begun.

[3] 30-day rolling average, compliance timeframe. (See Specific Condition A.6.)

[4] Since the CT and DB are in series, the opacity standard is applicable when the CT or the CT and DB are in operation, except when the CT is firing No. 2 distillate fuel oil, at which time the CT's opacity standard for fuel oil will be in effect. See Specific Condition B.4.

The permittee has elected to demonstrate compliance with the NO_X emissions limits using a continuous emissions monitor system (CEMS). Since the CT and DB are in series, the allowable emissions for both emissions units shall be combined for ongoing compliance demonstration purposes. For the purpose of demonstrating ongoing compliance with the applicable combined emissions limits for both the CT and DB, using the stack CEMS, compliance is considered to occur when the NO_X emissions are less than or equal to (1) 39.6 lbs/hr or 66.3 lbs/hr when only the CT is operating and firing natural gas or No. 2 distillate fuel oil, respectively; (2) 58.3 lbs/hr when both the CT and DB are operating and firing natural gas; or, (3) 85.0 lbs/hr when both the CT and DB are operating and the CT is firing No. 2 distillate fuel oil and the DB is firing natural gas. The daily rolling average compliance value shall be calculated based on the proportion of hours operated in a day (midnight to midnight) that the CT or both the CT and DB are operating. Any portion of an hour that the DB operates shall be recognized as an hour-period on the daily operation. For example, in a given daily timeframe, with 20 hours of CT operation only while firing natural gas and 4 hours of CT-DB operation while firing natural gas:

Calculated Daily NO_X Emissions Value =
[(39.6 lbs/hr x 20-hrs) + (58.3 lbs/hr x 4-hrs)]/24-hrs =
42.72 lbs/day NO_X emissions value

For the 30-day rolling average, this daily calculated emissions value will then be added to the previous 29-day period of daily calculated emission values and divided by 30 (days) to establish the 30-day average emissions value for comparing to the CEMS data over the same 30-day period.

Calculated 30-Day Average NO_X Emissions Value =
[42.72 lbs/day + "previous 29-daily emission values (lbs/day) summation"]/30-days =
lbs/30-day average NO_X emissions value

Compliance with the permitted NO_X emission limitation is considered satisfied as long as the NO_X emissions value from the stack CEMS is less than or equal to the calculated NO_X emissions value, averaged over the same 30-day period. [AC 01-204652/PSD-FL-181/PSD-FL-181(A); 40 CFR 60.44b(i); and, Rule 62-212.400(2)(g), F.A.C.]

APPENDIX GC
GENERAL PERMIT CONDITIONS [F.A.C. 62-4.160]

G.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, Florida Statutes. 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.

G.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 or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and 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 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.

G.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.

G.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 Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

G.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.

G.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 and 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.

G.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.

G.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 Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extend it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

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

G.11 This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, 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.

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

G.13 This permit also constitutes:

a) Determination of Best Available Control Technology ( )
b) Determination of Prevention of Significant Deterioration ( ); and
c) Compliance with New Source Performance Standards (X).

G.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 or 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:

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

G.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.

APPENDIX GG
40 CFR 60 NSPS REQUIREMENTS FOR GAS TURBINES

NSPS SUBPART GG REQUIREMENTS

[Note: Inapplicable provisions have been deleted in the following conditions, but the numbering of the original rules has been preserved for ease of reference to the original rules. The term "Administrator" when used in 40 CFR 60 shall mean the Department's Secretary or the Secretary's designee. Department notes and requirements related to the Subpart GG requirements are shown in **bold** immediately following the section to which they refer. The rule basis for the Department requirements specified below is Rule 62-4.070(3), F.A.C.]

Pursuant to 40 CFR 60.332 Standard for Nitrogen Oxides:

(a) On and after the date of the performance test required by § 60.8 is completed, every owner or operator subject to the provisions of this subpart as specified in paragraph (b) of this section shall comply with:

(1) No owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any stationary gas turbine, any gases which contain nitrogen oxides in excess of:

$$STD = 0.0075 \frac{(14.4)}{Y} + F$$

where:

STD = allowable NOx emissions (percent by volume at 15 percent oxygen and on a dry basis).

Y = manufacturer's rated heat rate at manufacturer's rated load (kilojoules per watt hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NOx emission allowance for fuel-bound nitrogen as de-fined in paragraph (a)(3) of this section.

(3) F shall be defined according to the nitrogen content of the fuel as follows:

Fuel-bound nitrogen (percent by weight)	F (NOx percent by volume)
$N \leq 0.015$	0
$0.015 < N \leq 0.1$	0.04(N)
$0.1 < N \leq 0.25$	0.004+0.0067(N–0.1)
$N > 0.25$	0.005

Where, N = the nitrogen content of the fuel (percent by weight).

Department requirement: While firing gas, the "F" value shall be assumed to be 0.

[Note: This is required by EPA's March 12, 1993 determination regarding the use of NOx CEMS. The "Y" value for the LM6000 SPRINT is approximately 8.8. The equivalent emission standard is 123 ppmvd at 15% oxygen. The emissions standards of this permit are more stringent than this requirement.]

(b) Electric utility stationary gas turbines with a heat input at peak load greater than 107.2 gigajoules per hour (100 million Btu/hour) based on the lower heating value of the fuel fired shall comply with the provisions of paragraph (a)(1) of this section.

Pursuant to 40 CFR 60.333 Standard for Sulfur Dioxide:

On and after the date on which the performance test required to be conducted by 40 CFR 60.8 is completed, every owner or operator subject to the provision of this subpart shall comply with:

(b) No owner or operator subject to the provisions of this subpart shall burn in any stationary gas turbine any fuel which contains sulfur in excess of 0.8 percent by weight.

Pursuant to 40 CFR 60.334 Monitoring of Operations:

(b) The owner or operator of any stationary gas turbine subject to the provisions of this subpart shall monitor sulfur content and nitrogen content of the fuel being fired in the turbine. The frequency of determination of these values shall be as follows:

(1) If the turbine is supplied its fuel from a bulk storage tank, the values shall be determined on each occasion that fuel is transferred to the storage tank from any other source.

Department requirement: The owner or operator is allowed to use vendor analyses of the fuel as received to satisfy the sulfur content monitoring requirements of this rule for fuel oil. Alternatively, if the fuel oil storage tank is isolated from the combustion turbines while being filled, the owner or operator is allowed to determine the sulfur content of the tank after completion of filling of the tank, before it is placed back into service.

[Note: This is consistent with guidance from EPA Region 4 dated May 26, 2000 to Ronald W. Gore of the Alabama Department of Environmental Management.]

(2) If the turbine is supplied its fuel without intermediate bulk storage the values shall be determined and recorded daily. Owners, operators or fuel vendors may develop custom schedules for determination of the values based on the design and operation of the affected facility and the characteristics of the fuel supply. These custom schedules shall be substantiated with data and must be approved by the Administrator before they can be used to comply with paragraph (b) of this section.

Department requirement: The requirement to monitor the nitrogen content of pipeline quality natural gas fired is waived. The requirement to monitor the nitrogen content of fuel oil fired is waived because a NOx CEMS shall be used to demonstrate compliance with the NOx limits of this permit. For purposes of complying with the sulfur content monitoring requirements of this rule, the owner or operator shall obtain a monthly report from the vendor indicating the sulfur content of the natural gas being supplied from the pipeline for each month of operation.

[Note: This is consistent with EPA's custom fuel monitoring policy and guidance from EPA Region 4.]

(c) For the purpose of reports required under 40 CFR 60.7(c), periods of excess emissions that shall be reported are defined as follows:

(1) *Nitrogen oxides.* Any one-hour period during which the average water-to-fuel ratio, as measured by the continuous monitoring system, falls below the water-to-fuel ratio determined to demonstrate compliance with 40 CFR 60.332 by the performance test required in § 60.8 or any period during which the fuel-bound nitrogen of the fuel is greater than the maximum nitrogen content allowed by the fuel-bound nitrogen allowance used during the performance test required in § 60.8. Each report shall include the average water-to-fuel ratio, average fuel consumption, ambient conditions, gas turbine load, and nitrogen content of the fuel during the period of excess emissions, and the graphs or figures developed under 40 CFR 60.335(a).

Department requirement: NOx emissions monitoring by CEM system shall substitute for the requirements of paragraph (c)(1) because a NOx monitor is required to demonstrate compliance with the standards of this permit. Data from the NOx monitor shall be used to determine "excess emissions" for purposes of 40 CFR 60.7 subject to the conditions of the permit.

[Note: As required by EPA's March 12, 1993 determination, the NOx monitor shall meet the applicable requirements of 40 CFR 60.13, Appendix B and Appendix F for certifying, maintaining, operating and assuring the quality of the system; shall be capable of calculating NOx emissions concentrations corrected to 15% oxygen; shall have no less than 95% monitor availability in any given calendar quarter; and shall provide a minimum of four data points for each hour and calculate an hourly average. The requirements for the CEMS specified by the specific conditions of this permit satisfy these requirements.]

(2) *Sulfur dioxide.* Any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8 percent.

Pursuant to 40 CFR 60.335 Test Methods and Procedures:

(a) To compute the nitrogen oxides emissions, the owner or operator shall use analytical methods and procedures that are accurate to within 5 per-cent and are approved by the Administrator to determine the nitrogen content of the fuel being fired.

(b) In conducting the performance tests required in 40 CFR 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as pro-vided for in 40 CFR 60.8(b). Acceptable alternative methods and procedures are given in paragraph (f) of this section.

(c) The owner or operator shall determine compliance with the nitrogen oxides and sulfur dioxide standards in 40 CFR 60.332 and 60.333(a) as follows:

(1) The nitrogen oxides emission rate (NOx) shall be computed for each run using the following equation:

$$NOx = (NOxo)\,(Pr/Po)^{0.5}\, e^{19(Ho-0.00633)}\,(288°K/Ta)^{1.53}$$

where:

NOx	=	emission rate of NOx at 15 percent O2 and ISO standard ambient conditions, volume percent.
Noxo	=	observed NOx concentration, ppm by volume.
Pr	=	reference combustor inlet absolute pressure at 101.3 kilopascals ambient pressure, mm Hg.
Po	=	observed combustor inlet absolute pressure at test, mm Hg.
Ho	=	observed humidity of ambient air, g H2O/g air.
e	=	transcendental constant, 2.718.
Ta	=	ambient temperature, °K.

Department requirement: The owner or operator is not required to have the NOx monitor required by this permit continuously calculate NOx emissions concentrations corrected to ISO conditions. However, the owner or operator shall keep records of the data needed to make the correction, and shall make the correction when required by the Department or Administrator.

[Note: This is consistent with guidance from EPA Region 4.]

(2) The monitoring device of 40 CFR 60.334(a) shall be used to determine the fuel consumption and the water-to-fuel ratio necessary to comply with 40 CFR 60.332 at 30, 50, 75, and 100 percent of peak load or at four points in the normal operating range of the gas turbine, including the minimum point in the range and peak load. All loads shall be corrected to ISO conditions using the appropriate equations supplied by the manufacturer.

Department requirement: The owner or operator is allowed to conduct initial performance tests at a single load because a NOx monitor shall be used to demonstrate compliance with the BACT NOx limits of this permit.

[Note: This is consistent with guidance from EPA Region 4.]

(3) Method 20 shall be used to determine the nitrogen oxides, sulfur dioxide, and oxygen concentrations. The span values shall be 300 ppm of nitrogen oxide and 21 percent oxygen. The NOx emissions shall be determined at each of the load conditions specified in paragraph (c)(2) of this section.

Department requirement: The owner or operator is allowed to make the initial compliance demonstration for NOx emissions using certified CEM system data, provided that compliance be based on a minimum of three test runs representing a total of at least three hours of data, and that the CEMS be calibrated in accordance with the procedure in section 6.2.3 of Method 20 following each run. Alternatively, initial compliance may be demonstrated using data collected

during the initial relative accuracy test audit (RATA) performed on the NOx monitor. The span value specified in the permit shall be used instead of that specified in paragraph (c)(3) above.

[Note: These initial compliance demonstration requirements are consistent with guidance from EPA Region 4. The span value is changed pursuant to Department authority and is consistent with guidance from EPA Region 4.]

(d) The owner or operator shall determine compliance with the sulfur content standard in 40 CFR 60.333(b) as follows: ASTM D 2880-71 shall be used to determine the sulfur content of liquid fuels and ASTM D 1072-80, D 3031-81, D 4084-82, or D 3246-81 shall be used for the sulfur content of gaseous fuels (incorporated by reference – see 40 CFR 60.17). The applicable ranges of some ASTM methods mentioned above are not adequate to measure the levels of sulfur in some fuel gases. Dilution of samples before analysis (with verification of the dilution ratio) may be used, subject to the approval of the Administrator.

Department requirement: The permit specifies sulfur testing methods and allows the owner or operator to follow the requirements of 40 CFR 75 Appendix D to determine the sulfur content of liquid fuels.

[Note: This requirement establishes different methods than provided by paragraph (d) above, but the requirements are equally stringent and will ensure compliance with this rule.]

(e) To meet the requirements of 40 CFR 60.334(b), the owner or operator shall use the methods specified in paragraphs (a) and (d) of this section to determine the nitrogen and sulfur contents of the fuel being burned. The analysis may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency.

[Note: The fuel analysis requirements of the permit meet or exceed the requirements of this rule and will ensure compliance with this rule.

Florida Power
CORPORATION

March 5, 2001

Mr. Al Linero, P.E.
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Dear Mr. Linero:

Re: UF Cogen Plant CT Replacement - DEP File No. 0010001-003-AC

Florida Power has received your letter of February 9 regarding the above-referenced permit application. In the letter, you requested additional information on the operation of the existing steam boilers and an explanation of the apparent higher than normal operation of Boiler Number 5 in 1999.

Steam Boilers Number 4 and 5 are used to supply backup and/or supplemental steam to Shands Hospital on an as-needed basis. Primarily this occurs when the cogen unit is shutdown or is operating at reduced load, resulting in an insufficient amount of steam supply to the hospital. The original construction permit and the current Title V operating permit allow the steam boilers to be "operated as necessary for backup, as long as total NOx emissions from this permitted facility do not exceed 194.3 tons/year." As you know, the permit does not contain an hours of operation limit for these boilers.

Florida Power acknowledges that the reported hours of operation for Boiler 5 in 1999 appear unusually high. Upon further investigation, Florida Power has determined that the reported hours also reflect the operation of the pilot flame, which operates nearly year-round. The total hours of operation of the boiler from a demand, or loaded, perspective were 717 in 1999. For future reporting, Florida Power will not include the hours of operation designated as "warm standby" mode; rather, the reporting will reflect the hours that the boilers were loaded to provide steam. This change will more accurately reflect their true operation. Note that, in either case, the reported fuel flow is still an accurate representation of emissions potential.

Thank you for your consideration of Florida Power's application. Please contact Mike Kennedy at (727) 826-4334 or me at (352) 337-6904 if you have any questions.

Sincerely,

Kris Edmondson
Plant Manager

ONE POWER PLAZA, 263 - 13th Avenue South, BB1A, St. Petersburg, FL 33701-5511 •
P.O. Box 14042, BB1A • St. Petersburg • Florida 33733-4042 • (727) 820-5151
A Progress Energy Company

bcc: J. M. Kennedy
S. H. Osbourn, ENSR

c: J. Reynolds
C. Kurtz, NED

ONE POWER PLAZA, 263 - 13th Avenue South, BB1A, St. Petersburg, FL 33701-5511 •
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- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Kris Edmonson
Plant Manager
UF Cogen Plant
Mowry Road, Bldg. 82, UF
Gainesville, FL 32611-2295

COMPLETE THIS SECTION ON DELIVERY

A. Received by *(Please Print Clearly)* B. Date of Delivery FEB 14 200

C. Signature
X Carl Williams ☒ Agent ☐ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
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☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Copy from service label)*
7099 3400 0000 1449 3911

PS Form 3811, July 1999 Domestic Return Receipt 102595-99-M-1789

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

Article Sent To: Mr. Kris Edmonson

Postage	$
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Name *(Please Print Clearly) (to be completed by mailer)*
Mr. Kris Edmonson
Street, Apt. No., or PO Box No.
Mowry Rd., Bldg, 82, UF
City, State, ZIP+4
Gainesville, FL 32611-2295

PS Form 3800, July 1999 See Reverse for Instructions

7099 3400 0000 1449 3911

Department of Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

February 9, 2001

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Kris Edmonson
Plant Manager
UF Cogen Plant
Mowry Road, Bldg. 82, UF
Gainesville, FL 32611-2295

Re: DEP File No. 0010001-003-AC (Replacement of Combustion Turbine for UF-Cogen Plant)

Dear Mr. Edmonson:

This confirms our recent conversation with Mike Kennedy and Scott Osbourn regarding the subject construction permit application. We discussed the possibility of Florida Power Corporation seeking a PSD permit to utilize the full-load potential of the additional capacity of the replacement turbine for 8,760 annual hours rather than having operation at 48 MW limited to a lesser number of hours to avoid PSD. Such an approach would have allowed full utilization of the replacement turbine capacity, but would have required a BACT determination for the LM6000 – PC–ESPRINT emissions.

It is understood that FPC prefers not to seek a PSD permit and would rather operate the new turbine at lower annual hours at maximum load such that continuously monitored emissions will not exceed PSD threshold amounts. Therefore, the permit application will be processed accordingly to accommodate FPC's projected target date of May 2001 for commencement of construction. However, for our files, we do need clarification on the proposed operation of the existing boilers including an explanation of the higher than normal operation of Boiler No. 5 in 1999. This request for additional information will not affect the schedule for processing the application.

If there are any questions regarding the above, please call John Reynolds at 850/921-9530.

Sincerely,

A. A. Linero, P.E. Administrator
New Source Review Section

AAL/JR

cc: Len Koslov, CD
Mike Kennedy, FPC
Scott Osbourn, ENSR

Florida Power Corporation
St. Petersburg, Florida

Permit Application to Replace a Combustion Turbine at the University of Florida

ENSR Corporation
January 2001
Document Number 8733-024-APR

CONTENTS

APPENDICES

LIST OF TABLES

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1.0 INTRODUCTION

1.1 Application Summary

Florida Power Corporation's (FPC) University of Florida Cogeneration (UF Cogen) Facility currently consists of one Combustion Turbine (CT), one Duct Burner (DB) with a Heat Recovery Steam Generator (HRSG) and two Steam Boilers (No. 4 and No. 5). The steam boilers are used only as back-up sources. This application is submitted to support the proposed replacement of the existing CT (GE LM6000-PA) with a more efficient model (GE LM6000-PC-ESPRINT). FPC desires to commence construction in May 2001 and begin commercial operation no later than May 1, 2002 (pending receipt of all necessary local and environmental approvals).

The existing GE LM6000-PA CT has a generator rating of 43 MW and a maximum heat input rating of 399 MMBtu/hr (LHV) while firing natural gas and 384 MMBtu/hr (LHV) while firing No. 2 fuel oil. The NOx emissions are controlled with steam injection. The DB can only fire natural gas and can only be operated while the CT is being operated. Low NOx burners have been installed to control emissions. The DB has a maximum heat input rate of 187 MMBtu/hr (LHV). These emissions units began commercial service in 1994.

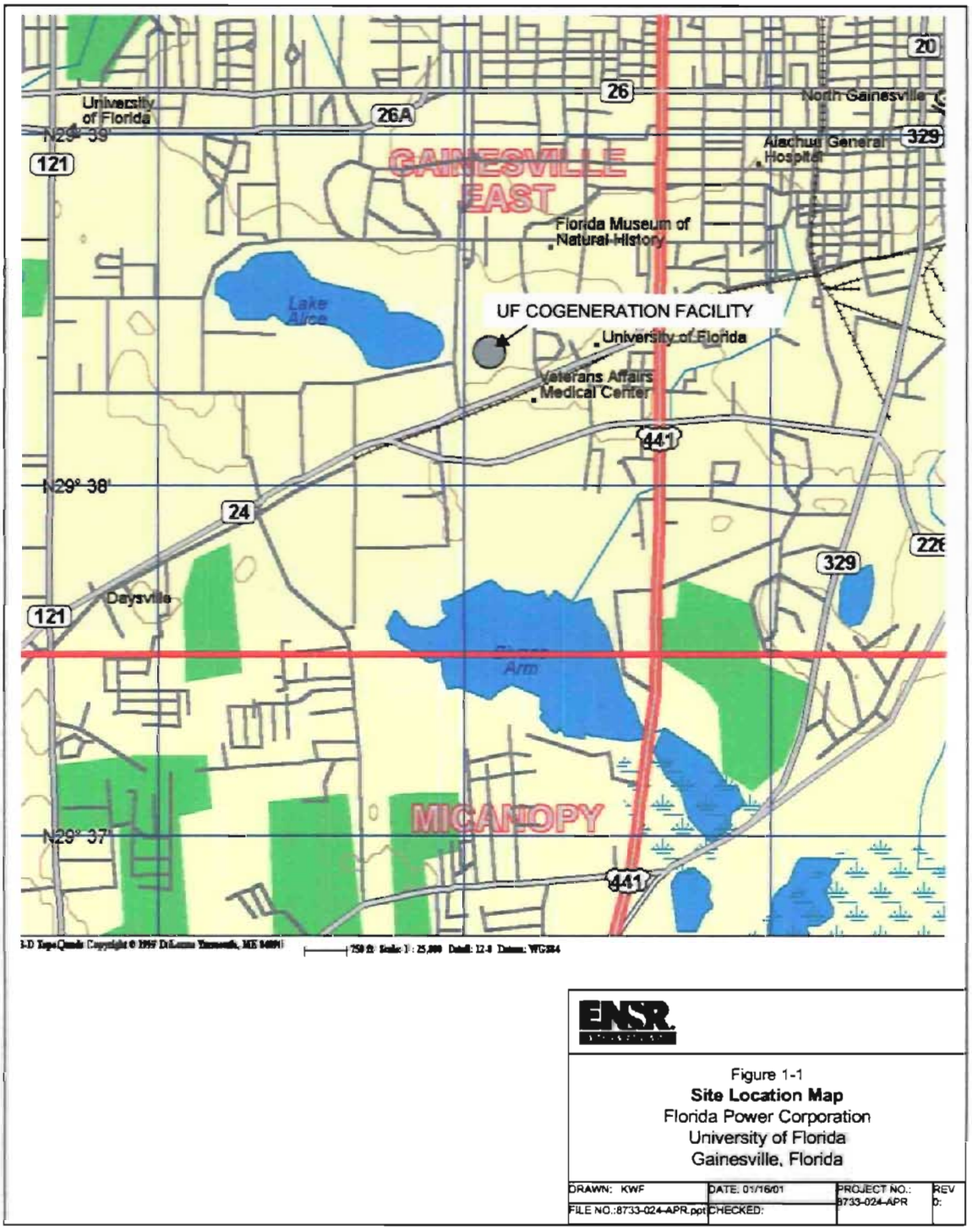
The CT and associated DB were permitted under the "source obligation" rule regarding NOx emissions by retiring existing boilers onsite and taking a net increase less than the applicable 40 TPY significant emission rate. That permitting action (PSD-FL-181, dated August 17, 1992) resulted in NOx emission caps of 194.3 TPY for the entire facility, 174.6 TPY for the CT and DB combined, and 142.7 TPY for the CT only. The existing facility was subject to PSD review for emissions of CO.

The back-up boilers (Nos. 4 and 5) began commercial operation in 1976. These boilers may be operated as necessary for back-up to the CT and DB, as long as the total NOx emissions from this facility do not exceed 194.3 TPY. The maximum heat input rate for the No. 4 steam boiler is 69.6 MMBtu/hr. This is based on permitted firing limits of 68,000 cubic feet of natural gas per hour and 444 gallons per hour of No. 2 fuel oil. The maximum heat input rate for the No. 5 steam boiler is 168 MMBtu/hr. The maximum heat input is based on permit firing limits of 164,000 cubic feet of natural gas per hour and 1,067 gallons per hour of No. 2 fuel oil.

The existing facility site plan and plot plan are presented in Figures 1-1 and 1-2, respectively.

FPC is applying to the Florida Department of Environmental Protection (FDEP) for a State Air Construction Permit to allow for the replacement of the existing CT with a more efficient model. This application provides technical analyses and supporting data for a permit to construct the facility under the state construction permit program.

Figure 1-1 Site Plan



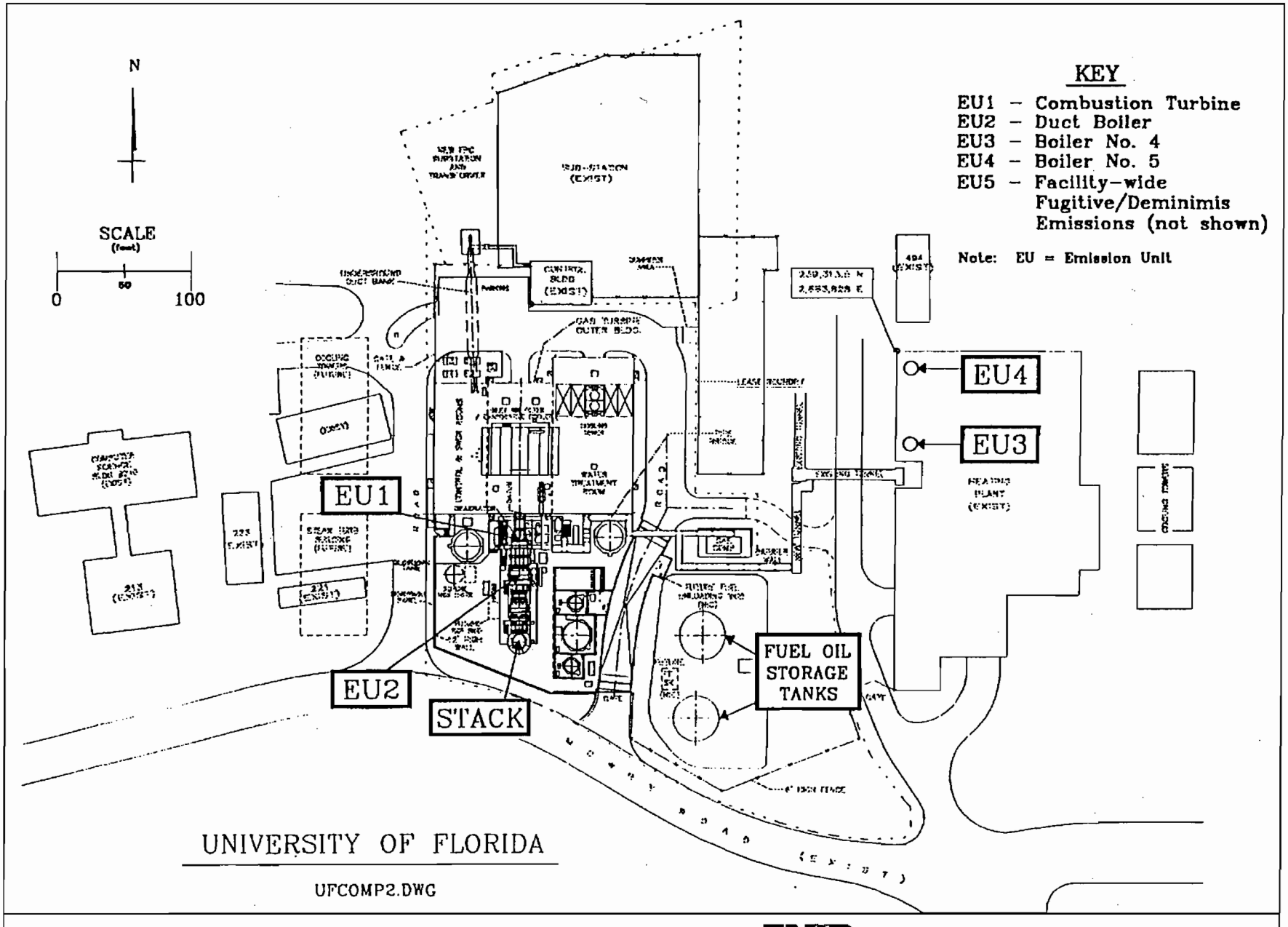


Figure 1-2. Plot Plan

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	FILE NO.:	CHECKED:		

This application addresses the air construction permitting requirements specified under the provision of Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212. General information about the applicant is presented below. A more detailed discussion on the organization of this document is also presented. To facilitate FDEP's review of this document, individuals familiar with both the facility and the preparation of this application have been identified in the following section. FDEP should contact these individuals if additional information or clarification is required during the review process.

1.2 General Applicant Information

Listed below are the applicant's primary points of contact, and the address and phone number where they can be contacted. Since this permit application has been prepared by a third party under the direction of FPC, a contact has been included for the permitting consultant.

1.2.1 Applicant's Address

Corporate Office	Florida Power Corporation One Power Plaza, 263 13th Ave., S. St. Petersburg, FL 33701
Project Site	UF Cogen Facility Mowry Rd., Bldg. 82, UF Gainesville, FL 32611

1.2.2 Applicant's Contacts

Responsible Official	Kris Edmondson Plant Manager Telephone: (352) 337-6900
Environmental Contact	J. Michael Kennedy Manager, Air Program (727) 826-4334
Permitting Consultant	Scott Osbourn Project Manager, ENSR Telephone (727) 898-9591

1.3 Document Organization

The balance of this document is divided into sections that address the major issues of a pre-construction air quality permit review. The outline below provides an overview of the contents of each of the remaining sections.

- **Section 2.0 - Project Description** provides an overview of the facility including major facility components.
- **Section 3.0 - Emissions Summary** presents a detailed review of the emissions that will be generated at the project site subsequent to the completion of project development, under normal operating conditions. The basis and methods used to calculate emissions from the project are presented.
- **Section 4.0 - Applicable Regulations and Standards** presents a detailed review of both Federal and State regulations. The focus of this section will be on establishing which regulations are directly applicable to the proposed project and for which compliance must be demonstrated.
- **Section 5.0 – PSD Applicability Determination.** Since the proposed project could result in a significant increase in the emission of certain criteria pollutants, as defined under PSD regulations, a detailed review of proposed project emissions and past actual emissions is presented in this section.

Appendices

- **Appendix A** contains the FDEP application forms
- **Appendix B** provides supporting emission calculations
- **Appendix C** provides supporting information such as fuel usage for 1999 and 2000, and performance test data for the existing LM6000-PA turbine.
- **Appendix D** contains the description of the current stack sampling facilities, which should not change with this project.
- **Appendix E** contains a summary of startup and shutdown procedures.

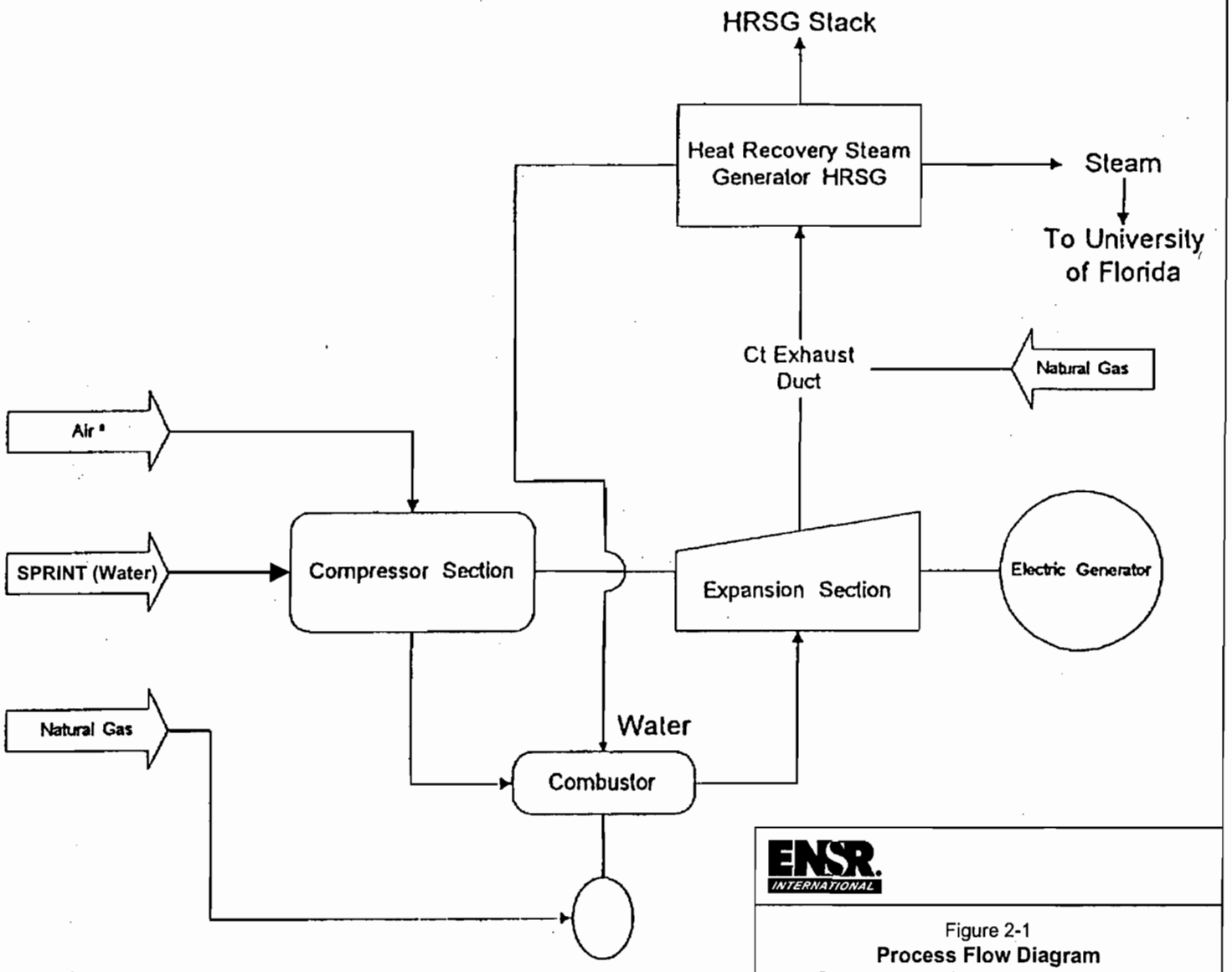
2.0 PROJECT DESCRIPTION

The following section provides an overview of the proposed project addressed by this permit application. The facility is owned and operated by Florida Power Corporation. A process flow diagram is depicted in Figure 2-1.

In 1998, an LM6000-PC design was introduced with water SPRay INTercooling (SPRINT) between the low- and high-pressure compressors. An enhanced version is now available that provides water spray injection at the low-pressure compressor inlet as well, to further improve performance. Most gas turbines are limited by a maximum allowable firing temperature consistent with an operational design life of 50,000 hours between major overhauls. In the case of the LM6000, however, high-pressure compressor discharge temperatures (instead of firing temperature) is the limiting factor in maintaining design component life.

As ambient temperatures rise and the density of air decreases, the total mass flow into the turbine is reduced. Lower mass flows will limit the power output of a gas turbine. One solution for many plants has been to install a mechanical chiller or an evaporative cooler at the gas turbine inlet to cool the ambient air entering the compressor section. Spray intercooling increases mass flow by cooling the air during the compression process. For supplementary-fired cogeneration installations (such as this one), SPRINT can reduce fuel costs by reducing the amount of duct firing required to meet contract delivery requirements for process steam. This is an important consideration for this project, as the UF Cogen facility is committed to supply increasing amounts of process steam to the adjoining Shands Hospital complex.

Although the proposed modification will not be subject to Best Available Control Technology (BACT) requirements, as defined by U.S. EPA, efforts have been made to ensure that the project design minimizes air emissions. The project will not be a major source of hazardous air pollutants.



Notes:
(a) cooled from ambient

Flow Diagram of Emission Unit

ENSR INTERNATIONAL

Figure 2-1
Process Flow Diagram
Combined Cycle Combustion Turbine
Florida Power Corporation
University of Florida

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FILE NO.:	CHECKED:		

3.0 PROJECT EMISSIONS

This section discusses the basis and methods used to calculate emissions for the UF Cogeneration Facility. The calculation procedures used during the development of this application rely on process information developed by FPC for the operations conducted at the UF Cogen Facility, manufacturers' data, and methods presented by the U.S. EPA in the "Compilation of Air Pollution Emission Factor, AP-42".

Detailed emission calculations are presented in Appendix B.

3.1 Combustion Turbine

Criteria pollutant emissions are those that contribute to the formation of ambient air concentrations of pollutants for which the EPA has established National Ambient Air Quality Standards (NAAQS) based on health effects criteria. The PSD-regulated criteria pollutant emissions associated with natural gas combustion are CO, NO_X, VOC, SO_2, and Particulates (PM/PM_{10}).

Although there are four major emission sources at the UF Cogen Facility, this proposed modification (a physical replacement of the existing CT with a newer, more efficient model) will have no effect on the other three emission units (i.e., the DB and the two back-up boilers). This section presents the estimated emissions proposed for the new GE LM6000-PC-ESPRINT. Hourly emissions were calculated from manufacturers' operating parameters and guaranteed in-stack concentrations for CO, NO_X, and VOC. SO_2 emissions were calculated using the manufacturers' supplied fuel consumption data and fuel gas sulfur content. Particulate emissions include front-half and back-half particulate matter as measured by EPA Methods 5 and 202.

Maximum hourly emission rates for each compound are based on the type of fuel fired and the four inlet temperatures that represent the range of expected operating conditions. Annual emissions are based on the hourly emission rates for the worst-case loads during natural gas-firing at an inlet temperature of 49°F (the inlet temperature representing maximum output with evaporative cooling of the ambient air).

The data used in this analysis is presented in Appendix B. Table 3-1 presents a summary of worst-case hourly emissions for the combustion turbine. Table 3-2 presents a summary of the estimate of annual potential emissions. The estimated annual emissions from the proposed project will be compared to the actual emissions baseline and then evaluated for PSD applicability in Section 5.0.

Table 3-1 Emission Summary (lb/hr) for the GE LM6000-PC-ESPRINT Combustion Turbine

Compound	Ambient Temp	55	66.3	71.1	105
	Inlet Temp	49	59	63.2	93.4
	Load, %	Emissions for LM6000-PC-ESPRINT Turbine, lb/hr			
NOx	100	39.6	39.6	39.1	32.9
CO	100	35.8	34.1	31.3	12.0
VOC	100	5.6	5.4	5.3	4.6
SO2	100	1.2	1.2	1.2	1.0
PM	100	3.0	3.0	3.0	3.0
Notes:	The average inlet temperature during the year 2000 was 63.2 °F				

Table 3-2 Annual Emission Summary (TPY) for the GE LM6000-PC-ESPRINT Combustion Turbine[1]

Turbine	NOx	CO	VOC	SO2	PM	PM_{10}	Pb
	Emissions for One Combustion Turbine (tons/year) [1]						
GE LM6000-PC-ESPRINT, 49°F inlet, 8760 hr/yr[1]	173.4	156.8	24.5	5.3	13.1	13.1	0.000
GE LM6000-PC-ESPRINT, 49°F inlet, 7121hr/yr1	141.0	127.5	19.9	4.3	10.6	10.6	0.000
GE LM6000-PC-ESPRINT, 63.2°F inlet, 8760 hr/yr[2]	171.3	137.1	23.2	5.3	13.1	13.1	0.000
GE LM6000-PC-ESPRINT, 63.2°F inlet, 7210.5 hr/yr	141.0	112.8	19.1	4.4	10.8	10.8	0.000

[1]These annual emission estimates are based on worst case hourly emissions and unlimited operation, I.e., inlet temperature of 49°F and natural gas operation of 8760 hrs/year, 100% load.
[2]The average inlet temperature for the year 2000 was 63.2°F. Emissions are at 100% load.

4.0 APPLICABLE REGULATIONS AND STANDARDS

The following air regulations have been reviewed as they may apply to the proposed facility:

- Prevention of Significant Deterioration (PSD) pre-construction review under 40 CFR Part 52;
- New Source Performance Standards (NSPS) under 40 CFR Part 60;
- National Emissions Standards for Hazardous Air Pollutants (NESHAPs) under 40 CFR Part 63;
- Acid Rain Deposition Control Program under 40 CFR Parts 72, 73, and 75;
- CAA Operating Permit Program under 40 CFR Part 70; and
- State of Florida Air Resource Management Rules under Chapter 62 of the Florida Administrative Code.

These regulations are implemented by the FDEP through the federally-approved CAA State Implementation Plan (SIP) or by U.S. EPA-delegated authority. A review of the applicability criteria for these rules and the conclusions drawn relative to the proposed facility is presented below.

4.1 Prevention of Significant Deterioration

The Prevention of Significant Deterioration (PSD) rules are codified at 40 CFR Part 52 and incorporated as a SIP-approved program into Rule 62-212.400, F.A.C. The facility would be subject to PSD review for PSD-regulated pollutants, if it is a "major" source. New sources of air emissions are considered major sources if they have the "Potential-to-Emit" (PTE) more than the 100 tons/year for "listed" source categories or 250 tons/year for all other source categories. One of the 28 source categories listed in the PSD regulations is "fossil-fuel fired steam electric plants of more than 250 million Btu per hour heat input." Gas turbines used without heat recovery, such as simple cycle peaking units, have been determined to fall outside of the 28-source category list, and thus are subject to PSD review if potential emissions of any regulated pollutant exceed 250 tons/year. For existing facilities undergoing reconstruction or modification, PSD review is required for each pollutant emitted in excess of the Significant Emission Rates (SER) listed in Table 62-212.400-2 F.A.C.

The following requirements are encompassed by PSD review.

- Compliance with any applicable emission limitation under the State Implementation Plan (SIP);
- Compliance with any applicable NSPS or NESHAPS;

- Application of Best Available Control Technology (BACT), as defined by the PSD rules, to emissions of NO_x, CO, SO_2, and PM/PM_{10} from all significant sources at the facility;
- A demonstration that the facility's potential emissions, and any emissions of regulated pollutants resulting from directly related growth of a residential, commercial or industrial nature, will neither cause nor contribute to a violation of the NAAQS or allowable PSD increments;
- An analysis of the impacts on local soils, vegetation and visibility resulting from emissions from the facility and emissions from directly related growth of a residential, commercial, or industrial nature;
- An evaluation of impacts on Visibility and Air Quality Related Values (AQRVs) in PSD Class I areas (if applicable); and
- At the discretion of FDEP, pre-construction and/or post-construction air quality monitoring for NO_x, CO, SO_2, and PM/PM_{10}.

Potentially applicable SIP limitations, NSPS and NESHAPs requirements are discussed below.

4.2 NSPS

The NSPS regulation that applies to combustion turbines is Subpart GG. This standard is applicable to stationary gas turbine units that have a heat input of greater than 10 MMBtu/hr. Under Subpart GG, units with a heat input at peak load greater than 100 MMBtu/hr and which supply more than one third of their electric generating capacity to a utility distribution system shall not emit NO_x in excess of:

$$STD = 0.0075(14.4/Y) + F$$

Where:

STD is the allowable NO_x emission, percent volume (corrected to 15 percent oxygen dry basis)

Y is rated heat rate at peak load, kilojoules/watt hour

F is NO_x emission allowance for fuel bound nitrogen, percent volume (for nitrogen content greater than 0.25 percent weight, F is 0.005 percent volume)

Applying the heat rate to the proposed General Electric LM6000-PC-ESPRINT turbine results in an applicable NSPS for NO_x emissions of approximately 110 ppmv on a dry basis, corrected to 15 percent oxygen, when firing natural gas. For distillate oil firing, the applicable NSPS limit is 102 ppm @ 15% oxygen.

Subpart GG also regulates the discharge of SO_2 by requiring compliance with one of the following two options:

- Limit SO_2 emissions to 0.015 percent or less by volume at 15 percent O_2 on a dry basis, or
- Limit the sulfur content of the fuel to 0.8 percent by weight or less.

The proposed project will readily meet the NSPS for SO_2 as both the proposed natural gas (1 grain/100 SCF) and distillate oil (<0.05 wt%) fuels will contain less than 0.8 percent sulfur content by weight.

4.3 NESHAPS

There is currently no NESHAPs for stationary gas turbines, although this is a source category scheduled for a determination of Maximum Achievable Control Technology (MACT) under 40 CFR Part 63. However, 40 CFR Part 63, Subpart B governs the construction or reconstruction of major sources of Hazardous Air Pollutants (HAPs) for which a NESHAP has not been promulgated. The rule requires new major sources of HAPs to install MACT for HAPs. MACT must be determined as a condition of pre-construction approval. A major source of HAPs is any stationary source that has the potential to emit 10 tons/year or more of a single HAP or 25 tons/year of combined HAPs.

The project is not a major HAP source, and, therefore, 40 CFR Part 63 Subpart B does not apply.

4.4 Acid Rain

The proposed facility meets the definition of "utility unit" and will be an affected Phase II unit under the Acid Rain Deposition Control Program pursuant to Title IV of the Clean Air Act. Title IV requirements for the proposed facility are currently included in the Title V permit. Title IV requires that the facility hold calendar-year allowances for each ton of SO_2 that is emitted and conduct emissions monitoring for SO_2 and NO_x pursuant to the requirements in 40 CFR Parts 72, 73, and 75.

4.5 CAA Operating Permit Program

FDEP administers the CAA Operating Permit Program under Rule 62-213 which has been approved by EPA under 40 CFR Part 70. A new major source must submit a Title V operating permit application to FDEP within 180 days after commencing operation. The Title V application will incorporate applicable emission limitations, monitoring, record keeping and reporting requirements from the construction permit.

4.6 State SIP Rules

In addition to the above regulations, the proposed facility is also subject to the Florida Air Pollution Control Regulations codified in Chapters 62-204 through 62-297 of the Florida Administrative Code (F.A.C.). The F.A.C. rules that are potentially applicable to the proposed project are as follows:

- General Pollutant Emission Limiting Standards

  Rule 62-296.320 limits visible emissions from any activity not specifically addressed by another Florida Regulation in Chapter 62-296. The general visible emission standard for stacks limits opacity to 20%. Compliance with the visible emission standard must be done in accordance with U.S. EPA Method 9. A companion rule limits visible emissions from fugitive sources by requiring sources to take reasonable precautions to prevent such emissions. Fugitive emissions may occur during construction of the facility. Wet suppression or similar techniques will be used to control emissions as necessary during construction activities

- General Construction Permitting Requirements

  Rule 62-210.310 requires that an air construction permit be obtained prior to commencing construction. The requirements for construction permits and approvals are contained in Rules 62-4.030, 62-4.050, 62-4.210, and 62-210.300(1). This document includes the general information required by the FDEP for a construction permit application.

- Stack Height Policy

  Rule 62-210.550 specifies the stack height requirements and permissible dispersion techniques for permitting air emission sources. The facility will comply with the provisions of this regulation.

- Excess Emissions

  Rule 62-210.700 provides allowances for excess emissions for emission units that may occur during periods of startup, shutdown, malfunction, and load changes (non steady-state operations). Excess emissions from the combustion turbines are expected to occur during startup and shutdowns. The facility will apply best operational practices to minimize the duration of excess emissions.

- Annual Emissions Reporting

  Rule 62-210.370 requires Title V sources to submit an annual operating report that provides emissions information for the previous calendar year. The UF Cogen Facility will submit to the FDEP annual emissions reports by March 1 of each year.

5.0 PSD APPLICABILITY DETERMINATION

Since the subject facility is currently a major source of regulated air pollutants per Prevention of Significant Deterioration (PSD) regulations (40 CFR 52.21; F.A.C. 62-212.400), the applicant must determine if the proposed new construction will require new source review. This section demonstrates that the emissions from the proposed new construction, with certain restrictions, will not exceed the significant emission rates in 40 CFR 52.21. Accordingly, new source review requirements in 40 CFR 52.21, including BACT analysis (F.A.C. 62-212.500), do not apply to the proposed new construction.

The proposed new combustion turbine project will exceed the significant emission rates for NOx and CO. 40 CFR 52.21 and F.A.C. 62-212.400 allow the facility to consider credits for contemporaneous net emissions increases, evaluating actual emissions for the previous two years of operation. The new combustion turbine replaces an existing combustion turbine, an LM6000-PA. The average emissions for 1999 and 2000 for NOx and CO, based on fuel consumption and performance testing, were subtracted from the potential to emit NOx and CO from the new LM6000-PC-ESPRINT. The resulting net emissions are lower than the significant emission rates for NOx and CO. The netting exercise is summarized in Table 5-1 below.

Baseline actual emissions were calculated from fuel rate information in the 1999 and 2000 annual operating reports, and from performance test data. Emission factors for NOx and CO in lb/MMBtu were developed from the performance test data. AP-42 emission factors were used for all other pollutants. The AP-42 emission factor for SO2 is based on the 1 grain per 100 cubic feet of natural gas fuel specification. These factors were then applied to the fuel usage reported for the combustion turbine in the annual operating reports. The resulting estimated actual emissions were then averaged to form the baseline actual annual emissions for the existing LM6000-PA combustion turbine.

Emissions for the new LM6000-PC-ESPRINT combustion turbine were based on manufacturer's data provided for NOx, CO, PM and VOC (as hydrocarbon) for a range of inlet conditions after evaporative cooling. AP-42 emission factors were used for all other pollutants. The AP-42 emission factor for SO2 is based on the 1 grain per 100 cubic feet of natural gas fuel specification. Worst case emissions were based on the worst case rates over the range of conditions studied. Accordingly, actual emissions are generally anticipated to be lower than those reported. The worst case conditions are generally at the lower temperatures, however, so at peak winter demand periods emissions may approach the worst case conditions.

Table 5-1 Emissions Netting Analysis

PERMIT LIMITS	NOx	CO	SO2	PM	PM10	VOC
Existing Permit Limits, Facility, TPY	194.3					
Existing Permit Limits, EU01 & EU02, TPY	174.6	202.6				
Existing Permit Limits, EU01, lb/hr	39.6	38.8				
EU01 LM6000-PA, 43 MW, TPY, gas, if no oil is fired	150	165.7				
EU01 LM6000-PA, 43 MW, TPY, gas portion	142.7					
EU02 Duct burners for HRSG, TPY*	24.6	36.9				
EU03 No. 4 boiler, 70 MMBtu/hr, TPY*						
EU04 No. 5 boiler, 168 MMBtu/hr, TPY*						
*SO2 emissions are limited by a restriction of 0.5% Sulfur in Fuel Oil.						

PROPOSED PROJECT, ESTIMATED MAXIMUMS	NOx	CO	SO2	PM	PM10	VOC
new LM6000-PC-ESPRINT Hours	8760	8760	8760	8760	8760	8760
new LM6000-PC-ESPRINT lbs/hr, @49°F inlet, 100% load	39.6	35.8	1.200	3.000	3.000	5.600
new LM6000-PC-ESPRINT tpy, @49°F inlet, 100% load	173.4	156.8	5.256	13.140	13.140	24.528

NETTING (Potential to Actual)	NOx	CO	SO2	PM	PM10	VOC
New CTG Emissions, Max, TPY	173.4	156.8	5.256	13.140	13.140	24.528
Existing CTG 2-Year Actuals (avg. 1999 & 2000), TPY	101.5	31.3	0.005	0.009	0.009	0.003
New CTG Emissions, Limited, TPY, 49°F inlet	141.0	127.5	4.273	10.682	10.682	19.939
Net Increase, TPY	39.5	96.1	4.268	10.672	10.672	19.936
Actual Emissions are based on average of emissions based on fuel use from 1999 and 2000 annual operating reports, performance test data and AP-42 emission factors.						

PROPOSED NEW LIMITS	NOx	CO	SO2	PM	PM10	VOC
Previous CTG Emissions, TPY	150	165.7				
New CTG Emissions, TPY	141.0	127.5				
Net Decrease in Allowable Emissions, TPY (150 - 141)	9.0	38.2				
New Limit for CTG plus Duct Burners, TPY	165.6	164.4				
New Facility Limits, TPY	185.3					

PSD/NSR DETERMINATION	NOx	CO	SO2	PM	PM10	VOC
Significant Emission Rate, TPY	40	100	40	25	15	40
Net Increase, TPY	39.5	96.1	4.3	10.7	10.7	19.9
Area Designation	BTNS	ATTAIN	BTNS	BTNS	BTNS	NA
Source Major for NAA?	NA	NA	NA	NA	NA	NA
Subject to NAA Review?	NO	NO	NO	NO	NO	NO
new CTG > SER?	YES	YES	NO	NO	NO	NO
Net Increase > SER?	NO	NO	NO	NO	NO	NO
BTNS: Better than National Standards ATTAIN: Attainment, or Unclassifiable NA: Not applicable						

OPERATIONAL NOTES	
CTG Fuel Use 1999 (HV=1048 Btu/CF):	2,717.9 MMCF
CTG Fuel Use 2000 (HV=1036.5 Btu/CF):	3,010.2 MMCF

Proposed NOx Limit

The facility is proposing to accept a limit on NOx emissions of 39.6 lb/hr (the current limit) and 141 ton/yr from the new LM-6000-PC-ESPRINT turbine. The proposed new annual limit is 9 ton/yr less than the previous allowable for NOx under the current permit. This is equivalent to operating at full load for 7,211 hours per year at inlet temperatures of 63.2°F (the average inlet temperature during the year 2000), or burning 2,937.3 MMCF of natural gas per year at the same inlet conditions. The new combustion turbine may operate up to 8760 hours per year at a lower fuel rate and/or better conditions.

The NOx and CO rates vary significantly with inlet conditions, and the new LM6000-PC-ESPRINT is likely to perform better than manufacturer's guarantees. Accordingly, FPC proposes to adjust the facility NOx limit as well as the current limit for the combination of the duct burners and the CTG by the amount corresponding to the decrease in the allowable for the CTG. Thus, FPC proposes to demonstrate compliance with all NOx limits for the CTG and duct burners by recording total NOx emissions as reported by the continuous emissions monitoring system (CEMS).

APPENDIX A

FLORIDA DEP APPLICATION FORMS

Department of Environmental Protection

Division of Air Resources Management

APPLICATION FOR AIR PERMIT - TITLE V SOURCE

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

I. APPLICATION INFORMATION

Identification of Facility

1. Facility Owner/Company Name: Florida Power Corporation	
2. Site Name: University of Florida Cogeneration Plant	
3. Facility Identification Number: 0010001 [ ] Unknown	
4. Facility Location: Street Address or Other Locator: Mowry Road, Building 82, University of Florida City: Gainesville County: Alachua Zip Code: 32611-2295	
5. Relocatable Facility? [ ] Yes [✔] No	6. Existing Permitted Facility? [✔] Yes [ ] No

Application Contact

1. Name and Title of Application Contact: J. Michael Kennedy, Manager Air Program, Environmental Services Department
2. Application Contact Mailing Address: Organization/Firm: Florida Power Corporation Street Address: One Power Plaza, 263 13th Ave., S. City: St. Petersburg State: FL Zip Code: 33701
3. Application Contact Telephone Numbers: Telephone: (727) 826-4334 Fax: (727) 826-4216

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	1-29-01
2. Permit Number:	0010001-003-AC
3. PSD Number (if applicable):	
4. Siting Number (if applicable):	

Purpose of Application

Air Operation Permit Application

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

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

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

Current construction permit number: _____

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

Current construction permit number: _____

Operation permit number to be revised: _____

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

Operation permit number to be revised/corrected: _____

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

Operation permit number to be revised: _____

Reason for revision: _____

Air Construction Permit Application

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

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

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

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

Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible Official:
   Kris Edmondson, Plant Manager

2. Owner/Authorized Representative or Responsible Official Mailing Address:
   Organization/Firm: Florida Power Corporation
   Street Address: UF Cogen Plant, Mowry Rd., Bldg. 82, UF
   City: Gainesville State: FL Zip Code: 32611

3. Owner/Authorized Representative or Responsible Official Telephone Numbers:
   Telephone: (352) 337-6900 Fax: (352) 337-6920

4. Owner/Authorized Representative or Responsible Official Statement:

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

Signature 01/23/2001
Date

* Attach letter of authorization if not currently on file.

Professional Engineer Certification

1. Professional Engineer Name: Blair D. Burgess
   Registration Number: 45460

2. Professional Engineer Mailing Address:
   Organization/Firm: ENSR
   Street Address: 2809 West Mall Drive
   City: Florence State: AL Zip Code: 35630

3. Professional Engineer Telephone Numbers:
   Telephone: (256) 767-1210 Fax: (256) 767-1211

4. Professional Engineer Statement:

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

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

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

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

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

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

D. D. [illegible] JR. CERTIFICATE 1/17/01 STATE OF FLORIDA REGISTERED ENGINEER EMBOSSED METALLIC

Signature (seal)

1/18/01
Date

* Attach any exception to certification statement.

Scope of Application

Emissions Unit ID	Description of Emissions Unit	Permit Type	Processing Fee
001	COGEN PLANT GAS TURBINE	AC1B	$0.00

Application Processing Fee

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

Construction/Modification Information

1. Description of Proposed Project or Alterations:

   Applicant is replacing the current LM6000-PA combustion turbine with a LM6000-PC-ESPRINT combustion turbine. Other described emission units, including the duct burner, will remain unchanged.

2. Projected or Actual Date of Commencement of Construction: May 2001

3. Projected Date of Completion of Construction: May 2002

Application Comment

For clarity, the application forms are divided into:

- Facility information
- Proposed new equipment
- Existing equipment

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates: Zone: 17	East (km): 369.4	North (km): 3279.3	
2. Facility Latitude/Longitude: Latitude (DD/MM/SS): 29° 38' 23"	Longitude (DD/MM/SS): 82° 20' 55"		
3. Governmental Facility Code: 0	4. Facility Status Code: A	5. Facility Major Group SIC Code: 49	6. Facility SIC(s):
7. Facility Comment (limit to 500 characters): The UF Cogeneration plant consists of a single combustion turbine (CT), heat recovery steam generator (HRSG), duct burners (DB) located between the CT and the HRSG, and two backup boilers.			

Facility Contact

1. Name and Title of Facility Contact: Kris Edmondson, Plant Manager		
2. Facility Contact Mailing Address: Organization/Firm: Florida Power Corporation Street Address: P.O. Box 112295 City: Gainesville	State: FL	Zip Code: 32611-2295
3. Facility Contact Telephone Numbers: Telephone: (352) 337-6900	Fax: (352) 337-6920	

Facility Regulatory Classifications

Check all that apply:

1. [ ] Small Business Stationary Source? [ ] Unknown
2. [✔] Major Source of Pollutants Other than Hazardous Air Pollutants (HAPs)?
3. [ ] Synthetic Minor Source of Pollutants Other than HAPs?
4. [ ] Major Source of Hazardous Air Pollutants (HAPs)?
5. [ ] Synthetic Minor Source of HAPs?
6. [✔] One or More Emissions Units Subject to NSPS?
7. [ ] One or More Emission Units Subject to NESHAP?
8. [ ] Title V Source by EPA Designation?
9. Facility Regulatory Classifications Comment (limit to 200 characters): CT – NSPS (40 CFR 60 Subpart GG) DBs – NSPS (40 CFR 60 Subpart Db)

List of Applicable Regulations

Chapter 62-4	Permits
Rule 62-204.220	Ambient Air Quality Protection
Rule 62-204.240	Ambient Air Quality Standards
Rule 62-204.800	Federal Regulations Adopted by Reference
Rule 62-210.300	Permits Required
Rule 62-210.350	Public Notice and Comments
Rule 62-210.370	Reports
Rule 62-210.550	Stack Height Policy
Rule 62-210.650	Circumvention
Rule 62-210.700	Excess Emissions
Rule 62-210.900	Forms and Instructions
Rule 62-212.300	General Preconstruction Review Requirements
Rule 62-213	Operation Permits for Major Sources of Air Pollution
Rule 62-214	Federal Acid Rain Program
Rule 62-296.	General Pollutant Emission Limiting Standards
Rule 62-297.310	General Test Requirements
Rule 62-297.401	Compliance Test Methods
Rule 62-297.520	EPA Continuous Monitor Performance Specifications
40 CFR 60	Applicable sections of Subpart A, General Requirements, NSPS Subparts GG and Db
40 CFR 70	Title V Operating Permits
40 CFR 72	Acid Rain Permits
40 CFR 75	Monitoring
40 CFR 77	Acid Rain Program – Excess Emissions

B. FACILITY POLLUTANTS

List of Pollutants Emitted

1. Pollutant Emitted	2. Pollutant Classif.	3. Requested Emissions Cap lb/hour	tons/year	4. Basis for Emissions Cap	5. Pollutant Comment
NOX	A		185.3	ESCPSD	Includes 001, 002, 003, 004
NOX	A		165.6	ESCPSD	Includes 001 & 002
CO	A				
SO2	A				
PM10	A				
VOC	A				

C. FACILITY SUPPLEMENTAL INFORMATION

Supplemental Requirements

1. Area Map Showing Facility Location:
   [✔] Attached, Document ID: Figure 1-1 [ ] Not Applicable [ ] Waiver Requested

2. Facility Plot Plan:
   [✔] Attached, Document ID: Figure 1-2 [ ] Not Applicable [ ] Waiver Requested

3. Process Flow Diagram(s):
   [✔] Attached, Document ID: Figure 2-1 [ ] Not Applicable [ ] Waiver Requested

4. Precautions to Prevent Emissions of Unconfined Particulate Matter:
   [ ] Attached, Document ID:_____ [✔] Not Applicable [ ] Waiver Requested

5. Fugitive Emissions Identification:
   [ ] Attached, Document ID:_____ [✔] Not Applicable [ ] Waiver Requested

6. Supplemental Information for Construction Permit Application:
   [ ] Attached, Document ID:_____ [✔] Not Applicable

7. Supplemental Requirements Comment:

   PSD Netting is discussed in Section 5 of this application report.

Additional Supplemental Requirements for Title V Air Operation Permit Applications

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

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

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

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

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

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

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

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

III. EMISSIONS UNIT INFORMATION

LM6000-PC-ESPRINT

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

A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)

Emissions Unit Description and Status

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

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

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

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

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

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

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

2. Description of Emissions Unit Addressed in This Section (limit to 60 characters):
Combustion Turbine (LM6000-PC-ESPRINT)

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

5. Emissions Unit Status Code:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
C	June 2001	49	[✔]

9. Emissions Unit Comment: (Limit to 500 Characters)
The new CT will replace the existing CT, which currently exhausts through a heat recovery steam generator (HRSG) and a single stack. There will be no other changes to the process configuration.

Emissions Unit Information Section 1 of 1

Emissions Unit Control Equipment

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

   Steam injection.

2. Control Device or Method Code(s): 28

Emissions Unit Details

1. Package Unit:
   Manufacturer: General Electric Model Number: LM6000-PC-ESPRINT
2. Generator Nameplate Rating: 48 MW @59°F 98% RH inlet conditions
3. Incinerator Information:
   Dwell Temperature: °F
   Dwell Time: seconds
   Incinerator Afterburner Temperature: °F

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

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:	392 mmBtu/hr LHV @59°F inlet
2. Maximum Incineration Rate:	lb/hr tons/day
3. Maximum Process or Throughput Rate:	
4. Maximum Production Rate:	48 MW @59°F inlet temp
5. Requested Maximum Operating Schedule:	24 hours/day 7 days/week 52 weeks/year 8760 hours/year*
6. Operating Capacity/Schedule Comment (limit to 200 characters):	Maximum heat input based on natural gas-firing, 950 Btu/CF (LHV). * The CT would not operate for 8,760 hr/yr at maximum firing rates; however, the CT may run at lower rates for more hours within annual fuel limits.

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

40 CFR 60, Subpart A (General Provisions for New Source Performance Standards)	
40 CFR 60.332(a)(1) – NO_x standards for Stationary Gas Turbines	
40 CFR 60.333 – SO_2 standards for Stationary Gas Turbines	
40 CFR 60.334 – Monitoring Provisions for Stationary Gas Turbines	
40 CFR Part 70 – Operating Permit Program	
40 CFR Part 72 – Acid Rain Program Requirements Regulations	
40 CFR Part 73 – Acid Rain Program SO_2 Allowances System	
40 CFR Part 75 – Acid Rain Program Continuous Emissions Monitoring	
Rule 62-296.320(4)(b)1 – Visible emissions	
40 CFR 52.21 – Prevention of Significant Deterioration	
Rule 62-212.400 – Prevention of Significant Deterioration	

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

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? EU-1	2. Emission Point Type Code: 2	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): Single stack for CT and DB		
3. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: EU-1 Combustion Turbine (LM6000-PC-ESPRINT) EU-2 Duct Burners		
4. Discharge Type Code: V	6. Stack Height: 93 feet	7. Exit Diameter: 9.8 feet
8. Exit Temperature: 257 °F	9. Actual Volumetric Flow Rate: 365,700 acfm	10. Water Vapor: 10-12 vol%
11. Maximum Dry Standard Flow Rate: dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates: Zone: East (km): North (km):		
14. Emission Point Comment (limit to 200 characters): Items 8, 9, 10, 11 based on the CT only, at 59°F and 60% Relative Humidity at the inlet.		

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

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Natural Gas Firing		
3. Source Classification Code (SCC): 2-01-002-01	3. SCC Units: Million Cubic Feet Burned	
4. Maximum Hourly Rate: 0.425 (LHV)	5. Maximum Annual Rate: 3,725 (LHV)	6. Estimated Annual Activity Factor:
6. Maximum % Sulfur: 1 grain / 100 CF	8. Maximum % Ash:	9. Million Btu per SCC Unit: 950 (LHV)
10. Segment Comment (limit to 200 characters): Based on inlet conditions 49°F and 92.8% relative humidity, LHV.		

Segment Description and Rate: Segment _____ of _____

1. Segment Description (Process/Fuel Type) (limit to 500 characters):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):		

F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
NOX	028		EL
CO			EL
PM10			NS
VOC			NS

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

Potential/Fugitive Emissions

1. Pollutant Emitted: NOX	2. Total Percent Efficiency of Control:
3. Potential Emissions: 39.6 lb/hour 141 tons/year	4. Synthetically Limited? [✔]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: 25 ppmvd @15% O2 Reference: Manufacturer's Data	7. Emissions Method Code: 2
8. Calculation of Emissions (limit to 600 characters): Calculations are in Appendix B.	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 39.6 lb/hr; 141 ton/yr	4. Equivalent Allowable Emissions: 39.6 lb/hour 141 tons/year
5. Method of Compliance (limit to 60 characters): Annual Compliance Test, EPA Method 20. CEMS data.	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

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

Potential/Fugitive Emissions

1. Pollutant Emitted: CO	2. Total Percent Efficiency of Control:
3. Potential Emissions: 35.8 lb/hour 127.5 tons/year	4. Synthetically Limited? [✔]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: 36 ppmvd @15% O2 Reference: Manufacturer's Data	7. Emissions Method Code: 2
8. Calculation of Emissions (limit to 600 characters): Calculations are in Appendix B.	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): PTE based on 100% load at 49°F inlet conditions.	

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 35.8 lb/hr 127.5 tons/year	4. Equivalent Allowable Emissions: 35.8 lb/hr 127.5 tons/yr
5. Method of Compliance (limit to 60 characters): Annual compliance test- EPA Method 10.	
6. Allowable Emissions Comment (Desc. Of Operating Method) (limit to 200 characters): Allowable based on 100% load at 49°F inlet conditions.	

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

Potential/Fugitive Emissions

1. Pollutant Emitted: PM10	2. Total Percent Efficiency of Control:
3. Potential Emissions: 3.0 lb/hour 13.1 tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: 3 lb/hr Reference: Manufacturer's Data	7. Emissions Method Code: 2
8. Calculation of Emissions (limit to 600 characters): Calculations are in Appendix B.	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions 1 of 1

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

Emissions Unit Information Section 1 **of** 1

Pollutant Detail Information Page 1 **of** 3

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

Potential/Fugitive Emissions

1. Pollutant Emitted: VOC	2. Total Percent Efficiency of Control:
3. Potential Emissions: 5.6 lb/hour 24.5 tons/year	6. Synthetically Limited? [ ]
7. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: 3 lb/hr Reference: Manufacturer's Data	7. Emissions Method Code: 2
8. Calculation of Emissions (limit to 600 characters): Calculations are in Appendix B.	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions 1 of 1

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

Department of Environmental Protection

Division of Air Resources Management

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

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: VE10	2. Basis for Allowable Opacity: [ ] Rule [✔] Other
3. Requested Allowable Opacity: Normal Conditions: 10% Exceptional Conditions: 27% Maximum Period of Excess Opacity Allowed: 6 min/hour	
8. Method of Compliance: Annual Compliance Test using EPA Method 9	
9. Visible Emissions Comment (limit to 200 characters): VE standard established as part of construction permit. Rule 62-210.700 – Maximum period of excess opacity allowed for startup, shutdown, and malfunction – 2 hrs / 24 hours.	

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

Continuous Monitoring System: Continuous Monitor 1 of 3

1. Parameter Code: EM	2. Pollutant(s): NOX
3. CMS Requirement:	[✔] Rule [ ] Other
4. Monitor Information: Manufacturer: Teco/Enviroplan Model Number: 42 Serial Number: 42-45320-273	
5. Installation Date: 01 Dec 1995	6. Performance Specification Test Date: 01 Dec 1995
7. Continuous Monitor Comment (limit to 200 characters): NOx is monitored on a continuous basis for compliance with the lb/hr and TPY permit limits.	

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

Continuous Monitoring System: Continuous Monitor ___2__ of __3___

1. Parameter Code: EM	2. Pollutant(s): EM
3. CMS Requirement:	[ ] Rule [✔] Other
4. Monitor Information: Manufacturer: Model Number:	Serial Number: 2342B005-1992 and 93221879
5. Installation Date: 01 Dec 1995	6. Performance Specification Test Date: 01 Dec 1995
7. Continuous Monitor Comment (limit to 200 characters): Fuel flow monitoring.	

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

Continuous Monitoring System: Continuous Monitor ___3__ of __3___

1. Parameter Code: EM	2. Pollutant(s): CO2
3. CMS Requirement:	[ ] Rule [ ] Other
4. Monitor Information: Manufacturer: Model Number:	Serial Number: 41H-44967-273
5. Installation Date: 01 Dec 1995	6. Performance Specification Test Date: 01 Dec 1995
7. Continuous Monitor Comment (limit to 200 characters):	

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

Supplemental Requirements

1. Process Flow Diagram [✔] Attached, Document ID: Figure 2-1 [ ] Not Applicable [ ] Waiver Requested
2. Fuel Analysis or Specification [✔] Attached, Document ID: Appendix C [ ] Not Applicable [ ] Waiver Requested
3. Detailed Description of Control Equipment [ ] Attached, Document ID:_____ [✔] Not Applicable [ ] Waiver Requested
4. Description of Stack Sampling Facilities [✔] Attached, Document ID: Appendix C [ ] Not Applicable [ ] Waiver Requested
5. Compliance Test Report [ ] Attached, Document ID:_____ [✔] Previously submitted, Date: 1999 and 2000 [ ] Not Applicable
6. Procedures for Startup and Shutdown [✔] Attached, Document ID: Appendix D [ ] Not Applicable [ ] Waiver Requested
7. Operation and Maintenance Plan [ ] Attached, Document ID:_____ [✔] Not Applicable [ ] Waiver Requested
8. Supplemental Information for Construction Permit Application [ ] Attached, Document ID:_____ [✔] Not Applicable
9. Other Information Required by Rule or Statute [ ] Attached, Document ID:_____ [✔] Not Applicable
10. Supplemental Requirements Comment:

Additional Supplemental Requirements for Title V Air Operation Permit Applications

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

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

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

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

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

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

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

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

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

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

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

[ ] Not Applicable

III. EMISSIONS UNIT INFORMATION

EXISTING UNITS

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

A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)

Emissions Unit Description and Status

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

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

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

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

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

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

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

7. Description of Emissions Unit Addressed in This Section (limit to 60 characters):
Duct Burner System associated with HRSG

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

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

10. Emissions Unit Comment: (Limit to 500 Characters)
This emission unit cannot operate unless the combustion turbine is operational.

Emissions Unit Control Equipment

10. Control Equipment/Method Description (Limit to 200 characters per device or method):
2. Control Device or Method Code(s): 28

Emissions Unit Details

1. Package Unit:	
Manufacturer: Colen	Model Number:
2. Generator Nameplate Rating:	
3. Incinerator Information:	
Dwell Temperature:	°F
Dwell Time:	seconds
Incinerator Afterburner Temperature:	°F

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

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:	188 mmBtu/hr		
2. Maximum Incineration Rate:	lb/hr		tons/day
3. Maximum Process or Throughput Rate:			
4. Maximum Production Rate:			
5. Requested Maximum Operating Schedule:			
24 hours/day	7 days/week		
52 weeks/year	8760 hours/year*		
7. Operating Capacity/Schedule Comment (limit to 200 characters):			
Maximum heat input based on natural gas-firing, 950 Btu/CF (LHV). These duct burners can only fire on natural gas.			

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

62-204.800(7)(b)3	NSPS Subpart Db
62-204.800(7)(d)	NSPS General Provisions
62-210.650	Circumvention
62-210.700(1)	Excess Emissions
62-210.700(4)	Excess Emissions
62-210.700(6)	Excess Emissions
62-297.310	Emissions Testing
40 CFR 60.7(b);(f)	Notification and Recordkeeping
40 CFR 60.8(e)	Performance tests
40 CFR 60.11(a)	Compliance
40 CFR 60.11(d)	Compliance (maintain control equipment)
40 CFR 60.44b(a)(4)(ii)	NOx
40 CFR 60.46b(a)	Compliance
40 CFR 60.46b(c)	NOx Performance tests
40 CFR 60.46b(f)	NOx for duct burners

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

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? EU-2	11. Emission Point Type Code: 2

3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point):
Single stack for CT and DB

12. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:
EU-1 Combustion Turbine (LM6000-PA)
EU-2 Duct Burners

13. Discharge Type Code: V	6. Stack Height: 93 feet	7. Exit Diameter: 9.8 feet
8. Exit Temperature:	9. Actual Volumetric Flow Rate:	10. Water Vapor:

11. Maximum Dry Standard Flow Rate:	12. Nonstack Emission Point Height: feet

13. Emission Point UTM Coordinates:
Zone: East (km): North (km):

14. Emission Point Comment (limit to 200 characters):
See emission point information for the new LM6000-PC-ESPRINT.

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

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Natural Gas Firing		
8. Source Classification Code (SCC): 2-01-002-01	3. SCC Units: Million Cubic Feet Burned	
9. Maximum Hourly Rate: 0.198 (LHV)	10. Maximum Annual Rate: 519 (LHV)	6. Estimated Annual Activity Factor:
11. Maximum % Sulfur: 1 grain / 100 CF	8. Maximum % Ash:	10. Million Btu per SCC Unit: 950 (LHV)
10. Segment Comment (limit to 200 characters):		

Segment Description and Rate: Segment _____ of _____

1. Segment Description (Process/Fuel Type) (limit to 500 characters):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):		

F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
NOX			**EL**
CO			**EL**

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

Potential/Fugitive Emissions

1. Pollutant Emitted: NOX	2. Total Percent Efficiency of Control:
3. Potential Emissions: 18.7 lb/hour 24.6 tons/year	4. Synthetically Limited? [✔]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: 0.1 lb/MMBtu Reference: Permit Limit	7. Emissions Method Code: 0
8. Calculation of Emissions (limit to 600 characters): Calculations are in Appendix B.	
8. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Emissions limited to 2,628 hr/yr operation at maximum fuel usage rate of 197.7 x 10^3 cf/hr.	

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
2. Requested Allowable Emissions and Units: 18.7 lb/hr	4. Equivalent Allowable Emissions: 18.7 lb/hour 24.6 tons/year
5. Method of Compliance (limit to 60 characters): Annual Compliance Test, EPA Method 20.	
6. Allowable Emissions Comment (Desc. Of Operating Method) (limit to 200 characters): Permit limit for DB.	

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

Potential/Fugitive Emissions

1. Pollutant Emitted: CO	2. Total Percent Efficiency of Control:
3. Potential Emissions: 28.1 lb/hour 36.9 tons/year	4. Synthetically Limited? [✔]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: 0.15 lb/MMBtu Reference: Permit Limit	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters): Permit Limit.	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Emissions limited by hours of operation (2,628 hr/yr) at maximum fuel usage rate of 197.7 x 10^3 cf/hr.	

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 28.1 lb/hr	4. Equivalent Allowable Emissions: 28.1 lb/hour 36.9 tons/year
5. Method of Compliance (limit to 60 characters): Annual Compliance Test, EPA Method 10.	
6. Allowable Emissions Comment (Desc. Of Operating Method) (limit to 200 characters): Permit Limit for DB.	

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

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: VE10	2. Basis for Allowable Opacity: [ ] Rule [✔] Other
3. Requested Allowable Opacity: Normal Conditions: 10% Exceptional Conditions: 27% Maximum Period of Excess Opacity Allowed: 6 min/hour	
14. Method of Compliance:	
15. Visible Emissions Comment (limit to 200 characters): See requirements for new LM6000-PC-ESPRINT turbine (shared stack).	

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

Continuous Monitoring System: Continuous Monitor 1 of 3

1. Parameter Code: EM	2. Pollutant(s): NOX
3. CMS Requirement:	[✔] Rule [ ] Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
8. Installation Date:	9. Performance Specification Test Date:
10. Continuous Monitor Comment (limit to 200 characters): See CEM data for LM-6000-PC-ESPRINT turbine.	

J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION

(Regulated Emissions Units Only)

Supplemental Requirements

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

Emissions Unit Control Equipment

16. Control Equipment/Method Description (Limit to 200 characters per device or method):
2. Control Device or Method Code(s):

Emissions Unit Details

1. Package Unit:	
Manufacturer:	Model Number:
2. Generator Nameplate Rating:	
3. Incinerator Information:	
Dwell Temperature:	°F
Dwell Time:	seconds
Incinerator Afterburner Temperature:	°F

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

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:	70 mmBtu/hr		
2. Maximum Incineration Rate:	lb/hr	tons/day	
3. Maximum Process or Throughput Rate:			
4. Maximum Production Rate:			
5. Requested Maximum Operating Schedule:			
24 hours/day	7 days/week		
52 weeks/year	8760 hours/year*		

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

Maximum heat input based on natural gas-firing, permit limit of 68,000 cf/hr, 1024 Btu/cf HHV. Max fuel input for oil is 444 gal/hr (20,140 Btu/lb- HHV; 7.2 lb/gal).

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

62-210.700(1)	Malfunction only for FFGS
62-210.700(2)	Startup / Shutdown for FFGS
62-210.700(3)	Load Change / soot blowing
62-210.700(4)	Maintenance
62-210.700(6)	Excess Emissions
62-296.406(1), (2), (3)	VE; BACT
62-297.310	Emissions Testing

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

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? EU-3		17. Emission Point Type Code: 1
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): Single stack		
18. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: NA		
19. Discharge Type Code: V	6. Stack Height: 82 feet	7. Exit Diameter: 5 feet
8. Exit Temperature: 350 °F	9. Actual Volumetric Flow Rate: 13,500 acfm	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet
13. Emission Point UTM Coordinates: Zone:	East (km):	North (km):
14. Emission Point Comment (limit to 200 characters): Information for oil-firing.		

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

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type) (limit to 500 characters):		
Natural Gas Firing		
13. Source Classification Code (SCC): 1-03-006-02	3. SCC Units: Million Cubic Feet Burned	
14. Maximum Hourly Rate: 0.068 (LHV)	15. Maximum Annual Rate: 596 (LHV)	6. Estimated Annual Activity Factor:
16. Maximum % Sulfur: 1 grain / 100 CF	8. Maximum % Ash:	11. Million Btu per SCC Unit: 950 (LHV)
10. Segment Comment (limit to 200 characters):		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Distillate fuel oil.		
2. Source Classification Code (SCC): 1-02-005-01	3. SCC Units: Thousand Gallons Burned	
3. Maximum Hourly Rate: 0.444	4. Maximum Annual Rate: 3,889	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.5	8. Maximum % Ash: 0.1	9. Million Btu per SCC Unit: 145
10. Segment Comment (limit to 200 characters):		

F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
NOX			**NS**
SO2			**EL**
CO			**NS**

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

Potential/Fugitive Emissions

1. Pollutant Emitted: SO2	H. Total Percent Efficiency of Control:
I. Potential Emissions: 32 lb/hour 140 tons/year	J. Synthetically Limited? [ ]
K. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: 0.5% Sulfur Reference:	7. Emissions Method Code:
6. Calculation of Emissions (limit to 600 characters): .Permit Limit	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 0.5% Sulfur	4. Equivalent Allowable Emissions: 32 lb/hour 140 tons/year
5. Method of Compliance (limit to 60 characters): Fuel Analysis	
6. Allowable Emissions Comment (Desc. Of Operating Method) (limit to 200 characters): Based on fuel-oil firing.	

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

Visible Emissions Limitation: Visible Emissions Limitation 1 of 5

1. Visible Emissions Subtype: VE10	2. Basis for Allowable Opacity: [ ] Rule [✔] Other
3. Requested Allowable Opacity: Normal Conditions: 10% Exceptional Conditions: 27% Maximum Period of Excess Opacity Allowed: 6 min/hour	
20. Method of Compliance: Annual Compliance Test using EPA Method 9	
21. Visible Emissions Comment (limit to 200 characters): VE standard established as part of construction permit. Gas-firing.	

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

Visible Emissions Limitation: Visible Emissions Limitation 2 of 5

1. Visible Emissions Subtype: VE20	2. Basis for Allowable Opacity: [✔] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: 20% Exceptional Conditions: 60% Maximum Period of Excess Opacity Allowed: 60 min/hour	
22. Method of Compliance: EPA Method 9	
23. Visible Emissions Comment (limit to 200 characters): VE limit during soot-blowing and load changing for up to 3 hr in 24 hr. Rule 62-210.700(3).	

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

Visible Emissions Limitation: Visible Emissions Limitation 3 of 5

1. Visible Emissions Subtype: VE	2. Basis for Allowable Opacity: [✔] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: Exceptional Conditions: 100% Maximum Period of Excess Opacity Allowed: 60 min/hour	
24. Method of Compliance: Best Operating Practices	
25. Visible Emissions Comment (limit to 200 characters): Not to exceed 2 hr in 24 hrs for malfunction. Rule 62-210.700(1).	

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

Visible Emissions Limitation: Visible Emissions Limitation 4 of 5

1. Visible Emissions Subtype: VE20	2. Basis for Allowable Opacity: [ ] Rule [✔] Other
3. Requested Allowable Opacity: Normal Conditions: 20% Exceptional Conditions: 27% Maximum Period of Excess Opacity Allowed: 6 min/hour	
26. Method of Compliance: Annual Compliance Test using EPA Method 9	
27. Visible Emissions Comment (limit to 200 characters): VE standard established as part of construction permit for cogeneration unit. Oil-firing. Annual test not required if F.O. use < 400 hr/yr.	

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

Visible Emissions Limitation: Visible Emissions Limitation 5 of 5

1. Visible Emissions Subtype: VE10	2. Basis for Allowable Opacity: [✔] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: Exceptional Conditions: 100% Maximum Period of Excess Opacity Allowed: 60 min/hour	
28. Method of Compliance: Best Operating Practices	
29. Visible Emissions Comment (limit to 200 characters): Excess emissions for startup, shutdown. Rule 62-210.700(2).	

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

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	[ ] Rule [ ] Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
11. Installation Date:	12. Performance Specification Test Date:
13. Continuous Monitor Comment (limit to 200 characters):	

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

Supplemental Requirements

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

Additional Supplemental Requirements for Title V Air Operation Permit Applications

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

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

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

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

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

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

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

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

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

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

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

[ ] Not Applicable

III. EMISSIONS UNIT INFORMATION

BOILER NO. 5

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

A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)

Emissions Unit Description and Status

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

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

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

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

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

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

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

17. Description of Emissions Unit Addressed in This Section (limit to 60 characters):
No. 5 Steam Boiler

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

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

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

Emissions Unit Control Equipment

30. Control Equipment/Method Description (Limit to 200 characters per device or method):
2. Control Device or Method Code(s):

Emissions Unit Details

1. Package Unit:	
Manufacturer:	Model Number:
2. Generator Nameplate Rating:	
3. Incinerator Information:	
Dwell Temperature:	°F
Dwell Time:	seconds
Incinerator Afterburner Temperature:	°F

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

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:	168 mmBtu/hr		
2. Maximum Incineration Rate:	lb/hr	tons/day	
3. Maximum Process or Throughput Rate:			
4. Maximum Production Rate:			
5. Requested Maximum Operating Schedule:			
24 hours/day	7 days/week		
52 weeks/year	8760 hours/year*		

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

Maximum heat input based on natural gas-firing, permit limit of 164,000 cf/hr, 1024 Btu/cf HHV. Max fuel input for oil is 1,067 gal/hr (20,140 Btu/lb- HHV; 7.2 lb/gal).

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

62-210.700(1)	Malfunction only for FFGS
62-210.700(2)	Startup / Shutdown for FFGS
62-210.700(3)	Load Change / soot blowing
62-210.700(4)	Maintenance
62-210.700(6)	Excess Emissions
62-296.406(1), (2), (3)	VE; BACT
62-297.310	Emissions Testing

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

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? EU-4		31. Emission Point Type Code: 1
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): Single stack		
32. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: NA		
33. Discharge Type Code: V	6. Stack Height: 82 feet	7. Exit Diameter: 6 feet
8. Exit Temperature: 400 °F	9. Actual Volumetric Flow Rate: 56,250 acfm	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet
13. Emission Point UTM Coordinates: Zone:	East (km):	North (km):
14. Emission Point Comment (limit to 200 characters): Information for oil-firing.		

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

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Natural Gas Firing		
18. Source Classification Code (SCC): 1-03-006-01	3. SCC Units: Million Cubic Feet Burned	
19. Maximum Hourly Rate: 0.164 (LHV)	20. Maximum Annual Rate: 1,383 (LHV)	6. Estimated Annual Activity Factor:
21. Maximum % Sulfur: 1 grain / 100 CF	8. Maximum % Ash:	12. Million Btu per SCC Unit: 950 (LHV)
10. Segment Comment (limit to 200 characters):		

Segment Description and Rate: Segment 2 of 2

5. Segment Description (Process/Fuel Type) (limit to 500 characters): Distillate fuel oil.		
6. Source Classification Code (SCC): 1-02-005-01	3. SCC Units: Thousand Gallons Burned	
7. Maximum Hourly Rate: 1.067	8. Maximum Annual Rate: 9,347	6. Estimated Annual Activity Factor:
10. Maximum % Sulfur: 0.5	11. Maximum % Ash: 0.1	12. Million Btu per SCC Unit: 145
10. Segment Comment (limit to 200 characters):		

F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
NOX			**NS**
SO2			**EL**
CO			**NS**
PM, PM10			**NS**

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

Potential/Fugitive Emissions

1. Pollutant Emitted: SO2	M. Total Percent Efficiency of Control:
N. Potential Emissions: 76.8 lb/hour 336.5 tons/year	O. Synthetically Limited? [ ]
P. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: 0.5% Sulfur Reference: Permit	8. Emissions Method Code: 0
7. Calculation of Emissions (limit to 600 characters): .Permit Limit	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions 1 of 1

7. Basis for Allowable Emissions Code: OTHER	8. Future Effective Date of Allowable Emissions:
9. Requested Allowable Emissions and Units: 0.5% Sulfur	10. Equivalent Allowable Emissions: 76.8 lb/hour 336.5 tons/year
11. Method of Compliance (limit to 60 characters): Fuel Analysis	
12. Allowable Emissions Comment (Desc. Of Operating Method) (limit to 200 characters): Based on fuel-oil firing; permit condition.	

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

Visible Emissions Limitation: Visible Emissions Limitation 1 of 5

1. Visible Emissions Subtype: VE10	2. Basis for Allowable Opacity: [ ] Rule [✔] Other
3. Requested Allowable Opacity: Normal Conditions: 10% Exceptional Conditions: 27% Maximum Period of Excess Opacity Allowed: 6 min/hour	
34. Method of Compliance: Annual Compliance Test using EPA Method 9	
35. Visible Emissions Comment (limit to 200 characters): VE standard established as part of construction permit. Gas-firing.	

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

Visible Emissions Limitation: Visible Emissions Limitation 2 of 5

1. Visible Emissions Subtype: VE20	2. Basis for Allowable Opacity: [✔] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: 20% Exceptional Conditions: 60% Maximum Period of Excess Opacity Allowed: 60 min/hour	
36. Method of Compliance: EPA Method 9	
37. Visible Emissions Comment (limit to 200 characters): VE limit during soot-blowing and load changing for up to 3 hr in 24 hr. Rule 62-210.700(3).	

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

Visible Emissions Limitation: Visible Emissions Limitation 3 of 5

1. Visible Emissions Subtype: VE	2. Basis for Allowable Opacity: [✔] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: Exceptional Conditions: 100% Maximum Period of Excess Opacity Allowed: 60 min/hour	
38. Method of Compliance: Best Operating Practices	
39. Visible Emissions Comment (limit to 200 characters): Not to exceed 2 hr in 24 hrs for malfunction. Rule 62-210.700(1).	

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

Visible Emissions Limitation: Visible Emissions Limitation 4 of 5

1. Visible Emissions Subtype: VE20	2. Basis for Allowable Opacity: [ ] Rule [✔] Other
3. Requested Allowable Opacity: Normal Conditions: 20% Exceptional Conditions: 27% Maximum Period of Excess Opacity Allowed: 6 min/hour	
40. Method of Compliance: Annual Compliance Test using EPA Method 9	
41. Visible Emissions Comment (limit to 200 characters): VE standard established as part of construction permit for cogeneration unit. Oil-firing. Annual test not required if F.O. use < 400 hr/yr.	

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

Visible Emissions Limitation: Visible Emissions Limitation 5 of 5

1. Visible Emissions Subtype: VE10	2. Basis for Allowable Opacity: [✔] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: Exceptional Conditions: 100% Maximum Period of Excess Opacity Allowed: 60 min/hour	
42. Method of Compliance: Best Operating Practices	
43. Visible Emissions Comment (limit to 200 characters): Excess emissions for startup, shutdown. Rule 62-210.700(2).	

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

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	[ ] Rule [ ] Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
14. Installation Date:	15. Performance Specification Test Date:
16. Continuous Monitor Comment (limit to 200 characters):	

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

Supplemental Requirements

1. Process Flow Diagram [ ] Attached, Document ID:___ [✔] Not Applicable [ ] Waiver Requested
2. Fuel Analysis or Specification [ ] Attached, Document ID:___ [✔] Not Applicable [ ] Waiver Requested
3. Detailed Description of Control Equipment [ ] Attached, Document ID:___ [✔] Not Applicable [ ] Waiver Requested
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5. Compliance Test Report [ ] Attached, Document ID:_____ [ ] Previously submitted, Date:_____ [ ] Not Applicable
6. Procedures for Startup and Shutdown [ ] Attached, Document ID:___ [✔] Not Applicable [ ] Waiver Requested
7. Operation and Maintenance Plan [ ] Attached, Document ID:_____ [✔] Not Applicable [ ] Waiver Requested
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9. Other Information Required by Rule or Statute [ ] Attached, Document ID:_____ [✔] Not Applicable
10. Supplemental Requirements Comment:

Additional Supplemental Requirements for Title V Air Operation Permit Applications

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

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[ ] Attached, Document ID:_____ [✔] Not Applicable

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

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

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

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

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

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

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

[ ] Not Applicable

III.

APPENDIX B

EMISSION CALCULATIONS

Operational Data 1995-2000

Year	EU	NG, MMCF	NG, Btu/CF	FO, Mgal	FO, %S	FO, MMBtu/Mgal	HOURS	Startup	Max MMBtu/hr
1995	001	2455.491	1035.50				8284	1993	
1995	002	110.328	1035.50	44.646	0.046	127.25	1473	1972	70
1995	003	110.293	1035.50	44.394	0.046	138.88	4381	1977	168
1996	001	2824.464	1042.25				8423	1993	
1996	002	43.391	1042.25	3.948	0.035	139.39	8386	1972	
1996	003	43.387	1042.25	3.948	0.035	139.39	7981	1977	
1997	001	2902.330	1047.25				8426	1993	
1997	002	41.759	1047.25	0.420	0.035	136.00	8702	1972	
1997	003	41.692	1047.25	0.000	0.035	136.00	8006	1977	
1998	001	1199.820	1044.92				4524	1993	
1998	002	287.548	1044.92	46.494	0.035	136.00	8710	1972	
1998	003	299.049	1044.92	27.002	0.035	136.00	7957	1977	
1999	001	2717.920	1048.00				7964	1993	
1999	002	60.870	1048.00	16.000	0.060	136.00	7940	1972	
1999	003	0.000	1048.00	366.000	0.060	136.00	7811	1977	
2000	1	3,010.19	1036.5					1993	
2000								1972	
2000								1977	

EU001: Combustion Gas Turbine
EU002: Boiler #4
EU003: Boiler #5
Fuel use for 2000 not yet available for EU002 and EU003.

		Factors, lb/MMCF, natural gas						
Year	EU	NOx	CO	SO2	PM	PM10	VOC	Comment
1995	001	30.12	3.57	0.003196	6.60E-03	6.60E-03	2.10E-03	NOX, CO, lb/hr test data
1995	002	100	84	0.03	7.6	7.6	5.5	Pre-NSPS
1995	003	280	84	0.03	7.6	7.6	5.5	Pre-NSPS
1996	001	30.12	3.57	0.003196	6.60E-03	6.60E-03	2.10E-03	NOX, CO, lb/hr test data
1996	002	100	84	0.03	7.6	7.6	5.5	Pre-NSPS
1996	003	280	84	0.03	7.6	7.6	5.5	Pre-NSPS
1997	001	25.36	7.91	0.003196	6.60E-03	6.60E-03	2.10E-03	NOX, CO, lb/hr test data
1997	002	100	84	0.03	7.6	7.6	5.5	Pre-NSPS
1997	003	280	84	0.03	7.6	7.6	5.5	Pre-NSPS
1998	001	0.068	0.021	0.003196	6.60E-03	6.60E-03	2.10E-03	NOX, CO, lb/MMBtu test data
1998	002	100	84	0.03	7.6	7.6	5.5	Pre-NSPS
1998	003	280	84	0.03	7.6	7.6	5.5	Pre-NSPS
1999	001	0.068	0.020	0.003196	6.60E-03	6.60E-03	2.10E-03	NOX, CO, lb/MMBtu test data
1999	002	100	84	0.03	7.6	7.6	5.5	Pre-NSPS
1999	003	280	84	0.03	7.6	7.6	5.5	Pre-NSPS
2000	001	0.066	0.013	0.003196	6.60E-03	6.60E-03	2.10E-03	NOX, CO, lb/MMBtu test data
2000	002	100	84	0.03	7.6	7.6	5.5	Pre-NSPS
2000	003	280	84	0.03	7.6	7.6	5.5	Pre-NSPS

Sulfur content per Title V application 0.043 gr/MCF, max 0.1 gr/MCF. Max used.
Factor = 0.6 * 0.1*1M/2000 =0.03 lb/MMCF.

Factors, lb/Mgal, oil						
EU	NOx	CO	SO2 / %S	PM	PM10	VOC
002	20	5	142	3.3	3.3	0.2
003	24	5	157	3.3	3.3	0.2

Emissions, TPY							
Year	EU	NOx	CO	SO2	PM	PM10	VOC
1995	001	124.8	14.8	0.00	0.01	0.01	0.00
1995	002	6.0	4.7	0.15	0.49	0.49	0.31
1995	003	16.0	4.7	0.16	0.49	0.49	0.31
1996	001	126.9	15.0	0.00	0.01	0.01	0.00
1996	002	2.2	1.8	0.01	0.17	0.17	0.12
1996	003	6.1	1.8	0.00	0.17	0.17	0.12
1997	001	106.8	33.3	0.00	0.01	0.01	0.00
1997	002	2.1	1.8	0.00	0.16	0.16	0.11
1997	003	5.8	1.8	0.00	0.16	0.16	0.11
1998	001	42.6	13.2	0.00	0.00	0.00	0.00
1998	002	14.8	12.2	0.12	1.17	1.17	0.80
1998	003	42.2	12.6	0.00	1.18	1.18	0.83
1999	001	96.8	29.9	0.00	0.01	0.01	0.00
1999	002	3.2	2.6	0.07	0.26	0.26	0.17
1999	003	4.4	0.9	0.00	0.60	0.60	0.04
2000	001	106.1	32.8	0.00	0.01	0.01	0.00
2000	002	0.0	0.0	0.00	0.00	0.00	0.00
2000	003	0.0	0.0	0.00	0.00	0.00	0.00

Year 2000 data for EU002 and EU003 unavailable.

Annual Totals	NOx	CO	SO2	PM	PM10	VOC
1995	146.7	24.3	0.31	0.99	0.99	0.62
1996	135.2	18.7	0.02	0.35	0.35	0.24
1997	114.8	36.8	0.01	0.33	0.33	0.23
1998	99.7	38.0	0.13	2.35	2.35	1.62
1999	104.4	33.4	0.07	0.87	0.87	0.21
2000*	106.1	32.8	0.0	0.0	0.0	0.0

Year 2000 data for EU002 and EU003 unavailable.

AVERAGE 2-YEAR ACTUALS (1999 & 2000), TPY

	NOx	CO	SO2	PM	PM10	VOC
EU01	101.5	31.3	0.00	0.01	0.01	0.00

CALCULATIONS AND COMPUTATIONS

Project: Florida GE LM6000-PC-ESPRINT
Project Number: 8733-024-PRM
Subject: Gas Turbine Emission Calculations - GE LM6000-PC 100 % Load Conditions

Computed by: K. Field Date: 1/5/00
Checked by: _____ Date: _____

Design Parameters	Units	Design Data				Comments
Turbine Load	(%)	100				Manufacturer Supplied Data
Stack Diameter	(Feet)	9.8				Current Permit Application
Fuel Type		Natural Gas Only				Proposed Design Specification
Fuel Heating Value	(Btu/SCF, LHV)	950				Manufacturer Supplied Data
Fuel Sulfur Content	(Grains/SCF)	0.01				Manufacturer Supplied Data
Conditioning		EVAP	EVAP	EVAP	EVAP	Manufacturer Supplied Data
Ambient Temperature	(F)	55	66.3	71.1	105	Manufacturer Supplied Data
Ambient Relative Humidity	(%)	60	60	60	60	Manufacturer Supplied Data
Inlet Temperature	(F)	49	59	63.2	93.4	Manufacturer Supplied Data
Inlet Relative Humidity	(%)	92.9%	92.8%	92.7%	92.5%	Manufacturer Supplied Data
CTG - Gross Power Output	(kW)	49,075	47,136	46,210	35,958	Manufacturer Supplied Data
Heat Input Rate	(MMBtu/Hr, LHV)	404.0	392.0	387.0	324.0	Manufacturer Supplied Data
Fuel Feed Rate	(SCF/Hr)	425,263	412,632	407,368	341,053	Calculated
Exhaust Temperature	(F)	839	842	843	855	Manufacturer Supplied Data
Exhaust Velocity	(F/S)	137.2	134.2	132.8	117.5	Calculated
Exhaust Analysis Argon	mol%	0.96	0.96	0.96	0.96	39.948 lb/lb mol Ar
Nitrogen	mol%	71.23	71.05	70.95	69.96	28.0134 lb/lb mol N_2
Oxygen	mol%	13.12	13.10	13.09	13.08	31.998 lb/lb mol O_2
Carbon Dioxide	mol%	3.12	3.10	3.09	2.96	44.009 lb/lb mol CO_2
Water	mol%	11.68	11.90	12.01	13.16	18.0148 lb/lb mol H_2O
CHECKSUM	mol%	100.11	100.11	100.11	100.12	mol% check sum
Exhaust Molecular Weight	(Lbs/Lb-Mol)	28.01	27.99	27.97	27.84	Calculated
Exhaust Flow Rate	(Lbs/Hr, Wet)	1,099,901	1,072,983	1,060,250	925,381	Manufacturer Supplied Data
	(ACFHW)	37,244,976	36,443,379	36,066,052	31,914,687	Calculated
	(ACFMW)	620,750	607,390	601,101	531,911	Calculated
	(ACFHD)	32,893,906	32,106,617	31,733,146	27,714,299	Calculated
	(ACFMD)	548,232	535,110	528,886	461,905	Calculated
	(SCFHW)	15,133,218	14,775,659	14,606,963	12,809,620	Calculated
	(SCFMW)	252,220	246,261	243,449	213,494	Calculated
	(SCFHD)	13,365,310	13,017,356	12,852,111	11,123,707	Calculated
	(SCFMD)	222,755	216,956	214,202	185,395	Calculated
Exhaust Moisture	(%)	11.68	11.90	12.01	13.16	Manufacturer Supplied Data
Exhaust O2 Dry	(%)	14.86	14.87	14.88	15.06	Calculated
Concentration of NOx in Exhaust	(ppmvd@15% O2)	25.00	25.00	25.00	25.00	Manufacturer Supplied Data
	(ppmvd)	25.6	25.5	25.5	24.7	Calculated
Concentration of CO in Exhaust	(ppmvd)	36.9	36.1	33.5	14.8	Calculated
	(ppmvd @ 15% O2)	36.0	35.3	32.8	15.0	Manufacturer Supplied Data
Concentration of VOC in Exhaust	(ppmvw)	8.83	8.81	8.80	8.68	Calculated
	(ppmvd)	10.00	10.00	10.00	10.00	Manufacturer Supplied Data (HC)
	(ppmvd @ 15% O2)	9.8	9.8	9.8	10.1	Calculated

Note:

CALCULATIONS AND COMPUTATIONS

Project: Florida GE LM6000-PC-ESPRINT
Project Number: 8733-024-PRM
Subject: Gas Turbine Emission Calculations - GE LM6000-PC 100 % Load Conditions

Computed by: K. Field Date: 1/5/00
Checked by: Date:

OXIDES OF NITROGEN

$$\text{Lbs/Hr} = \frac{(\text{NOx Concentration, ppmvd}) * (\text{Exhaust Flow Rate, SCFMD}) * (\text{Mol Wt. NOx, Lbs/Lb-Mol}) * 60\ \text{Min/Hr}}{(385\ \text{SCF/Lb-Mol}) * (1{,}000{,}000)}$$

Oxides of Nitrogen Emissions Summary

Inlet Temperature, °F	49	59	63.2	93.4
	Emission Per Combustion Turbine Unit			
Lbs/Hr =	39.6	39.6	39.1	32.9

CARBON MONOXIDE

$$\text{Lbs/Hr} = \frac{(\text{CO Concentration, ppmvd}) * (\text{Exhaust Flow Rate, SCFMD}) * (\text{Mol Wt. CO, Lbs/Lb-Mol}) * 60\ \text{Min/Hr}}{(385\ \text{SCF/Lb-Mol}) * (1{,}000{,}000)}$$

Carbon Monoxide Emission Summary

Inlet Temperature, °F	49	59	63.2	93.4
	Emission Per Combustion Turbine Unit			
Lbs/Hr =	35.8	34.1	31.3	12.0

VOLATILE ORGANIC COMPOUNDS

$$\text{Lbs/Hr} = \frac{(\text{VOC Concentration as Methane, ppmvw}) * (\text{Exhaust Flow Rate, SCFMW}) * (\text{Mol Wt. VOC, Lbs/Lb-Mol}) * 60\ \text{Min/Hr}}{(385\ \text{SCF/Lb-Mol}) * (1{,}000{,}000)}$$

Volatile Organic Compounds Emission Summary

Inlet Temperature, °F	49	59	63.2	93.4
	Emission Per Combustion Turbine Unit			
Lbs/Hr =	5.6	5.4	5.3	4.6

CALCULATIONS AND COMPUTATIONS

Project: Florida GE LM6000-PC-ESPRINT
Project Number: 8733-024-PRM
Subject: Gas Turbine Emission Calculations - GE LM6000-PC 100 % Load Conditions

Computed by: K. Field Date: 1/5/00
Checked by: Date:

SULFUR DIOXIDE

$$\text{Lbs/Hr} = \frac{\text{(Expected Fuel Gas Sulfur Content, Grains/SCF) * (Fuel Feed Rate, SCF/Hr) * (64 Lbs SO2/32 Lbs S)}}{\text{(7,000 Grains/Lbs)}}$$

Sulfur Dioxide Emissions Summary

Inlet Temperature, °F	49	59	63.2	93.4
	Emission Per Combustion Turbine Unit			
Lbs/Hr =	1.2	1.2	1.2	1.0

Note:
Sulfur emissions calculated based on Natural Gas sulfur content of 0.01 grains of sulfur/SCF Natural Gas

PARTICULATE MATTER

Particulate Matter Emissions Summary

Inlet Temperature, °F	49	59	63.2	93.4
	Emission Per Combustion Turbine Unit			
Lbs/Hr =	3	3	3	3

Combustion Turbine Hourly Emissions Rate Summary
University of Florida
Natural Gas Firing

Compound	Ambient Temp	55	66.3	71.1	105	MAX
	Inlet Temp	49	59	63.2	93.4	
	Load, %	Emissions for LM6000-PC-ESPRINT Turbine, lb/hr				lb/hr
NOx	100	39.6	39.6	39.1	32.9	39.6
CO	100	35.8	34.1	31.3	12.0	35.8
VOC	100	5.6	5.4	5.3	4.6	5.6
SO2	100	1.2	1.2	1.2	1.0	1.2
PM	100	3.0	3.0	3.0	3.0	3.0
Notes:	The average inlet temperature during the year 2000 was 63.2 °F					

Combustion Turbine Annual Emission Summary
University of Florida

Turbine	NOx	CO	VOC	SO2	PM	PM_{10}	Pb
	Emissions for One Combustion Turbine (tons/year) [1]						
GE LM6000-PC-ESPRINT, 49°F inlet, 8760 hr/yr[1]	173.4	156.8	24.5	5.3	13.1	13.1	0.000
GE LM6000-PC-ESPRINT, 49°F inlet, 7121hr/yr1	141.0	127.5	19.9	4.3	10.6	10.6	0.000
GE LM6000-PC-ESPRINT, 63.2°F inlet, 8760 hr/yr[2]	171.3	137.1	23.2	5.3	13.1	13.1	0.000
GE LM6000-PC-ESPRINT, 63.2°F inlet, 7210.5 hr/yr	141.0	112.8	19.1	4.4	10.8	10.8	0.000

[1]These annual emission estimates are based on worst case hourly emissions and unlimited operation, I.e., inlet temperature of 49°F and natural gas operation of 8760 hrs/year, 100% load.
[2]The average inlet temperature for the year 2000 was 63.2°F. Emissions are at 100% load.

University of Florida
Estimated NSPS NO_x Emission Standard

Turbine: General Electric Model LM6000-PC-ESPRINT Natural Gas Firing		
Nominal Maximum Electrical Capacity	47.136	MW
Maximum Energy Input	392	MMBtu/hr (LHV)
	413,795,200	kJ/hr
Heat Rate	8,316	Btu/kWh
	8.8	kJ/Wh
NSPS Subpart GG NOx Limit	0.0123%	Volume % NOx @ 15% O2
	123	ppmvd @ 15% O2

Calculations and Computations
HAP Emissions from Simple Cycle CTG Facility

Project: Florida GE LM6000-PC-ESPRINT
Project Number: 8733-024-PRM
Subject: Natural Gas Turbine Non-Criteria Regulated Pollutant Emissions

Computed by: K. Field **Date:** 1/5/00
Checked by: _____ **Date:** _____

Pollutant	Type[a]	Emission Factor AP-42 Section 3.1 04/00 - Combustion Turbine Natural Gas (lb/10^6 scf)	(lb/MMBtu)[d]	Rating	CTG Natural Gas Combustion: Maximum Heat Input, per turbine (MMBtu/Hr)[b]	Average Heat Input, per turbine (MMBtu/Hr)[c]	Natural Gas Fired CTG Emissions: Emission Rate, Per Turbine Hourly[e] (lb/hr)	Annual[f] (tpy)	Facility: Emission Rate All Turbines Hourly[f] (lb/hr)	Annual[f] (tpy)	Facility: Major Source (Y/N)
1,3-Butadiene	HAP		4.50E-07	D	364.0	440.4	1.64E-04	8.68E-04	1.64E-04	8.68E-04	No
Acetaldehyde	HAP		4.19E-05	C	364.0	440.4	1.52E-02	8.08E-02	1.52E-02	8.08E-02	No
Acrolein	HAP		6.70E-06	C	364.0	440.4	2.44E-03	1.29E-02	2.44E-03	1.29E-02	No
Benzene [g]	HAP	1.36E-02	1.27E-05	B	364.0	440.4	4.64E-03	2.46E-02	4.64E-03	2.46E-02	No
Ethylbenzene	HAP		3.35E-05	C	364.0	440.4	1.22E-02	6.46E-02	1.22E-02	6.46E-02	No
Formaldehyde [h]	HAP	2.72E-01	2.54E-04		364.0	440.4	9.26E-02	4.91E-01	9.26E-02	4.91E-01	No
Naphthalene	HAP		1.36E-06	C	364.0	440.4	4.95E-04	2.62E-03	4.95E-04	2.62E-03	No
PAHs	HAP		2.30E-06	C	364.0	440.4	8.38E-04	4.44E-03	8.38E-04	4.44E-03	No
Propylene Oxide	HAP		3.03E-05	D	364.0	440.4	1.10E-02	5.85E-02	1.10E-02	5.85E-02	No
Toluene [g]	HAP	7.10E-02	6.66E-05	B	364.0	440.4	2.42E-02	1.28E-01	2.42E-02	1.28E-01	No
Xylene	HAP		6.70E-05	C	364.0	440.4	2.44E-02	1.29E-01	2.44E-02	1.29E-01	No

	Hours of Operation
Natural Gas CTG	8,760
Number of Turbines	1

Total HAPs	**0.2**	**1.0**	**No**
Maximum Individual HAP	**0.1**	**0.5**	**No**

Natural Gas Heating Value [i]: 1067.4 Btu/SCF (HHV), 950 Btu/SCF (LHV)

Notes:
(a) Type = NC for Non-Criteria Pollutants, HAP/POM for compounds included as polycyclic organic matter or HAP for Hazardous Air Pollutant.
(b) Maximum heat input rate for turbine is based on HHV data at ambient temperature of 55°F and 100% load operating conditions.
(c) Average heat input rate is based on HHV data at an average ambient temperature of 55°F end 100% load operating conditions.
(d) Emission Factor (lb/MMBtu) = (Emission Factor, lb/10^6 scf) / (Btu/scf)
(e) Hourly Emission Rate (lb/hr) = [Heat Input Rate (MMBtu/Hr) * Emission Factor (lb/MMBtu)]
(f) Annual Emission Rate (tpy) = (Average Hourly Emission Rate, lb/hr) * (hr/yr) / (2,000 lb/ton)
(g) Emission Factors from CARB CATEF emission factor database for natural gas fired combustion turbines.
(h) Modified from AP-42 Section 3.1 emissions database for large turbines.

Calculations and Computations

Project: Florida GE LM6000-PC-ESPRINT
Project Number: 8733-024-PRM
Subject: Formaldehyde Emission Factor

Computed by: L. Sherburne **Date:** 7/19/00
Checked by: M. Griffin **Date:** 9/21/00

Facility	Manufacturer	Model	Rating	AP-42 1998 Draft	Large Turbines (>70 MW)
			(MW)	*(lb/Mmcuft)*	*(lb/Mmcuft)*
Gilroy Energy Co./Gilroy, CA	General Electric	Frame 7	87	**0.722160**	**0.722160**
Sithe Energies, 32nd St. Naval S/San Diego, CA	General Electric	MS6000	44	**0.110160**	
SD Gas & Electric Co./San Diego, CA	General Electric	5221	17	**0.483480**	
Modesto Irrigation District/Mclure/Modesto, CA	General Electric	Frame 7B	50	**0.135660**	
Willamette Industries, Inc./Oxnard, CA	General Electric	LM2500-PE	67.4	**0.044982**	
Sycamore Cogen. Co./Bakersfield, CA	General Electric	Frame 7	75	**0.085884**	**0.085884**
Calpine / Agnews Cogen./San Jose, CA	General Electric	LM5000	23.33	**0.063036**	
Dexzel Inc./Bakersfield, CA	General Electric	LM2500	29.1	**0.026520**	
Procter & Gamble Manufacturing/Sacramento, CA	General Electric	LM2500	20.5	**0.088434**	
Chevron Inc./Gaviota, CA	Allison	K501	2.5	**3.570000**	
Ell / Stewart & Stevenson/Berkeley, CA	General Electric	LM2500	25	**0.480420**	
Calpine Corp./Sumas, WA	General Electric	MS7001EA	87.83	**0.006834**	**0.006834**
Sargent Canyon Cogen/Bakersfield, CA	General Electric	Frame 6	42.5	**0.059568**	
Watsonville Cogen, Partnership/Watsonville, CA	General Electric	LM 2500	24	**0.091596**	
Southern Cal. Edison Co./Long Beach, CA	Brown-Boveri-Sulzer	11-D	61.75	**1.326000**	
NR/NR	General Electric	Frame 3	7.7	**0.265200**	
NR/NR	General Electric	Frame 3	7.7	**0.427380**	
NR/NR	Solar	T12000	9.4	**0.015810**	
NR/NR	Solar	T12000	9.4	**9.618600**	
NR/NR	General Electric	LM1500	10.6	**4.273800**	
NR/NR	General Electric	LM1500	10.6	**25.908000**	
Southern Cal. Edison Co./Coolwater, CA	Westinghouse	PACE520	63	**38.964000**	
Southern Cal. Edison Co./Coolwater, CA	Westinghouse	PACE520	63	**0.350880**	
Imperial Irrigation D / Choachella/Imperial, CA	General Electric	NS5000P	46.3	**0.306000**	
Bonneville Pacific Corp./Somis, CA	Solar	Mars	9	**0.743580**	
WSPA/SWEPI GT/Bakersfield, CA	Allison	501 KB5	4	**0.013872**	
			Mean (lb/Mmcuft)	**3.39**	**0.27**

Note: The AP-42 1998 Draft document calculates the proposed Formaldehyde Emission factor as an average of all of the test data present in the data base. For the purposes of calculating an appropriate emission factor for the Big Cajun One Expansion Project only the data presented for large turbines has been used.

APPENDIX C

SUPPORTING DOCUMENTATION

ATTACHMENT UF-EU3-L2
FUEL ANALYSIS

Natural Gas Analysis

Parameter	Typical Value	Max Value
Relative density	0.58 (compared to air)	
heat content	950 - 1140 Btu/cu ft.	
% sulfur	0.43 grains/CCF [1]	1 grain/100 CF
% nitrogen	0.8% by volume	
% ash	negligible	

Note: The values listed are "typical" values based upon information supplied to FPC by Florida Gas Transmission (FGT). However, analytical results from grab samples of fuel taken at any given point in time may vary from those listed.

[1] Data from laboratory analysis

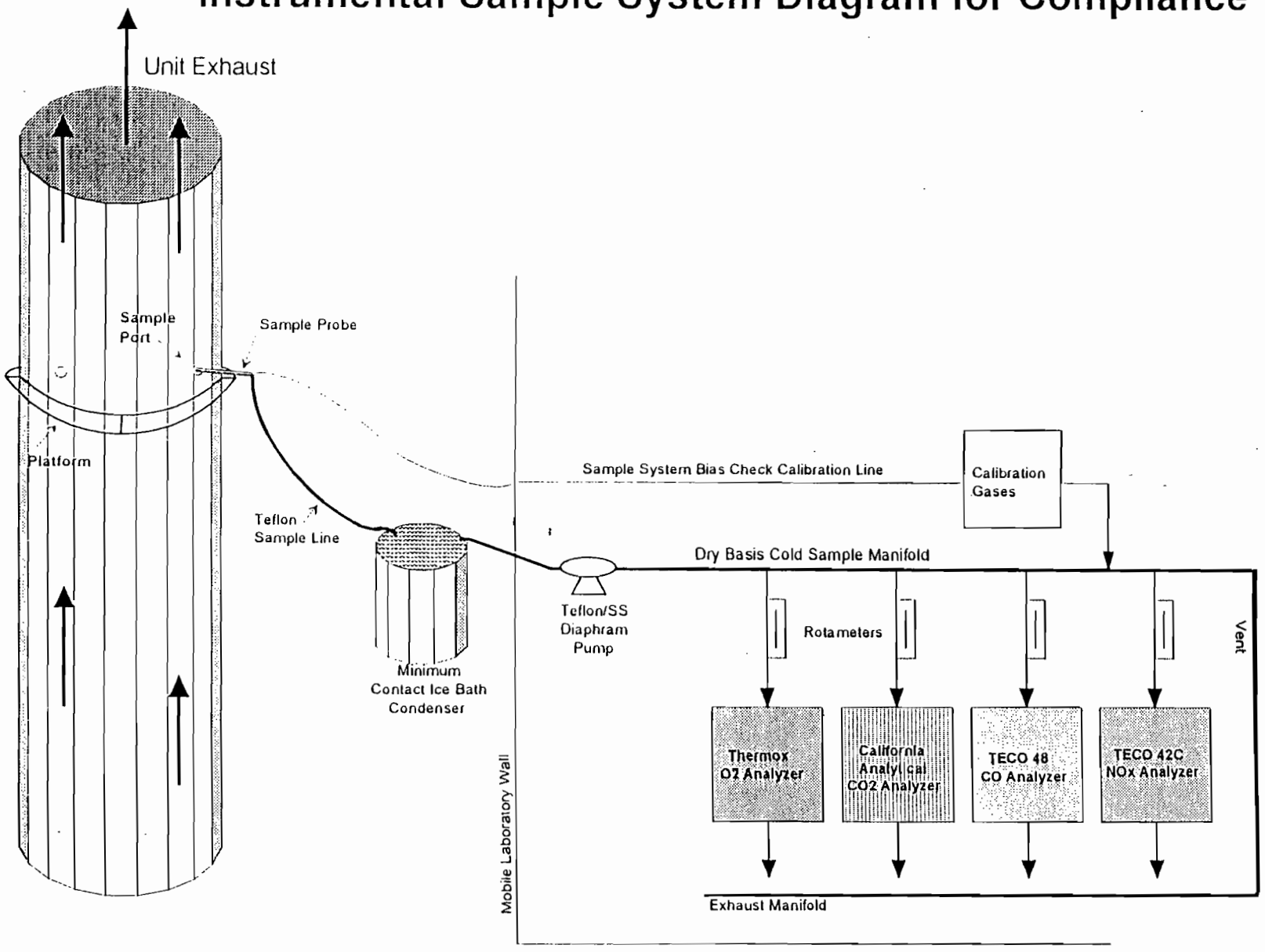
CTG FUEL USE DATA 1995-2000

Year	Nat. Gas, MMCF	Nat. Gas, Btu/CF	HOURS
1995	2,455.5	1,035.5	8,284
1996	2,824.5	1,042.3	8,423
1997	2,902.3	1,047.3	8,426
1998	1,199.8	1,044.9	4,524
1999	2,717.9	1,048.0	7,964
2000	3,010.2	1,036.5	

APPENDIX D

STACK SAMPLING FACILITIES

Instrumental Sample System Diagram for Compliance Testing



File: Sample2.ds4

APPENDIX E

STARTUP/SHUTDOWN PROCEDURES

STARTUP/SHUTDOWN PROCEDURES

Startup operations commence with the first ignition of fuel within the combustion turbine (CT). The unit is then ramp-loaded over a brief period of time to safely bring the CT and the HRSG to base load conditions in a manner required by the equipment manufacturers' warranties and recommendations. Best operating practices are adhered to and all efforts to minimize both the level and duration of excess emissions are undertaken.

Shutdown is performed by reducing the unit load to a minimum level, opening the breaker (which disconnects the unit from the electrical system grid), shutting off the fuel supply and coasting down to a stop. The CT is then put on "turning gear" to prevent possible distortion of the turbine components.

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT
STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DEP File No. 0010001-003-AC
University of Florida
Cogen Facility
Alachua County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit to Florid Power Corporation. The permit is for the replacement of a 43 MW combustion power turbine at the University of Florida with a more efficient unit related at 48 MW. A Best Available Control Technology (BACT) determination was not required. The applicant's name and address are Florida Power Corporation, Post Office Box 112295, Gainesville, Florida 32611-2295.

The existing unit is a General Electric LM6000 PA aeroderivative combustion turbine with a supplementally-fired heat recovery steam generator. The unit was installed in 1994 and will be replaced with the larger and more efficient LM6000 PC ESPRINT.

Nitrogen Oxides (NOx) emissions will be controlled by steam injection to achieve 25 parts per million by volume (dry) at 15 percent oxygen (ppmvd) while burning natural gas and 42 ppmvd while burning distillate fuel oil. Emissions of carbon monoxide (CO) will be controlled to 36 and 75 ppmvd while burning gas and fuel oil respectively. Emissions of particulate matter (PM/PM10), sulfur dioxide (SO2), sulfuric acid mist, volatile organic compounds (VOC), and hazardous air pollutants (HAP) will be controlled to very low levels by good combustion and use of inherently clean pipeline quality natural gas and No. 2 distillate fuel oil.

The Department determined that the Rules for the Prevention of Significant Deterioration of Air Quality (PSD) do not apply to this project because the modification will not result in emissions increases greater than the significant emission rates given in Table 212.400-2, F.A.C. An air quality impact analysis was not required.

The Department will issue the FINAL permit with the attached conditions 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 fourteen (14) days from the date of publication of "Public Notice of Intent to Issue Air Construction Permit." Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interest swlll be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final actio may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

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:

Dept. of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida, 32301
Telephone: 850/488-0114
Fax 850/922-6979

Dept. of Environmental Protection
Northeast District Office
7825 Baymeadows Way,
Suite 200B
Jacksonville, FL 32256-7590
Telephone: 904/448-4300
Fax: 904/448-4363

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 102.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under

Dept. of Environmental Protection
Northeast District Branch Office
101 NW 75th Street, Suite 3
Gainesville, FL 32607
Telephone: 352/333-2850
Fax: 352/333-2856

The complete project file includes the application, technical evaluations, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-0114, for additional information. The Department's technical evaluations and Draft Permit can be viewed at the following Internet address: www8.myflorida.com/licensingpermitting/learn/environment/air/airpermits.html by clicking on "Utility and Other Facility Permits".

20017

NO_____

THE GAINESVILLE SUN
Published Daily and Sunday
GAINESVILLE, FLORIDA

STATE OF FLORIDA
COUNTY OF ALACHUA

Before the undersigned authority appeared Naomi Williams-Jordan
Classified Assistant Manager

Who on oath says that he/she is .....of THE GAINESVILLE SUN, a daily

newspaper published at Gainesville in Alachua County, Florida, that the attached copy of advertisement, being a Public Notice of Intent

in the matter of.....

in the.....Court, was published in said newspaper in the issue of April 21,

.....2001

Affiant further says that the said THE GAINESVILLE SUN is a newspaper published at Gainesville, in said Alachua County, Florida, and that the said newspaper has heretofore been continuously published in said Alachua County, each day, and has been entered as second class mail matter at the post office in Gainesville, in Said Alachua 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 for publication in the said newspaper.

Sworn to and subscribed before me this

24 day of April A.D.,2001

Sharon K. Williams

(seal) Notary Public

SHARON K. WILLIAMS
MY COMMISSION # CC 814219
EXPIRES: March 3, 2003
Bonded Thru Notary Public Underwriters

Naomi Williams-Jordan

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Dave Newport, Chair
Alachua County Commission
PO Box 2877
Gainesville, FL 32602-2877

COMPLETE THIS SECTION ON DELIVERY

A. Received by *(Please Print Clearly)* J. Crow — B. Date of Delivery 5-22-01

C. Signature
X J. Crow ☐ Agent ☐ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Copy from service label)*
7099 3400 0000 1453 1965

PS Form 3811, July 1999 Domestic Return Receipt 102595-99-M-1789

7099 3400 0000 1453 1965

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

Article Sent To:

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Nam
Stree
City,
Mr. Dave Newport, Chair
Alachua County Commission
PO Box 2877
Gainesville, FL 32602-2877

PS F for Instructions

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Kris Edmondson
Florida Power Corporation
PO Box 112295
Gainesville, FL 32611-2295

COMPLETE THIS SECTION ON DELIVERY

A. Received by *(Please Print Clearly)* B. Date of Delivery
MAY 21 2001

C. Signature
X Carl Wilkan ☒ Agent ☐ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Copy from service label)*
7000 0600 0026 4129 9372

PS Form 3811, July 1999 Domestic Return Receipt 102595-99-M-1789

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7000 0600 0026 4129 9372

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Rec
Stre
City,

Mr. Kris Edmondson
Florida Power Corporation
PO Box 112295
Gainesville, FL 32611-2295

PS Form [illegible] for Instructions

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. J. Michael Kennedy
Manager Air Programs
Florida Power Corp.
One Power Plaza, 263-13th Ave.S.
St. Petersburg, FL 33701-5511

COMPLETE THIS SECTION ON DELIVERY

A. Received by (Please Print Clearly): A. ROGER — B. Date of Delivery: 5/4

C. Signature: X [signature] ☐ Agent ☐ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Copy from service label)
7000 0600 0026 4129 9389

PS Form 3811, July 1999 — Domestic Return Receipt — 102595-99-M-1789

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7000 0600 0026 4129 9389

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Re
Si Mr. J. Michael Kennedy
Ci One Power Plaza, 263-13th Ave. S.
St. Petersburg, FL 33701-5511

PS Form 3800, February 2000 — See Reverse for Instructions

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Kris Edmondson
Plant Manager - FPC
PO Box 112295
Gainesville, FL 32611-2295

COMPLETE THIS SECTION ON DELIVERY

A. Received by *(Please Print Clearly)* | B. Date of Delivery
APR 23 2001

C. Signature
Carl Williams
☒ Agent
☐ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Copy from service label)*
7099 3400 0000 1450 2798

PS Form 3811, July 1999 Domestic Return Receipt 102595-00-M-0952

7099 3400 0000 1450 2798

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

Article Sent To:

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Name (Please Print Clearly) (to be completed by mailer)
Mr. Kris Edmondson, Plant Mgr.-FPC
Street, Apt. No., or PO Box No.
PO Box 112295
City, State, ZIP+4
Gainesville, FL 32611-2295

PS Form 3800, July 1999 See Reverse for Instructions

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Kris Edmonson
Plant Manager
UF Cogen Plant
Mowry Road, Bldg. 82, UF
Gainesville, FL 32611-2295

COMPLETE THIS SECTION ON DELIVERY

A. Received by *(Please Print Clearly)* B. Date of Delivery FEB 14 200

C. Signature
X Carl Williams ☒ Agent ☐ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Copy from service label)*
7099 3400 0000 1449 3911

PS Form 3811, July 1999 Domestic Return Receipt 102595-99-M-1789

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

Article Sent To:
Mr. Kris Edmonson

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Name *(Please Print Clearly) (to be completed by mailer)*
Mr. Kris Edmonson
Street, Apt. No.; or PO Box No.
Mowry Rd., Bldg, 82, UF
City, State, ZIP+4
Gainesville, FL 32611-2295

PS Form 3800, July 1999 See Reverse for Instructions

7099 3400 0000 1449 3911