



# Florida Department of Environmental Protection

## Memorandum

TO: Joseph Kahn, Division of Air Resource Management

THROUGH: Trina Vielhauer, Bureau of Air Regulation 

FROM: Syed Arif, New Source Review Section 

DATE: March 5, 2009

SUBJECT: Air Permit No. PSD-FL-401  
Project No. 0310561-001-AC  
JEA  
Greenland Energy Center  
Two Simple Cycle Combustion Turbines

The Final Permit for this project is attached for your approval and signature, which authorizes the construction of two nominal 190 megawatts simple cycle combustion turbines electrical generators. This work will be conducted at Greenland Energy Center, which is located in Duval County at 12121 Phillips Road, Jacksonville, Florida.

The Department distributed an Intent to Issue Permit package on August 20, 2008. The applicant published the Public Notice of Intent to Issue in The Florida Times-Union on August 29, 2008. The Department received the proof of publication electronically on September 5, 2008. Substantial comments concerning the draft permit were submitted by the applicant on September 16, 2008. Based on the substantial comments submitted by the applicant, the Department made a determination to issue a revised draft permit. The Department distributed a revised Intent to Issue permit package on November 30, 2008. The applicant published the Revised Public Notice of Intent to Issue in The Florida Times-Union on January 18, 2009. The applicant filed an extension of time to petition for an administrative hearing. The applicant submitted comments on the revised draft permit, which the Department responded to in the Final Determination. On March 5, 2009, the applicant withdrew the request for an extension of time to petition for an administrative hearing.

I recommend your approval of the attached Final Permit for this project.

Attachments



# Florida Department of Environmental Protection

Bob Martinez Center  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Charlie Crist  
Governor

Jeff Kottkamp  
Lt. Governor

Michael W. Sole  
Secretary

## NOTICE OF FINAL PERMIT

In the Matter of an  
Application for Permit by:

JEA  
21 West Church Street  
Jacksonville, Florida 32202

*Authorized Representative:*

Mr. James M. Chansler, P.E., D.P.A. - Chief Operating Officer

Air Permit No. PSD-FL-401  
Project No. 0310561-001-AC  
Greenland Energy Center  
Two Simple Cycle Combustion Turbines

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. This permit is issued pursuant to Chapter 403, Florida Statutes (F.S.).

Any party to this order has the right to seek judicial review of it under Section 120.68, F.S., by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) 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 must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida

Trina L. Vielhauer, Chief  
Bureau of Air regulation

(Date)

TLV/sa

## NOTICE OF FINAL PERMIT

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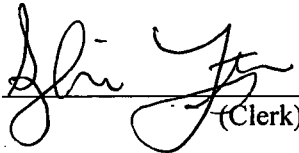
### CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Notice of Final Permit (including the Final Determination and the Final Permit) was sent by electronic mail (or a link to these documents made available electronically on a publicly accessible server) with received receipt requested before the close of business on 3/10/09 to the persons listed below.

Mr. James M. Chansler, P.E., D.P.A., JEA ([chanjm@jea.com](mailto:chanjm@jea.com))  
Mr. Bert Gianazza, P.E., JEA ([giannb@jea.com](mailto:giannb@jea.com))  
Mr. Jay Worley, P.E., JEA ([worlja@jea.com](mailto:worlja@jea.com))  
Mr. Chris Kirts, DEP-NED ([christopher.kirts@dep.state.fl.us](mailto:christopher.kirts@dep.state.fl.us))  
Mr. Richard Robinson, P.E., EQD ([robinson@coj.net](mailto:robinson@coj.net))  
Mr. Mike Halpin, DEP-SCO ([mike.halpin@dep.state.fl.us](mailto:mike.halpin@dep.state.fl.us))  
Ms. Kathleen Forney, EPA Region 4 ([forney.kathleen@epa.gov](mailto:forney.kathleen@epa.gov))  
Ms. Heather Abrams, U.S. EPA Region 4 ([abrams.heather@epamail.epa.gov](mailto:abrams.heather@epamail.epa.gov))  
Ms. Catherine Collins, Fish and Wildlife Service ([catherine\\_collins@fws.gov](mailto:catherine_collins@fws.gov))  
Ms. Vickie Gibson, DEP-BAR ([victoria.gibson@dep.state.fl.us](mailto:victoria.gibson@dep.state.fl.us)) (for read file)

Clerk Stamp

**FILING AND ACKNOWLEDGMENT FILED**, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

  
\_\_\_\_\_  
(Clerk)

3/10/09  
(Date)

## FINAL DETERMINATION

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### PERMITTEE

JEA  
21 West Church Street  
Jacksonville, Florida 32202

### PERMITTING AUTHORITY

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

### PROJECT

Air Permit No. PSD-FL-401  
Project No. 0310561-001-AC  
Greenland Energy Center  
Simple Cycle Combustion Turbines

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 General Electric PG7241FA simple cycle combustion turbine (CT) electrical generators (Units 1 and 2) with a nominal output of 352 megawatts (MW) on natural gas and 380 MW on ultra low sulfur fuel oil (ULSFO). The CT will be 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. The second phase will convert these simple cycle CT units to a combined cycle CT. The facility will be constructed at 12121 Phillips Road, Jacksonville, Duval County, Florida. The project was subject to the Prevention of Significant Deterioration (PSD) preconstruction review.

### NOTICE AND PUBLICATION

The Department distributed an Intent to Issue Permit package on August 20, 2008. The applicant published the Public Notice of Intent to Issue in The Florida Times-Union on August 29, 2008. The Department received the proof of publication electronically on September 5, 2008. Substantial comments concerning the draft permit were submitted by the applicant on September 16, 2008. Based on the substantial comments submitted by the applicant, the Department made a determination to issue a revised draft permit. The Department distributed a revised Intent to Issue permit package on November 30, 2008. The applicant published the Revised Public Notice of Intent to Issue in The Florida Times-Union on January 18, 2009. The applicant filed an extension of time to petition for an administrative hearing. On March 5, 2009, the applicant withdrew the request for an extension of time to petition for an administrative hearing.

### COMMENTS

No comments on the Draft Permit were received from the public, Environmental Protection Agency or the Northeast District Office. The applicant submitted comments on the draft permit, which were addressed in the Revised Technical Evaluation and Preliminary Determination. The applicant further submitted comments on the revised draft permit and the revised technical evaluation and preliminary determination which are summarized below along with Department's response to the applicant's comments.

#### Applicant's Comments and Department's Response

1. Expiration Date: JEA requests that the expiration date of the revised draft permit be changed from December 31, 2010, to December 31, 2012. This is necessitated due to the expected delays in the

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commencement of construction of the simple cycle project resulting from the financial market and because the needed land use approval was delayed until the Fall of 2009.

*Response:* The Department will make the necessary changes and the expiration date of the permit will be extended from December 31, 2010, to December 31, 2012. The expiration date on the cover page of the permit will be changed as follows:

**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, 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 converting simple cycle units to a combined cycle unit 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 the Facility Description anticipating a future submittal should be revised.

*Response:* The Department will make the necessary changes requested by the applicant in the Facility Description as follows (~~strikethrough~~ are deletions while double underline are additions):

**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 20101. 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 20123. A new PSD construction permit application ~~will be~~ has been submitted by the applicant for the second phase ~~at a later date~~.

3. **Natural Gas Pipeline and Fuel Usage:** The proposed natural gas pipeline to bring natural gas to the Greenland site is currently expected to be operational by January 1, 2011, instead of the original projected date of June 1, 2010. Changes to reflect this delay in the natural gas availability 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 Revised Technical Evaluation and Preliminary Determination (pages 8 and 10). 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.

*Response:* The Department will make the necessary changes as requested by the applicant under the Project Description on page 2 and Specific Conditions 9 of the draft permit. Condition 16 will be re-written as Condition 16(a) and 16 (b) as described under Comment 8 and the necessary changes will be included in those conditions. The change in the Facility Description was made under Comment 2. The

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*Department will make a note of the changes to be reflected in the Revised Technical Evaluation and Preliminary Determination, but will not issue the corrected Revised Technical Evaluation and Preliminary Determination with this Final Determination. The following changes will be made:*

**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 (by ~~June~~ January 1, 2010), 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.

**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.]

4. **Sulfur Content:** Consistent with the permit application and the remainder of the permit, the sulfur content limit identified as the emissions standard for particulate matter, sulfuric acid mist and sulfur dioxide in the table included under Condition 12 should be stated as 2 grains per 100 standard cubic feet 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.

***Response:** The Department will make the necessary changes as requested by the applicant. The Department will make a note of the changes to be reflected in the Revised Technical and Preliminary Determination, but will not issue the corrected Revised Technical and Preliminary Determination with this Final Determination. The following change will be made to Specific Condition 12 of the draft permit:*

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

<b>Pollutant</b>	<b>Emission Standard<sup>e</sup></b>	<b>Averaging Time</b>	<b>Compliance Method</b>	<b>Basis</b>
NO <sub>x</sub> <sup>a</sup> (Gas)	9.0 ppmvd @ 15% O <sub>2</sub>	24-hr block	CEMS	BACT
	58.5 lb/hr	3 1-hr runs	Stack Test	
NO <sub>x</sub> <sup>a</sup> (Oil)	42.0 ppmvd @ 15% O <sub>2</sub>	4-hr rolling average <sup>f</sup>	CEMS	NSPS

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Pollutant	Emission Standard <sup>e</sup>	Averaging Time	Compliance Method	Basis
	329.4 lb/hr	3 1-hr runs	Stack Test	
CO <sup>b</sup> (Gas)	4.1 ppmvd @ 15% O <sub>2</sub>	24-hr block	CEMS	BACT
	16.2 lb/hr	3 1-hr runs	Stack Test	
CO <sup>b</sup> (Oil)	8.0 ppmvd @ 15% O <sub>2</sub>	24-hr block	CEMS	BACT
	38.2 lb/hr	3 1-hr runs	Stack Test	
PM/PM <sub>10</sub> <sup>c</sup>	10 % Opacity	6-minute block	Visible Emissions Test	BACT
	2.0 $\pm$ gr S/100 SCF of gas/ 0.0015 % S fuel oil	N/A	Record Keeping	
SAM/SO <sub>2</sub> <sup>d</sup>	2.0 $\pm$ 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<sub>x</sub> 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<sub>x</sub> mass emission rates are at International Organization for Standardization (ISO) conditions and are defined as oxides of nitrogen expressed as NO<sub>2</sub>.
- 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<sub>10</sub> 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<sub>2</sub> 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<sub>x</sub>, 67.7 tons/year of CO, 71 tons/year of PM/PM<sub>10</sub> and 28.81 tons/year of SO<sub>2</sub>.}*

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

## FINAL DETERMINATION

5. Annual Tests: JEA indicated that annual stack tests should not be required when continuous emissions monitoring systems (CEMS) are used to demonstrate compliance. 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). If the Department insists, however, that annual stack tests be performed, then the relative accuracy test audit (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."

*Response: The Department will still require annual stack testing that can be done in conjunction with the RATA testing. Therefore, annual tests requirement listed in footnotes a and b of the table under Condition 12 as well as references in footnotes a and b on page 27 of 36 of the Revised Technical and Preliminary Determination will not be removed. Annual tests referenced in Condition 17 will be changed to reflect those tests will be done in conjunction with RATA testing. The Department concurs with the applicant that the RATA testing can be done on operations at less than 90 percent of the permitted capacity, and therefore will delete the requirement in 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." Performance Specification 2 which lists the specifications and test procedures for SO<sub>2</sub> and NO<sub>x</sub> continuous emission monitoring systems in stationary sources does require that the RATA test be conducted while the affected facility is operating at more than 50 percent of normal load. The following changes will be made to Specific Condition 15 and 17 of the draft permit:*

**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<sub>x</sub> 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 RATA tests shall be conducted while the affected facility is operating at more than 50 percent of normal load. 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 and 40 CFR 60 Appendix B, Spec.2]

**17. Subsequent Compliance Testing:** Annual compliance tests for NO<sub>x</sub>, CO (done in conjunction with RATA tests) and visible emissions shall be conducted during each federal fiscal year (October 1<sup>st</sup> to September 30<sup>th</sup>). 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<sub>x</sub>, CO (done in conjunction with RATA tests) 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.]

6. New Source Performance Standards (NSPS) Subpart KKKK: JEA requests that the Department include the following text from the Revised Technical Evaluation and Preliminary Determination (pages 4 and 5 of 36)



## FINAL DETERMINATION

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).

*Response: The Department has already included that language in the Technical Evaluation and Preliminary Determination and sees no reason to again include it as part of a permitting note under Conditions 12 and 27.*

7. **Excess Emissions:** Visible emissions from the two simple cycle CT are limited to a 10 percent opacity standard, although the emissions are subject to the excess emissions rule under Rule 62-210.700(1), Florida Administrative Code (F.A.C.), Common Condition 3 included in Section IV, Appendix C. Is our understanding correct?

*Response: The Department concurs with the applicant’s statement provided best operational practices to minimize excess emissions are adhered to.*

8. **Initial Compliance Demonstration:** Condition 16 should be revised to clarify that initial stack testing is fuel-specific and initial compliance stack test 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.

*Response: Condition 16 was re-written in consultation with the applicant. The condition will be broken down in two parts; one when the CT starts up on ULSFO due to non-availability of natural gas onsite and second when the CT starts up on natural gas due to availability of natural gas onsite. The applicant indicated that they should have the option of starting on ULSFO or natural gas when natural gas is available onsite. The Department does not have a problem with that request. Therefore, Specific Condition 16 of the draft permit shall be re-written as follows:*

**16(a). Initial Compliance Demonstration (onsite natural gas availability on startup):** Initial compliance stack tests while firing natural gas shall be conducted within 60 days after achieving maximum production, but not later than 180 days after the first firing on natural gas. This testing must be completed within the required fuel use of Condition 7. Initial testing on ULSFO shall be conducted within 60 days after achieving maximum production, but not later than 180 days after the first firing on ULSFO. This testing must be completed within the required fuel use of Condition 7. 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<sub>x</sub>, 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 January 1, 2011. Initial startup of the CT will be on natural gas or ULSFO}*

**16(b). Initial Compliance Demonstration (onsite natural gas non-availability on startup):** Initial compliance stack tests while firing ULSFO shall be conducted within 60 days after achieving maximum production, but not later than 180 days after the first firing on ULSFO. This testing must be completed within the required fuel use of Condition 6. Initial testing on natural gas shall be conducted within 60 days after achieving maximum production rate, but not later than 180 days of first firing on natural gas. This

## FINAL DETERMINATION

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testing must be completed within the required fuel use of Condition 7. 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<sub>x</sub>, 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 January 1, 2011. Initial startup of the CT will be on ULSFO}*

9. **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.

***Response:** The Department does not concur with the applicant as Condition 23 allows data exclusion only for the State Implementation Plan (SIP)-based compliance demonstrations. See response to Comment #6 on NO<sub>x</sub> standards during periods of startup, shutdown and malfunction for the New Source Performance Standards (NSPS) Subpart KKKK.*

10. **Data Exclusion Procedures:** Condition 22 should not be limited to procedures for State Implementation Plan (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. Since, the only NO<sub>x</sub> 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.

***Response:** See response to Comment #9.*

11. **DLN Tuning:** Condition 23.d should be revised to clarify that the notices required for DLN 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 resulting excess emissions.

***Response:** The Department concurs with the applicant and Specific Condition 23.d shall be changed as follows:*

**23.d DLN Tuning:** CEMS data collected during initial or other major DLN tuning sessions may be excluded from the compliance demonstrations 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.]

12. **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.

***Response:** The Department concurs with the applicant and Specific Condition 25 shall be changed as follows:*

## FINAL DETERMINATION

**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<sub>x</sub> 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<sub>x</sub> Monitor:* Each NO<sub>x</sub> 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<sub>x</sub> 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<sub>2</sub>) or carbon dioxide (CO<sub>2</sub>) content of the flue gas shall be monitored at the location where CO and NO<sub>x</sub> are monitored to correct the measured emissions rates to 15% oxygen. If a CO<sub>2</sub> 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 40 CFR 75]

13. **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).

*Response: The Department does not concur with the applicant as the Condition heading refers it as CEMS data requirements for BACT standards and therefore does not apply to any NSPS emission standards. Therefore, Specific Condition 27.a will not be revised.*

14. **Preventable Emissions:** Condition 27.e should be revised to omit the last sentence, which is inconsistent 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."

*Response: The Department will omit the last sentence of Specific Condition 27.e not because it's inconsistent with the Department's rule but because that language has already been included in Specific Condition 21. The following changes will be made to Specific Condition 27.e of the draft permit:*

**27.e Data Exclusion:** Each CEMS shall monitor and record emissions during all operations including episodes of startup, shutdown, malfunction and 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, 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

## FINAL DETERMINATION

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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.~~

15. 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 monitor system downtime. Consistent with this guideline, 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.

*Response: The Department will make the necessary changes as requested by the applicant. Specific Condition 27.f shall be changed to read as follows:*

~~27.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 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.~~

16. 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.

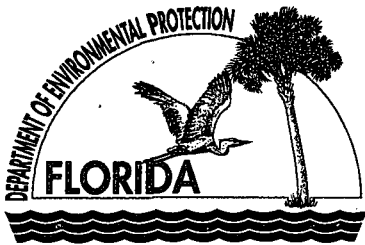
*Response: The Department is bound by the SIP requirements of Rule 62-210.700(6), F.A.C. in requiring quarterly reporting of excess emissions resulting from malfunctions. Therefore, Condition 33.b will not be revised.*

17. 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.

18. *Response: The Department will make a note of the changes to be reflected in the Revised Technical Evaluation and Preliminary Determination, but will not issue the corrected Revised Technical Evaluation and Preliminary Determination with this Final Determination. Table 8, page 25 of 36 in the Technical Evaluation and Preliminary Determination the Department was making a point that the Greenland simple cycle project's CO and PM emission limits were comparable to combined cycle operations that have controls. This was an indication of the effectiveness of the combustion turbine for this simple cycle project.*

## CONCLUSION

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



# Florida Department of Environmental Protection

Bob Martinez Center  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Charlie Crist  
Governor

Jeff Kottkamp  
Lt. Governor

Michael W. Sole  
Secretary

## 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, 2012

## 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

Section I. General Information

Section II. Administrative Requirements

Section III. Emissions Units Specific Conditions

Section IV. Appendices

  
\_\_\_\_\_  
Joseph Kahn, Director  
Division of Air Resource Management

3/6/09  
\_\_\_\_\_  
Effective Date

## SECTION I - GENERAL INFORMATION

### 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. 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 2013. A new PSD construction permit application has been submitted by the applicant for the second phase.

### 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 (by January 1, 2011), 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.

### 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.

## SECTION I - GENERAL INFORMATION

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### 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<sub>x</sub>), particulate matter/particulate matter less than 10 microns (PM/PM<sub>10</sub>), sulfur dioxide (SO<sub>2</sub>), 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

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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



## SECTION II. ADMINISTRATIVE REQUIREMENTS

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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.]

**SECTION III - EMISSIONS UNITS SPECIFIC CONDITIONS**

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

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<sub>x</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), particulate matter/particulate matter less than 10 microns (PM/PM<sub>10</sub>) 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<sub>x</sub> and the fuel sulfur specifications for SO<sub>2</sub> are as stringent as, or more stringent than the NO<sub>x</sub> and SO<sub>2</sub> 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<sub>x</sub> 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<sub>x</sub>. 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<sub>x</sub> 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 NO<sub>x</sub> 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.

## SECTION III - EMISSIONS UNITS SPECIFIC CONDITIONS

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

*{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, 2011, 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, 2011. 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 January 1, 2011.}*  
[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.

**SECTION III - EMISSIONS UNITS SPECIFIC CONDITIONS**  
**Unit 1 and 2 Simple Cycle Combustion Turbines (EU 001 and 002)**

<b>Pollutant</b>	<b>Emission Standard<sup>e</sup></b>	<b>Averaging Time</b>	<b>Compliance Method</b>	<b>Basis</b>
NO <sub>x</sub> <sup>a</sup> (Gas)	9.0 ppmvd @ 15% O <sub>2</sub>	24-hr block	CEMS	BACT
	58.5 lb/hr	3 1-hr runs	Stack Test	
NO <sub>x</sub> <sup>a</sup> (Oil)	42.0 ppmvd @ 15% O <sub>2</sub>	4-hr rolling average <sup>f</sup>	CEMS	NSPS
	329.4 lb/hr	3 1-hr runs	Stack Test	
CO <sup>b</sup> (Gas)	4.1 ppmvd @ 15% O <sub>2</sub>	24-hr block	CEMS	BACT
	16.2 lb/hr	3 1-hr runs	Stack Test	
CO <sup>b</sup> (Oil)	8.0 ppmvd @ 15% O <sub>2</sub>	24-hr block	CEMS	BACT
	38.2 lb/hr	3 1-hr runs	Stack Test	
PM/PM <sub>10</sub> <sup>c</sup>	10 % Opacity	6-minute block	Visible Emissions Test	BACT
	2 gr S/100 SCF of gas/ 0.0015 % S fuel oil	N/A	Record Keeping	
SAM/SO <sub>2</sub> <sup>d</sup>	2 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<sub>x</sub> 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<sub>x</sub> mass emission rates are at International Organization for Standardization (ISO) conditions and are defined as oxides of nitrogen expressed as NO<sub>2</sub>.
- 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<sub>10</sub> 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<sub>2</sub> 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).

### SECTION III - EMISSIONS UNITS SPECIFIC CONDITIONS

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

*{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<sub>x</sub>, 67.7 tons/year of CO, 71 tons/year of PM/PM<sub>10</sub> and 28.81 tons/year of SO<sub>2</sub>.}*

[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 NO <sub>x</sub> 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 NO <sub>x</sub> , SO <sub>2</sub> , 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. 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<sub>x</sub> and CO, provided the owner or operator indicates this intent in the submitted test protocol, and obtains approval prior to testing. The RATA tests shall be conducted while the affected facility is operating at more than 50 percent of normal load. 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(7)(a), F.A.C.; 40 CFR 60.8 and 40 CFR 60 Appendix B, Spec.2]
- 16(a) **Initial Compliance Demonstration(onsite natural gas availability on startup):** Initial compliance stack tests while firing natural gas shall be conducted within 60 days after achieving the maximum production rate, but not later than 180 days after the first firing on natural gas. This testing must be completed within the required fuel use of Condition 7. Initial testing on ULSFO shall be conducted within 60 days after achieving maximum production, but not later than 180 days after the first firing on ULSFO. This testing must be completed within the required fuel use of Condition 7. 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<sub>x</sub>, 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 January 1, 2011. Initial start up of the CT will be on natural gas or ULSFO.}*

## SECTION III - EMISSIONS UNITS SPECIFIC CONDITIONS

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

- 16(b) Initial Compliance Demonstration (onsite natural gas non-availability on startup): Initial compliance stack tests while firing ULSFO shall be conducted within 60 days after achieving maximum production, but not later than 180 days after the first firing on ULSFO. This testing must be completed within the required fuel use of Condition 6. Initial testing on natural gas shall be conducted within 60 days after achieving maximum production rate, but not later than 180 days of first firing on natural gas. This testing must be completed within the required fuel use of Condition 7. 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<sub>x</sub>, 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 January 1, 2011. Initial start up of the CT will be on ULSFO.}*
17. Subsequent Compliance Testing: Annual compliance tests for NO<sub>x</sub>, CO (done in conjunction with RATA tests) and visible emissions shall be conducted during each federal fiscal year (October 1<sup>st</sup> to September 30<sup>th</sup>). 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<sub>x</sub>, CO (done in conjunction with RATA tests) 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 rolling average NO<sub>x</sub> 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.

### SECTION III - EMISSIONS UNITS SPECIFIC CONDITIONS

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

*{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 demonstration 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 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.]

### SECTION III - EMISSIONS UNITS SPECIFIC CONDITIONS

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- e. *Fuel Switching*: Up to 60 minutes of CEMS data may be excluded for each fuel switch. 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<sub>x</sub> 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<sub>x</sub> Monitor*: Each NO<sub>x</sub> 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<sub>x</sub> 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<sub>2</sub>) or carbon dioxide (CO<sub>2</sub>) content of the flue gas shall be monitored at the location where CO and NO<sub>x</sub> are monitored to correct the measured emissions rates to 15% oxygen. If a CO<sub>2</sub> 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., 40 CFR 60 and 40 CFR 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



### SECTION III - EMISSIONS UNITS SPECIFIC CONDITIONS

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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<sub>x</sub> 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 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, 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.
- f. *Availability*: Monitor availability for the CEMS shall be based on performance standards as set forth in 40 CFR 75.

[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<sub>x</sub> 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

## SECTION III - EMISSIONS UNITS SPECIFIC CONDITIONS

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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

### SECTION III - EMISSIONS UNITS SPECIFIC CONDITIONS

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emissions; and the actions taken to correct the problem. In addition, the Department may request a written summary report of the incident.

- b. *SIP Quarterly Report*: Within 30 days following the end of each calendar-quarter, the permittee shall submit a report to the Compliance Authority summarizing periods of NO<sub>x</sub> 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<sub>x</sub> 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.]

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**SECTION IV. APPENDIX A**  
**CITATION FORMATS AND GLOSSARY OF COMMON TERMS**

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**CITATION FORMATS**

The following illustrate the formats used in the permit to identify applicable requirements from permits and regulations.

**Old Permit Numbers**

Example: Permit No. AC50-123456 or Permit No. AO50-123456

Where: "AC" identifies the permit as an Air Construction Permit  
"AO" identifies the permit as an Air Operation Permit  
"123456" identifies the specific permit project number

**New Permit Numbers**

Example: Permit Nos. 099-2222-001-AC, 099-2222-001-AF, 099-2222-001-AO, or 099-2222-001-AV

Where: "099" represents the specific county ID number in which the project is located  
"2222" represents the specific facility ID number for that county  
"001" identifies the specific permit project number  
"AC" identifies the permit as an air construction permit  
"AF" identifies the permit as a minor source federally enforceable state operation permit  
"AO" identifies the permit as a minor source air operation permit  
"AV" identifies the permit as a major Title V air operation permit

**PSD Permit Numbers**

Example: Permit No. PSD-FL-317

Where: "PSD" means issued pursuant to the preconstruction review requirements of the Prevention of Significant Deterioration of Air Quality  
"FL" means that the permit was issued by the State of Florida  
"317" identifies the specific permit project number

**Florida Administrative Code (F.A.C.)**

Example: [Rule 62-213.205, F.A.C.]

Means: Title 62, Chapter 213, Rule 205 of the Florida Administrative Code

**Code of Federal Regulations (CFR)**

Example: [40 CFR 60.7]

Means: Title 40, Part 60, Section 7

**GLOSSARY OF COMMON TERMS**

° F: degrees Fahrenheit

acfm: actual cubic feet per minute

ARMS: Air Resource Management System (Department's database)

BACT: best available control technology

Btu: British thermal units

CAM: compliance assurance monitoring

**SECTION IV. APPENDIX A**  
**CITATION FORMATS AND GLOSSARY OF COMMON TERMS**

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**CEMS:** continuous emissions monitoring system  
**cfm:** cubic feet per minute  
**CFR:** Code of Federal Regulations  
**CO:** carbon monoxide  
**COMS:** continuous opacity monitoring system  
**DEP:** Department of Environmental Protection  
**Department:** Department of Environmental Protection  
**dscfm:** dry standard cubic feet per minute  
**EPA:** Environmental Protection Agency  
**ESP:** electrostatic precipitator (control system for reducing particulate matter)  
**EU:** emissions unit  
**F.A.C.:** Florida Administrative Code  
**F.D.:** forced draft  
**F.S.:** Florida Statutes  
**FGR:** flue gas recirculation  
**Fl:** fluoride  
**ft<sup>2</sup>:** square feet  
**ft<sup>3</sup>:** cubic feet  
**gpm:** gallons per minute  
**gr:** grains  
**gr/dscf:** grains per dry standard cubic feet  
**HAP:** hazardous air pollutant  
**Hg:** mercury  
**HHV:** higher heating value  
**I.D.:** induced draft  
**ID:** identification  
**kPa:** kilopascals  
**lb:** pound  
**MACT:** maximum achievable technology  
**MMBtu:** million British thermal units  
**MSDS:** material safety data sheets  
**MW:** megawatt  
**NESHAP:** National Emissions Standards for Hazardous Air Pollutants  
**NO<sub>x</sub>:** nitrogen oxides  
**NSPS:** New Source Performance Standards

**SECTION IV. APPENDIX A**  
**CITATION FORMATS AND GLOSSARY OF COMMON TERMS**

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**O&M:** operation and maintenance

**O<sub>2</sub>:** oxygen

**Pb:** lead

**PM:** particulate matter

**PM<sub>10</sub>:** particulate matter with a mean aerodynamic diameter of 10 microns or less

**PSD:** prevention of significant deterioration

**psi:** pounds per square inch

**PTE:** potential to emit

**RACT:** reasonably available control technology

**RATA:** relative accuracy test audit

**SAM:** sulfuric acid mist

**scf:** standard cubic feet

**scfm:** standard cubic feet per minute

**SIC:** standard industrial classification code

**SNCR:** selective non-catalytic reduction (control system used for reducing emissions of nitrogen oxides)

**SO<sub>2</sub>:** sulfur dioxide

**TPH:** tons per hour

**TPY:** tons per year

**UTM:** Universal Transverse Mercator coordinate system

**VE:** visible emissions

**VOC:** volatile organic compounds

**SECTION IV. APPENDIX B**  
**GENERAL CONDITIONS**

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The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in Subsections 403.087(6) and 403.722(5), F.S., the issuance of this permit does not convey 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.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of F.S. and Department rules, unless specifically authorized by an order from the Department.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit; as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
  - a. Have access to and copy records that must be kept under the conditions of the permit;
  - b. Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
  - c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

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

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
  - a. A description of and cause of non-compliance; and
  - b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

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

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



**SECTION IV. APPENDIX B**  
**GENERAL CONDITIONS**

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shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and F.S. after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by F.S. or Department rules.
11. This permit is transferable only upon Department approval in accordance with Rules 62-4.120 and 62-730.300, 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.
12. This permit or a copy thereof shall be kept at the work site of the permitted activity.
13. This permit also constitutes:
  - a. Determination of Best Available Control Technology (applicable);
  - b. Determination of Prevention of Significant Deterioration (applicable); and
  - c. Compliance with New Source Performance Standards (applicable).
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.
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.

**SECTION IV. APPENDIX C**  
**COMMON CONDITIONS**

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Unless otherwise specified in the permit, the following conditions apply to all emissions units and activities at the facility.

**EMISSIONS AND CONTROLS**

1. **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.]
2. **Circumvention:** The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]
3. **Excess Emissions Allowed:** Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration as applicable under Condition No. 23 of the permit. [Rule 62-210.700(1), F.A.C.]
4. **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. [Rule 62-210.700(4), F.A.C.]
5. **Excess Emissions - Notification:** In case of excess emissions resulting from malfunctions, the permittee shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]
6. **VOC or OS Emissions:** No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds (VOC) or organic solvents (OS) without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]
7. **Objectionable Odor Prohibited:** No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and 62-210.200(Definitions), F.A.C.]
8. **General Visible Emissions:** No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20% opacity. This regulation does not impose a specific testing requirement. [Rule 62-296.320(4)(b)1, F.A.C.]
9. **Unconfined Particulate 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.]

*{Permitting Note: Rule 62-210.700 (Excess Emissions), F.A.C., cannot vary any NSPS or NESHAP provision.}*

**RECORDS AND REPORTS**

10. **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 5 years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rule 62-213.440(1)(b)2, F.A.C.]
11. **Annual Operating Report:** The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. 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.]

**SECTION IV. APPENDIX D**  
**COMMON TESTING REQUIREMENTS**

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Unless otherwise specified in the permit, the following testing requirements apply to all emissions units at the facility.

**COMPLIANCE TESTING REQUIREMENTS**

1. **Required Number of Test Runs:** For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]
2. **Operating Rate During Testing:** Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. 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. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. [Rule 62-297.310(2), F.A.C.]
3. **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.]
4. **Applicable Test Procedures**
  - a. **Required Sampling Time.**
    - (1) 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.
    - (2) **Opacity Compliance Tests.** When either EPA Method 9 or DEP Method 9 is specified as the applicable opacity test method, the required minimum period of observation for a compliance test shall be sixty (60) minutes for emissions units which emit or have the potential to emit 100 tons per year or more of particulate matter, and thirty (30) minutes for emissions units which have potential emissions less than 100 tons per year of particulate matter and are not subject to a multiple-valued opacity standard. The opacity test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. Exceptions to these requirements are as follows:
      - (a) For batch, cyclical processes, or other operations which are normally completed within less than the minimum observation period and do not recur within that time, the period of observation shall be equal to the duration of the batch cycle or operation completion time.
      - (b) The observation period for special opacity tests that are conducted to provide data to establish a surrogate standard pursuant to Rule 62-297.310(5)(k), F.A.C., Waiver of Compliance Test Requirements, shall be established as necessary to properly establish the relationship between a proposed surrogate standard and an existing mass emission limiting standard.
      - (c) The minimum observation period for opacity tests conducted by employees or agents of the Department to verify the day-to-day continuing compliance of a unit or activity with an applicable opacity standard shall be twelve minutes.
  - 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.

**SECTION IV. APPENDIX D**  
**COMMON TESTING REQUIREMENTS**

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- 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.
- d. *Allowed Modification to EPA Method 5.* When EPA Method 5 is required, the following modification is allowed: the heated filter may be separated from the impingers by a flexible tube.

[Rule 62-297.310(4), F.A.C.]

5. 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.
- 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), F.A.C.]

6. Sampling Facilities: The permittee shall install permanent stack sampling ports and provide sampling facilities that meet the requirements of Rule 62-297.310(6), F.A.C. Sampling facilities include sampling ports, work platforms, access to work platforms, electrical power, and sampling equipment support. All stack sampling facilities must also comply with all applicable Occupational Safety and Health Administration (OSHA) Safety and Health Standards described in 29 CFR Part 1910, Subparts D and E.

- a. *Permanent Test Facilities.* The owner or operator of an emissions unit for which a compliance test, other than a visible emissions test, is required on at least an annual basis, shall install and maintain permanent stack sampling facilities.
- b. *Temporary Test Facilities.* The owner or operator of an emissions unit that is not required to conduct a compliance test on at least an annual basis may use permanent or temporary stack sampling facilities. If the owner chooses to use temporary sampling facilities on an emissions unit, and the Department elects to test the unit, such temporary facilities shall be installed on the emissions unit within 5 days of a request by the Department and remain on the emissions unit until the test is completed.
- c. *Sampling Ports.*
  - (1) All sampling ports shall have a minimum inside diameter of 3 inches.
  - (2) The ports shall be capable of being sealed when not in use.
  - (3) The sampling ports shall be located in the stack at least 2 stack diameters or equivalent diameters downstream and at least 0.5 stack diameter or equivalent diameter upstream from any fan, bend, constriction or other flow disturbance.
  - (4) For emissions units for which a complete application to construct has been filed prior to December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 15 feet or less. For stacks with a larger diameter, four sampling ports, each 90 degrees apart, shall be installed. For emissions units for which a complete application to construct is filed on or after December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 10 feet or less. For stacks with larger diameters, four sampling ports, each 90 degrees apart, shall be installed. On horizontal circular ducts, the ports shall be located so that the probe can enter the stack vertically, horizontally or at a 45 degree angle.
  - (5) On rectangular ducts, the cross sectional area shall be divided into the number of equal areas in accordance with EPA Method 1. Sampling ports shall be provided which allow access to each sampling point. The ports shall be located so that the probe can be inserted perpendicular to the gas flow.

**SECTION IV. APPENDIX D**  
**COMMON TESTING REQUIREMENTS**

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d. *Work Platforms.*

- (1) Minimum size of the working platform shall be 24 square feet in area. Platforms shall be at least 3 feet wide.
- (2) On circular stacks with 2 sampling ports, the platform shall extend at least 110 degrees around the stack.
- (3) On circular stacks with more than two sampling ports, the work platform shall extend 360 degrees around the stack.
- (4) All platforms shall be equipped with an adequate safety rail (ropes are not acceptable), toe board, and hinged floor-opening cover if ladder access is used to reach the platform. The safety rail directly in line with the sampling ports shall be removable so that no obstruction exists in an area 14 inches below each sample port and 6 inches on either side of the sampling port.

e. *Access to Work Platform.*

- (1) Ladders to the work platform exceeding 15 feet in length shall have safety cages or fall arresters with a minimum of 3 compatible safety belts available for use by sampling personnel.
- (2) Walkways over free-fall areas shall be equipped with safety rails and toe boards.

f. *Electrical Power.*

- (1) A minimum of two 120-volt AC, 20-amp outlets shall be provided at the sampling platform within 20 feet of each sampling port.
- (2) If extension cords are used to provide the electrical power, they shall be kept on the plant's property and be available immediately upon request by sampling personnel.

g. *Sampling Equipment Support.*

- (1) A three-quarter inch eyebolt and an angle bracket shall be attached directly above each port on vertical stacks and above each row of sampling ports on the sides of horizontal ducts.
  - (a) The bracket shall be a standard 3 inch × 3 inch × one-quarter inch equal-legs bracket which is 1 and one-half inches wide. A hole that is one-half inch in diameter shall be drilled through the exact center of the horizontal portion of the bracket. The horizontal portion of the bracket shall be located 14 inches above the centerline of the sampling port.
  - (b) A three-eighth inch bolt which protrudes 2 inches from the stack may be substituted for the required bracket. The bolt shall be located 15 and one-half inches above the centerline of the sampling port.
  - (c) The three-quarter inch eyebolt shall be capable of supporting a 500 pound working load. For stacks that are less than 12 feet in diameter, the eyebolt shall be located 48 inches above the horizontal portion of the angle bracket. For stacks that are greater than or equal to 12 feet in diameter, the eyebolt shall be located 60 inches above the horizontal portion of the angle bracket. If the eyebolt is more than 120 inches above the platform, a length of chain shall be attached to it to bring the free end of the chain to within safe reach from the platform.
- (2) A complete monorail or dual rail arrangement may be substituted for the eyebolt and bracket.
- (3) When the sample ports are located in the top of a horizontal duct, a frame shall be provided above the port to allow the sample probe to be secured during the test.

[Rule 62-297.310(6), F.A.C.]

7. Frequency of Compliance Tests: The following provisions apply only to those emissions units that are subject to an emissions limiting standard for which compliance testing is required.

a. *General Compliance Testing.*

1. The owner or operator of a new or modified emissions unit that is subject to an emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining an operation permit for such emissions unit.

**SECTION IV. APPENDIX D**  
**COMMON TESTING REQUIREMENTS**

2. For excess emission limitations for particulate matter specified in Rule 62-210.700, F.A.C., a compliance test shall be conducted annually while the emissions unit is operating under soot blowing conditions in each federal fiscal year during which soot blowing is part of normal emissions unit operation, except that such test shall not be required in any federal fiscal year in which a fossil fuel steam generator does not burn liquid and/or solid fuel for more than 400 hours other than during startup.
  3. The owner or operator of an emissions unit that is subject to any emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining a renewed operation permit. Emissions units that are required to conduct an annual compliance test may submit the most recent annual compliance test to satisfy the requirements of this provision. In renewing an air operation permit pursuant to sub-subparagraph 62-210.300(2)(a)3.b., c., or d., F.A.C., the Department shall not require submission of emission compliance test results for any emissions unit that, during the year prior to renewal:
    - (a) Did not operate; or
    - (b) In the case of a fuel burning emissions unit, burned liquid and/or solid fuel for a total of no more than 400 hours,
  4. During each federal fiscal year (October 1 – September 30), unless otherwise specified by rule, order, or permit, the owner or operator of each emissions unit shall have a formal compliance test conducted for:
    - (a) Visible emissions, if there is an applicable standard;
    - (b) Each of the following pollutants, if there is an applicable standard, and if the emissions unit emits or has the potential to emit: 5 tons per year or more of lead or lead compounds measured as elemental lead; 30 tons per year or more of acrylonitrile; or 100 tons per year or more of any other regulated air pollutant; and
    - (c) c. Each NESHAP pollutant, if there is an applicable emission standard.
  5. An annual compliance test for particulate matter emissions shall not be required for any fuel burning emissions unit that, in a federal fiscal year, does not burn liquid and/or solid fuel, other than during startup, for a total of more than 400 hours.
  6. For fossil fuel steam generators on a semi-annual particulate matter emission compliance testing schedule, a compliance test shall not be required for any six-month period in which liquid and/or solid fuel is not burned for more than 200 hours other than during startup.
  7. For emissions units electing to conduct particulate matter emission compliance testing quarterly pursuant to paragraph 62-296.405(2)(a), F.A.C., a compliance test shall not be required for any quarter in which liquid and/or solid fuel is not burned for more than 100 hours other than during startup.
  8. Any combustion turbine that does not operate for more than 400 hours per year shall conduct a visible emissions compliance test once per each five-year period, coinciding with the term of its air operation permit.
  9. The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator.
  10. An annual compliance test conducted for visible emissions shall not be required for units exempted from air permitting pursuant to subsection 62-210.300(3), F.A.C.; units determined to be insignificant pursuant to subparagraph 62-213.300(2)(a)1., F.A.C., or paragraph 62-213.430(6)(b), F.A.C.; or units permitted under the General Permit provisions in paragraph 62-210.300(4)(a) or Rule 62-213.300, F.A.C., unless the general permit specifically requires such testing.
- b. *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

**SECTION IV. APPENDIX D**  
**COMMON TESTING REQUIREMENTS**

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quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department.

- c. *Waiver of Compliance Test Requirements.* If the owner or operator of an emissions unit that is subject to a compliance test requirement demonstrates to the Department, pursuant to the procedure established in Rule 62-297.620, F.A.C., that the compliance of the emissions unit with an applicable weight emission limiting standard can be adequately determined by means other than the designated test procedure, such as specifying a surrogate standard of no visible emissions for particulate matter sources equipped with a bag house or specifying a fuel analysis for sulfur dioxide emissions, the Department shall waive the compliance test requirements for such emissions units and order that the alternate means of determining compliance be used, provided, however, the provisions of paragraph 62-297.310(7)(b), F.A.C., shall apply.

[Rule 62-297.310(7), F.A.C.]

**RECORDS AND REPORTS**

**8. Test Reports:**

- a. The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test.
- b. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed.
- c. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information.
  1. The type, location, and designation of the emissions unit tested.
  2. The facility at which the emissions unit is located.
  3. The owner or operator of the emissions unit.
  4. The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
  5. The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
  6. The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
  7. A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
  8. The date, starting time and duration of each sampling run.
  9. The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
  10. The number of points sampled and configuration and location of the sampling plane.
  11. For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
  12. The type, manufacturer and configuration of the sampling equipment used.
  13. Data related to the required calibration of the test equipment.
  14. Data on the identification, processing and weights of all filters used.
  15. Data on the types and amounts of any chemical solutions used.

**SECTION IV. APPENDIX D**  
**COMMON TESTING REQUIREMENTS**

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16. Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
17. The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
18. All measured and calculated data required to be determined by each applicable test procedure for each run.
19. The detailed calculations for one run that relate the collected data to the calculated emission rate.
20. The applicable emission standard and the resulting maximum allowable emission rate for the emissions unit plus the test result in the same form and unit of measure.
21. A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]



**SECTION IV. APPENDIX E**

**SUMMARY OF BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATIONS**

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

**Draft BACT Determinations – Greenland Energy Power Project Units 1 and 2**

Pollutant	Emission Standard <sup>e</sup>	Averaging Time	Compliance Method	Basis
NO <sub>x</sub> <sup>a</sup> (Gas)	9.0 ppmvd @ 15% O <sub>2</sub>	24-hr block	CEMS	BACT
	58.5 lb/hr	3 1-hr runs	Stack Test	
NO <sub>x</sub> <sup>a</sup> (Oil)	42.0 ppmvd @ 15% O <sub>2</sub>	4-hr rolling average <sup>f</sup>	CEMS	NSPS
	329.4 lb/hr	3 1-hr runs	Stack Test	
CO <sup>b</sup> (Gas)	4.1 ppmvd @ 15% O <sub>2</sub>	24-hr block	CEMS	BACT
	16.2 lb/hr	3 1-hr runs	Stack Test	
CO <sup>b</sup> (Oil)	8.0 ppmvd @ 15% O <sub>2</sub>	24-hr block	CEMS	BACT
	38.2 lb/hr	3 1-hr runs	Stack Test	
PM/PM <sub>10</sub> <sup>c</sup>	10 % Opacity	6-minute block	Visible Emissions Test	BACT
	2 gr S/100 SCF of gas/ 0.0015 % S fuel oil	N/A	Record Keeping	
SAM/SO <sub>2</sub> <sup>d</sup>	2 gr S/100 SCF of gas/ 0.0015 % S fuel oil	N/A	Record Keeping	BACT

- a. Continuous compliance with the 24-hr block and 4-hr rolling average NO<sub>x</sub> 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<sub>x</sub> mass emission rates are at ISO conditions and are defined as oxides of nitrogen expressed as NO<sub>2</sub>.
- 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<sub>10</sub> 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<sub>2</sub> 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).

**SECTION IV. APPENDIX F**  
**NSPS SUBPART A, GENERAL PROVISIONS**

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Emissions units subject to a New Source Performance Standard of 40 CFR 60 are also subject to the applicable requirements of Subpart A, the General Provisions, including:

- § 60.1 Applicability.
- § 60.2 Definitions.
- § 60.3 Units and abbreviations.
- § 60.4 Address.
- § 60.5 Determination of construction or modification.
- § 60.6 Review of plans.
- § 60.7 Notification and Record Keeping.
- § 60.8 Performance Tests.
- § 60.9 Availability of information.
- § 60.10 State Authority.
- § 60.11 Compliance with Standards and Maintenance Requirements:
- § 60.12 Circumvention.
- § 60.13 Monitoring Requirements.
- § 60.14 Modification.
- § 60.15 Reconstruction.
- § 60.16 Priority List.
- § 60.17 Incorporations by Reference.
- § 60.18 General Control Device Requirements.
- § 60.19 General Notification and Reporting Requirements.

Individual subparts may exempt specific equipment or processes from some or all of these requirements. The general provisions may be provided in full upon request.

## SECTION IV. APPENDIX G

### NSPS SUBPART KKKK REQUIREMENTS FOR STATIONARY COMBUSTION TURBINES

This subpart establishes emission standards and compliance schedules for the control of emissions from stationary combustion turbines that commenced construction, modification or reconstruction after February 18, 2005.

#### Applicability

##### § 60.4305 Does this subpart apply to my stationary combustion turbine?

(a) If you are the owner or operator of a stationary combustion turbine with a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBtu) per hour, based on the higher heating value of the fuel, which commenced construction, modification, or reconstruction after February 18, 2005, your turbine is subject to this subpart. Only heat input to the combustion turbine should be included when determining whether or not this subpart is applicable to your turbine. Any additional heat input to associated heat recovery steam generators (HRSG) or duct burners should not be included when determining your peak heat input. However, this subpart does apply to emissions from any associated HRSG and duct burners.

(b) Stationary combustion turbines regulated under this subpart are exempt from the requirements of subpart GG of this part. Heat recovery steam generators and duct burners regulated under this subpart are exempted from the requirements of subparts Da, Db, and Dc of this part.

##### § 60.4310 What types of operations are exempt from these standards of performance?

(a) Emergency combustion turbines, as defined in §60.4420(i), are exempt from the nitrogen oxides (NO<sub>x</sub>) emission limits in §60.4320.

(b) Stationary combustion turbines engaged by manufacturers in research and development of equipment for both combustion turbine emission control techniques and combustion turbine efficiency improvements are exempt from the NO<sub>x</sub> emission limits in §60.4320 on a case-by-case basis as determined by the Administrator.

(c) Stationary combustion turbines at integrated gasification combined cycle electric utility steam generating units that are subject to subpart Da of this part are exempt from this subpart.

(d) Combustion turbine test cells/stands are exempt from this subpart.

#### Emission Limits

##### § 60.4315 What pollutants are regulated by this subpart?

The pollutants regulated by this subpart are nitrogen oxide (NO<sub>x</sub>) and sulfur dioxide (SO<sub>2</sub>).

##### § 60.4320 What emission limits must I meet for nitrogen oxides (NO<sub>x</sub>)?

(a) You must meet the emission limits for NO<sub>x</sub> specified in Table 1 to this subpart.

(b) If you have two or more turbines that are connected to a single generator, each turbine must meet the emission limits for NO<sub>x</sub>.

##### § 60.4325 What emission limits must I meet for NO<sub>x</sub> if my turbine burns both natural gas and distillate oil (or some other combination of fuels)?

You must meet the emission limits specified in Table 1 to this subpart. If your total heat input is greater than or equal to 50 percent natural gas, you must meet the corresponding limit for a natural gas-fired turbine when you are burning that fuel. Similarly, when your total heat input is greater than 50 percent distillate oil and fuels other than natural gas, you must meet the corresponding limit for distillate oil and fuels other than natural gas for the duration of the time that you burn that particular fuel.

##### § 60.4330 What emission limits must I meet for sulfur dioxide (SO<sub>2</sub>)?

(a) If your turbine is located in a continental area, you must comply with either paragraph (a)(1) or (a)(2) of this section. If your turbine is located in Alaska, you do not have to comply with the requirements in paragraph (a) of this section until January 1, 2008.

(1) You must not cause to be discharged into the atmosphere from the subject stationary combustion turbine any gases which contain SO<sub>2</sub> in excess of 110 nanograms per Joule (ng/J) (0.90 pounds per megawatt-hour (lb/MWh)) gross output, or

(2) You must not burn in the subject stationary combustion turbine any fuel which contains total potential sulfur emissions in excess of 26 ng SO<sub>2</sub>/J (0.060 lb SO<sub>2</sub>/MMBtu) heat input. If your turbine simultaneously fires multiple fuels, each fuel must meet this requirement.

(b) If your turbine is located in a noncontinental area or a continental area that the Administrator determines does not have access to natural gas and that the removal of sulfur compounds would cause more environmental harm than benefit, you must comply with one or the other of the following conditions:

(1) You must not cause to be discharged into the atmosphere from the subject stationary combustion turbine any gases which contain SO<sub>2</sub> in excess of 780 ng/J (6.2 lb/MWh) gross output, or

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(2) You must not burn in the subject stationary combustion turbine any fuel which contains total sulfur with potential sulfur emissions in excess of 180 ng SO<sub>2</sub>/J (0.42 lb SO<sub>2</sub>/MMBtu) heat input. If your turbine simultaneously fires multiple fuels, each fuel must meet this requirement.

#### General Compliance Requirements

##### § 60.4333 What are my general requirements for complying with this subpart?

(a) You must operate and maintain your stationary combustion turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.

(b) When an affected unit with heat recovery utilizes a common steam header with one or more combustion turbines, the owner or operator shall either:

(1) Determine compliance with the applicable NO<sub>x</sub> emissions limits by measuring the emissions combined with the emissions from the other unit(s) utilizing the common heat recovery unit; or

(2) Develop, demonstrate, and provide information satisfactory to the Administrator on methods for apportioning the combined gross energy output from the heat recovery unit for each of the affected combustion turbines. The Administrator may approve such demonstrated substitute methods for apportioning the combined gross energy output measured at the steam turbine whenever the demonstration ensures accurate estimation of emissions related under this part.

#### Monitoring

##### § 60.4335 How do I demonstrate compliance for NO<sub>x</sub> if I use water or steam injection?

(a) If you are using water or steam injection to control NO<sub>x</sub> emissions, you must install, calibrate, maintain and operate a continuous monitoring system to monitor and record the fuel consumption and the ratio of water or steam to fuel being fired in the turbine when burning a fuel that requires water or steam injection for compliance.

(b) Alternatively, you may use continuous emission monitoring, as follows:

(1) Install, certify, maintain, and operate a continuous emission monitoring system (CEMS) consisting of a NO<sub>x</sub> monitor and a diluent gas (oxygen (O<sub>2</sub>) or carbon dioxide (CO<sub>2</sub>)) monitor, to determine the hourly NO<sub>x</sub> emission rate in parts per million (ppm) or pounds per million British thermal units (lb/MMBtu); and

(2) For units complying with the output-based standard, install, calibrate, maintain, and operate a fuel flow meter (or flow meters) to continuously measure the heat input to the affected unit; and

(3) For units complying with the output-based standard, install, calibrate, maintain, and operate a watt meter (or meters) to continuously measure the gross electrical output of the unit in megawatt-hours; and

(4) For combined heat and power units complying with the output-based standard, install, calibrate, maintain, and operate meters for useful recovered energy flow rate, temperature, and pressure, to continuously measure the total thermal energy output in British thermal units per hour (Btu/h).

##### § 60.4340 How do I demonstrate continuous compliance for NO<sub>x</sub> if I do not use water or steam injection?

(a) If you are not using water or steam injection to control NO<sub>x</sub> emissions, you must perform annual performance tests in accordance with §60.4400 to demonstrate continuous compliance. If the NO<sub>x</sub> emission result from the performance test is less than or equal to 75 percent of the NO<sub>x</sub> emission limit for the turbine, you may reduce the frequency of subsequent performance tests to once every 2 years (no more than 26 calendar months following the previous performance test). If the results of any subsequent performance test exceed 75 percent of the NO<sub>x</sub> emission limit for the turbine, you must resume annual performance tests.

(b) As an alternative, you may install, calibrate, maintain and operate one of the following continuous monitoring systems:

(1) Continuous emission monitoring as described in §§60.4335(b) and 60.4345, or

(2) Continuous parameter monitoring as follows:

(i) For a diffusion flame turbine without add-on selective catalytic reduction (SCR) controls, you must define parameters indicative of the unit's NO<sub>x</sub> formation characteristics, and you must monitor these parameters continuously.

(ii) For any lean premix stationary combustion turbine, you must continuously monitor the appropriate parameters to determine whether the unit is operating in low-NO<sub>x</sub> mode.

(iii) For any turbine that uses SCR to reduce NO<sub>x</sub> emissions, you must continuously monitor appropriate parameters to verify the proper operation of the emission controls.

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(iv) For affected units that are also regulated under part 75 of this chapter, with state approval you can monitor the NOx emission rate using the methodology in appendix E to part 75 of this chapter, or the low mass emissions methodology in §75.19, the requirements of this paragraph (b) may be met by performing the parametric monitoring described in section 2.3 of part 75 appendix E or in §75.19(c)(1)(iv)(H).

**§ 60.4345 What are the requirements for the continuous emission monitoring system equipment, if I choose to use this option?**

If the option to use a NOx CEMS is chosen:

(a) Each NOx diluent CEMS must be installed and certified according to Performance Specification 2 (PS 2) in appendix B to this part, except the 7-day calibration drift is based on unit operating days, not calendar days. With state approval, Procedure 1 in appendix F to this part is not required. Alternatively, a NOx diluent CEMS that is installed and certified according to appendix A of part 75 of this chapter is acceptable for use under this subpart. The relative accuracy test audit (RATA) of the CEMS shall be performed on a lb/MMBtu basis.

(b) As specified in §60.13(e)(2), during each full unit operating hour, both the NOx monitor and the diluent monitor must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each 15-minute quadrant of the hour, to validate the hour. For partial unit operating hours, at least one valid data point must be obtained with each monitor for each quadrant of the hour in which the unit operates. For unit operating hours in which required quality assurance and maintenance activities are performed on the CEMS, a minimum of two valid data points (one in each of two quadrants) are required for each monitor to validate the NOx emission rate for the hour.

(c) Each fuel flow meter shall be installed, calibrated, maintained, and operated according to the manufacturer's instructions. Alternatively, with state approval, fuel flow meters that meet the installation, certification, and quality assurance requirements of appendix D to part 75 of this chapter are acceptable for use under this subpart.

(d) Each watt meter, steam flow meter, and each pressure or temperature measurement device shall be installed, calibrated, maintained, and operated according to manufacturer's instructions.

(e) The owner or operator shall develop and keep on-site a quality assurance (QA) plan for all of the continuous monitoring equipment described in paragraphs (a), (c), and (d) of this section. For the CEMS and fuel flow meters, the owner or operator may, with state approval, satisfy the requirements of this paragraph by implementing the QA program and plan described in section 1 of appendix B to part 75 of this chapter.

**§ 60.4350 How do I use data from the continuous emission monitoring equipment to identify excess emissions?**

For purposes of identifying excess emissions:

(a) All CEMS data must be reduced to hourly averages as specified in §60.13(h).

(b) For each unit operating hour in which a valid hourly average, as described in §60.4345(b), is obtained for both NOx and diluent monitors, the data acquisition and handling system must calculate and record the hourly NOx emission rate in units of ppm or lb/MMBtu, using the appropriate equation from method 19 in appendix A of this part. For any hour in which the hourly average O<sub>2</sub> concentration exceeds 19.0 percent O<sub>2</sub> (or the hourly average CO<sub>2</sub> concentration is less than 1.0 percent CO<sub>2</sub>), a diluent cap value of 19.0 percent O<sub>2</sub> or 1.0 percent CO<sub>2</sub> (as applicable) may be used in the emission calculations.

(c) Correction of measured NOx concentrations to 15 percent O<sub>2</sub> is not allowed.

(d) If you have installed and certified a NOx diluent CEMS to meet the requirements of part 75 of this chapter, states can approve that only quality assured data from the CEMS shall be used to identify excess emissions under this subpart. Periods where the missing data substitution procedures in subpart D of part 75 are applied are to be reported as monitor downtime in the excess emissions and monitoring performance report required under §60.7(c).

(e) All required fuel flow rate, steam flow rate, temperature, pressure, and megawatt data must be reduced to hourly averages.

(f) Calculate the hourly average NOx emission rates, in units of the emission standards under §60.4320, using either ppm for units complying with the concentration limit or the following equation for units complying with the output based standard:

(1) For simple-cycle operation:

$$E = \frac{(NO_x)_h * (HI)_h}{P} \quad (\text{Eq. 1})$$

Where:

E = hourly NOx emission rate, in lb/MWh, (NOx)<sub>h</sub> = hourly NOx emission rate, in lb/MMBtu,

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(HI)<sub>h</sub> = hourly heat input rate to the unit, in MMBtu/h, measured using the fuel flowmeter(s), e.g., calculated using Equation D-15a in appendix D to part 75 of this chapter, and

P = gross energy output of the combustion turbine in MW.

(2) For combined-cycle and combined heat and power complying with the output-based standard, use Equation 1 of this subpart, except that the gross energy output is calculated as the sum of the total electrical and mechanical energy generated by the combustion turbine, the additional electrical or mechanical energy (if any) generated by the steam turbine following the heat recovery steam generator, and 100 percent of the total useful thermal energy output that is not used to generate additional electricity or mechanical output, expressed in equivalent MW, as in the following equations:

$$P = (Pe)_t + (Pe)_c + P_s + P_o \quad (\text{Eq. 2})$$

Where:

P = gross energy output of the stationary combustion turbine system in MW.

(Pe)<sub>t</sub> = electrical or mechanical energy output of the combustion turbine in MW,

(Pe)<sub>c</sub> = electrical or mechanical energy output (if any) of the steam turbine in MW, and

$$P_s = \frac{Q * H}{3.413 \times 10^6 \text{ Btu/MWh}} \quad (\text{Eq. 3})$$

Where:

P<sub>s</sub> = useful thermal energy of the steam, measured relative to ISO conditions, not used to generate additional electric or mechanical output, in MW,

Q = measured steam flow rate in lb/h,

H = enthalpy of the steam at measured temperature and pressure relative to ISO conditions, in Btu/lb, and  $3.413 \times 10^6 =$  conversion from Btu/h to MW.

P<sub>o</sub> = other useful heat recovery, measured relative to ISO conditions, not used for steam generation or performance enhancement of the combustion turbine.

(3) For mechanical drive applications complying with the output-based standard, use the following equation:

$$E = \frac{(NO_x)_m}{BL * AL} \quad (\text{Eq. 4})$$

Where:

E = NO<sub>x</sub> emission rate in lb/MWh,

(NO<sub>x</sub>)<sub>m</sub> = NO<sub>x</sub> emission rate in lb/h,

BL = manufacturer's base load rating of turbine, in MW, and

AL = actual load as a percentage of the base load.

(g) For simple cycle units without heat recovery, use the calculated hourly average emission rates from paragraph (f) of this section to assess excess emissions on a 4-hour rolling average basis, as described in §60.4380(b)(1).

(h) For combined cycle and combined heat and power units with heat recovery, use the calculated hourly average emission rates from paragraph (f) of this section to assess excess emissions on a 30 unit operating day rolling average basis, as described in §60.4380(b)(1).

**§ 60.4355 How do I establish and document a proper parameter monitoring plan?**

(a) The steam or water to fuel ratio or other parameters that are continuously monitored as described in §§60.4335 and 60.4340 must be monitored during the performance test required under §60.8, to establish acceptable values and ranges. You may supplement the performance test data with engineering analyses, design specifications, manufacturer's recommendations and other relevant information to define the acceptable parametric ranges more precisely. You must develop and keep onsite a parameter monitoring plan which explains the procedures used to document proper operation of the NO<sub>x</sub> emission controls. The plan must:

- (1) Include the indicators to be monitored and show there is a significant relationship to emissions and proper operation of the NO<sub>x</sub> emission controls,

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- (2) Pick ranges (or designated conditions) of the indicators, or describe the process by which such range (or designated condition) will be established,
  - (3) Explain the process you will use to make certain that you obtain data that are representative of the emissions or parameters being monitored (such as detector location, installation specification if applicable),
  - (4) Describe quality assurance and control practices that are adequate to ensure the continuing validity of the data,
  - (5) Describe the frequency of monitoring and the data collection procedures which you will use (e.g., you are using a computerized data acquisition over a number of discrete data points with the average (or maximum value) being used for purposes of determining whether an exceedance has occurred), and
  - (6) Submit justification for the proposed elements of the monitoring. If a proposed performance specification differs from manufacturer recommendation, you must explain the reasons for the differences. You must submit the data supporting the justification, but you may refer to generally available sources of information used to support the justification. You may rely on engineering assessments and other data, provided you demonstrate factors which assure compliance or explain why performance testing is unnecessary to establish indicator ranges. When establishing indicator ranges, you may choose to simplify the process by treating the parameters as if they were correlated. Using this assumption, testing can be divided into two cases:
    - (i) All indicators are significant only on one end of range (e.g., for a thermal incinerator controlling volatile organic compounds (VOC) it is only important to insure a minimum temperature, not a maximum). In this case, you may conduct your study so that each parameter is at the significant limit of its range while you conduct your emissions testing. If the emissions tests show that the source is in compliance at the significant limit of each parameter, then as long as each parameter is within its limit, you are presumed to be in compliance.
    - (ii) Some or all indicators are significant on both ends of the range. In this case, you may conduct your study so that each parameter that is significant at both ends of its range assumes its extreme values in all possible combinations of the extreme values (either single or double) of all of the other parameters. For example, if there were only two parameters, A and B, and A had a range of values while B had only a minimum value, the combinations would be A high with B minimum and A low with B minimum. If both A and B had a range, the combinations would be A high and B high, A low and B low, A high and B low, A low and B high. For the case of four parameters all having a range, there are 16 possible combinations.
- (b) For affected units that are also subject to part 75 of this chapter and that have state approval to use the low mass emissions methodology in §75.19 or the NO<sub>x</sub> emission measurement methodology in appendix E to part 75, you may meet the requirements of this paragraph by developing and keeping onsite (or at a central location for unmanned facilities) a QA plan, as described in §75.19(e)(5) or in section 2.3 of appendix E to part 75 of this chapter and section 1.3.6 of appendix B to part 75 of this chapter.

#### § 60.4360 How do I determine the total sulfur content of the turbine's combustion fuel?

You must monitor the total sulfur content of the fuel being fired in the turbine, except as provided in §60.4365. The sulfur content of the fuel must be determined using total sulfur methods described in §60.4415. Alternatively, if the total sulfur content of the gaseous fuel during the most recent performance test was less than half the applicable limit, ASTM D4084, D4810, D5504, or D6228, or Gas Processors Association Standard 2377 (all of which are incorporated by reference, see §60.17), which measure the major sulfur compounds, may be used.

#### § 60.4365 How can I be exempted from monitoring the total sulfur content of the fuel?

You may elect not to monitor the total sulfur content of the fuel combusted in the turbine, if the fuel is demonstrated not to exceed potential sulfur emissions of 26 ng SO<sub>2</sub>/J (0.060 lb SO<sub>2</sub>/MMBtu) heat input for units located in continental areas and 180 ng SO<sub>2</sub>/J (0.42 lb SO<sub>2</sub>/MMBtu) heat input for units located in noncontinental areas or a continental area that the Administrator determines does not have access to natural gas and that the removal of sulfur compounds would cause more environmental harm than benefit. You must use one of the following sources of information to make the required demonstration:

- (a) The fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the fuel, specifying that the maximum total sulfur content for oil use in continental areas is 0.05 weight percent (500 ppmw) or less and 0.4 weight percent (4,000 ppmw) or less for noncontinental areas, the total sulfur content for natural gas use in continental areas is 20 grains of sulfur or less per 100 standard cubic feet and 140 grains of sulfur or less per 100 standard cubic feet for noncontinental areas, has potential sulfur emissions of less than less than 26 ng SO<sub>2</sub>/J (0.060 lb SO<sub>2</sub>/MMBtu) heat input for continental areas and has potential sulfur emissions of less than less than 180 ng SO<sub>2</sub>/J (0.42 lb SO<sub>2</sub>/MMBtu) heat input for noncontinental areas; or
- (b) Representative fuel sampling data which show that the sulfur content of the fuel does not exceed 26 ng SO<sub>2</sub>/J (0.060 lb SO<sub>2</sub>/MMBtu) heat input for continental areas or 180 ng SO<sub>2</sub>/J (0.42 lb SO<sub>2</sub>/MMBtu) heat input for noncontinental areas. At a minimum, the amount of fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of appendix D to part 75 of this chapter is required.

#### § 60.4370 How often must I determine the sulfur content of the fuel?

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The frequency of determining the sulfur content of the fuel must be as follows:

(a) *Fuel oil.* For fuel oil, use one of the total sulfur sampling options and the associated sampling frequency described in sections 2.2.3, 2.2.4.1, 2.2.4.2, and 2.2.4.3 of appendix D to part 75 of this chapter (*i.e.*, flow proportional sampling, daily sampling, sampling from the unit's storage tank after each addition of fuel to the tank, or sampling each delivery prior to combining it with fuel oil already in the intended storage tank).

(b) *Gaseous fuel.* If you elect not to demonstrate sulfur content using options in §60.4365, and the fuel is supplied without intermediate bulk storage, the sulfur content value of the gaseous fuel must be determined and recorded once per unit operating day.

(c) *Custom schedules.* Notwithstanding the requirements of paragraph (b) of this section, operators or fuel vendors may develop custom schedules for determination of the total sulfur content of gaseous fuels, based on the design and operation of the affected facility and the characteristics of the fuel supply. Except as provided in paragraphs (c)(1) and (c)(2) of this section, custom schedules shall be substantiated with data and shall be approved by the Administrator before they can be used to comply with the standard in §60.4330.

(1) The two custom sulfur monitoring schedules set forth in paragraphs (c)(1)(i) through (iv) and in paragraph (c)(2) of this section are acceptable, without prior Administrative approval:

(i) The owner or operator shall obtain daily total sulfur content measurements for 30 consecutive unit operating days, using the applicable methods specified in this subpart. Based on the results of the 30 daily samples, the required frequency for subsequent monitoring of the fuel's total sulfur content shall be as specified in paragraph (c)(1)(ii), (iii), or (iv) of this section, as applicable.

(ii) If none of the 30 daily measurements of the fuel's total sulfur content exceeds half the applicable standard, subsequent sulfur content monitoring may be performed at 12-month intervals. If any of the samples taken at 12-month intervals has a total sulfur content greater than half but less than the applicable limit, follow the procedures in paragraph (c)(1)(iii) of this section. If any measurement exceeds the applicable limit, follow the procedures in paragraph (c)(1)(iv) of this section.

(iii) If at least one of the 30 daily measurements of the fuel's total sulfur content is greater than half but less than the applicable limit, but none exceeds the applicable limit, then:

(A) Collect and analyze a sample every 30 days for 3 months. If any sulfur content measurement exceeds the applicable limit, follow the procedures in paragraph (c)(1)(iv) of this section. Otherwise, follow the procedures in paragraph (c)(1)(iii)(B) of this section.

(B) Begin monitoring at 6-month intervals for 12 months. If any sulfur content measurement exceeds the applicable limit, follow the procedures in paragraph (c)(1)(iv) of this section. Otherwise, follow the procedures in paragraph (c)(1)(iii)(C) of this section.

(C) Begin monitoring at 12-month intervals. If any sulfur content measurement exceeds the applicable limit, follow the procedures in paragraph (c)(1)(iv) of this section. Otherwise, continue to monitor at this frequency.

(iv) If a sulfur content measurement exceeds the applicable limit, immediately begin daily monitoring according to paragraph (c)(1)(i) of this section. Daily monitoring shall continue until 30 consecutive daily samples, each having a sulfur content no greater than the applicable limit, are obtained. At that point, the applicable procedures of paragraph (c)(1)(ii) or (iii) of this section shall be followed.

(2) The owner or operator may use the data collected from the 720-hour sulfur sampling demonstration described in section 2.3.6 of appendix D to part 75 of this chapter to determine a custom sulfur sampling schedule, as follows:

(i) If the maximum fuel sulfur content obtained from the 720 hourly samples does not exceed 20 grains/100 scf, no additional monitoring of the sulfur content of the gas is required, for the purposes of this subpart.

(ii) If the maximum fuel sulfur content obtained from any of the 720 hourly samples exceeds 20 grains/100 scf, but none of the sulfur content values (when converted to weight percent sulfur) exceeds half the applicable limit, then the minimum required sampling frequency shall be one sample at 12 month intervals.

(iii) If any sample result exceeds half the applicable limit, but none exceeds the applicable limit, follow the provisions of paragraph (c)(1)(iii) of this section.

(iv) If the sulfur content of any of the 720 hourly samples exceeds the applicable limit, follow the provisions of paragraph (c)(1)(iv) of this section.

#### Reporting

#### § 60.4375 What reports must I submit?



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(a) For each affected unit required to continuously monitor parameters or emissions, or to periodically determine the fuel sulfur content under this subpart, you must submit reports of excess emissions and monitor downtime; in accordance with §60.7(c). Excess emissions must be reported for all periods of unit operation, including start-up, shutdown, and malfunction.

(b) For each affected unit that performs annual performance tests in accordance with §60.4340(a), you must submit a written report of the results of each performance test before the close of business on the 60th day following the completion of the performance test.

#### § 60.4380 How are excess emissions and monitor downtime defined for NO<sub>x</sub>?

For the purpose of reports required under §60.7(c), periods of excess emissions and monitor downtime that must be reported are defined as follows:

(a) For turbines using water or steam to fuel ratio monitoring:

(1) An excess emission is any unit operating hour for which the 4-hour rolling average steam or water to fuel ratio, as measured by the continuous monitoring system, falls below the acceptable steam or water to fuel ratio needed to demonstrate compliance with §60.4320, as established during the performance test required in §60.8. Any unit operating hour in which no water or steam is injected into the turbine when a fuel is being burned that requires water or steam injection for NO<sub>x</sub> control will also be considered an excess emission.

(2) A period of monitor downtime is any unit operating hour in which water or steam is injected into the turbine, but the essential parametric data needed to determine the steam or water to fuel ratio are unavailable or invalid.

(3) Each report must include the average steam or water to fuel ratio, average fuel consumption, and the combustion turbine load during each excess emission.

(b) For turbines using continuous emission monitoring, as described in §§60.4335(b) and 60.4345:

(1) An excess emissions is any unit operating period in which the 4-hour or 30-day rolling average NO<sub>x</sub> emission rate exceeds the applicable emission limit in §60.4320. For the purposes of this subpart, a "4-hour rolling average NO<sub>x</sub> emission rate" is the arithmetic average of the average NO<sub>x</sub> emission rate in ppm or ng/J (lb/MWh) measured by the continuous emission monitoring equipment for a given hour and the three unit operating hour average NO<sub>x</sub> emission rates immediately preceding that unit operating hour. Calculate the rolling average if a valid NO<sub>x</sub> emission rate is obtained for at least 3 of the 4 hours. For the purposes of this subpart, a "30-day rolling average NO<sub>x</sub> emission rate" is the arithmetic average of all hourly NO<sub>x</sub> emission data in ppm or ng/J (lb/MWh) measured by the continuous emission monitoring equipment for a given day and the twenty-nine unit operating days immediately preceding that unit operating day. A new 30-day average is calculated each unit operating day as the average of all hourly NO<sub>x</sub> emissions rates for the preceding 30 unit operating days if a valid NO<sub>x</sub> emission rate is obtained for at least 75 percent of all operating hours.

(2) A period of monitor downtime is any unit operating hour in which the data for any of the following parameters are either missing or invalid: NO<sub>x</sub> concentration, CO<sub>2</sub> or O<sub>2</sub> concentration, fuel flow rate, steam flow rate, steam temperature, steam pressure, or megawatts. The steam flow rate, steam temperature, and steam pressure are only required if you will use this information for compliance purposes.

(3) For operating periods during which multiple emissions standards apply, the applicable standard is the average of the applicable standards during each hour. For hours with multiple emissions standards, the applicable limit for that hour is determined based on the condition that corresponded to the highest emissions standard.

(c) For turbines required to monitor combustion parameters or parameters that document proper operation of the NO<sub>x</sub> emission controls:

(1) An excess emission is a 4-hour rolling unit operating hour average in which any monitored parameter does not achieve the target value or is outside the acceptable range defined in the parameter monitoring plan for the unit.

(2) A period of monitor downtime is a unit operating hour in which any of the required parametric data are either not recorded or are invalid.

#### § 60.4385 How are excess emissions and monitoring downtime defined for SO<sub>2</sub>?

If you choose the option to monitor the sulfur content of the fuel, excess emissions and monitoring downtime are defined as follows:

(a) For samples of gaseous fuel and for oil samples obtained using daily sampling, flow proportional sampling, or sampling from the unit's storage tank, an excess emission occurs each unit operating hour included in the period beginning on the date and hour of any sample for which the sulfur content of the fuel being fired in the combustion turbine exceeds the applicable limit and ending on the date and hour that a subsequent sample is taken that demonstrates compliance with the sulfur limit.

(b) If the option to sample each delivery of fuel oil has been selected, you must immediately switch to one of the other oil sampling options (i.e., daily sampling, flow proportional sampling, or sampling from the unit's storage tank) if the sulfur content of a delivery

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exceeds 0.05 weight percent. You must continue to use one of the other sampling options until all of the oil from the delivery has been combusted, and you must evaluate excess emissions according to paragraph (a) of this section. When all of the fuel from the delivery has been burned, you may resume using the as-delivered sampling option.

(c) A period of monitor downtime begins when a required sample is not taken by its due date. A period of monitor downtime also begins on the date and hour of a required sample, if invalid results are obtained. The period of monitor downtime ends on the date and hour of the next valid sample.

**§ 60.4390 What are my reporting requirements if I operate an emergency combustion turbine or a research and development turbine?**

(a) If you operate an emergency combustion turbine, you are exempt from the NOx limit and must submit an initial report to the Administrator stating your case.

(b) Combustion turbines engaged by manufacturers in research and development of equipment for both combustion turbine emission control techniques and combustion turbine efficiency improvements may be exempted from the NOx limit on a case-by-case basis as determined by the Administrator. You must petition for the exemption.

**§ 60.4395 When must I submit my reports?**

All reports required under §60.7(c) must be postmarked by the 30th day following the end of each 6-month period.

**Performance Tests**

**§ 60.4400 How do I conduct the initial and subsequent performance tests, regarding NOx?**

(a) You must conduct an initial performance test, as required in §60.8. Subsequent NOx performance tests shall be conducted on an annual basis (no more than 14 calendar months following the previous performance test).

(1) There are two general methodologies that you may use to conduct the performance tests. For each test run:

(i) Measure the NOx concentration (in parts per million (ppm)), using EPA Method 7E or EPA Method 20 in appendix A of this part. For units complying with the output based standard, concurrently measure the stack gas flow rate, using EPA Methods 1 and 2 in appendix A of this part, and measure and record the electrical and thermal output from the unit. Then use the following equation to calculate the NOx emission rate:

$$E = \frac{1.194 \times 10^{-7} * (NO_x)_c * Q_{std}}{P} \quad (\text{Eq. 5})$$

Where:

E = NOx emission rate, in lb/MWh

1.194 × 10<sup>-7</sup> = conversion constant, in lb/dscf-ppm

(NOx)<sub>c</sub> = average NOx concentration for the run, in ppm

Q<sub>std</sub> = stack gas volumetric flow rate, in dscf/hr

P = gross electrical and mechanical energy output of the combustion turbine, in MW (for simple-cycle operation), for combined-cycle operation, the sum of all electrical and mechanical output from the combustion and steam turbines, or, for combined heat and power operation, the sum of all electrical and mechanical output from the combustion and steam turbines plus all useful recovered thermal output not used for additional electric or mechanical generation, in MW, calculated according to §60.4350(f)(2); or

(ii) Measure the NOx and diluent gas concentrations, using either EPA Methods 7E and 3A, or EPA Method 20 in appendix A of this part. Concurrently measure the heat input to the unit, using a fuel flow meter (or flow meters), and measure the electrical and thermal output of the unit. Use EPA Method 19 in appendix A of this part to calculate the NOx emission rate in lb/MMBtu. Then, use Equations 1 and, if necessary, 2 and 3 in §60.4350(f) to calculate the NOx emission rate in lb/MWh.

(2) Sampling traverse points for NOx and (if applicable) diluent gas are to be selected following EPA Method 20 or EPA Method 1 (non-particulate procedures), and sampled for equal time intervals. The sampling must be performed with a traversing single-hole probe, or, if feasible, with a stationary multihole probe that samples each of the points sequentially. Alternatively, a multi-hole probe designed and documented to sample equal volumes from each hole may be used to sample simultaneously at the required points.

(3) Notwithstanding paragraph (a)(2) of this section, you may test at fewer points than are specified in EPA Method 1 or EPA Method 20 in appendix A of this part if the following conditions are met:

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### NSPS SUBPART KKKK REQUIREMENTS FOR STATIONARY COMBUSTION TURBINES

- (i) You may perform a stratification test for NO<sub>x</sub> and diluent pursuant to
- (A) [Reserved], or
  - (B) The procedures specified in section 6.5.6.1(a) through (e) of appendix A of part 75 of this chapter.
- (ii) Once the stratification sampling is completed, you may use the following alternative sample point selection criteria for the performance test:
- (A) If each of the individual traverse point NO<sub>x</sub> concentrations is within  $\pm 10$  percent of the mean concentration for all traverse points, or the individual traverse point diluent concentrations differs by no more than  $\pm 5$  ppm or  $\pm 0.5$  percent CO<sub>2</sub> (or O<sub>2</sub>) from the mean for all traverse points, then you may use three points (located either 16.7, 50.0 and 83.3 percent of the way across the stack or duct, or, for circular stacks or ducts greater than 2.4 meters (7.8 feet) in diameter, at 0.4, 1.2, and 2.0 meters from the wall). The three points must be located along the measurement line that exhibited the highest average NO<sub>x</sub> concentration during the stratification test; or
  - (B) For turbines with a NO<sub>x</sub> standard greater than 15 ppm @ 15% O<sub>2</sub>, you may sample at a single point, located at least 1 meter from the stack wall or at the stack centroid if each of the individual traverse point NO<sub>x</sub> concentrations is within  $\pm 5$  percent of the mean concentration for all traverse points, or the individual traverse point diluent concentrations differs by no more than  $\pm 3$  ppm or  $\pm 0.3$  percent CO<sub>2</sub> (or O<sub>2</sub>) from the mean for all traverse points; or
  - (C) For turbines with a NO<sub>x</sub> standard less than or equal to 15 ppm @ 15% O<sub>2</sub>, you may sample at a single point, located at least 1 meter from the stack wall or at the stack centroid if each of the individual traverse point NO<sub>x</sub> concentrations is within  $\pm 2.5$  percent of the mean concentration for all traverse points, or the individual traverse point diluent concentrations differs by no more than  $\pm 1$  ppm or  $\pm 0.15$  percent CO<sub>2</sub> (or O<sub>2</sub>) from the mean for all traverse points.
- (b) The performance test must be done at any load condition within plus or minus 25 percent of 100 percent of peak load. You may perform testing at the highest achievable load point, if at least 75 percent of peak load cannot be achieved in practice. You must conduct three separate test runs for each performance test. The minimum time per run is 20 minutes.
- (1) If the stationary combustion turbine combusts both oil and gas as primary or backup fuels, separate performance testing is required for each fuel.
  - (2) For a combined cycle and CHP turbine systems with supplemental heat (duct burner), you must measure the total NO<sub>x</sub> emissions after the duct burner rather than directly after the turbine. The duct burner must be in operation during the performance test.
  - (3) If water or steam injection is used to control NO<sub>x</sub> with no additional post-combustion NO<sub>x</sub> control and you choose to monitor the steam or water to fuel ratio in accordance with §60.4335, then that monitoring system must be operated concurrently with each EPA Method 20 or EPA Method 7E run and must be used to determine the fuel consumption and the steam or water to fuel ratio necessary to comply with the applicable §60.4320 NO<sub>x</sub> emission limit.
  - (4) Compliance with the applicable emission limit in §60.4320 must be demonstrated at each tested load level. Compliance is achieved if the three-run arithmetic average NO<sub>x</sub> emission rate at each tested level meets the applicable emission limit in §60.4320.
  - (5) If you elect to install a CEMS, the performance evaluation of the CEMS may either be conducted separately or (as described in §60.4405) as part of the initial performance test of the affected unit.
  - (6) The ambient temperature must be greater than 0 °F during the performance test.

#### § 60.4405 How do I perform the initial performance test if I have chosen to install a NO<sub>x</sub>-diluent CEMS?

If you elect to install and certify a NO<sub>x</sub>-diluent CEMS under §60.4345, then the initial performance test required under §60.8 may be performed in the following alternative manner:

- (a) Perform a minimum of nine RATA reference method runs, with a minimum time per run of 21 minutes, at a single load level, within plus or minus 25 percent of 100 percent of peak load. The ambient temperature must be greater than 0 °F during the RATA runs.
- (b) For each RATA run, concurrently measure the heat input to the unit using a fuel flow meter (or flow meters) and measure the electrical and thermal output from the unit.
- (c) Use the test data both to demonstrate compliance with the applicable NO<sub>x</sub> emission limit under §60.4320 and to provide the required reference method data for the RATA of the CEMS described under §60.4335.
- (d) Compliance with the applicable emission limit in §60.4320 is achieved if the arithmetic average of all of the NO<sub>x</sub> emission rates for the RATA runs, expressed in units of ppm or lb/MWh, does not exceed the emission limit.

#### § 60.4410 How do I establish a valid parameter range if I have chosen to continuously monitor parameters?

SECTION IV. APPENDIX G

NSPS SUBPART KKKK REQUIREMENTS FOR STATIONARY COMBUSTION TURBINES

If you have chosen to monitor combustion parameters or parameters indicative of proper operation of NOx emission controls in accordance with §60.4340, the appropriate parameters must be continuously monitored and recorded during each run of the initial performance test, to establish acceptable operating ranges, for purposes of the parameter monitoring plan for the affected unit, as specified in §60.4355.

§ 60.4415 How do I conduct the initial and subsequent performance tests for sulfur?

(a) You must conduct an initial performance test, as required in §60.8. Subsequent SO2 performance tests shall be conducted on an annual basis (no more than 14 calendar months following the previous performance test). There are three methodologies that you may use to conduct the performance tests.

(1) If you choose to periodically determine the sulfur content of the fuel combusted in the turbine, a representative fuel sample would be collected following ASTM D5287 (incorporated by reference, see §60.17) for natural gas or ASTM D4177 (incorporated by reference, see §60.17) for oil. Alternatively, for oil, you may follow the procedures for manual pipeline sampling in section 14 of ASTM D4057 (incorporated by reference, see §60.17). The fuel analyses of this section may be performed either by you, a service contractor retained by you, the fuel vendor, or any other qualified agency. Analyze the samples for the total sulfur content of the fuel using:

- (i) For liquid fuels, ASTM D129, or alternatively D1266, D1552, D2622, D4294, or D5453 (all of which are incorporated by reference, see §60.17); or
- (ii) For gaseous fuels, ASTM D1072, or alternatively D3246, D4084, D4468, D4810, D6228, D6667, or Gas Processors Association Standard 2377 (all of which are incorporated by reference, see §60.17).

(2) Measure the SO2 concentration (in parts per million (ppm)), using EPA Methods 6, 6C, 8, or 20 in appendix A of this part. In addition, the American Society of Mechanical Engineers (ASME) standard, ASME PTC 19-10-1981-Part 10, "Flue and Exhaust Gas Analyses," manual methods for sulfur dioxide (incorporated by reference, see §60.17) can be used instead of EPA Methods 6 or 20. For units complying with the output based standard, concurrently measure the stack gas flow rate, using EPA Methods 1 and 2 in appendix A of this part, and measure and record the electrical and thermal output from the unit. Then use the following equation to calculate the SO2 emission rate:

$$E = \frac{1.664 \times 10^{-7} * (SO_2)_c * Q_{std}}{P} \quad (\text{Eq. 6})$$

Where:

E = SO2 emission rate, in lb/MWh

1.664 × 10<sup>-7</sup> = conversion constant, in lb/dscf-ppm

(SO<sub>2</sub>)<sub>c</sub> = average SO<sub>2</sub> concentration for the run, in ppm

Q<sub>std</sub> = stack gas volumetric flow rate, in dscf/hr

P = gross electrical and mechanical energy output of the combustion turbine, in MW (for simple-cycle operation), for combined-cycle operation, the sum of all electrical and mechanical output from the combustion and steam turbines, or, for combined heat and power operation, the sum of all electrical and mechanical output from the combustion and steam turbines plus all useful recovered thermal output not used for additional electric or mechanical generation, in MW, calculated according to §60.4350(f)(2); or

(3) Measure the SO2 and diluent gas concentrations, using either EPA Methods 6, 6C, or 8 and 3A, or 20 in appendix A of this part. In addition, you may use the manual methods for sulfur dioxide ASME PTC 19-10-1981-Part 10 (incorporated by reference, see §60.17). Concurrently measure the heat input to the unit, using a fuel flow meter (or flow meters), and measure the electrical and thermal output of the unit. Use EPA Method 19 in appendix A of this part to calculate the SO2 emission rate in lb/MMBtu. Then, use Equations 1 and, if necessary, 2 and 3 in §60.4350(f) to calculate the SO2 emission rate in lb/MWh.

(b) [Reserved]

Definitions

§ 60.4420 What definitions apply to this subpart?

As used in this subpart, all terms not defined herein will have the meaning given them in the Clean Air Act and in subpart A (General Provisions) of this part.

Combined cycle combustion turbine means any stationary combustion turbine which recovers heat from the combustion turbine exhaust gases to generate steam that is only used to create additional power output in a steam turbine.

## SECTION IV. APPENDIX G

### NSPS SUBPART KKKK REQUIREMENTS FOR STATIONARY COMBUSTION TURBINES

*Combined heat and power combustion turbine* means any stationary combustion turbine which recovers heat from the exhaust gases to heat water or another medium, generate steam for useful purposes other than additional electric generation, or directly uses the heat in the exhaust gases for a useful purpose.

*Combustion turbine model* means a group of combustion turbines having the same nominal air flow, combustor inlet pressure, combustor inlet temperature, firing temperature, turbine inlet temperature and turbine inlet pressure.

*Combustion turbine test cell/stand* means any apparatus used for testing uninstalled stationary or uninstalled mobile (motive) combustion turbines.

*Diffusion flame stationary combustion turbine* means any stationary combustion turbine where fuel and air are injected at the combustor and are mixed only by diffusion prior to ignition.

*Duct burner* means a device that combusts fuel and that is placed in the exhaust duct from another source, such as a stationary combustion turbine, internal combustion engine, kiln, etc., to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a heat recovery steam generating unit.

*Efficiency* means the combustion turbine manufacturer's rated heat rate at peak load in terms of heat input per unit of power output—based on the higher heating value of the fuel.

*Emergency combustion turbine* means any stationary combustion turbine which operates in an emergency situation. Examples include stationary combustion turbines used to produce power for critical networks or equipment, including power supplied to portions of a facility, when electric power from the local utility is interrupted, or stationary combustion turbines used to pump water in the case of fire or flood, etc. Emergency stationary combustion turbines do not include stationary combustion turbines used as peaking units at electric utilities or stationary combustion turbines at industrial facilities that typically operate at low capacity factors. Emergency combustion turbines may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are required by the manufacturer, the vendor, or the insurance company associated with the turbine. Required testing of such units should be minimized, but there is no time limit on the use of emergency combustion turbines.

*Excess emissions* means a specified averaging period over which either (1) the NOX emissions are higher than the applicable emission limit in §60.4320; (2) the total sulfur content of the fuel being combusted in the affected facility exceeds the limit specified in §60.4330; or (3) the recorded value of a particular monitored parameter is outside the acceptable range specified in the parameter monitoring plan for the affected unit.

*Gross useful output* means the gross useful work performed by the stationary combustion turbine system. For units using the mechanical energy directly or generating only electricity, the gross useful work performed is the gross electrical or mechanical output from the turbine/generator set. For combined heat and power units, the gross useful work performed is the gross electrical or mechanical output plus the useful thermal output (i.e., thermal energy delivered to a process).

*Heat recovery steam generating unit* means a unit where the hot exhaust gases from the combustion turbine are routed in order to extract heat from the gases and generate steam, for use in a steam turbine or other device that utilizes steam. Heat recovery steam generating units can be used with or without duct burners.

*Integrated gasification combined cycle electric utility steam generating unit* means a coal-fired electric utility steam generating unit that burns a synthetic gas derived from coal in a combined-cycle gas turbine. No solid coal is directly burned in the unit during operation. *ISO conditions* means 288 Kelvin, 60 percent relative humidity and 101.3 kilopascals pressure.

*Lean premix stationary combustion turbine* means any stationary combustion turbine where the air and fuel are thoroughly mixed to form a lean mixture before delivery to the combustor. Mixing may occur before or in the combustion chamber. A lean premixed turbine may operate in diffusion flame mode during operating conditions such as startup and shutdown, extreme ambient temperature, or low or transient load.

*Natural gas* means a naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1,100 British thermal units (Btu) per standard cubic foot. Natural gas does not include the following gaseous fuels: landfill gas, digester gas, refinery gas, sour gas, blast furnace gas, coal derived gas, producer gas, coke oven gas, or any gaseous fuel produced in a process which might result in highly variable sulfur content or heating value.

*Noncontinental area* means the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, the Northern Mariana Islands, or offshore platforms.

*Peak load* means 100 percent of the manufacturer's design capacity of the combustion turbine at ISO conditions.

*Regenerative cycle combustion turbine* means any stationary combustion turbine which recovers heat from the combustion turbine exhaust gases to preheat the inlet combustion air to the combustion turbine.

**SECTION IV. APPENDIX G**

**NSPS SUBPART KKKK REQUIREMENTS FOR STATIONARY COMBUSTION TURBINES**

*Simple cycle combustion turbine* means any stationary combustion turbine which does not recover heat from the combustion turbine exhaust gases to preheat the inlet combustion air to the combustion turbine, or which does not recover heat from the combustion turbine exhaust gases for purposes other than enhancing the performance of the combustion turbine itself.

*Stationary combustion turbine* means all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), heat recovery system, and any ancillary components and sub-components comprising any simple cycle stationary combustion turbine, any regenerative/recuperative cycle stationary combustion turbine, any combined cycle combustion turbine, and any combined heat and power combustion turbine based system. Stationary means that the combustion turbine is not self propelled or intended to be propelled while performing its function. It may, however, be mounted on a vehicle for portability.

*Unit operating day* means a 24-hour period between 12 midnight and the following midnight during which any fuel is combusted at any time in the unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

*Unit operating hour* means a clock hour during which any fuel is combusted in the affected unit. If the unit combusts fuel for the entire clock hour, it is considered to be a full unit operating hour. If the unit combusts fuel for only part of the clock hour, it is considered to be a partial unit operating hour.

*Useful thermal output* means the thermal energy made available for use in any industrial or commercial process, or used in any heating or cooling application, i.e., total thermal energy made available for processes and applications other than electrical or mechanical generation. Thermal output for this subpart means the energy in recovered thermal output measured against the energy in the thermal output at 15 degrees Celsius and 101.325 kilopascals of pressure.

**Table 1\_to Subpart KKKK of Part 60\_Nitrogen Oxide Emission Limits for New Stationary Combustion Turbines**

Combustion turbine type	Combustion turbine heat input at peak load (HHV)	NOX emission standard
New turbine firing natural gas, electric generating	[le] 50 MMBtu/h...	42 ppm at 15 percent O <sub>2</sub> or 290 ng/J of useful output (2.3 lb/MWh).
New turbine firing natural gas, mechanical drive.	[le] 50 MMBtu/h...	100 ppm at 15 percent O <sub>2</sub> or 690 ng/J of useful output (5.5 lb/MWh).
New turbine firing natural gas.	> 50 MMBtu/h and [le] 850 MMBtu/h	25 ppm at 15 percent O <sub>2</sub> or 150 ng/J of useful output (1.2 lb/MWh).
New, modified, or reconstructed turbine firing natural gas.	> 850 MMBtu/h...	15 ppm at 15 percent O <sub>2</sub> or 54 ng/J of useful output (0.43 lb/MWh)
New turbine firing fuels other than natural gas, electric generating	[le] 50 MMBtu/h...	96 ppm at 15 percent O <sub>2</sub> or 700 ng/J of useful output (5.5 lb/MWh).
New turbine firing fuels other than natural gas, mechanical drive.	[le] 50 MMBtu/h...	150 ppm at 15 percent O <sub>2</sub> or 1,100 ng/J of useful output (8.7 lb/MWh).
New turbine firing fuels other than natural gas	> 50 MMBtu/h and [le] 850 MMBtu/h	74 ppm at 15 percent O <sub>2</sub> or 460 ng/J of useful output (3.6 lb/MWh).
New, modified, or reconstructed turbine firing fuels other than natural gas.	> 850 MMBtu/h...	42 ppm at 15 percent O <sub>2</sub> or 160 ng/J of useful output (1.3 lb/MWh).
Modified or reconstructed turbine.	[le] 50 MMBtu/h...	150 ppm at 15 percent O <sub>2</sub> or 1,100 ng/J of useful output (8.7 lb/MWh).

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Modified or reconstructed turbine firing natural gas.	> 50 MMBtu/h and [le] 850 MMBtu/h.	42 ppm at 15 percent O <sub>2</sub> or 250 ng/J of useful output (2.0 lb/MWh).
Modified or reconstructed turbine firing fuels other than natural gas.	> 50 MMBtu/h and [le] 850 MMBtu/h	96 ppm at 15 percent O <sub>2</sub> or 590 ng/J of useful output (4.7 lb/MWh).
Turbines located north of the Arctic Circle (latitude 66.5 degrees north), turbines operating at less than 75 percent of peak load, modified and reconstructed offshore turbines, and turbine operating at temperatures less than 0 °F.	[le] 30 MW output.	150 ppm at 15 percent O <sub>2</sub> or 1,100 ng/J of useful output (8.7 lb/MWh).
Turbines located north of the Arctic Circle (latitude 66.5 degrees north), turbines operating at less than percent of peak load, modified and reconstructed offshore turbines, and turbine operating at temperatures less than 0°F.	> 30 MW output.	96 ppm at 15 percent O <sub>2</sub> or 590 ng/J of useful 75 output (4.7 lb/MWh).
Heat recovery units operating independent of the combustion turbine.	All sizes.....	54 ppm at 15 percent O <sub>2</sub> or 110 ng/J of useful output (0.86 lb/MWh).

## Livingston, Sylvia

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**From:** Livingston, Sylvia  
**Sent:** Tuesday, March 10, 2009 11:28 AM  
**To:** 'chanjm@jea.com'  
**Cc:** 'giannb@jea.com'; 'worlja@jea.com'; Kirts, Christopher; 'robinson@coj.net'; Halpin, Mike; 'forney.kathleen@epa.gov'; 'abrams.heather@epamail.epa.gov'; 'catherine\_collins@fws.gov'; Gibson, Victoria; Arif, Syed; Walker, Elizabeth (AIR)  
**Subject:** JEA - GREENLAND ENERGY CENTER; 0310561-001-AC/ PSD-FL-401  
**Attachments:** 0310561-001-AC\_Signatures.pdf

Dear Sir/ Madam:

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**Owner/Company Name:** JEA  
**Facility Name:** GREENLAND ENERGY CENTER  
**Project Number:** 0310561-001-AC/ PSD-FL-401  
**Permit Status:** FINAL  
**Permit Activity:** CONSTRUCTION  
**Facility County:** DUVAL  
**Processor:** Syed Arif

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Sylvia Livingston  
Bureau of Air Regulation  
Division of Air Resource Management (DARM)  
850/921-9506  
[sylvia.livingston@dep.state.fl.us](mailto:sylvia.livingston@dep.state.fl.us)

Note: The attached document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: <http://www.adobe.com/products/acrobat/readstep.html>.



## Livingston, Sylvia

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**From:** Chansler, James M. - Chief Operating Officer [ChanJM@jea.com]  
**Sent:** Tuesday, March 10, 2009 4:12 PM  
**To:** Livingston, Sylvia  
**Cc:** Gianazza, N. Bert; Worley, Jay A. - Director, Environmental Programs; Kirts, Christopher; robinson@coj.net; Halpin, Mike; forney.kathleen@epa.gov; abrams.heather@epamail.epa.gov; catherine\_collins@fws.gov; Gibson, Victoria; Arif, Syed; Walker, Elizabeth (AIR)  
**Subject:** RE: JEA - GREENLAND ENERGY CENTER; 0310561-001-AC/ PSD-FL-401

Dear Madam:

We have received the documents.

*James M. Chansler, P.E., D.P.A.*  
Chief Operating Officer  
JEA  
(904) 665-4433

---

**From:** Livingston, Sylvia [mailto:Sylvia.Livingston@dep.state.fl.us]  
**Sent:** Tuesday, March 10, 2009 11:28 AM  
**To:** Chansler, James M. - Chief Operating Officer  
**Cc:** Gianazza, N. Bert; Worley, Jay A. - Director, Environmental Programs; Kirts, Christopher; robinson@coj.net; Halpin, Mike; forney.kathleen@epa.gov; abrams.heather@epamail.epa.gov; catherine\_collins@fws.gov; Gibson, Victoria; Arif, Syed; Walker, Elizabeth (AIR)  
**Subject:** JEA - GREENLAND ENERGY CENTER; 0310561-001-AC/ PSD-FL-401

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**Owner/Company Name:** JEA  
**Facility Name:** GREENLAND ENERGY CENTER  
**Project Number:** 0310561-001-AC/ PSD-FL-401  
**Permit Status:** FINAL  
**Permit Activity:** CONSTRUCTION  
**Facility County:** DUVAL  
**Processor:** Syed Arif

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## Livingston, Sylvia

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**From:** Gianazza, N. Bert [GianNB@jea.com]  
**Sent:** Tuesday, March 10, 2009 12:04 PM  
**To:** Livingston, Sylvia  
**Subject:** RE: JEA - GREENLAND ENERGY CENTER; 0310561-001-AC/ PSD-FL-401

My R.O. and I have received this email.

---

**From:** Livingston, Sylvia [mailto:Sylvia.Livingston@dep.state.fl.us]  
**Sent:** Tuesday, March 10, 2009 11:28 AM  
**To:** Chansler, James M. - Chief Operating Officer  
**Cc:** Gianazza, N. Bert; Worley, Jay A. - Director, Environmental Programs; Kirts, Christopher; robinson@coj.net; Halpin, Mike; forney.kathleen@epa.gov; abrams.heather@epamail.epa.gov; catherine\_collins@fws.gov; Gibson, Victoria; Arif, Syed; Walker, Elizabeth (AIR)  
**Subject:** JEA - GREENLAND ENERGY CENTER; 0310561-001-AC/ PSD-FL-401

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**Processor:** Syed Arif

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Permit project documents addressed in this email may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible, and verify that they are accessible. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record. If you have any problems opening the documents or would like further information, please contact the Florida Department of Environmental Protection, Bureau of Air Regulation at (850)488-0114.

## Livingston, Sylvia

---

**From:** Robinson, Richard [ROBINSON@coj.net]  
**Sent:** Tuesday, March 10, 2009 12:58 PM  
**To:** Livingston, Sylvia  
**Subject:** RE: JEA - GREENLAND ENERGY CENTER; 0310561-001-AC/ PSD-FL-401

Sylvia,

I was able to access the subject permit documents provided in the e-mail link below.

Thanks,

Richard

Richard L. Robinson, P.E.  
Environmental Engineering Manager  
Air Quality Branch  
Environmental Quality Division  
Environmental and Compliance Department  
City of Jacksonville, Florida  
117 West Duval Street, Suite 225  
Jacksonville, FL 32202

Phone: (904) 630-4900  
Fax: (904) 630-3638  
E-Mail: [robinson@coj.net](mailto:robinson@coj.net)

Please note: that under Florida's very broad public records law, e-mail communications to and from City officials may be subject to public disclosure.

 Please consider the environment before printing this email.

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**From:** Livingston, Sylvia [mailto:Sylvia.Livingston@dep.state.fl.us]  
**Sent:** Tuesday, March 10, 2009 11:28 AM  
**To:** chanjm@jea.com  
**Cc:** giannb@jea.com; worlja@jea.com; Kirts, Christopher; Robinson, Richard; Halpin, Mike; forney.kathleen@epa.gov; abrams.heather@epamail.epa.gov; catherine\_collins@fws.gov; Gibson, Victoria; Arif, Syed; Walker, Elizabeth (AIR)  
**Subject:** JEA - GREENLAND ENERGY CENTER; 0310561-001-AC/ PSD-FL-401

Dear Sir/ Madam:

Attached is the official **Notice of Final Permit** for the project referenced below. Click on the link displayed below to access the permit project documents and send a "reply" message verifying receipt of the document(s) provided in the link; this may be done by selecting "Reply" on the menu bar of your e-mail software, noting that you can view the documents, and then selecting "Send".

*Note: We must receive verification that you are able to access the documents. Your immediate reply will preclude subsequent e-mail transmissions to verify accessibility of the document(s).*

**Click on the following link to access the permit project documents:**

[http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf\\_permit\\_zip\\_files/0310561.001.AC.F\\_pdf.zip](http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf_permit_zip_files/0310561.001.AC.F_pdf.zip)

**Owner/Company Name:** JEA  
**Facility Name:** GREENLAND ENERGY CENTER

**Livingston, Sylvia**

---

**From:** Abrams.Heather@epamail.epa.gov  
**Sent:** Wednesday, March 11, 2009 8:15 AM  
**To:** Livingston, Sylvia  
**Subject:** Re: JEA - GREENLAND ENERGY CENTER; 0310561-001-AC/ PSD-FL-401  
**Attachments:** 0310561-001-AC\_Signatures.pdf

We got it

Heather Abrams  
Air Permits Section  
U.S. EPA - Region 4  
61 Forsyth St. SW  
Atlanta, Georgia 30303

Phone: 404-562-9185  
Fax: 404-562-9019

"Livingston,  
Sylvia"  
<Sylvia.Livingston@dep.state.fl.us>

03/10/2009 11:27 AM

To  
cc  
<chanjm@jea.com>  
<giannb@jea.com>,  
<worlja@jea.com>, "Kirts,  
Christopher"  
<Christopher.Kirts@dep.state.fl.us>,  
<robinson@coj.net>, "Halpin,  
Mike"  
<Mike.Halpin@dep.state.fl.us>,  
Kathleen Forney/R4/USEPA/US@EPA,  
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<Victoria.Gibson@dep.state.fl.us>  
, "Arif, Syed"  
<Syed.Arif@dep.state.fl.us>,  
"Walker, Elizabeth \ (AIR\)"  
<Elizabeth.Walker@dep.state.fl.us>

Subject  
JEA - GREENLAND ENERGY CENTER;  
0310561-001-AC/ PSD-FL-401