

THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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BUREAU OF AIR REGULATION

In the Matter of an
Application for Permit by:

OGC No. 99-1673

Florida Power Corporation
One Power Plaza
St. Petersburg, FL 33733-4042

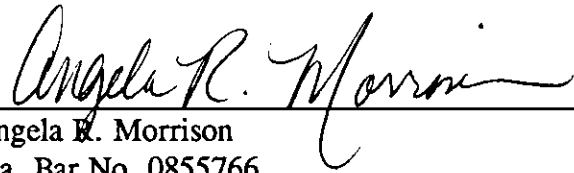
DRAFT Permit No.: 0970014-003-AC; PSD-FL-268
Intercession City Plant
Osceola County

NOTICE OF WITHDRAWAL OF REQUEST
FOR EXTENSION OF TIME

Florida Power Corporation (FPC), by and through undersigned counsel, hereby withdraws its Request for Extension of Time to file a petition for formal administrative proceedings in accordance with Chapter 120, Florida Statutes. FPC filed its Request for Extension of Time on September 30, 1999, in response to the "Intent to Issue Air Construction Permit" for the Intercession City Plant located in Osceola County, Florida, to negotiate certain changes in the proposed Prevention of Significant Deterioration air construction permit with the Department of Environmental Protection (Department). The Department granted the requested extension through December 15, 1999, by an order entered on November 3, 1999. FPC withdraws its Request because the Department has agreed to issue the final permit with changes negotiated with FPC, as reflected in the December 6, 1999 document attached as Exhibit A.

Respectfully submitted this 7th day of December, 1999.

HOPPING GREEN SAMS & SMITH, P.A.

A handwritten signature in cursive script, reading "Angela R. Morrison", is written over a horizontal line.

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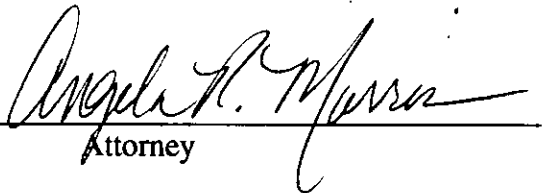
CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of the foregoing has been furnished to the following by

U.S. Mail on this 7th day of December, 1999:

✓ Clair H. Fancy, P.E.
Chief
Bureau of Air Regulation
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2600

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Attorney

**FINAL DETERMINATION (Proposed Revisions 12/06/99)
FPC Intercession City Plant (PSD-FL-268)**

PERMIT PROCESSING SCHEDULE

- 05/25/99 The Department received the application for this project.
- 06/02/99 The Department received additional pages of the application that were accidentally omitted.
- 06/16/99 The Department received air dispersion modeling files for the project.
- 06/22/99 The Department requested additional information to complete the application.
- 08/12/99 Received e-mail from NPS that NPS and FWS did not have any comments on this project.
- 08/02/99 The Department received additional information from the applicant.
- 09/15/99 The Department distributed an Intent to Issue Permit package that would authorize the addition of three new simple cycle General Electric Model 7EA combustion turbines with electrical generator sets (87 MW each) to the existing Intercession City Plant.
- 09/30/99 The applicant published the "Public Notice of Intent to Issue" in Osceola News-Gazette.
- 10/01/99 The Department's Office of General Counsel received a request from the applicant to extend the period of time in which to file a petition for an administrative hearing.
- 10/15/99 The Department received comments from the applicant (by fax) on the Draft Permit.
- 10/21/99 The Department received proof of publication from the applicant.
- 10/25/99 The Department met with the applicant's representatives in Tallahassee to discuss the applicant's comments on the Draft Permit.
- 10/25/99 The Department received comments from EPA Region 4 on the Draft Permit.
- 11/02/99 The Department granted the applicant's request and extended the time to file for an administrative hearing until December 15, 1999.
- 11/02/99 The Department e-mailed a response to the applicant's comments made in writing and presented at the 10/25/99 meeting.
- 11/16/99 The Department received additional information and comments from the applicant requesting continuous compliance with the NO_x standard based on "lb/hour" only or increasing the ppmvd limit to 10 ppmvd.
- 12/03/99 The Department received additional information and comments from the applicant requesting continuous compliance with the NO_x standard based on "10 ppmvd" with a 3-hour rolling average. Annual testing would demonstrate compliance with the lb/hr limit and the 9 ppmvd basis.
- 12/06/99 The Department and applicant agreed upon proposed revisions.

COMMENTS/REQUESTS FROM THE APPLICANT

Page 5, Specific Condition 3. Permitted Capacity. Request: Applicant requests additional text similar to that in recent Title V permits to clarify that the heat input values for gas and oil firing are only included for the purposes of determining capacity during testing, and that regular record keeping is not required. Applicant also requests a change in the text from "... an inlet air supply cooled to 59° F ..." to "... an inlet air temperature of 59° F ..." **Response:** The maximum heat input rate is based on the fuel heating value, inlet temperature, air pressure, relative humidity, and load. This requirement was retained with text added to clarify that compliance

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would be determined based on adjusted data compiled by the automated Speedtronic™ Control System corrected for these parameters. The text regarding inlet air temperature was revised.

Page 6, Specific Condition 6. Hours of Operation. Request: Based on EPA Region 4's comments, the applicant requests an additional restriction of no more than 1000 hours of oil firing per gas turbine per year and to retain the aggregate limits on operation for the three gas turbines combined. Response: The additional restriction was added and is believed to address EPA's concerns regarding costs. In consideration for increasing the NOx concentration for continuous compliance to 10 ppmvd, the aggregate allowable hours of fuel oil firing was reduced from 3000 to 2500 hours per consecutive 12 months. It is estimated that this will result in an overall decrease in annual NOx emissions.

Request: Applicant requests deletion of the requirement to limit operation below 50% load to less than two hours per unit cycle. Response: This conditions was moved to Specific Condition No. 3 and revised to read, "Operation below 50% of base load shall be limited to two (2) hours during any calendar day."

Page 7, Specific Condition 11. and 12. Emissions Controls. Request: Applicant requests insertion of text to clarify that operation of the DLN and water injection systems will be in accordance with the manufacturer's recommendations. Response: The condition was revised.

Request: Applicant requests deletion of the requirement to provide emissions performance versus load diagrams. Response: The following text was added to the condition requiring load diagrams, "Compliance with this requirement may be demonstrated by compiling data during the initial NSPS tests performed at various load conditions."

Request: Applicant strenuously objects to the requirement of developing a NOx reduction plan if a unit fires more oil than gas during a 12-month period. Response: Because hours of fuel oil firing were limited to no more than 1000 hours per gas turbine per year, this requirement was deleted.

Page 8, Specific Condition No. 15. Emissions Standards. Request: Applicant requests that all emissions standards be expressed solely in terms of a mass emissions rate (pounds per hour) using "ppm" only as the basis for the standard verified by annual testing. Applicant also requests replacing the text "3-hour test averages" for the CO, NOx, and VOC standards with a reference to the corresponding EPA test methods. Response: The Department retained "ppm" as the units for continuous compliance limits as well as the 3-hour test averages. Other changes to emissions standards are summarized for each specific condition below. This summary table was revised accordingly.

Page 8, Specific Condition No. 16. Carbon Monoxide. Request: Applicant requests that the CO concentration limit be expressed as "ppmvd" without correction to 15% oxygen. Response: Potential CO emissions from this project are nearly 250 tons per year. The correction to 15% oxygen is necessary to "fix" the emissions standard. In addition, the manufacturer's data indicates an expected oxygen concentration of 13.8% during normal operation. Measured CO emissions would only be corrected upward for oxygen contents greater than 15%. No change was made.

Request: Applicant requests that the requirement to reduce CO emissions from 25 ppmvd to 20 ppmvd be revised from "after the first 12 months after initial startup" to "after the first 12 months after initial compliance testing". Response: This request is reasonable and the condition was revised.

Page 8, Specific Condition No. 17. Nitrogen Oxides. Request: Applicant requests that the continuous NOx standard be specified in terms of "lb/hr" rather than "ppmvd". The applicant states a higher level of confidence with the mass emission rate as opposed to the emission concentration, particularly at lower loads. Response: The "ppmvd" standards are required to ensure complete utilization of the technical capabilities of the DLN system to

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minimize NO_x emissions. For combustion turbines, units of "ppmvd" are the standard by which environmental agencies compare BACT determinations, have been included in nearly all recently issued Department air permits, and are consistent with the federal NSPS Subpart GG. The Department contacted an operator of a similar unit to discuss operation of the General Electric Model 7EA. The operator indicated that the new "9 ppm" combustor liner for the Model 7EA performed very well on their existing unit and that a 9 ppmvd limit appeared achievable for operation of 8 to 10 consecutive hours of operation. The applicant provided one day of CEM data for an existing similar unit, which shows that emission levels as high as 10.5 ppmvd being reported. It should be noted that the data was for an older unit with a NO_x emissions standard of 15 ppmvd, so it may not be "tuned" for 9 ppmvd. The Department also considered the reduction in oil firing from 3000 to 2500 total turbine hours. The NO_x emissions standard for gas firing was revised to:

- Based on annual test requirements: NO_x emissions shall not exceed 32.0 pounds per hour and shall not exceed 9.0 ppmvd corrected to 15% oxygen based on a 3-hour test average conducted at base load.
- Based on continuous compliance by CEM: NO_x emissions shall not exceed 10.0 ppmvd corrected to 15% oxygen based on a 3-hour rolling average.

In combination with the reduced oil limit, the Department believes that these changes maintain the integrity of the standards specified in the Draft Permit, satisfy EPA's comments regarding the appropriate averaging period, and result in a decrease in emissions. Therefore, no additional publication will be required.

Request: Applicant requests that the NO_x limit for oil firing be revised from a 3-hour average to a 24-hour average, consistent with gas firing. Response: The Department established the 24-hour average for gas firing to allow for fluctuations in emissions resulting from load changes that may require a period of time for the DLN system to completely adjust. The Department required a 3-hour average for oil firing for two reasons: (1) NO_x emissions from oil firing are nearly five times that of gas firing, and (2) the belief that the Speedtronic™ Gas Turbine Automatic Control System is technically capable adjusting the water injection rate to meet this shorter averaging period. So, the averaging period isn't really based on the fuel being fired, but the control methods being used and the corresponding emission rates. In addition, the air quality analysis was based on maximum *hourly* emissions when firing oil. As described above, the new NO_x standard for continuous compliance was revised to a 3-hour average.

Page 9, Specific Condition No. 19. Volatile Organic Compounds. Request: Applicant requests that the VOC concentration limit be expressed as "ppmvw". Response: The VOC concentration limit was revised to "ppmvw", consistent with the manufacturer's data.

Page 9, Specific Condition 20. Excess Emissions Prohibited. Consistent with the averaging periods for the revised NO_x standard, this condition was revised to reflect 3-hour averaging period.

Page 9, Specific Condition 21. Excess Emissions Allowed. Request: In accordance with the original language of Rule 62-210.700, F.A.C., applicant requests that this condition be revised to include the following text "... unless specifically authorized by the Department for longer duration ...". Response: The Department notes that Rule 62-210.700(5), F.A.C. also states the following: "... Considering operational variations in types of industrial equipment operations affected by this rule, the Department may adjust maximum and minimum factors to provide reasonable and practical regulatory controls consistent with the public interest." Based on the Department's earlier discussion, the operator of an existing similar General Electric Model 7EA noted the following startup/shutdown times:

- Firing primary nozzle followed by firing secondary nozzle at low to mid loads: 22 minutes
- Shutdown of fuel to primary nozzle and extinguishing primary flame: 20 minutes

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- Change to full lean premix and stabilized operation: 10 minutes
- Shutdown: A complete shutdown of the gas turbine can be made in 15 minutes.

During startup, NO_x emissions may spike to 140 ppmvd until stable lean premix firing is achieved. (Mass emission rates will not be as high due to reduce fuel consumption and lower loads.) In addition, the Department notes that the compliance status will be routinely known for only two standards: visible emissions (surrogate for particulate) and NO_x emissions. Therefore, the excess emissions rule is not practicably applicable to the following pollutants:

- SAM/SO₂ because compliance is demonstrated by fuel specifications.
- CO and VOC because compliance is demonstrated by an annual stack test.

Based on the information specific to this unit, the Department will change the excess emissions condition to the following.

“ Excess Emissions Allowed: Providing the permittee adheres to best operational practices to minimize the amount and duration of excess emissions, the following conditions shall apply:

- (a) During startup and shutdown, visible emissions excluding water vapor shall not exceed 20% opacity for up to 2.0 hours in any 24-hour period.
- (b) During startup, shutdown, and malfunction, the NO_x CEM shall monitor and record NO_x emissions. However, up to 2 hours of monitoring data during any 24-hour period may be excluded from the continuous NO_x compliance demonstration as a result of startup, shutdown, and documented malfunctions. In case of malfunctions, the owner or operator shall notify the Compliance Authorities in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report.”

The Department believes this revision more appropriately addresses excess emissions expected from the specific equipment under review.

Request: Applicant requests that the limit of one hour of excess emissions resulting from startup to simple cycle be removed. Response: This was a typographical error and was deleted.

Page 10, Specific Condition 22. Combustion Turbine Testing Capacity. Request: Applicant requests that the text “ambient temperature” be replaced with “inlet temperature”. Response: The text was revised.

Page 11, Specific Condition 27(a) and (d). Performance Test Methods. Request: Applicant requests clarification of the phrase “annual 3-hour NO_x limit”. Response: References to the NO_x limit were deleted as unnecessary.

Page 11, Specific Condition 30. Annual Performance Tests. Request: Applicant requests removal of the requirement to conduct annual visible emissions tests when firing natural gas. Response: The Department established the visible emissions standard as a surrogate BACT standard for regulating particulate matter when firing natural gas. The visible emissions test is necessary on at least an annual basis to determine compliance for the visible emissions and particulate matter BACT standards. No change was made.

Request: Applicant requests that annual tests for CO, NO_x, and visible emissions when firing oil be required only when oil is fired for more than 400 hours per year per combustion turbine. Response: The condition was revised to: “If a combustion turbine operates more than 200 hours of oil firing during any federal fiscal year, the permittee shall schedule and conduct annual tests for CO, NO_x, and visible emissions while firing distillate oil. Compliance with the NO_x standards may be determined by the continuous monitor data collected during the

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required CO test. An annual performance test for VOC emissions is not required as long as the unit remains in compliance with the CO and visible emissions limits specified by this permit for oil firing.”

Request: Applicant requests removal of the condition requiring compliance with the visible emissions standard as a surrogate for compliance with the VOC standard. Applicant believes that compliance with the CO standard is an adequate surrogate. **Response:** The Department included visible emissions as a surrogate for VOC emissions because compliance may be easily demonstrated on a more frequent basis. No change was made.

Page 11, Specific Condition 31. Tests Prior to Renewal. This condition was revised to clarify that all emissions performance tests, including VOC tests, shall be conducted during the year prior to renewal.

Page 12, Specific Condition 35. Continuous Monitoring Requirements. **Request:** Applicant requests removal of text requiring substitution of missing data in accordance with Title IV for demonstrating compliance with the emissions standards, revising the NO_x limits to a mass emissions rate, and changing the NO_x limit for oil firing from a 3-hour average to a 24-hour average. **Response:** The data substitution requirement was removed. Revised NO_x limits and averaging periods were previously discussed.

Page 14, Specific Condition 39. Monthly Operations Summary. **Request:** Applicant requests that this condition be deleted. **Response:** The Department will revise “written log” to “written or electronic log” and add the following text: “Information may be recorded and stored as an electronic file, but must be available for inspection and/or printing at the request of the Compliance Authorities.” The requirements to calculate and record the average monthly heat input and to record the fuel sulfur content were deleted as unnecessary. The condition was clarified to indicate that records shall be kept for each gas turbine, for the group of three gas turbines, for the previous month of operation, and for the previous 12 months of operation.

Appendix BD. **Request:** Applicant requests revising the BACT Determination consistent with other requested changes. **Response:** Minor revisions were made to the BACT determination based on the previously discussed changes.

COMMENTS FROM EPA REGION 4 (11/12/99)

- EPA Comment:** EPA states that the Department’s cost analysis was appropriate in considering year-round operation given the flexibility to operate a given unit 8760 hours per year. EPA does not believe that hot SCR should be rejected based on the estimated cost effectiveness at this level of operation. EPA suggests that these concerns could be addressed if the Draft Permit was revised to limit hours of operation to: 3390 hours per year gas per turbine with no more than 1000 hours of gas firing per gas turbine per year. This is consistent with other recent determinations for intermittent, simple cycle combustion turbines in Region 4. **Response:** The Department disagrees with EPA’s conclusion regarding cost effectiveness for hot SCR. However, the permit was revised to limit each gas turbine to no more than 1000 hours of gas firing per year and to reduce total oil firing to no more than 2500 hours per year for all three gas turbines. At this level, requiring a hot SCR system would result in an incremental cost estimate of nearly \$10,000 per ton of NO_x removed over the selected DLN system. The Department believes this addresses EPA’s concerns.
- EPA Comment:** Because these units are intended to be “peaking units”, EPA Region 4 comments that the 24-hour block averages should be revised to a shorter averaging period, such as a 3-hour block average. **Response:** The Draft Permit included a 24-hour block averaging period to provide for fluctuations in emissions resulting from load changes. Functioning as designed, the Speedtronic™ Control System requires sufficient time to adjust operation in response load changes and other input parameters. The applicant agreed to demonstrate compliance with the mass emissions rate and 9.0 ppmvd NO_x limit based on annual testing at base load conditions. The applicant also agreed to a shorter averaging period for continuous compliance by

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CEM if the given a slightly higher limit of 10.0 ppmvd. In addition, the applicant agreed to reduce oil firing from 3000 to 2500 total turbine hours. The Department estimates that this more than offsets any potential increase in emissions and believes this addresses EPA's concern about the long averaging period.

3. **EPA Comment:** EPA comments that an opacity limit for PM/PM₁₀ is acceptable, but that the emissions rate should be referenced. **Response:** The permit was revised to include a PM/PM₁₀ emissions rate reference in the Emissions Summary Table as the basis for the opacity standard.
4. **EPA Comment:** EPA comments that automatic exemptions should not be granted for excess emissions. **Response:** Startup and shutdown is part of every process involving mechanical equipment. For nearly all combustion sources, startup and shutdown involves higher emissions than normal operations. The DLN system employed to control emissions requires a period of "warm-up" and staging before a full lean premix state is established that results in the very low NO_x emissions. The permit was revised to define allowable excess visible emissions during startup and shutdown as 20% opacity. The condition was also changed to allow exclusion of up to 2 hours during any 24-hour period resulting from startup, shutdown or documented malfunctions. This condition is specified in accordance with Rule 62-210.700, F.A.C., as approved by the EPA in Florida's State Implementation Plan.
5. **EPA Comment:** EPA comments that there will be an increase in potential VOC emissions from the existing fuel oil tank as a result of this project. **Response:** The Department concurs, but estimates the potential emissions to be much less than 1 ton per year or about the same magnitude as "rounding error" for the total project emissions.
6. **EPA Comment:** EPA notes that the Department's estimated emissions rates for PM/PM₁₀ are higher than the initial application and modeling analysis. **Response:** The Department based these higher rates on information provided by General Electric for the same model gas turbine for another project. For that project, the manufacturer reports that the back half of the EPA Method 5 train also contains PM₁₀ – about the same quantity as the filter portion. In effect, this could double both the expected PM emissions as well as PM₁₀ (assuming all particulate to be PM₁₀). The Department's staff meteorologist concluded that no additional requirements would be triggered as a result of these emissions, which were higher than originally modeled. However, after additional consideration, the Department revised the PM/PM₁₀ estimates lower for two reasons: (1) Many permitted sources have PM test data with no analysis of the back half of the sample train, and (2) The Department is uncertain as to the accuracy or repeatability of this non-reference test method.
7. **EPA Comment:** EPA agrees with the Department's conditions limiting hours of operation as each gas turbine is installed. **Response:** No response is required.
8. **EPA Comment:** EPA primarily comments that oil firing may not always result in the worst-case scenario and that a larger receptor grid should have been used in the air quality analysis. **Response:** Again, these issues were discussed with the staff meteorologist. He confirmed EPA's comments, but concluded that no additional requirements would be triggered based on additional modeling.
9. **EPA Comment:** EPA comments that air quality impacts resulting from temporary emissions sources associated with the project should also be considered in the Additional Impacts Analysis, but would believes this would not alter the conclusion presented. **Response:** The Department concurs.

CONCLUSION

Although the Department considers these revisions to be important, it does not believe the changes to be substantial modifications that would require the publication of a new public notice. In fact, the revisions will result in a decrease in potential emissions. The final action of the Department is to issue the permit with the changes described above.

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FPC Intercession City Plant (PSD-FL-268)

PERMITTEE:

Florida Power Corporation
P.O. Box 14042, MAC BB1A
St. Petersburg, FL 33733

ARMS Permit No.	0970014-003-AC
PSD Permit No.	PSD-FL-268
Facility ID No.	0970014
SIC No.	4911
Expires:	July 1, 2001

Authorized Representative:

Mr. W. Jeffrey Pardue, C.E.P.
Director, Environmental Services

PROJECT AND LOCATION

This permit is issued pursuant to the requirements for the Prevention of Significant Deterioration of Air Quality (PSD Permit). This existing facility is an electric power generating plant with a nominal hourly capacity of 897 megawatts (MW). The proposed project will add three simple cycle, dual-fuel, General Electric Model 7EA combustion turbines with electrical generator sets each having a maximum hourly capacity of 87 MW.

The project will be located at the existing FPC Intercession City Plant in Osceola County approximately 3.5 miles west of Intercession City. The address is 6525 Osceola Polk County Line Road, Intercession City, Florida 33848. The UTM coordinates are Zone 17, 446.3 km E, 3126.0 km N and the map coordinates are Latitude 28° 15' 38", Longitude 81° 32' 51".

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.) and 40 CFR 52.21. 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.

APPENDICES

The following Appendices are attached as part of this permit.

- Appendix A - Terminology
- Appendix BD - Department's BACT Determination
- Appendix GC - Construction Permit General Conditions
- Appendix GG - NSPS Subpart GG Requirements for Gas Turbines
- Appendix XS - CEMS Excess Emissions Report

Howard L. Rhodes, Director
Division of Air Resources Management

Date: _____



FACILITY DESCRIPTION

The existing facility is an electric power generating plant consisting of eleven combustion turbine peaking units (P1-P11). Units P1-P6 each consist of two gas turbines having a combined hourly capacity of 56.7 MW and firing No. 2 distillate oil. Units P7-P10 each consist of a General Electric Model 7EA gas turbine having an hourly capacity of 96.3 MW and firing natural gas or distillate oil. Unit P11 is a Siemens Model V84.3 having an hourly capacity of 171 MW and firing distillate oil.

NEW EMISSIONS UNITS

The proposed project will add the following new emissions units.

ARMS ID No.	EMISSION UNIT DESCRIPTION
018 019 020	Peaking Units P12, P13, and P14: Each peaking unit consists of a General Electric Model No. PG7121 7EA dual-fuel simple cycle combustion turbine with electrical generator set having a nominal hourly power production output of 87 MW. The units may employ an evaporative cooling system. Dry low-NO _x (DLN) combustion technology will be used to control nitrogen oxide emissions when firing the primary fuel of pipeline natural gas. Water injection will be used to control nitrogen oxide emissions when firing the backup fuel of low sulfur distillate oil.

REGULATORY CLASSIFICATION

The facility is a "major facility" with respect to Rule 62-212.400, Prevention of Significant Deterioration (PSD) of Air Quality because emissions of at least one pollutant exceed 250 tons per year. Therefore, each modification to this facility resulting in emissions increases greater than the Significant Emissions Rates specified in Table 62-212.400-2 also requires a PSD review and Best Available Control Technology (BACT) determination. For this project, emissions of CO, NO_x, PM/PM₁₀, and SAM/SO₂ are significant and this permit establishes the Best Available Control Technology (BACT) for each pollutant.

The facility is not believed to be a Title III major source of hazardous air pollutants. The facility and project are subject to the applicable Title IV acid rain provisions. The facility is classified as a Title V "major" source of air pollution because emissions of at least one regulated air pollutant, such as CO, NO_x, PM/PM₁₀, SO₂, and/or VOC exceeds 100 tons per year.

This project is subject to regulation under the New Source Performance Standards (NSPS), 40 CFR 60, Subpart GG, Standards of Performance for Stationary Gas Turbines.

RELEVANT DOCUMENTS

- Permit application (05/25/99) and all related correspondence.
- Technical information on DLN-1 combustor technology by General Electric.
- Technical information on inlet air fogging by Caldwell Energy and Environmental, Inc.
- Calpuff modeling analysis performed by Golder Associates, Inc. (08/02/99).
- Written comments (10/15/99 and subsequent discussions) received from applicant.
- Written comments (10/25/99) received from EPA Region 4.

GENERAL AND ADMINISTRATIVE REQUIREMENTS

1. **Permitting Authority:** All documents related to applications for permits to construct, operate or modify an emissions unit should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (DEP), at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400 and phone number 850/488-0114.
2. **Compliance Authority:** All documents related compliance activities such as reports, tests, and notifications should be submitted to the Central District Office, Florida Department of Environmental Protection, 3319 Maguire Boulevard, Suite 232, Orlando, Florida 32803-3767. The phone number is 407/894-7555 and the fax number is 407/897-2966.
3. **Terminology:** The terms used in this permit have specific meanings as defined in the applicable chapters of the Florida Administrative Code. *Appendix A* lists frequently used abbreviations and explains the format used to cite rules and regulations in this permit.
4. **General Conditions:** The owner and operator are subject to, and shall operate under, the attached General Conditions listed in *Appendix GC* of this permit. General Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [Rule 62-4.160, F.A.C.]
5. **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 Florida Statutes (F.S.); Chapters 62-4, 62-17, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.); and the Title 40, Parts 52, 60, 72, 73, and 75 of the Code of Federal Regulations (CFR), adopted by reference in Rule 62-204.800, 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 facility owner or operator 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.]
6. **PSD Expiration:** Approval to construct shall become invalid if construction is not commenced within 18 months after receipt of such approval, or if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. The Department may extend the 18-month period upon a satisfactory showing that an extension is justified. [40 CFR 52.21(r)(2)]
7. **Permit Expiration:** 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, and 62-210.300(1), F.A.C.]
8. **BACT Determination:** In conjunction with extension of the 18 month period to commence or continue construction, phasing of the project, or an extension of the permit expiration date, the permittee may be required to demonstrate the adequacy of any previous determination of Best Available Control Technology (BACT) for the source. [Rule 62-212.400(6)(b), F.A.C. and 40 CFR 52.166(j)(4)]
9. **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.]

SECTION II. ADMINISTRATIVE REQUIREMENTS (DRAFT 12/06/99)

10. **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. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
11. **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 Region 4 office of the U.S. Environmental Protection Agency in Atlanta, Georgia and a copy to the Department's Bureau of Air Regulation in Tallahassee. [40 CFR 72]
12. **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 emissions unit. The permittee shall apply for and receive a Title V operation permit prior to expiration of this permit. 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 UNIT SPECIFIC CONDITIONS (DRAFT 12/06/99)

This permit addresses the following new emissions units.

ARMS EU ID No.	EMISSION UNIT DESCRIPTION
018 019 020	<p>Peaking Units P12, P13, and P14: This permit authorizes the installation of three new peaking gas turbines. Each gas turbine consists of a General Electric Model No. PG7121 (7EA) dual-fuel, simple-cycle combustion turbine with electrical generator set. Each unit has a nominal hourly power production capacity of 87 MW. The new units may employ an evaporative cooling system and will use the existing infrastructure including natural gas connections, oil storage and auxiliary equipment. Dry low-NOx (DLN) combustion technology will control nitrogen oxide emissions when firing the primary fuel of pipeline natural gas. Water injection will control NOx emissions when firing low sulfur distillate oil as a backup fuel. Combustion design and clean fuels will minimize emissions of CO, PM/PM₁₀, SAM, SO₂, and VOC. Exhaust gases from each combustion turbine will exit a 56 feet high stack at approximately 1000°F with a volumetric flow rate of 1,436,000 acfm.</p>

APPLICABLE STANDARDS AND REGULATIONS

1. **BACT Determinations:** This emissions unit is subject to Best Available Control Technology (BACT) determinations for carbon monoxide (CO), nitrogen oxides (NO_x), particulate matter (PM/PM₁₀), sulfuric acid mist (SAM), and sulfur dioxide (SO₂). [Rule 62-212.400, F.A.C.]
2. **NSPS Requirements:** Each combustion turbine shall comply with all applicable requirements of 40 CFR 60, adopted by reference in Rule 62-204.800(7)(b), F.A.C.
 - (a) **Subpart A, General Provisions, including:**
 - 40 CFR 60.7, Notification and Record Keeping
 - 40 CFR 60.8, Performance Tests
 - 40 CFR 60.11, Compliance with Standards and Maintenance Requirements
 - 40 CFR 60.12, Circumvention
 - 40 CFR 60.13, Monitoring Requirements
 - 40 CFR 60.19, General Notification and Reporting Requirements
 - (b) **Subpart GG, Standards of Performance for Stationary Gas Turbines, identified in Appendix GG of this permit.** These provisions include a requirement to correct test data to ISO conditions; however, such correction is not used for compliance determinations with the BACT standards.

PERFORMANCE RESTRICTIONS

3. **Permitted Capacity:** Each combustion turbine shall operate only in simple-cycle mode and generate a nominal 87 MW per hour of electrical power. Operation of each unit shall not exceed 885 mmBTU per hour of heat input from firing natural gas or 954 mmBTU per hour of heat input from firing low sulfur distillate oil. Operation below 50% of base load shall be limited to two (2) hours during any 24-hour period (day). The maximum heat inputs are based on the lower heating value (LHV) of each fuel, an inlet air temperature of 59°F, a relative humidity of 60%, an ambient air pressure of 14.7 psi, and 100% of base load. Therefore, heat input rates will vary depending upon ambient conditions and the combustion turbine characteristics. Compliance shall be determined by data compiled from the Speedtronic™ Control System adjusted for these parameters. Manufacturer's performance curves, corrected for site conditions or equations for correction to other ambient conditions, shall be provided to the Permitting and Compliance Authorities within 45 days of completing the initial compliance testing. Initial compliance

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with this requirement may be demonstrated by compiling data during the initial NSPS tests performed at various load conditions. [Design, Rule 62-210.200, F.A.C. (Definition – Potential Emissions)]

4. **Simple Cycle Operation Only:** The combustion turbines shall operate only in simple cycle mode. This requirement is based on the permittee's request, which formed the basis of the NO_x BACT determination and resulted in the emission standards specified in this permit. Specifically, the NO_x BACT determination eliminated several control alternatives based on technical considerations and costs due to the elevated temperatures of the exhaust gas. Any request to convert these units to combined cycle operation by installing a new heat recovery steam generator or connecting to an existing heat recovery steam generator shall require the permittee to perform a new, current NO_x BACT analysis and the approval of the Department through a permit modification. The results of this analysis may validate the initial BACT determination or result in the submittal of a full PSD permit application, new control equipment, and new emissions standards. [Rule 62-212.400(6)(b), F.A.C.]
5. **Allowable Fuels:** Each combustion turbine shall be fired by pipeline natural gas containing no more than 1 grain of sulfur per 100 dry standard cubic feet of gas. As a backup fuel, each combustion turbine may be fired with No. 2 distillate oil (or a superior grade) containing no more than 0.05% sulfur by weight. Each unit shall be capable of accommodating either fuel. Compliance with limits on fuel sulfur content shall be demonstrated by the record keeping requirements and/or the conditions of the Alternate Monitoring Plan specified in this permit. It is noted that these limitations are much more stringent than the NSPS sulfur dioxide limitation and assure compliance with 40 CFR 60.333 and 60.334. [Applicant Request, Rule 62-210.200, F.A.C. (Definition - Potential Emissions)]
6. **Hours of Operation:** The following limits apply to this group of three combustion turbines.
 - (a) **Installation of One Gas Turbine:** When one gas turbine is installed, the total turbine operating hours shall not exceed 3390 hours during any consecutive 12 months.
 - (b) **Installation of Two Gas Turbines:** When two gas turbines are installed, the total turbine operating hours shall not exceed 6780 hours during any consecutive 12 months.
 - (c) **Installation of Three Gas Turbines:** When all three gas turbines are installed, the total turbine operating hours shall not exceed 10,170 hours during any consecutive 12 months.
 - (d) **Oil Firing:** Each gas turbine is limited to no more than 1000 turbine operating hours of oil firing during any consecutive 12 months. In addition, the group of three gas turbines is limited to no more than 2500 turbine operating hours of oil firing during any consecutive 12 months.

Total turbine operating hours are the sum of operating hours when firing gas and operating hours when firing oil. The permittee shall install, calibrate, operate and maintain meters to measure and accumulate the amount of each fuel fired and hours of operation for each combustion turbine. [Applicant Request; Rule 62-212.400, F.A.C. (BACT); Rule 62-210.200, F.A.C. (Definitions - Potential Emissions)]
7. **Operating Procedures:** The Best Available Control Technology (BACT) determinations established by this permit rely on "good operating practices" to minimize emissions. Therefore, all operators and supervisors shall be properly trained to operate and maintain the combustion turbines and pollution control devices in accordance with the guidelines and procedures established by each equipment manufacturer. The training shall include good operating practices as well as methods of minimizing excess emissions. [Applicant Request; Rule 62-4.070(3); Rule 62-212.400, F.A.C. (BACT)]
8. **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 owner or operator shall notify the Compliance Authority as soon as possible, but at least within one (1) working day, excluding

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weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; the 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 and the regulations. [Rule 62-4.130, F.A.C.]

EMISSIONS CONTROLS

9. **Automated Control System:** In accordance with the manufacturer's recommendations, the permittee shall install, calibrate, tune, operate, and maintain the General Electric Speedtronic™ Gas Turbine Control System for each unit. Each system shall be designed and operated to monitor and control the gas turbine combustion process and operating parameters including, but not limited to: fuel distribution and staging, turbine speed, load conditions, combustion temperatures, water injection, and fully automated startup, shutdown, and cool-down. [Design; Rule 62-4.070(3); Rule 62-212.400, F.A.C. (BACT)]
10. **Combustion Controls:** The permittee shall employ "good operating practices" in accordance with the manufacturer's recommended operating procedures to control CO, NO_x, and VOC emissions. Prior to the initial emissions performance tests, the dry low-NO_x (DLN) combustors and Speedtronic™ control system on each gas turbine shall be tuned to optimize the reduction of CO, NO_x, and VOC emissions. Thereafter, these systems shall be maintained and tuned, as necessary, to minimize pollutant emissions. [Design, Rules 62-4.070 and 62-212.400, F.A.C.]
11. **DLN Combustion Technology:** To control NO_x emissions when firing natural gas, the permittee shall install, tune, operate and maintain a dry low-NO_x (DLN) combustion system for each combustion turbine in accordance with the manufacturer's recommendations. The permittee shall provide manufacturer's emissions performance versus load diagrams for the specific DLN system as part of the Title V permit application. Compliance with this requirement may be demonstrated by compiling data during the initial NSPS tests performed at various load conditions. [Design, Rules 62-4.070 and 62-212.400, F.A.C.]
12. **Water Injection:** To control NO_x emissions when firing low sulfur distillate oil, the permittee shall install, calibrate and operate an automated water injection system for each combustion turbine in accordance with the manufacturer's recommendations. Each water injection system shall be maintained and adjusted to minimize NO_x emissions. The permittee shall provide manufacturer's emissions performance versus load diagrams for the specific water injection system as part of the Title V permit application. Compliance with this requirement may be demonstrated by compiling data during the initial NSPS tests performed at various load conditions. [Design, Rules 62-4.070 and 62-212.400, F.A.C.]
13. **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.]
14. **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.]

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EMISSIONS STANDARDS

15. Emissions Standards Summary: The following table summarizes the emissions standards specified in this permit.

<i>EU-018, 019, and 020: GE Model 7EA Combustion Turbines</i>		
Pollutant	Fuels and Controls^a	Emission Standards^b
CO	Gas Firing W/DLN During First 12 Months After Initial Testing	25.0 ppmvd @ 15% O ₂ , 3-hour test avg. 54.0 pounds per hour, 3-hour test avg.
	After First 12 Months After Initial Testing	20.0 ppmvd @ 15% O ₂ , 3-hour test avg. 43.0 pounds per hour, 3-hour test avg.
	Oil Firing W/Wet Injection	20.0 ppmvd @ 15% O ₂ , 3-hour test avg. 44.0 pounds per hour, 3-hour test avg.
NOx	Gas Firing W/DLN Compliance by Annual Testing at Base Load	9.0 ppmvd @ 15% O ₂ , 3-hour test avg. 32.0 pounds per hour, 3-hour test avg.
	Continuous Compliance by CEM	10.0 ppmvd @ 15% O ₂ , 3-hour avg.
	Oil Firing W/Wet Injection Compliance by Annual Testing at Base Load	42.0 ppmvd @ 15% O ₂ , 3-hour test avg. 167.0 pounds per hour, 3-hour test avg.
	Continuous Compliance by CEM	42.0 ppmvd @ 15% O ₂ , 3-hour avg.
PM/PM ₁₀	Fuel Sulfur Specifications and Combustion Design	Visible emissions ≤ 10% opacity (PM estimated at 0.002 grains/dscf)
SAM/SO ₂	Natural Gas Sulfur Specification	1 grain per 100 SCF of gas
	Low Sulfur Distillate Oil Sulfur Specification	0.05% sulfur by weight
VOC	Gas Firing W/Combustion Design	2.0 ppmvw as methane 2.0 pounds per hour
	Oil Firing W/Combustion Design	4.0 ppmvw as methane 5.0 pounds per hour

^a Oil firing is limited to 1000 hours per year per gas turbine and 2500 hours per year for all three gas turbines combined. DLN means dry low-NOx controls.

^b The mass emission limits (pounds per hour) were based on 100% base load, 59° F, and 60% relative humidity.

16. Carbon Monoxide (CO)

- (a) **Gas Firing:** When firing natural gas in a combustion turbine during the first 12 months after initial emissions performance testing, CO emissions shall not exceed 54.0 pounds per hour nor 25.0 ppmvd corrected to 15% oxygen based on a 3-hour test average. Thereafter, when firing natural gas in a combustion turbine, CO emissions shall not exceed 43.0 pounds per hour nor 20.0 ppmvd corrected to 15% oxygen based on a 3-hour test average.
- (b) **Oil Firing:** When firing low sulfur distillate oil in a combustion turbine, CO emissions shall not exceed 44.0 pounds per hour nor 20.0 ppmvd based on a 3-hour test average.

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The permittee shall demonstrate compliance with these standards by conducting tests in accordance with EPA Method 10 and the performance testing requirements of this permit. [Rule 62-212.400, F.A.C. (BACT)]

17. Nitrogen Oxides (NOx)

- (a) **Gas Firing:** When firing natural gas in a combustion turbine, NOx emissions shall not exceed 32.0 pounds per hour nor 9.0 ppmvd corrected to 15% oxygen based on an annual 3-hour compliance test average. In addition, NOx emissions shall not exceed 10.0 ppmvd corrected to 15% oxygen based on a 3-hour rolling average for data collected from the continuous NOx emissions monitor.
- (b) **Oil Firing:** When firing low sulfur distillate oil in a combustion turbine, NOx emissions shall not exceed 167.0 pounds per hour nor 42.0 ppmvd corrected to 15% oxygen based on an annual 3-hour test average. In addition, NOx emissions shall not exceed 42.0 ppmvd corrected to 15% oxygen based on a 3-hour rolling average for data collected from the continuous NOx emissions monitor.

NOx emissions are defined as emissions of oxides of nitrogen measured as NO₂. The permittee shall demonstrate compliance by conducting tests in accordance with EPA Methods 7E, 20 and the performance testing requirements of this permit. Compliance with the 3-hour rolling averages shall be demonstrated by collecting and reporting data in accordance with the conditions for the NOx continuous emissions monitor specified by this permit. [Rule 62-212.400, F.A.C. (BACT)]

18. Particulate Matter (PM/PM₁₀), Sulfuric Acid Mist (SAM) and Sulfur Dioxides (SO₂)

- (a) **Fuel Specifications:** Emissions of PM, PM₁₀, SAM, and SO₂ shall be limited by the good combustion techniques and the fuel sulfur limitations specified in this permit. The permittee shall demonstrate compliance with the fuel sulfur limits by maintaining records of the sampling and analysis required by this permit and/or as specified in the provisions of the Alternate Monitoring Plan. [Rule 62-212.400, F.A.C. (BACT)]
- (b) **VE Standard:** As a surrogate for PM/PM₁₀ emissions, visible emissions from the operation of a combustion turbine shall not exceed 10% opacity, based on a 6-minute average. The permittee shall demonstrate compliance with this standard by conducting tests in accordance with EPA Method 9 and the performance testing requirements of this permit. [Rule 62-212.400, F.A.C. (BACT)]

19. Volatile Organic Compounds (VOC)

- (a) **Gas Firing:** When firing natural gas in a combustion turbine, VOC emissions shall not exceed 2.0 pounds per hour nor 2.0 ppmvd based on a 3-hour test average.
- (b) **Oil Firing:** When firing low sulfur distillate oil in a combustion turbine, VOC emissions shall not exceed 5.0 pounds per hour nor 4.0 ppmvd based on a 3-hour test average.

The VOC emissions shall be measured and reported as methane. The permittee shall demonstrate compliance with these standards by conducting tests in accordance with EPA Methods 18, 25, and/or 25A and the performance testing requirements of this permit. [Application, Design, Rule 62-4.070(3), F.A.C.]

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EXCESS EMISSIONS

20. **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. These emissions shall be included in the calculation of the 3-hour averages compiled by the continuous NOx emissions monitor. [Rule 62-210.700, F.A.C.]
21. **Excess Emissions Allowed:** Providing the permittee adheres to best operational practices to minimize the amount and duration of excess emissions, the following conditions shall apply:
- (a) During startup and shutdown, visible emissions excluding water vapor shall not exceed 20% opacity for up to 2.0 hours in any 24-hour period.
 - (b) During startup, shutdown, and malfunction, the NOx CEM shall monitor and record NOx emissions. However, up to 2 hours of monitoring data during any 24-hour period may be excluded from the continuous NOx compliance demonstration as a result of startup, shutdown, and documented malfunctions. In case of malfunctions, the owner or operator shall notify the Compliance Authorities in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report."

[Design and Rule 62-210.700, F.A.C.]

EMISSIONS PERFORMANCE TESTING

22. **Combustion Turbine Testing Capacity:** Testing of emissions shall be conducted with the combustion turbine operating at permitted capacity. Permitted capacity is defined as 90-100 percent of the maximum heat input rate allowed by the permit, corrected for the average ambient air temperature during the test (with 100 percent represented by a curve depicting heat input vs. ambient temperature). If it is impracticable to test at permitted capacity, the source may be tested at less than permitted capacity. However, subsequent operation is limited by adjusting the entire heat input vs. ambient temperature curve downward by an increment equal to the difference between the maximum permitted heat input (corrected for inlet temperature) and 110 percent of the value reached during the test 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 purposes of additional compliance testing to regain the permitted capacity. Emissions performance tests shall meet all applicable requirements of Chapters 62-204 and 62-297, F.A.C. [Rule 62-297.310(2), F.A.C.]
23. **Calculation of Emission Rate:** 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.]
24. **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. [Rule 62-297.310(4)(a)1., F.A.C.]
 - 2. The minimum observation period for a visible emissions compliance test shall be sixty (60) minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur. [Rule 62-297.310(4)(a)2., F.A.C.]

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- (b) **Minimum Sample Volume.** Unless otherwise specified in the applicable rule or test method, the minimum sample volume per run shall be 25 dry standard cubic feet. [Rule 62-297.310(4)(b), F.A.C.]
- (d) **Calibration of Sampling Equipment.** Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1, F.A.C. [Rule 62-297.310(4)(d), F.A.C.]

25. **Determination of Process Variables**

- (a) **Required Equipment.** The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards. [Rule 62-297.310(5)(a), F.A.C.]
- (b) **Accuracy of Equipment.** Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value. [Rule 62-297.310(5)(b), F.A.C.]

26. **Sampling Facilities:** The permittee shall design the combustion turbine stack to accommodate adequate testing and sampling locations in order to determine compliance with the applicable emission limits specified by this permit. Permanent stack sampling facilities shall be installed in accordance with Rule 62-297.310(6), F.A.C. [Rules 62-4.070 and 62-204.800, F.A.C., and 40 CFR 60.40a(b)]

27. **Performance Test Methods:** Compliance tests shall be performed in accordance with the following reference methods as described in 40 CFR 60, Appendix A, and adopted by reference in Chapter 62-204.800, F.A.C.

- (a) **EPA Method 7E,** "Determination of Nitrogen Oxide Emissions from Stationary Sources".
- (b) **EPA Method 9,** "Visual Determination of the Opacity of Emissions from Stationary Sources".
- (c) **EPA Method 10,** "Determination of Carbon Monoxide Emissions from Stationary Sources". All CO tests shall be conducted concurrently with NO_x emissions tests.
- (d) **EPA Method 20,** "Determination of Oxides of Nitrogen Oxide, Sulfur Dioxide and Diluent Emissions from Stationary Gas Turbines."
- (e) **EPA Methods 18, 25 and/or 25A,** "Determination of Volatile Organic Concentrations."

No other test methods may be used for compliance testing unless prior DEP approval is received, in writing, from the DEP Emissions Monitoring Section Administrator in accordance with an alternate sampling procedure pursuant to 62-297.620, F.A.C.

28. **Test Notification:** The permittee shall notify the Compliance Authority in writing at least 30 days prior to initial performance tests and at least 15 days prior to any other required tests. [Rule 62-297.310(7)(a)9., F.A.C. and 40 CFR 60.7, 60.8]

29. **Initial Tests Required:** Initial compliance with the allowable emission standards specified in this permit shall be determined within 60 days after achieving the maximum production rate, but not later than 180 days after initial operation of the emissions unit. Initial tests for emissions from the combustion turbine shall be conducted for CO, NO_x, VOC, and visible emissions individually for firing natural gas and for

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firing low sulfur distillate oil. Initial NO_x performance test data shall also be converted into the units of the corresponding NSPS Subpart GG emissions standards to demonstrate compliance (see Appendix GG). [Rule 62-297.310(7)(a)1., F.A.C.]

30. **Annual Performance Tests:** Annual emissions performance tests for CO, NO_x, and visible emissions from each combustion turbine shall be conducted when firing natural gas. If conducted at permitted capacity, the annual NO_x continuous monitor RATA required pursuant to 40 CFR 75 may be substituted for the annual compliance stack test. An annual performance test for VOC emissions is not required as long as the unit remains in compliance with the CO and visible emissions limits specified by this permit.
- If a combustion turbine operates more than 200 hours of oil firing during any federal fiscal year, the permittee shall schedule and conduct annual emissions performance tests for CO, NO_x, and visible emissions when firing low sulfur distillate oil. For oil firing, compliance with the NO_x standards may be determined by the continuous monitor data collected during the required CO test. An annual performance test for VOC emissions is not required as long as the unit remains in compliance with the CO and visible emissions limits specified by this permit for oil firing.
- Tests required on an annual basis shall be conducted at least once during each federal fiscal year (October 1st to September 30th). [Rule 62-297.310(7)(a)4., F.A.C.]
31. **Tests Prior to Permit Renewal:** Prior to renewing the air operation permit, the permittee shall also conduct emissions performance tests for CO, NO_x, VOC, and visible emissions when firing natural gas and when firing low sulfur distillate oil. These tests shall be conducted within the 12-month period prior to renewing the air operation permit. For pollutants required to be tested annually, the permittee may submit the most recent annual compliance test to satisfy the requirements of this provision. [Rule 62-297.310(7)(a)3., F.A.C.]
32. **Tests After Substantial Modifications:** All performance tests required for initial startup shall also be conducted after any substantial modification and appropriate shake-down period of air pollution control equipment including the replacement of dry low-NO_x combustors. Shakedown periods shall not exceed 100 days after re-starting the combustion turbine. [Rule 62-297.310(7)(a)4., F.A.C.]
33. **VE Tests After Shutdown:** Any combustion turbine that does not operate for more than 400 hours per year shall conduct a visible emissions (VE) compliance test once per each five-year period, coinciding with the term of its air operation permit. [Rule 62-297.310(7)(a)8., F.A.C.]
34. **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.]

CONTINUOUS MONITORING REQUIREMENTS

35. **NO_x CEM:** The permittee shall install, calibrate, operate, and maintain a continuous emission monitoring system (CEMS) to measure and record NO_x and oxygen concentrations in each combustion turbine exhaust stack. A monitor for carbon dioxide may be used in place of the oxygen monitor, but the system shall be capable of correcting the emissions to 15% oxygen. NO_x data collected by the CEMS shall be used to demonstrate compliance with the continuous emissions standards for NO_x based on a 3-hour rolling average. The 3-hour averages shall be determined by calculating the arithmetic average of all hourly emission rates for the respective averaging period. Each 1-hour average shall be expressed in

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units of ppmvd corrected to 15% oxygen and calculated using at least two valid data points at least 15 minutes apart. Valid hourly emission rates shall not include periods of start up, shutdown, or malfunction unless prohibited by 62-210.700 F.A.C.

- (a) The monitoring devices shall comply with the certification and quality assurance, and any other applicable requirements of: Rule 62-297.520, F.A.C., including certification of each device in accordance with 40 CFR 60, Appendix B, Performance Specifications 2 and 3; 40 CFR 60.7(a)(5); 40 CFR 60.13; 40 CFR 60, Appendix F; and 40 CFR Part 75. A monitoring plan shall be provided to the DEP Emissions Monitoring Section Administrator, EPA and the Compliance Authority for review no later than 45 days prior to the first scheduled certification test pursuant to 40 CFR 75.62. The plan shall consist of data on CEM equipment specifications, manufacturer, type, calibration and maintenance needs, and its proposed location.
- (b) Continuous emission monitoring data required by this permit shall be collected and recorded during all periods of operation including startup, shutdown, and malfunction, except for continuous monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments. Although recorded, emissions during periods of startup, shutdown and malfunction are subject to the excess emission conditions specified in this permit. When the CEMS reports NO_x emissions in excess of the standards allowed by this permit, the owner or operator shall notify the Compliance Authority within one (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. The Department may request a written report summarizing the excess emissions incident.

[Rules 62-204.800, 62-210.700, 62-4.130, 62-4.160(8), F.A.C and 40 CFR 60.7].

COMPLIANCE DEMONSTRATIONS

36. Records: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. Records shall be made available to DEP representatives upon request. [Rules 62-4.160(14) and 62-213.440(1)(b)2., F.A.C.]
37. Fuel Records
 - (a) Natural Gas: The permittee shall demonstrate compliance with the fuel sulfur limit for natural gas specified in this permit by maintaining records of the sulfur content of the natural gas being supplied for each month of operation. Methods for determining the sulfur content of the natural gas shall be ASTM methods D4084-82, D3246-81 or equivalent methods. These methods shall be used to determine the sulfur content of the natural gas fired in accordance with any EPA-approved custom fuel monitoring schedule (see Alternate Monitoring Plan) or natural gas supplier data or the natural gas sulfur content referenced in 40 CFR 75 Appendix D. The analysis may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency pursuant to 40 CFR 60.335(e). However, the permittee is responsible for ensuring that the procedures in 40 CFR 60.335 or 40 CFR 75 are used to determine the fuel sulfur content for compliance with the 40 CFR 60.333 SO₂ standard.
 - (b) Low Sulfur Distillate Oil: For all bulk shipments of low sulfur distillate oil received at this facility, the permittee shall obtain from the fuel vendor an analysis identifying the sulfur content. Methods for determining the sulfur content of the distillate oil shall be ASTM D129-91, D2622-94, or D4294-90 or equivalent methods. Records shall specify the test method used and shall comply with the requirements of 40 CFR 60.335(d).

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[Rules 62-4.070(3) and 62-4.160(15), F.A.C.]

38. **Alternate Monitoring Plan:** Subject to EPA approval, the following alternate monitoring may be used to demonstrate compliance.
- (a) The NO_x CEM data may be used in lieu of the monitoring system for water-to-fuel ratio and the reporting of excess emissions in accordance with 40 CFR 60.334(c)(1), Subpart GG. Subject to EPA approval, the calibration of the water-to-fuel ratio-monitoring device required in 40 CFR 60.335(c)(2) will be replaced by the 40 CFR 75 certification tests of the NO_x CEMS.
 - (b) The NO_x CEM data shall be used in lieu of the requirement for reporting excess emissions in accordance with 40 CFR 60.334(c)(1), Subpart GG.
 - (c) When requested by the Department, the CEMS emission rates for NO_x on this unit shall be corrected to ISO conditions to demonstrate compliance with the NO_x standard established in 40 CFR 60.332.
 - (d) *A custom fuel monitoring schedule* pursuant to 40 CFR 75 Appendix D for natural gas may be used in lieu of the daily sampling requirements of 40 CFR 60.334 (b)(2) provided the following conditions are met.
 - (1) The permittee shall apply for an Acid Rain permit within the deadlines specified in 40 CFR 72.30.
 - (2) The permittee shall submit a monitoring plan, certified by signature of the Authorized Representative, that commits to using a primary fuel of pipeline supplied natural gas containing no more than 1 grain of sulfur per 100 SCF of gas pursuant to 40 CFR 75.11(d)(2);
 - (3) Each unit shall be monitored for SO₂ emissions using methods consistent with the requirements of 40 CFR 75 and certified by the USEPA.

This custom fuel-monitoring schedule will only be valid when pipeline natural gas is used as a primary fuel. If the primary fuel for these units is changed to a higher sulfur fuel, SO₂ emissions must be accounted for as required pursuant to 40 CFR 75.11(d).

[40 CFR 60, Subpart GG, Applicant Request]

39. **Monthly Operations Summary:** By the fifth calendar day of each month, the owner or operator shall record the following information in a written or electronic log summarizing the previous month of operation and the previous 12 months of operation: hours of gas firing; million cubic feet of gas fired; hours of oil firing; and gallons of oil fired. The information shall be recorded for each gas turbine and for the group of three gas turbines. Information may be recorded and stored as an electronic file, but must be available for inspection and/or printing at the request of the Compliance Authorities. [Rule 62-4.160(15), F.A.C.]

REPORTS

40. **Emissions Performance Test Reports:** A report indicating the results of the required emissions performance tests 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. [Rule 62-297.310(8), F.A.C.].

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT 12/06/99)

41. Quarterly Excess Emissions Reports: If excess emissions occur due to malfunction, the owner or operator shall notify the Compliance Authority within (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Department may request a written summary report of the incident. Following the NSPS format (40 CFR 60.7, Subpart A) periods of startup, shutdown, malfunction, shall be monitored, recorded, and reported as excess emissions when emission levels exceed the standards specified in this permit. Within thirty (30) days following each calendar quarter, the permittee shall submit a report on any periods of excess emissions that occurred during the previous calendar quarter to the Compliance Authority. This quarterly report shall follow the format provided in Appendix XS of this permit. [Rules 62-4.130, 62-204.800, 62-210.700(6), F.A.C., and 40 CFR 60.7]

42. 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 by March 1st of each year. [Rule 62-210.370(2), F.A.C.]