Florida Department of Environmental Protection

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Sent by Electronic Mail – Received Receipt Requested

PERMITTEE

Florida Power and Light Company
700 Universe Boulevard
Juno Beach, Florida 33408

Authorized Representative:
Gabriel Mendoza, Chemistry Manager

Air Permit No. 0250003-015-AC
Permit Expires: July 1, 2012
Minor Source Air Construction Permit

Turkey Point Nuclear Plant
Replacement of Emergency Diesel Engines

This is the final air construction permit, which authorizes replacement of two emergency diesel engines for instrument air compressors at the facility. The proposed work will be conducted at the Turkey Point Nuclear Plant, which is a nuclear power generation plant (Standard Industrial Classification No. 4911). The facility is located in Miami-Dade County, 10 miles east of Florida City on SW 344th Street, in Florida City, Florida. The Universal Transverse Mercator (UTM) coordinates are Zone 17,567.2 km East, and 2813.2 km North.

This final permit is organized into the following sections: Section 1 (General Information); Section 2 (Administrative Requirements); Section 3 (Emissions Unit Specific Conditions); Section 4 (Appendices). Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of Section 4 of this permit. As noted in the Final Determination provided with this final permit, no changes were made to the draft permit.

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.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and is not subject to the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Upon issuance of this final permit, any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes 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
For the Division of Air Resource Management

_____ _____
Jeffrey F. Koerner, P.E., Program Administrator (Date)
Office of Permitting and Compliance

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Permit package (including the Final Determination and Final Permit with Appendices) 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 _____ to the persons listed below.

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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) (Date)

FACILITY AND PROJECT DESCRIPTION

Existing Facility

The Turkey Point Title V Source is composed of two separate co-located power plants: the Fossil Plant and the Nuclear Plant. The Nuclear Plant consists of two nuclear generating units with a combined capacity of 1,332 megawatts (MW); nine diesel emergency generators; miscellaneous diesel engines; and miscellaneous unregulated and insignificant emissions units and/or activities. The existing Nuclear Plant includes the following emissions units.

Facility ID No. 0250003	
ID No.	**Emission Unit Description**
005	Four 2.5 MW Diesel Emergency Generators
006	Five Other Diesel Emergency Generators
007	Miscellaneous Diesel Plant Equipment, including Air Compressor Engines

Proposed Project

This project authorizes replacement of two emergency diesel engines (currently part of Unit 007) for instrument air compressors at the facility. In the event station power is lost, Turkey Point Units 003 and 004 (nuclear reactors) have emergency generators (Unit 005) that supply critical systems including electric power for the instrument air compressors. In the event that the emergency generators cannot supply electric power for instrument air, the diesel engines provide backup power to instrument air compressors (i.e., the new instrument air compressor diesel engines are a backup to a backup system). This project will modify the following emissions unit.

Facility ID No. 0250003	
ID No.	**Emission Unit Description**
007	Miscellaneous Diesel Plant Equipment, including Air Compressor Engines

FACILITY REGULATORY CLASSIFICATION

- The facility is a major source of hazardous air pollutants (HAP).
- The facility has units subject to the acid rain provisions of the Clean Air Act (CAA).
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400(PSD), F.A.C.

SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: The permitting authority for this project is the Office of Permitting and Compliance, Division of Air Resource Management, Florida Department of Environmental Protection (Department). The Office of Permitting and Compliance's mailing address is: 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the District Office and Local Air Program. The mailing address and phone number of the Southeast District Office is: 400 North Congress Avenue, West Palm Beach, Florida 33401, 561/681-6600. The mailing address and phone number of the Local Air Program is: Miami-Dade County Department of Environmental Resources Management, 701 NW 1st Court Suite 400 Miami, Florida 33136, 305/372-6925.

3. Appendices: The following Appendices are attached as part of this permit: Appendix A. Citation Formats and Glossary of Common Terms; and Appendix B. General Conditions.

4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.

5. 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.]

6. Modifications: The permittee shall notify the Compliance Authority upon commencement of construction. No new emissions unit shall be constructed and no existing emissions unit shall be 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.]

7. Application for Title V Permit: This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V air operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V air operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation. 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 appropriate Permitting Authority with copies to the Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220 and Chapter 62-213, F.A.C.]

A. Two Emergency Diesel Engines

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
007	Two Caterpillar C11 ACERT ™ Industrial Engines, 350 brake horsepower (bhp), I-6, 4-stroke-cycle diesel engines

EQUIPMENT

1. Emergency Diesel Engines: The permittee is authorized to install two diesel engines to provide backup power to instrument air compressors. [Application No. 0250003-015-AC]

   The Caterpillar model C11 is an inline, six cylinder, four-stroke-cycle diesel engine. The cylinder bore has a diameter of 5.12 inches, and the stroke piston is 5.51 inches long. The engine's compression ratio is 17 to 1. When operating at 2,100 revolutions per minute (rpm), the horsepower range is 305 to 370. When operating at 1,200 revolutions per minute, the pound-feet of torque range is 1,050 to 1,450. The fuel rate at 2,100 rpm is 19.1 gallons/hour. The engines will burn ultra low sulfur diesel fuel with 15 ppm (parts per million) sulfur content by weight.

   In the event station power is lost, Turkey Point Units 003 and 004 (nuclear reactors) have emergency generators (Unit 005) that supply critical systems including electric power for the instrument air compressors. In the event that the emergency generators cannot supply electric power for instrument air, the diesel engines provide backup power to instrument air compressors (i.e., the new instrument air compressor diesel engines are a backup to a backup system).

   The following table provides important details for these emissions units:

E.U. ID No.	Engine Brake HP	Date of Construction	Model Year	Primary Fuel	Type of Engine	Displacement liters/cylinder (l/c)	Serial #	Date of last modif-ication or recon-struction
007	325	01/03/11	2011	Diesel	Emergency	1.85	GLS0 3911 and GLS0 3912	N/A

PERFORMANCE RESTRICTIONS

2. Permitted Capacity: The maximum allowable heat input rate is as follows:

Unit No.	MMBtu/hr Heat Input	Fuel Type
007	5.85	Ultra low sulfur diesel fuel

   Heat input may be determined by using fuel flow meters in conjunction with the heating value of the fired fuel. [Rules 62-4.160(2) & 62-210.200 (PTE), F.A.C.]

3. Authorized Fuel: The Stationary Reciprocating Internal Combustion Engines (RICE) must use diesel fuel that meets the following requirements for non-road diesel fuel:

   a. *Sulfur Content.* The sulfur content shall not exceed = 15 ppm = 0.0015% by weight (ultra low sulfur) for non-road fuel.

b. *Cetane and Aromatic*. The fuel must have a minimum cetane index of 40 or must have a maximum aromatic content of 35 volume percent.

[40 CFR 60.4207(b) and 80.510(b); Application No. 0250003-015-AC and Rule 62-210.200(PTE), F.A.C.]

4. Restricted Hours of Operation:

a. *Emergency Situations*. There is no time limit on the use of emergency stationary RICE in emergency situations. [40 CFR 60.4211(e)]

b. *Maintenance and Testing.* Each RICE is authorized to operate for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by federal, state, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. [40 CFR 60.4211(e)]

c. *Other Situations*. Each RICE cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [40 CFR 60.4219; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

EMISSIONS STANDARDS

5. NO_X Emissions: Nitrogen oxides (NO_X) emissions shall not exceed 4.75 lb per million Btu heat input. This limit shall apply at all times except during periods of startup, shutdown, or malfunction. [Rule 62-296.570(4)(b)7. and (c), F.A.C.; Application No. 0250003-015-AC]

6. Compliance with NO_X Reasonably Available Control Technology (RACT) Standard: If the owner or operator of a emissions unit subject to the requirements of this rule assumes a more stringent NO_X emissions limit than the RACT emissions limit established in subsection 62-296.570(4), F.A.C., compliance with the emissions unit's NO_X emissions limit in its air construction permit shall be considered compliance with RACT for purposes of this rule. Note that the NO_X emissions limit specified in Specific Condition 7 is more stringent than the emissions limit specified in Specific Condition 5. [Rule 62-296.570(2), F.A.C.]

7. NMHC + NO_X Emissions: Non-methane hydrocarbons (NMHC) and NO_X emissions shall not exceed 4.0 grams per kilowatt hour (g/KW-hr). [40 CFR 60.4205(b)]

8. CO Emissions: Carbon monoxide (CO) emissions shall not exceed 3.5 g/KW-hr. [40 CFR 60.4205(b)]

9. PM Emissions: Particulate matter (PM) emissions shall not exceed 0.2 g/KW-hr. [40 CFR 60.4205(b)]

TESTING REQUIREMENTS

10. NTE Standards: Exhaust emissions from stationary compression ignition (CI) internal combustion engines (ICE) that are complying with the emission standards in Specific Conditions 7. - 9. must not exceed the not to exceed (NTE) numerical requirements, rounded to the same number of decimal places as the applicable standard, determined from the following equation: NTE = (1.25) x (Standard). [40 CFR 60.4212]

11. Compliance Requirements: No stack testing for compliance with emissions limits is required. The owner or operator must demonstrate compliance according to one of the methods below:

a. *Certification*. Have purchased an engine certified according to 40 CFR Part 89 or Part 94, as applicable, for the same model year and maximum engine power.

b. *Manufacturer Data*. Keep records of engine manufacturer data indicating compliance with the standards.

[40 CFR 60.4211(b)]

MONITORING REQUIREMENTS

12. Hour Meter: The owner or operator must install a non-resettable hour meter if one is not already installed. [40 CFR 60.4209(a)]

13. Operation and Maintenance: The owner or operator must operate and maintain the stationary CI internal combustion engine according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer. In addition, owners and operators may only change those settings that are permitted by the manufacturer. The owner or operator must meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply. [40 CFR 60.4211(a)]

RECORDS AND REPORTS

14. Required Records: Owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner or operator must record the time of operation of the engine and the reason the engine was in operation during that time. [40 CFR 60.4214]

15. Record Retention:

    a. The owner or operator must keep records in a suitable and readily available form for expeditious reviews.

    b. The owner or operator must keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record.

    [40 CFR 63.6660 and 40 CFR 63.10(b)(1)]

GENERAL PROVISIONS

16. Subpart A: The owner or operator must comply with the general provisions in 40 CFR 60 Subpart A. [40 CFR 60.4218]