21 West Church Street

Jacksonville, Florida 32202-3139

February 4, 2009

JEA

Ms. Trina Vielhauer, Chief
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399

RE: JEA Greenland Energy Center
PSD Permit No. PSD-FL-401
Project No. 0310561-001-AC

Dear Ms. Vielhauer:

I want to thank you, Mr. Syed Arif, and Ms. Ronni Moore for meeting with JEA on January 14, 2009 to discuss the revised proposed PSD air construction permit for the above referenced Greenland Energy Center simple cycle project. As we discussed on January 14th, JEA is seeking a few additional suggested changes to the permit, as outlined in Attachment A. The suggested changes are also shown in the attached version of the revised draft permit and revised draft technical evaluation and preliminary determination, included as Attachments B and C, consistent with our prior discussions.

After you and Syed have had an opportunity to consider the suggested changes and have made further changes to the revised draft permit, we would appreciate receiving a copy of the revised draft permit prior to it being finalized. JEA would at that point be in a position to withdraw the pending request for extension of time.

Thank you for consideration of our comments and for your time and efforts in developing the proposed permit and associated documents. If you have any questions regarding the suggested changes or the information being provided with this submittal, please do not hesitate to contact me at (904) 665-8729 if you have any questions or require any additional information.

Sincerely,

Jay Worley
Director, Environmental Programs

Attachments

cc: Syed Arif, DEP DARM
Ronni Moore, DEP OGC

Attachment A

JEA Greenland Revised Draft Air Construction Permit
PSD Permit No. PSD-FL-401

Suggested Changes
February 4, 2009

1. **Expiration Date.** Due to the expected delays in the commencement of construction of the simple cycle project resulting from the financial market and because the needed land use approval cannot occur until the Fall of 2009, JEA requests that the expiration date on page 1 of the revised draft permit be changed from December 31, 2010, to December 31, 2012.

2. **First and Second Phases**. The first phase of the Greenland Energy Center involving the simple cycle units is expected to be operational by June 2011, so the date referenced under the Facility Description on page 2 should be revised. The second phase of the Greenland Energy Center project involves installation of two heat recovery steam generators to run a steam turbine. The second phase is now proposed to be operational in June of 2013 instead of the original projected date of June, 2012. This new date for the second phase of the project should be included under the Facility Description on page 2. Also, because the PSD air construction permit application has already been submitted for the second phase, the last sentence under Facility Description anticipating a future submittal should be revised.

3. **Natural Gas Pipeline**. The proposed natural gas pipeline to bring natural gas to the Greenland site is currently expected to be operational by June 1, 2011, instead of the original projected date of June 1, 2010. Also, construction of the pipeline is expected to be completed by January 1, 2011 instead of June 1, 2010, so natural gas is not expected to be available onsite until that time. Changes to reflect these delays in the natural gas pipeline schedule should be made under the Facility Description on page 2, under the Project Description on page 2, Condition 9 on page 7, the permitting note under Condition 16, and in the Technical Evaluation and Preliminary Determination (pages 8 and 10).

4. **Fuel Usage Description.** Under the Project Description on page 2, the last sentence should be revised to clarify and more accurately describe the fuel usage, as follows: JEA proposes to fire each CT 3,500 hours per year on natural gas with up to 500 hours per year of that total on ULSFO (0.0015% sulfur by weight) and the balance on natural gas.

5. **Sulfur Content.** Consistent with the permit application and the remainder of the permit, the sulfur content limit identified as the emissions standard for particular matter, sulfuric acid mist, and sulfur dioxide in the table included under Condition 12 should be stated as 2 grains per 100 standard cubic feed of gas, rather than 2.0 grains. This same change should be made in the table on page 27 of 36 of the Revised Technical Evaluation and Preliminary Determination.

6. **Annual Tests.** Consistent with the Department's March 1, 2000, guidance regarding annual compliance testing exemptions for facilities utilizing CEMS (DARM-OGG-08), the PSD permit should not require annual testing to the extent that CEMS are used for determining compliance and especially when the averaging period is longer than the duration of the stack tests (such as a 24-hour block average). Annual tests are referenced in footnotes a and b of the table under Condition 12 and in Condition 17 (as well as references in footnotes a and b on page 27 of 36 of the Revised Technical Evaluation and Preliminary Determination). The Department's guidance specifically provides that annual compliance tests are unnecessary when CEMS are used to determine compliance. The Department has not indicated any independent need for the annual tests where CEMS are used for year-

round compliance. If the Department insists, however, that annual stack tests be performed, then the RATA data (which may be developed based on operations at less than 90 percent of the permitted capacity) should be completely sufficient, without the need for a duplicative and unnecessary stack test performed at 90 to 100 percent of the permitted capacity. The following sentence should therefore be deleted under Condition 15: "If the RATA is conducted at less than permitted capacity, and the data is used for annual compliance, the requirements of 62-297.310(2) (Operating Rate During Testing) still apply."

7. **NSPS Subpart KKKK.** Consistent with our discussions on January 14th, JEA requests that the Department include the following text from the Revised Technical Evaluation and Preliminary Determination (pages 4 and 5 of 36) as part of a permitting note under Conditions 12 and 27: "The Environmental Protection Agency (EPA) in the preamble to Subpart KKKK . . . [clarified] the applicability of NOx standards during periods of startup, shutdown and malfunction: 'It is clear that continuous compliance is not a requirement of the final rule during periods of startup, shutdown and malfunction.'" EPA stated in the Federal Register that excess emissions must be recorded during periods of startup, shutdown, and malfunction but recognized that "even for well-operated units with efficient NOx emission controls, excess emission 'spikes' during unit startup and shutdown are inevitable, and malfunctions of emission controls and process equipment occasionally occur." 71 Fed. Reg. 38487 (July 6, 2006).

8. **Excess Emissions.** Based on our discussions on January 14, 2009, we understand that visible emissions from the two simple cycle combustion turbines are generally limited to a 10 percent opacity standard, although the emissions are subject to the excess emissions rule under Rule 62-210.700(1), F.A.C., Common Condition 3 included in Section IV, Appendix C. If our understanding is incorrect, please let us know.

9. **Initial Compliance Demonstration**. Condition 16 should be revised to clarify that initial stack testing is fuel-specific and initial compliance stacks while firing fuel oil shall be conducted within 60 days after achieving the maximum production rate, but not later than 180 days after the initial startup on fuel oil. Similarly, initial testing on natural gas shall be conducted within 60 days after achieving the maximum production rate on natural gas, but not later than 180 days after initial natural gas firing. EPA guidance addressed to the Florida Department of Environmental Protection dated October 25, 2001, specifically states that if the maximum firing rates for natural gas and fuel oil are achieved on different days, the deadlines for completing the initial testing for the two fuels will be different. The guidance, a copy of which is included as Attachment D, primarily addresses the inability of the agencies to grant an extension of the testing deadlines, but very specifically states that the deadlines are fuel-specific based on the date that the maximum firing rates are achieved.

10. **Continuous Compliance.** Condition 18 should be revised to include a parenthetical to clarify that data from periods of startup, shutdown, malfunctions, DLN tuning, and fuel switching (as provided under Condition 23) should be excluded from demonstrations of compliance with the 24-hour block and 4-hour rolling average emission standards.

11. **Data Exclusion Procedures**. Condition 22 should not be limited to procedures for "SIP" compliance, and Condition 23 should be revised to omit the general reference to "SIP-based" compliance demonstrations. While subparagraphs d and e of Condition 23 (addressing DLN tuning and fuel switching) should be limited to SIP-based compliance demonstrations, Excess emissions occurring during startup, shutdown, and malfunctions should be excluded from both NSPS and SIP-based compliance determinations. As explained in paragraph 7 above, the NSPS preamble statements confirm that emissions during startup, shutdown, and malfunctions could spike and are therefore inappropriate for determining compliance. Excess emissions during these periods, therefore, would

appropriately be excluded from compliance determinations for both SIP and NSPS purposes. While we did not discuss this at our meeting on January 14th, since the only nitrogen oxides limit applicable during oil firing is NSPS-based, it seems appropriate to clarify the extent to which data may be excluded and how compliance with the NSPS limit is to be determined.

12. DLN Tuning. Condition 23.d should be revised to clarify that the notices required for dry low NOx combustor tuning sessions is limited to "major" tuning sessions. Similarly, Condition 27.e should be revised to refer to "major" DLN tuning sessions because other tuning sessions can occur remotely, without notice, and without resultant excess emissions.

13. Rule Citation. The rule citation at the end of Condition 25 should be revised to refer to 40 CFR "Part" 75 rather than "Subpart" 75.

14. Missing Data. Condition 27.a should be revised to provide that missing data shall not be substituted for purposes of determining compliance with any emissions standards of this permit (not limited to "CEMS" emissions standards).

15. Preventable Emissions. Condition 27.e should be revised to omit the last sentence, which is inconstant with the Department's rules: "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."

16. Monitor Availability. Condition 27.f should be revised to refer to the performance standards as set forth in 40 CFR Part 75. In addition, the Department has established guidance under DARM-OGG-06 to address monitor system downtime. Consistent with this guidance, and as noted in the Department's Revised Draft Technical Evaluation and Preliminary Determination, the 95 percent availability requirement should apply, if at all, only to the extent that the unit operates for more than 760 hours in any calendar quarter.

17. Semi-Annual Report. Consistent with the NSPS requirements, the Department should require only semi-annual reporting rather than quarterly reporting. Condition 33.b should be revised accordingly.

18. Technical Evaluation. The nominal plant output is 547 megawatts, rather than 570 megawatts as noted on page 8 of 36 of the Revised Technical Evaluation and Preliminary Determination, so a correction should be made. Also, Table 8 on page 25 of 36 should probably refer to other simple cycle projects rather than controlled combined cycle projects.

ATTACHMENT B

REVISED DRAFT PERMIT

REVISED VERSION ISSUED 12/22/08
JEA SUGGESTIONS 1/28/09

PERMITTEE:

JEA – Greenland Energy Center
21 West Church Street
Jacksonville, Florida 32202

Authorized Representative:
Mr. James M. Chansler, P.E., Chief Operating Officer

Greenland Energy Center	
Two Simple Cycle Combustion Turbines	
Permit No.	PSD-FL-401
Project No.	0310561-001-AC
Expires:	December 31, 20102

PROJECT AND LOCATION

This permit authorizes the construction of two General Electric PG7241FA simple cycle combustion turbine electrical generators with a nominal output of 352 megawatts (MW) on natural gas and 380 MW on ultra low sulfur fuel oil at the new Greenland Energy Center. The new facility site is at 12121 Phillips Road, Jacksonville, in Duval County.

STATEMENT OF BASIS

This construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). The project was processed in accordance with the requirements of Rule 62-212.400, F.A.C., the preconstruction review program for the Prevention of Significant Deterioration (PSD) of Air Quality. The permittee is authorized to install the proposed equipment 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).

CONTENTS

(DRAFT)

Joseph Kahn, Director
Division of Air Resource Management

Effective Date

FACILITY DESCRIPTION

The proposed facility is a new electric-generating facility referred to as Greenland Energy Center (GEC). GEC will be built in two phases. The initial phase will be the construction of two natural gas-fired simple cycle combustion turbine (CT) units that are proposed to be operational by June 2011~~0~~. This permit authorizes the construction of the initial phase. The second phase will convert these simple cycle units to a combined cycle combustion turbine ("2-on 1" configuration). Heat recovery equipment will be installed on the two simple cycle combustion turbines to capture enough heat energy to run a steam turbine (ST). This second phase is proposed to be operational in June 201~~3~~2. A new PSD construction permit application will be submitted for the second phase at a later date.

PROJECT DESCRIPTION

This project is for the construction of two General Electric PG7241FA simple cycle combustion turbine (CT) electrical generators (Units 1 and 2) with a nominal output of 352 MW on natural gas and 380 MW on ultra low sulfur fuel oil (ULSFO); equipped with dry low-NOx (DLN) combustors system for nitrogen oxides (NOx) reduction while burning gas and water injection while burning ULSFO. The project also includes the installation of two 1.875 million gallon, one 2,500 gallon and one 500 gallon ULSFO storage tanks, an emergency diesel fired pump, a natural gas fired process heater and an emergency generator.

Two operating scenarios are proposed that correspond to the availability of natural gas fuel onsite. Under the first scenario (Scenario 1 – Pre-Onsite Natural Gas Availability), natural gas is not available and the CT will burn ULSFO (0.0015% sulfur by weight) exclusively. The applicant requests the operation to be limited to combined ULSFO usage of 30,213 thousand gallons per year (kgal/yr), equivalent to 1,000 hours of full load ULSFO firing per year per CT. When the natural gas pipeline construction is complete (Scenario 2 – Post Onsite Natural Gas Availability) and natural gas fuel is available onsite (expected by ~~June~~ January 1, 201~~0~~), JEA proposes to fire each CT 3,500 hours per year on natural gas with up to ~~or 3,000 hours per year on natural gas and~~ 500 hours per year of that total on ULSFO (0.0015% sulfur by weight) and the balance on natural gas.

NEW EMISSION UNITS

This permit authorizes construction and installation of the following new regulated emission units:

ID	Emission Unit (EU) Description
001	Unit 1 – General Electric PG7241FA gas turbine electrical generator.
002	Unit 2 – General Electric PG7241FA gas turbine electrical generator.

This permit also authorizes construction and installation of the following emission units which are exempt from construction permitting requirements but certain new source performance standards may still apply. These emission units will be included in the Title V Operating Permit.

ID	EU Description
003	Two 1.8 million gallon, one 2,500 gallon and one 500 gallon distillate fuel oil storage tanks. This is an exempt emission unit as explained in the technical evaluation.
004	1,500 kilowatt (kW) Emergency Diesel Engine Generator and 350 brake horse power (bhp) Emergency Diesel Fire Pump. This is an exempt emission unit as explained in the technical evaluation.
005	5.84 Million British Thermal Unit per hour (MMBtu/hr) Natural Gas Fired Fuel Gas Heater. This is an exempt emission unit as explained in the technical evaluation.

REGULATORY CLASSIFICATION

Title I, Part C, Clean Air Act (CAA): The facility will be a PSD-major facility pursuant to Rule 62-212, F.A.C.

Title I, Section 111, CAA: Units 1 and 2 will be subject to the New Source Performance Standards (NSPS) of 40 Code of Federal Regulations (CFR) 60, Subpart KKKK (Standards of Performance for Stationary Combustion Turbines).

Title I, Section 111, CAA: EU 004 (Emergency Diesel Engine and Emergency Diesel Fire Pump) will be subject to the manufacturer's certification requirements of compliance under 40 CFR 60, Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines).

Title I, Section 112, CAA: The facility will not be a "Major Source" of hazardous air pollutants (HAP), therefore compliance under 40 CFR 63, National Emission Standards for Hazardous Air Pollutants (NESHAP) will not apply.

Title IV, CAA: Units 1 and 2 will be subject to the Acid Rain provisions of the Clean Air Act.

Title V, CAA: The facility will be Title V or "Major Source of air pollution" in accordance with Chapter 62-213, F.A.C. because the potential emissions of at least one regulated pollutant exceed 100 tons per year. Regulated pollutants include pollutants such as carbon monoxide (CO), nitrogen oxides (NO_X), particulate matter/particulate matter less than 10 microns (PM/PM_{10}), sulfur dioxide (SO_2), sulfuric acid mist (SAM), and volatile organic compounds (VOC).

APPENDICES

The following Appendices are attached as part of this permit.

Appendix A	Citation Formats and Glossary of Common Terms
Appendix B	General Conditions
Appendix C	Common Conditions
Appendix D	Common Testing Requirements
Appendix E	Summary of Best Available Control Technology Determinations
Appendix F	NSPS Subpart A, General Provisions
Appendix G	NSPS Subpart KKKK Requirements for Stationary Combustion Turbines

RELEVANT DOCUMENTS:

The permit request and additional information received to make it complete are not a part of this permit; however, the information is listed in the technical evaluation which is issued concurrently with this permit.

SECTION II. ADMINISTRATIVE REQUIREMENTS (REVISED DRAFT PERMIT)

1. Permitting Authority: All documents related to applications for permits to construct, operate or modify emissions unit should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (DEP), at 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400. Copies of all such documents shall also be submitted to the Compliance Authority.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications should be submitted to the City of Jacksonville Environmental Resource Management Department, Environmental Quality Division (EQD), 117 West Duval Street, Suite 225, Jacksonville, Florida 32202 and a copy to the DEP Northeast District, 7825 Baymeadows Way, Suite 200B, Jacksonville, Florida 32256.

3. General Conditions: The permittee shall operate under the attached General Conditions listed in Appendix B of this permit. General Conditions are binding and enforceable pursuant to Chapter 403 of the F.S. [Rule 62-4.160, F.A.C.]

4. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of the subject emissions unit shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403 of the F.S.; Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-214, 62-296 and 62-297 of the F.A.C.; and the Title 40, Parts 51, 52, 60, 63, 72, 73 and 75 of the CFR, adopted by reference in Rule 62-204.800, F.A.C. The terms used in this permit have specific meanings as defined in the applicable chapters of the F.A.C. 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. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.
[Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]

5. Construction and Expiration: Authorization to construct shall expire if construction is not commenced within 18 months after receipt of the permit, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. This provision does not apply to the time period between construction of the approved phases of a phased construction project except that each phase must commence construction within 18 months of the commencement date established by the Department in the permit. The Department may extend the 18-month period upon a satisfactory showing that an extension is justified. In conjunction with an extension of the 18-month period to commence or continue construction (or to construct the project in phases), the Department may require the permittee to demonstrate the adequacy of any previous determination of Best Available Control Technology (BACT) for emissions units regulated by the project. For good cause, the permittee may request that this PSD air construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation at least sixty (60) days prior to the expiration of this permit.
[Rules 62-4.070(4), 62-4.080, 62-210.300(1) and 62-212.400(12), F.A.C.]

6. New or Additional Conditions: 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.]

7. Source Obligation.

   a. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall

apply to the source or modification as though construction had not yet commenced on the source or modification.

b. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

[Rule 62-212.400(12), F.A.C.]

8. Modifications: No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. This permit authorizes construction of the referenced facilities. [Chapters 62-210 and 62-212, F.A.C.]

9. Application for Title IV Permit: At least 24 months before the date on which the new unit begins serving an electrical generator greater than 25 MW, the permittee shall submit an application for a Title IV Acid Rain Permit to the Department's Bureau of Air Regulation in Tallahassee and a copy to the Region 4 Office of the U.S. Environmental Protection Agency in Atlanta, Georgia. This permit does not specify the Acid Rain program requirements. These will be included in the Title V air operation permit. [40 CFR 72]

10. Title V Permit: This permit authorizes construction of the permitted emissions unit and initial operation to determine compliance with Department rules. A Title V operation permit is required for regular operation of the permitted emission units. The permittee shall apply for and obtain a Title V operation permit in accordance with Rule 62-213.420, F.A.C. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the Department's Bureau of Air Regulation and a copy to the Compliance Authority.
[Rules 62-4.030, 62-4.050, 62-4.220 and Chapter 62-213, F.A.C.]

The specific conditions of this subsection apply to the following emissions unit after construction is complete.

ID	Emission Unit Description
001	Unit 1 – General Electric (GE) PG7241 FA gas turbine electrical generator
002	Unit 2 – GE PG7241 FA gas turbine electrical generator

APPLICABLE STANDARDS AND REGULATIONS

1. BACT Determinations: Units 1 and 2 are subject to determinations of the Best Available Control Technology (BACT) for nitrogen oxides (NO_X), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter/particulate matter less than 10 microns (PM/PM_{10}) and sulfuric acid mist (SAM). [Rule 62-210.200 (BACT), F.A.C.]

2. NSPS Requirements: The combustion turbines shall comply with the applicable New Source Performance Standards (NSPS) in 40 CFR 60, including: Subpart A (General Provisions) and Subpart KKKK (Standards of Performance for Stationary Combustion Turbines for which Construction is Commenced after February 18, 2005). See Appendix F for the NSPS Subpart A provisions and Appendix G for the NSPS Subpart KKKK provisions. The BACT emissions standards for NO_X and the fuel sulfur specifications for SO_2 are as stringent as, or more stringent than the NO_X and SO_2 limits imposed by the applicable NSPS provisions. Some separate reporting and monitoring may be required by the individual subparts. [Rule 62-204.800(7)(b), F.A.C. and 40 CFR 60, Subparts A and KKKK]

EQUIPMENT DESCRIPTION

3. Combustion Turbine: The permittee is authorized to install, tune, operate, and maintain two GE Model PG7241FA gas turbine-electrical generator set with a nominal generating capacity of 176 MW each while firing natural gas and 190 MW each while firing ultra low sulfur fuel oil (ULSFO). The combustion turbines will be equipped with GE's DLN combustor; Mark VI automated combustion turbine control system, and an inlet air filtration system. The combustion turbines will be designed for operation in simple cycle mode and will have dual-fuel capability. [Application and Design]

CONTROL TECHNOLOGY

4. DLN Combustion: The permittee shall operate and maintain the General Electric DLN 2.6 combustion system (or better) to control NO_X emissions from the combustion turbine when firing natural gas. Prior to the initial emissions performance tests required for the gas turbine when firing natural gas, the DLN combustors and automated gas turbine control system shall be tuned to achieve the permitted levels for CO and NO_X. Thereafter, the system shall be maintained and tuned in accordance with the manufacturer's recommendations or determined best practices. [Design and Rule 62-212.400(10)(BACT), F.A.C.]

5. Wet Injection: The permittee shall install, operate, and maintain a water injection system to reduce NO_X emissions from the combustion turbine when firing ULSFO. Prior to the initial emissions performance tests when firing ULSFO, the water injection system shall be tuned to achieve the permitted NOx emissions standard. Thereafter, the system shall be maintained and tuned in accordance with the manufacturer's recommendations or determined best practices.
[Applicant request and Rule 62-212.400(10)(BACT), F.A.C.]

PERFORMANCE REQUIREMENTS

6. Hours of Operation (Pre-onsite natural gas availability): The two combustion turbines are limited to a combined ULSFO usage of 30,213 thousand gallons per year. Each combustion turbine shall not operate more than 17 hours on ULSFO per calendar day for compliance with regional haze impact thresholds. The fuel usage shall be monitored with fuel meters.

{Permitting Note: The fuel usage of 30,213 thousand gallons per year for the two turbines combined is equivalent to 1000 hours of operation per year per turbine.}
[Rule 62-210.200(PTE and BACT) F.A.C.; Rule 62-212.400(PSD), F.A.C. and Applicant Request]

7. Hours of Operation (Post-onsite natural gas availability): Each combustion turbine shall not operate more than 3,500 hours during any consecutive 12 months of which 500 hours may be on ULSFO. Each combustion turbine shall not operate more than 17 hours exclusively on ULSFO per calendar day, or with a combination of ULSFO burning of 12 hours with 12 hours of natural gas for compliance with regional haze impact thresholds.
[Rule 62-210.200(PTE and BACT) F.A.C.; Rule 62-212.400(PSD), F.A.C. and Applicant Request]

8. Permitted Capacity: The nominal heat input rate to the combustion turbine is 1,806 MMBtu per hour when firing natural gas and 1,994 MMBtu per hour when firing fuel oil (based on a compressor inlet air temperature of 59° F, the higher heating value (HHV) of each fuel, and 100% load). Heat input rates will vary depending upon gas turbine characteristics, ambient conditions, alternate methods of operation, and evaporative cooling. The permittee shall provide manufacturer's performance curves (or equations) that correct for site conditions to the Permitting and Compliance Authorities within 45 days of completing the initial compliance testing. Operating data may be adjusted for the appropriate site conditions in accordance with the performance curves and/or equations on file with the Department.
[Rule 62-210.200(PTE), F.A.C.]

9. Authorized Fuels (Pre-onsite natural gas availability): Each combustion turbine shall fire ULSFO which shall contain no more than 0.0015% sulfur by weight as the primary fuel until natural gas is available at the facility. If natural gas is not available by June 1, 2010, the permittee shall submit to the Department and EQD semi-annual status reports on the availability of natural gas to the facility. The first status report shall be submitted by June 1, 2010. The status reports shall be submitted until natural gas is available at the facility.

{Permitting Note: The applicant has indicated that the targeted date for completion of natural gas pipeline infrastructure and commencement of gas transportation service is approximately ~~June~~ January 1, 2010.}
[Rules 62-210.200(PTE and BACT) and 62-212.400(PSD), F.A.C.]

10. Authorized Fuels (Post-onsite natural gas availability): Each combustion turbine shall fire natural gas as the primary fuel, which shall contain no more than 2 grains of sulfur per 100 standard cubic feet of natural gas. As a restricted alternate fuel, the combustion turbine may fire ULSFO containing no more than 0.0015% sulfur by weight.
[Rules 62-210.200(PTE and BACT) and 62-212.400(PSD), F.A.C.]

11. Simple Cycle, Intermittent Operation: The combustion turbine shall operate only in simple cycle mode not to exceed the permitted hours of operation allowed by this permit. This restriction is based on the permittee's request, which formed the basis of the PSD applicability and BACT determinations and resulted in the emission standards specified in this permit. For any request to convert these units to combined cycle operation by installing/connecting to heat recovery steam generators, including changes to the fuel quality or quantity related to combined cycle conversion which may cause an increase in short or long-term emissions, the permittee shall submit a full PSD permit application complete with a new proposal of the Best Available Control Technology as if the units had never been built.
[Rules 62-212.400(12) and 62-212.400(BACT), F.A.C.]

EMISSIONS AND TESTING REQUIREMENTS

12. Emission Standards: Emissions from the combustion turbine shall not exceed the following standards.

Unit 1 and 2 Simple Cycle Combustion Turbines (EU 001 and 002)

Pollutant	Emission Standard [e]	Averaging Time	Compliance Method	Basis
NO_X[a] (Gas)	9.0 ppmvd @ 15% O_2	24-hr block	CEMS	BACT
	58.5 lb/hr	3 1-hr runs	Stack Test	
NO_X[a] (Oil)	42.0 ppmvd @ 15% O_2	4-hr rolling average[f]	CEMS	NSPS
	329.4 lb/hr	3 1-hr runs	Stack Test	
CO[b] (Gas)	4.1 ppmvd @ 15% O_2	24-hr block	CEMS	BACT
	16.2 lb/hr	3 1-hr runs	Stack Test	
CO[b] (Oil)	8.0 ppmvd @ 15% O_2	24-hr block	CEMS	BACT
	38.2 lb/hr	3 1-hr runs	Stack Test	
PM/PM_{10}[c]	10 % Opacity	6-minute block	Visible Emissions Test	BACT
	2.0 gr S/100 SCF of gas/ 0.0015 % S fuel oil	N/A	Record Keeping	
SAM/SO_2[d]	2.0 gr S/100 SCF of gas/ 0.0015 % S fuel oil	N/A	Record Keeping	BACT

a. Continuous compliance with the 24-hour block and 4-hour rolling average NO_X standards shall be demonstrated based on data collected by the required Continuous Emissions Monitoring System (CEMS). The initial ~~and annual~~ EPA Method 7E or Method 20 tests associated with demonstration of compliance with 40 CFR 60, Subpart KKKK or certification of the CEMS instruments may also be used to demonstrate compliance with the individual standards for natural gas and ULSFO during the time of those tests. NO_X mass emission rates are at International Organization for Standardization (ISO) conditions and are defined as oxides of nitrogen expressed as NO_2.

b. Continuous compliance with the 24-hour CO standards shall be demonstrated based on data collected by the required CEMS. The initial ~~and annual~~ EPA Method 10 tests associated with the certification of the CEMS instruments may also be used to demonstrate compliance with the individual standards for natural gas and ULSFO. CO mass emission rates are at ISO conditions.

c. The sulfur fuel specification combined with the efficient combustion design and operation of the gas turbine represents BACT for PM/PM_{10} emissions. Compliance with the fuel specifications, CO standards, and visible emissions standards shall serve as indicators of good combustion. Compliance with the fuel specifications shall be demonstrated by keeping records of the fuel sulfur content. Compliance with the visible emissions standard shall be demonstrated by conducting tests in accordance with EPA Method 9.

d. The fuel sulfur specification effectively limits the potential emissions of SAM and SO_2 from the gas turbines and represents BACT for these pollutants. Compliance with the fuel sulfur specifications shall be determined by the ASTM methods or a certified fuel sulfur analysis from the fuel vendor for determination of fuel sulfur as detailed in the draft permit.

e. The mass emission rate standards are based on a turbine inlet condition of 59 °F, evaporative cooling on, and using the HHV of the fuel. Mass emission rate may be adjusted to actual test conditions in accordance with the performance curves and/or equations on file with the Department.

f. 40 CFR 60, NSPS-Subpart KKKK as described in 60.4380(b)(1).

[Permitting Note: In combination with the annual restriction on hours of operation, the above emissions standards effectively limit annual potential emissions from the combustion turbines to: 340.2 tons/year of

NO_X, 67.7 tons/year of CO, 71 tons/year of PM/PM_{10} and 28.81 tons/year of SO_2.: The Environmental Protection Agency (EPA) in the preamble to Subpart KKKK clarified the applicability of NOx standards during periods of startup, shutdown and malfunction: "It is clear that continuous compliance is not a requirement of the final rule during periods of startup, shutdown and malfunction." Excess emissions must be recorded during periods of startup, shutdown, and malfunction but the data should not be included for purposes of determining compliance. EPA recognized that "even for well-operated units with efficient NOx emission controls, excess emission 'spikes' during unit startup and shutdown are inevitable, and malfunctions of emission controls and process equipment occasionally occur."*/*

[Rules 62-4.070(3), 62-210.200 (BACT), 62-212.400(PSD), F.A.C. and 40 CFR 60, Subpart KKKK]

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

14. Test Methods: Required tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
7E	Determination of NOx Emissions from Stationary Sources (Instrumental)
9	Visual Determination of Opacity of Emissions from Stationary Sources
10	Determination of Carbon Monoxide Emissions from Stationary Sources
20	Determination of NOx, SO_2, and Diluent Emissions from Stationary Combustion Turbines

The methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used for compliance testing unless prior written approval is received from the administrator of the Department's Emissions Monitoring Section in accordance with an alternate sampling procedure pursuant to 62-297.620, F.A.C. [Rule 62-204.800, F.A.C. and 40 CFR 60, Appendix A]

15. Testing Requirements: Initial tests shall be conducted between 90% and 100% of permitted capacity; adjusted as appropriate, and at prevailing ambient conditions; otherwise, this permit shall be modified to reflect the true maximum capacity as constructed. Subsequent annual tests shall be conducted between 90% and 100% of permitted capacity adjusted as appropriate, and at prevailing ambient conditions in accordance with the requirements of Rule 62-297.310(2), F.A.C. Tests shall be conducted for each pollutant while firing each fuel in the CT. For each run during tests for visible emissions, emissions of CO recorded by the CEMS shall also be reported. ~~Data collected from the reference method during the required CEMS quality assurance relative accuracy test audit (RATA) tests may substitute for annual compliance tests for NO_x and CO, provided the owner or operator indicates this intent in the submitted test protocol, and obtains approval prior to testing. If the RATA is conducted at less than permitted capacity, and the data is used for annual compliance, the requirements of 62-297.310(2) (Operating Rate During Testing) still apply~~The mass emission rate standards are based on a turbine inlet condition of 59°F and 100 percent full load operation. Combustion turbine capacity and mass emission rate may be adjusted from actual test conditions in accordance with the performance curves and/or equations on file with the Department. [Rule 62-297.310(2) and (7)(a), F.A.C.; and 40 CFR 60.8]

16. Initial Compliance Demonstration: Initial compliance stack tests while firing ULSFO shall be conducted within 60 days after achieving the maximum production rate, but not later than 180 days after the initial startup on ULSFO. Initial testing on natural gas shall be conducted within 60 days after achieving the maximum production rate on natural gas, but not later than 180 days after ~~of~~ any natural gas firing in the

CT. In accordance with the test methods specified in this permit, the combustion turbine shall be tested to demonstrate initial compliance with the emission standards for NO_X, CO and with the visible emissions standard. The permittee shall provide the Compliance Authority with any other initial emissions performance tests conducted to satisfy vendor guarantees. [Rules 62-4.070, 62-297.310(7)(a), F.A.C. and 40 CFR 60.8]

{Permitting Note: The applicant has indicated that the targeted date for completion of natural gas pipeline infrastructure and commencement of gas transportation service is approximately ~~June~~ January 1, 2019. Initial start up of the CT will be on ULSFO.}

17. Subsequent Compliance Testing: Annual compliance tests for ~~NO_X, CO and~~ visible emissions shall be conducted during each federal fiscal year (October 1st to September 30th). If normal operation on fuel oil is less than 400 hours per calendar year, then subsequent compliance testing on fuel oil is not required for that year. If normal operation on fuel oil exceeds 400 hours per year, the Department shall require compliance testing for ~~NO_X, CO and~~ visible emissions while firing fuel oil.
[Rules 62-4.070, 62-210.200(BACT) and 62-297.310(7)(a)4, F.A.C.]

18. Continuous Compliance: The permittee shall demonstrate continuous compliance with the 24-hour block average CO emissions standards; and with the 24-hour block and 4-hour *{excluding periods of startup, shutdown, malfunction, DNL tuning, and fuel switching as provided under Condition 23),* rolling average NO_X emission standards based on data collected by the certified CEMS. Within 45 days of conducting any RATA on a CEMS, the permittee shall submit a report to the Compliance Authority summarizing results of the RATA. Compliance with the CO emission standards also serves as an indicator of efficient fuel combustion, which reduces emissions of particulate matter.
[Rules 62-4.070 and 62-210.200 (BACT), F.A.C.]

19. 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.]

EXCESS EMISSIONS

{Permitting Note: The following conditions apply only to the State Implementation Plan (SIP)-based emissions standards specified in Condition No. 12 of this subsection. Rule 62-210.700, F.A.C. (Excess Emissions) cannot vary or supersede any federal provision of the NSPS, NESHAP, or Acid Rain programs.}

20. Definitions:

    a. *Startup* is defined as the commencement of operation of any emissions unit which has shut down or ceased operation for a period of time sufficient to cause temperature, pressure, chemical or pollution control device imbalances, which result in excess emissions.

    b. *Shutdown* is the cessation of the operation of an emissions unit for any purpose.

    c. *Malfunction* is defined as any unavoidable mechanical and/or electrical failure of air pollution control equipment or process equipment or of a process resulting in operation in an abnormal or unusual manner.

    {Permitting Note: The applicant has described startup of this unit as the period from 0 to just less than 50% load, and shutdown as the period beginning at just less than 50 % load to no load operation.}

    [Rule 62-210.200(165, 242, and 258), F.A.C.]

21. 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 shall be prohibited. All such preventable emissions shall be included in any compliance determinations based on CEMS data. [Rule 62-210.700(4), F.A.C.]

22. Data Exclusion Procedures for ~~SIP~~ Compliance: As per the procedures in this condition, limited amounts of CEMS emissions data, as specified in condition 23 and 27 may be excluded from the corresponding SIP-based compliance demonstration, provided that best operational practices to minimize emissions are adhered to, the duration of data excluded is minimized, and the procedures for data exclusion listed below are followed. As provided by the authority in Rule 62-210.700(5), F.A.C., these conditions replace the provisions in Rule 62-210.700(1), F.A.C.

    a. *Limiting Data Exclusion:* If the compliance calculation using all valid CEMS emission data indicates that the emission unit is in compliance, then no CEMS data shall be excluded from the compliance demonstration.

    b. *Event Driven Exclusion:* There must be an underlying event (startup, shutdown, malfunction, or fuel switching) in order to exclude data. If there is no underlying event, then no data may be excluded.

    c. *Continuous Exclusion:* Data shall be excluded on a continuous basis for an underlying event. Data from discontinuous periods shall not be excluded for the same underlying event.

    [Rule 62-210.700 F.A.C.]

23. Allowable Data Exclusions: The following data may be excluded from ~~the corresponding SIP-based~~ compliance demonstrations for each of the events listed below in accordance with the Data Exclusion Procedures of condition 22:

    a. *Startup:* Up to 30 minutes of CEMS data may be excluded for each combustion turbine startup. For startups of less than 30 minutes in duration, only those minutes attributable to startup may be excluded.

    b. *Shutdown:* Up to 30 minutes of CEMS data may be excluded for each combustion turbine shutdown. For shutdowns of less than 30 minutes in duration, only those minutes attributable to shutdown may be excluded.

    c. *Malfunction*: Up to two hours (in any operating day) of CEMS data may be excluded due to a documented malfunction. A "documented malfunction" means a malfunction that is documented within one working day of detection by contacting the Compliance Authority by telephone, facsimile transmittal, or electronic email.

    d. *DLN Tuning*: CEMS data collected during initial or other major DLN tuning sessions may be excluded from the compliance demonstrations for SIP-based limits provided the tuning session is performed in accordance with the manufacturer's specifications or determined best practices. A "major tuning session" would occur after completion of initial construction, a combustor change-out, a major repair or maintenance to a combustor, or other similar circumstances. Prior to performing any major tuning session, the permittee shall provide the Compliance Authority with an advance notice of at least one (1) day that details the activity and proposed tuning schedule. The notice may be by telephone, facsimile transmittal, or electronic mail. [Design and Rule 62-4.070(3), F.A.C.]

    e. *Fuel Switching*: Up to 60 minutes of CEMS data may be excluded for each fuel switch for use in determining compliance with SIP-based limits. For fuel switches of less than 60 minutes in duration, only those minutes attributable to fuel switching may be excluded.

    All valid emissions data (including data collected during startup, shutdown, malfunction, DLN tuning, and fuel switching) shall be used to report emissions for the Annual Operating Report.

[Rules 62-210.200(BACT), 62-210.370 and 62-210.700, F.A.C.]

24. Notification Requirements: The owner or operator shall notify the Compliance Authority within one working day of discovering any emissions that demonstrate non-compliance for a given averaging period. Within one working day of occurrence, the owner or operator shall notify the Compliance Authority of any malfunction resulting in the exclusion of CEMS data. The notice may be by telephone, facsimile transmittal, or electronic mail. [Rule 62-4.070, F.A.C.]

CONTINUOUS MONITORING REQUIREMENTS

25. CEM Systems: Subject to the following, the permittee shall install, calibrate, operate, and maintain a continuous emission monitoring system (CEMS) to measure and record the emissions of NO_X and CO from the combustion turbine in terms of the applicable standards. The monitoring system shall be installed, and functioning within the required performance specifications by the time of the initial compliance demonstration.

    a. *NO_X Monitor:* Each NO_X monitor shall be certified pursuant to the specifications of 40 CFR 75. Quality assurance procedures shall conform to the requirements of 40 CFR 75. The annual and required RATA tests required for the NO_X monitor shall be performed using EPA Method 20 or 7E in Appendix A of 40 CFR 60.

    b. *CO Monitor:* The CO monitor shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 4 or 4A within 60 calendar days of achieving permitted capacity as defined in Rule 62-297.310(2), F.A.C., but no later than 180 calendar days after initial startup. Quality assurance procedures shall conform to the requirements of 40 CFR 60, Appendix F, and the Data Assessment Report of Section 7 shall be made each calendar quarter, and reported semiannually to the Compliance Authority. The RATA tests required for the CO monitor shall be performed using EPA Method 10 in Appendix A of 40 CFR 60 and shall be based on a continuous sampling train. The CO monitor span values shall be set appropriately, considering the allowable methods of operation and corresponding emission standards.

    c. *Diluent Monitor:* The oxygen (O_2) or carbon dioxide (CO_2) content of the flue gas shall be monitored at the location where CO and NO_X are monitored to correct the measured emissions rates to 15% oxygen. If a CO_2 monitor is installed, the oxygen content of the flue gas shall be calculated using F-factors that are appropriate for the fuel fired. Each monitor shall comply with the performance and quality assurance requirements of 40 CFR 75.

    [Rules 62-4.070(3), 62-210.200(BACT), F.A.C. and 40 CFR 60 and ~~, Subpart~~ 75]

26. Moisture Correction: If necessary, the owner or operator shall determine the moisture content of the exhaust gas and develop an algorithm to enable correction of the monitoring results to a dry basis (0% moisture). [Rules 62-4.070(3) and 62-210.200(BACT), F.A.C]

27. CEMS Data Requirements for BACT Standards:

    a. *Data Collection*: Emissions shall be monitored and recorded at all times including startup, operation, shutdown, and malfunction except for continuous monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments. The CEMS shall be designed and operated to sample, analyze, and record data evenly spaced over an hour. If the CEMS measures concentration on a wet basis, the CEM system shall include provisions to determine the moisture content of the exhaust gas and an algorithm to enable correction of the monitoring results to a dry basis (0% moisture). Alternatively, the owner or operator may develop through manual stack test measurements a curve of moisture contents in the exhaust gas versus load, and use these typical values in an algorithm to enable correction of the monitoring results to a dry basis (0% moisture). Final results of the CEMS shall be expressed as

ppmvd corrected to 15% oxygen. The CEMS shall be used to demonstrate compliance with the CEMS emission standards for CO and NO_X as specified in this permit. For purposes of determining compliance with the ~~CEMS~~ emissions standards of this permit, missing (or excluded) data shall not be substituted. Upon request by the Department, the CEMS emissions rates shall be corrected to ISO conditions.

b. *Valid Hour*: Hourly average values shall begin at the top of each hour. Each hourly average value shall be computed using at least one data point in each fifteen-minute quadrant of an hour, where the unit combusted fuel during that quadrant of an hour. Notwithstanding this requirement, an hourly value shall be computed from at least two data points separated by a minimum of 15 minutes (where the unit operates for more than one quadrant of an hour). If less than two such data points are available, the hourly average value is not valid. The permittee shall use all valid measurements or data points collected during an hour to calculate the hourly average values.

c. *24-hour Block Averages*: A 24-hour block shall begin at midnight of each operating day and shall be calculated from 24 consecutive hourly average emission rate values. If a unit operates less than 24 hours during the block, the 24-hour block average shall be the average of all available valid hourly average emission rate values for the 24-hour block. For purposes of determining compliance with the 24-hour CEMS standards, the missing data substitution methodology of 40 CFR Part 75, Subpart D, shall not be utilized. Instead, the 24-hour block average shall be determined using the remaining hourly data in the 24-hour block. [Rule 62-212.400(BACT), F.A.C.]

d. *4-hour Rolling Average:* Compliance with this rolling average is as described in 40 CFR 60.4380(b)(1).

e. *Data Exclusion:* Each CEMS shall monitor and record emissions during all operations including episodes of startup, shutdown, malfunction and major DLN tuning. Some of the CEMS emissions data recorded during these episodes may be excluded from the corresponding CEMS compliance demonstration subject to the provisions of Condition Nos. 22 and 23 of this section. All periods of data excluded shall be consecutive for each such episode and only data obtained during the described episodes (startup, shutdown, malfunction, major DLN tuning) may be used for the appropriate exclusion periods. The permittee shall minimize the duration of data excluded for such episodes to the extent practicable. Data recorded during such episodes shall not be excluded if the episode was caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure, which may reasonably be prevented. Best operational practices shall be used to minimize hourly emissions that occur during such episodes. ~~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.~~

~~f.~~*Availability*: ~~The quarterly excess emissions report shall identify monitor availability for each quarter in which the unit operated.~~ Monitor availability for the CEMS shall be based on performance standards, as set forth in 40 CFR Part 75 ~~95% or greater in any calendar quarter in which the unit operated for more than 760 hours. In the event 95% availability is not achieved, the permittee shall provide the Department with a report identifying the problems in achieving 95% availability and a plan of corrective actions that will be taken to achieve 95% availability. The permittee shall implement the reported corrective actions within the next calendar quarter. Failure to take corrective actions or continued failure to achieve the minimum monitor availability shall be violations of this permit, except as otherwise authorized by the Department's Compliance Authority.~~

[Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

CEMS REQUIREMENTS FOR ANNUAL EMISSIONS

28. CEMS Annual Emissions Requirement: The owner or operator shall use data from the NO_X and CO CEMS when calculating annual emissions for purposes of computing actual emissions, baseline actual emissions, and net emissions increase, as defined at Rule 62-210.200, F.A.C., and for purposes of computing emissions pursuant to the reporting requirements of Rule 62-210.370(3), F.A.C. In computing the emissions of a pollutant, the owner or operator shall account for the emissions during periods of startup and shutdown of the emissions unit. [Rules 62-210.200 and 62-210.370(3), F.A.C.]

REPORTING AND RECORD KEEPING REQUIREMENTS

29. Monitoring of Capacity: 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, malfunction, DLN tuning, and fuel switching). Such monitoring shall be made 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 62-210.200(BACT), F.A.C.]

30. Monthly Operations Summary: By the 15th calendar day of each month, the permittee shall record the following for each fuel in a written or electronic log for the combustion turbine for the previous month of operation: fuel consumption, hours of operation on each fuel, and the updated calendar year totals for each. 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. The fuel consumption shall be monitored in accordance with the provisions of 40 CFR 75 Appendix D. [Rules 62-4.070(3) and 62-210.200(BACT), F.A.C.]

31. Fuel Sulfur Records: The permittee shall demonstrate compliance with the fuel sulfur limits specified in this permit by maintaining the following records of the sulfur contents.

    a. *Natural Gas Sulfur Limit*: Compliance with the fuel sulfur limit for natural gas shall be demonstrated by keeping reports obtained from the vendor indicating the average sulfur content of the natural gas being supplied from the pipeline for each month of operation. Methods for determining the sulfur content of the natural gas shall be ASTM methods D4084-82, D4468-85, D5504-01, D6228-98 and D6667-01, D3246-81 or more recent versions.

    b. *Distillate Fuel Oil Sulfur Limit*: Compliance with the distillate fuel oil sulfur limit shall be demonstrated by taking a sample, analyzing the sample for fuel sulfur, and reporting the results to each Compliance Authority before initial startup. Sampling the fuel oil sulfur content shall be conducted in accordance with ASTM D4057-88, Standard Practice for Manual Sampling of Petroleum and Petroleum Products, and one of the following test methods for sulfur in petroleum products: ASTM methods D5453-00, D129-91, D1552-90, D2622-94, or D4294-90. More recent versions of these methods may be used. For each subsequent fuel delivery, the permittee shall maintain a permanent file of the certified fuel sulfur analysis from the fuel vendor. At the request of the Compliance Authority, the permittee shall perform additional sampling and analysis for the fuel sulfur content.

    The above methods shall be used to determine the fuel sulfur content in conjunction with the provisions of 40 CFR 75 Appendix D. [Rules 62-4.070(3) and 62-4.160(15), F.A.C.]

32. Emissions Performance Test Reports: A report indicating the results of any required emissions performance test shall be submitted to the 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. and in Appendix D of this permit. [Rule 62-297.310(8), F.A.C.]

33. Excess Emissions Reporting:

a. *Malfunction Notification:* If emissions in excess of a standard (subject to the specified averaging period) occur due to malfunction, the permittee shall notify the Compliance Authority within (1) working day 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.

b. *SIP Semi-Annual~~Quarterly~~ Report*: Within 30 days following the end of each calendar semi-annual period~~quarter~~, the permittee shall submit a report to the Compliance Authority summarizing periods of NO_X emissions in excess of the BACT permit standard following the NSPS format in 40 CFR 60.7(c), Subpart A. A summary of data excluded from SIP compliance calculations should also be provided. In addition, the report shall summarize the NO_X CEMS system monitor availability for the previous quarter.

c. *NSPS Reporting*: Within 30 days following the calendar semi-annual period, the permittee shall submit the written reports required by 40 CFR 60 Subpart KKKK (Standards of Performance for Stationary Combustion Turbines) for the previous semi-annual period to the Compliance Authority.

{Note: If there are no periods of excess emissions as defined in 40 CFR, Part 60, Subpart KKKK, a statement to that effect may be submitted with the SIP Quarterly Report to suffice for the NSPS Semi-Annual Report.}

[Rules 62-4.130, 62-204.800, 62-210.700(6) and 62-212.400(BACT), F.A.C. and 40 CFR 60.7 and 60.4375]

34. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating hours and emissions from this facility in accordance with Rule 62-210.370, F.A.C. Annual operating reports shall be submitted to the Compliance Authority as required by Rule 62-210.370(3)(c), F.A.C. [Rule 62-210.370(3), F.A.C.]

ATTACHMENT C
REVISED- 12/22/08 – WITH JEA EDITS SUGGESTED 1/28/09
TECHNICAL EVALUATION
AND
PRELIMINARY DETERMINATION

JEA

Greenland Energy Center

Units 1 and 2 Simple Cycle Combustion Turbines

Jacksonville, Duval County

DEP File No. 0310561-001-AC (PSD-FL-401)

Florida Department of Environmental Protection
Division of Air Resource Management
Bureau of Air Regulation – New Source Review Section
2600 Blair Stone Road, MS #5505
Tallahassee, FL 32399-2400

December 18, 2008

E. PROPOSED FACILITY DESCRIPTION

The proposed facility is a new electric-generating facility referred to as Greenfield Energy Center (GEC). GEC will be built in two phases. The initial phase will be the construction of two natural gas-fired simple cycle combustion turbine (CT) units that are proposed to be operational June ~~2010~~2011. The second phase will convert these simple cycle units to a combined cycle combustion turbine ("2-on 1" configuration). Heat recovery equipment will be installed on the two simple cycle combustion turbines to capture enough heat energy to run a steam turbine (ST). This second phase is proposed to be operational in June ~~2012~~2013.

This technical evaluation and preliminary determination (TEPD) will consider only phase one.

The pictures below are the artist renderings of GEC at completion of phase one (simple cycle). During the phase one the generating station will produce a nominal plant output of 352 megawatt (MW) on natural gas and 380 MW on ULSFO.

Figure 4. North Northeast View

Figure 4A. Northeast View

The pictures below are the artist renderings of GEC at completion of phase two (combined cycle). During this phase the generating station will produce a nominal plant output of ~~570~~547 MW.

Figure 5. North Northeast View

Figure 5A. Northeast View

F. PROJECT DESCRIPTION AS PROPOSED BY APPLICANT

Under phase one, the regulated emissions units at the new Greenland Energy Center site will include two General Electric (GE) 7FA simple cycle combustion turbine-electric generators (CT Units 1 and 2, Emissions Unit (EU) Nos. 001and 002) with a power output each of 190 MW while firing ULSFO and 176 MW while firing natural gas. Each CT will include the following major features:

Table 1. Greenland Energy Center Project SIC Codes

STANDARD INDUSTRIAL CLASSIFICATION CODES (SIC)		
Industry Group No.	49	Electric, Gas, and Sanitary Services
Industry No.	4911	Electric Services

Additional project details, as proposed, are described below:

Fuel: Two operating scenarios are proposed that correspond to the availability of natural gas fuel onsite. Under the first scenario (Scenario 1 – Pre-Onsite Natural Gas Availability), natural gas is not available and the CT will burn ULSFO (0.0015% sulfur by weight) exclusively. The applicant requests the operation to be limited to combined ULSFO usage of 30,213 thousand gallons per year (kgal/yr), equivalent to 1,000 hours of full load ULSFO firing per year per CT. When the natural gas pipeline construction is complete (Scenario 2 – Post Onsite Natural Gas Availability) and natural gas fuel is available onsite (expected by January 1, 2011~~June 1, 2010~~), JEA proposes to fire each CT for 3,500 hours per year with up to 500 hours per year of that total on ULSFO (0.0015% sulfur by weight) and the balance on natural gas.

Controls: NO_X emission will be reduced with DLN combustion technology while firing natural gas, and water injection while firing fuel oil. Advanced burner design with good combustion practices will be used to minimize incomplete combustion of carbon monoxide (CO), particulate matter less than 10 microns (PM_{10}), and volatile organic compound (VOC). The use of natural gas and restricted operation on fuel oil will minimize emissions of sulfur dioxide (SO_2) and sulfuric acid mist (SAM).

Continuous Monitors: The combustion turbine is required to continuously monitor NO_X emissions in accordance with the acid rain provisions. The same monitor will be employed for demonstration of continuous compliance with the Best Available Control Technology (BACT) determination. Flue gas oxygen content or carbon dioxide content will be monitored as a diluent gas. The applicant will also install a continuous emissions monitor for demonstration of continuous compliance with permitted CO emissions.

Stack parameters: Unit 1 and 2 will each have a stack that is 115 feet tall with an approximate exit diameter of 20 feet. The following table summarizes the exhaust characteristics of the unit. Values given are approximate for operation at 59 degrees Fahrenheit (°F) at 100% load and a relative humidity of 60 percent. At 59 °F, the nominal capacity is approximately 176 MW when firing natural gas whereas the capacity is 190 MW when firing ULSFO.

Table 2. Approximate Exhaust Characteristics of Unit 1 and 2 at 100% Load and 59° F

Fuel	Total Heat Input (HHV)[1]	Compressor Inlet Temp.	Turbine Exhaust Temp., °F	Stack Flow ACFM[2] @ 15% O_2
Gas	1806 mmBtu/hr	59° F	1,111 °F	2,428,785
Oil	1994 mmBtu/hr	59° F	1,094 °F	2,257,700

1 – higher heating value (HHV)
2 – actual cubic feet per minute (ACFM)

The key components of the GE 7FA CT are shown in the "quarter section" internal diagram of Figure 6.

Table 8. CO and PM Standards for "F-Class" Combined Cycle Units (Comment: This should identify simple cycle units.)

Project Location	CO – ppmvd (@15% O_2)	PM - lb/mmBtu (or gr/dscf or lb/hr)
Cogen Tech, NJ	2.0 (1-hr – Ox-Cat)	
FPL Bellingham, MA	2.0 (3-hr – Ox-Cat)	0.008
Duke Santan, AZ	2.0 (3-hr – Ox-Cat)	0.01
Duke Morro, CA	2.0 (Ox-Cat)	0.0059 (DB off) 0.0064 (DB on)
ANP Blackstone, MA	3.0 (Ox-Cat)	0.002 (NH_3 = 2.0 ppmvd)
El Paso Manatee, FL	2.5 – NG (3-hr – Ox-Cat) 4 – NG (3-hr, PA)	20 lb/hr – (Front & Back) NH_3 = 5
FPL LLC Tesla, CA	4.0 – NG (3-hr – Ox-Cat)	0.0048 (NH_3 = 5 ppmvd) 0.0005 Cool Tower Drift
JEA GEC Simple Cycle Units 1 & 2	**4.1 – NG** **8.0 – ULSFO**	**2 gr S/100 SCF of gas** **10% Opacity**
FMPA CIPP Unit 4	4.1 – NG (DB off, Annual Test) 7.6 – NG (DB on, Annual Test) 8.0 – 24-hr (All Modes)	2 gr S/100 SCF of gas 10% Opacity NH3 = 5 ppmvd
OUC Stanton B, FL	4.1 – NG (DB off, Annual Test) 7.6 – NG (DB on, Annual Test) 14 – NG (DB+PA) 8.0 – FO (Annual Test) 8.0 – 24-hr (All Modes) 6.0 - 12-month (all modes)	2 gr S/100 SCF of gas 0.0015% sulfur fuel oil 10% Opacity NH_3 = 5 ppmvd
FPL Turkey Pt., FL	4.1 – NG (DB off, Annual Test) 7.6 – NG (DB on, Annual Test) 14 – NG (DB+PA) 8.0 – FO (Annual Test) 8.0 – 24-hr (All Modes) 6.0 - 12-month (all modes)	2 gr S/100 SCF of gas 0.0015% sulfur fuel oil 10% Opacity NH_3 = 5 ppmvd
FMPA TCEC, FL	4.1 – NG (DB off, Annual Test) 8.0 – NG (DB on, Annual Test) 8.0 – FO (Annual Test) 8.0 – 24-hr (All Modes) 6.0 - 12-month (all modes)	2 gr S/100 SCF of gas 0.0015% sulfur fuel oil 10% Opacity NH_3 = 5 ppmvd
Milford Power, CT	13 – 52 lb/hr (Ox-Cat)	0.011
Calpine OEC, PA	10 (1-hr)	0.0061
FPL Martin, FL	7.4 – NG (New, Clean) 8.0 – NG (DB off) 10 – (DB, PA)	10% Opacity NH_3 = 5 ppmvd
Metcalf Energy, CA	6 - NG (100% load)	12 lb/hr – NG (w DB) NH_3 = 5 ppmvd

Notes: NG = Natural Gas; DB = Duct Burner; PA = Power Augmentation; FO = Fuel Oil; GE = General Electric; WH = Westinghouse; ABB = Asea Brown Bovari; gr/dscf = grains per dry

E. BACT Determinations for the Simple Cycle Combustion Turbines

The Department establishes the following standards as the Best Available Control Technology for the simple cycle combustion turbine Units 1 and 2 at the GEC Power Project.

Table 9. Draft BACT Determinations – Greenland Energy Power Project Units 1 and 2

Pollutant	Emission Standard [e]	Averaging Time	Compliance Method	Basis
NO_X[a] (Gas)	9.0 ppmvd @ 15% O_2	24-hr block	CEMS	BACT
	58.5 lb/hr	3 1-hr runs	Stack Test	
NO_X[a] (Oil)	42.0 ppmvd @ 15% O_2	4-hr rolling average[f]	CEMS	NSPS
	329.4 lb/hr	3 1-hr runs	Stack Test	
CO[b] (Gas)	4.1 ppmvd @ 15% O_2	24-hr block	CEMS	BACT
	16.2 lb/hr	3 1-hr runs	Stack Test	
CO[b] (Oil)	8.0 ppmvd @ 15% O_2	24-hr block	CEMS	BACT
	38.2 lb/hr	3 1-hr runs	Stack Test	
PM/PM_{10}[c]	10 % Opacity	6-minute block	Visible Emissions Test	BACT
	2.0 gr S/100 SCF of gas/ 0.0015 % S fuel oil	N/A	Record Keeping	
SAM/SO_2[d]	2.0 gr S/100 SCF of gas/ 0.0015 % S fuel oil	N/A	Record Keeping	BACT

a. Continuous compliance with the 24-hour block and 4-hour rolling average NO_X standards shall be demonstrated based on data collected by the required CEMS. The initial ~~and annual~~ EPA Method 7E or Method 20 tests associated with demonstration of compliance with 40 CFR 60, Subpart KKKK or certification of the CEMS instruments may also be used to demonstrate compliance with the individual standards for natural gas and ULSFO during the time of those tests. NO_X mass emission rates are at ISO conditions and are defined as oxides of nitrogen expressed as NO_2.

b. Continuous compliance with the 24-hour CO standards shall be demonstrated based on data collected by the required CEMS. The initial ~~and annual~~ EPA Method 10 tests associated with the certification of the CEMS instruments may also be used to demonstrate compliance with the individual standards for natural gas and ULSFO. CO mass emission rates are at ISO conditions.

c. The sulfur fuel specification combined with the efficient combustion design and operation of the gas turbine represents BACT for PM/PM_{10} emissions. Compliance with the fuel specifications, CO standards, and visible emissions standards shall serve as indicators of good combustion. Compliance with the fuel specifications shall be demonstrated by keeping records of the fuel sulfur content. Compliance with the visible emissions standard shall be demonstrated by conducting tests in accordance with EPA Method 9.

d. The fuel sulfur specification effectively limits the potential emissions of SAM and SO_2 from the gas turbines and represents BACT for these pollutants. Compliance with the fuel sulfur specifications shall be determined by the ASTM methods or a certified fuel sulfur analysis from the fuel vendor for determination of fuel sulfur as detailed in the draft permit.

Last Updated on Thursday, January 22nd, 2009

Compliance Monitoring

Search Applicability Determination Index

Determination Detail

Control Number: 0200011

Category: NSPS
EPA Office: Region 4
Date: 10/25/2001
Title: Initial Test Extension
Recipient: C. H. Fancy
Author: R. Douglas Neeley
Comments:

Subparts: Part 60, A General Provisions
Part 60, GG Stationary Gas Turbines

References: 60.8(a)

Abstract:

Q: Will EPA grant an initial performance testing extension requested by Gainesville Regional Utilities (GRU) for Combined Cycle Unit No. 1 at the J.R. Kelly Generating Station?

A: No. Because 40 C.F.R. Part 60 does not contain provisions for extending the initial performance testing deadlines in Sec. 60.8(a), GRU is technically in violation of the requirement to complete an initial performance test within 60 days after reaching the maximum firing rate on Unit No. 1. Because the turbine operating problems that have delayed the performance testing are largely out of GRU's control, it is recommended that a decision regarding whether to pursue enforcement for missing the testing deadline be deferred until after the testing is actually completed.

Letter:

4APT-ATMB

C.H. Fancy, P.E., Chief
Bureau of Air Regulation
Department of Environmental Protection
Division of Air Resources Management
Mail Station 5500
2600 Blair Stone Road
Tallahassee, Florida 32199-2400

Dear Mr. Fancy:

The purpose of this letter is to provide you with written comments regarding an initial performance testing deadline extension requested by Gainesville Regional Utilities (GRU) in a September 7, 2001, letter that was sent to both the U.S. Environmental Protection Agency (EPA) Region 4 and the Florida Department of Environmental Protection. This request is for Combined Cycle Unit No. 1 at the J.R. Kelly Generating Station in Gainesville, Florida, and this unit is subject to 40 C.F.R. Part 60, Subpart GG (Standards of Performance for Stationary Gas Turbines). Based upon the date that the maximum firing rate for No. 2 fuel oil in the unit was achieved, the deadline for completing an initial performance test for oil would have been May 18, 2001. Due to ongoing problems that the unit has experienced while firing oil, GRU has been unable to conduct an initial performance test for this fuel and requested an extension of the initial performance testing for oil firing in its September 7, 2001, letter. Although the New Source Performance Standards (NSPS) do not contain provisions for extending the performance testing deadlines specified in 40 C.F.R. Sec. 60.8 (a), we recommend deferring any decision regarding whether to pursue enforcement for the missed testing deadline at GRU until the testing is actually completed.

Unit No. 1 can be fired with either natural gas or oil, and since the maximum firing rate for each of these fuels was achieved on different days, the deadlines for completing initial testing for these two fuels were different. In a May 1, 2001, letter addressed to you, Region 4 approved a previous GRU request for an extension of the testing deadlines for both fuels fired in Unit No. 1. An extension for testing during natural gas firing was granted because the removal of parts that had to be returned to the manufacturer for repairs prevented the unit from operating on the April 18, 2001, deadline for testing. An extension for oil firing was granted because the unit had been experiencing vibration problems while firing this fuel, and it was unlikely that these problems would be corrected by the May 18, 2001, deadline for testing while firing oil. Under the terms of the extension approved in our May 1, 2001 letter, GRU was given up to 720 operating hours following the restart of Unit No. 1 to complete testing. In addition, the letter required that all testing for both fuels be completed no later than September 11, 2001. The date by which GRU completed testing during natural gas firing (June 15, 2001) was acceptable under the terms specified in our May 1, 2001, letter. GRU has been unable, however, to complete performance testing for oil since the cause of the vibration problems when this fuel is fired has not yet been identified and corrected. Because of the inability to complete testing during oil firing within the time frame specified in Region 4's pervious letter, GRU's September 7, 2001, letter requested that the deadline for completing testing during oil firing be extended for an additional 720 operating hours after the use of this fuel resumes.

Although our May 1, 2001, letter indicated that an extension of the initial testing deadlines

for natural gas and oil firing in Unit No. 1 would be acceptable, we recently became aware of the fact that 40 C.F.R. Part 60 does not contain any provisions which allow EPA to grant extensions of the NSPS testing deadlines specified in 40 C.F.R. Sec. 60.8(a). Initiating enforcement for missing one of these deadlines, however, may not be necessary or reasonable when the deadline is missed for reasons that are beyond the control of a source owner or operator. In such circumstances, using enforcement discretion as the basis for not pursing an action would be acceptable provided that testing is completed expeditiously once the problems that prevented completion of testing by the applicable deadline are resolved.

Based upon the specific problems associated with Unit No. 1, we recommend deferring any decision regarding whether to pursue enforcement for missing the testing deadline for oil until after the testing is actually completed. Although decisions regarding what would constitute a reasonable amount of time for completing testing should be made on a case-by-case basis, Region 4 has typically considered a period of either 30 calendar days or 720 operating hours following the restart of a facility which could not operate on the initial deadline for testing to be reasonable. Our May 1, 2001, letter indicated that a 720 operating hour extension following the restart of Unit No. 1 would be acceptable. A final date of September 11, 2001, for completing testing was also specified in this letter due to the expectation that the vibration problems experienced during oil firing could be identified and corrected within this time frame. Because the manufacturer of Unit No. 1 has not been able to conclusively identify the cause of the vibration problems during oil firing yet, GRU was unable to complete testing for oil by the September 11, 2001, deadline specified in our May 1, 2001, letter.

If the testing is completed expeditiously once Unit No. 1 is capable of sustained operation on oil, deciding not to pursue enforcement for missing the testing deadline would be an acceptable option consistent with the enforcement discretion available to your agency. If testing is not completed expeditiously once oil can be fired in the unit on a sustained basis, deferring a decision regarding enforcement until after the initial performance testing is completed would not preclude you from citing GRU for a violation of the requirements in 40 C.F.R. Sec. 60.8(a) extending back to the original May 18, 2001, deadline for testing.

If you have any questions about the issues addressed in this letter, please contact Mr. David McNeal of the EPA Region 4 staff at (404) 562-9102.

Sincerely,

R. Douglas Neeley, Chief Air Toxics and Monitoring Branch Air, Pesticides and Toxics Management Division

cc: Mr. Randy L. Casserleigh
Ms. Yolanta Jonynas