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:
Mr. Gabriel Mendoza, Nuclear Chemistry Manager

Air Permit No. 0250003-020-AC
Permit Expires: July 1, 2014
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 the feed water pump and the 10-meter land utilization meteorological tower emergency generator 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 at 9700 SW 344th Street, 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, minor administrative type corrections 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

On Behalf of:

Digitally signed by Jonathan Holtom, P.E., CPM
Date: 2013.04.02 14:44:24 -04'00'

Jeffery F. Koerner, Program Administrator
Office of Permitting and Compliance
Division of Air Resource Management

JFK/sa/jh

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Air Permit package 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 the date indicated below to the following persons.

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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.

Lynn Scearce
2013.04.02 15:35:54 -04'00'

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); multiple diesel emergency generators; a diesel engine-driven emergency fire pump; miscellaneous emergency diesel engines used to support plant equipment; and, miscellaneous unregulated and insignificant emissions units and/or activities. The existing Nuclear Plant includes the following emissions units.

ID No.	Emission Unit Description
005	Four 2.5 MW Diesel Emergency Generators
006	Five Other Diesel Emergency Generators
007	Miscellaneous Diesel Plant Equipment

Note: The above emissions unit ID numbers and descriptions are consistent with the existing permits for the facility, but are being updated during the processing of the Title V permit renewal to better reflect the RICE rule applicability for each engine.

Proposed Project

This project authorizes the replacement of two emergency diesel engines (currently part of Unit 007) for the back-up service water feed pump and the emergency generator at the 10-meter land utilization meteorological tower located at the facility.

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 Regulatory and Economic Resources, Division 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.]

A. Two New Emergency Diesel Engines (Part of EU 007)

The specific conditions in this section apply to the following emissions unit:

ID No.	Emission Unit Description
007	Four Emergency Diesel Engines Used to Support Plant Equipment. • Two Industrial Backup Generators for the Instrument Air Compressors (Caterpillar 325 HP - C11 ACERT ™) • One Diesel Engine for the Back-up Service Water Feed Pump (John Deere 149 HP) • One Diesel Engine for the Land Utilization Meteorological Tower Generator Set (Yanmar 24 HP)

Emissions Unit 007 consists of four emergency diesel engines used for the plant's backup systems for the instrument air compressors, the back-up service water feed pump and the generator at the 10-Meter Land Utilization Meteorological Tower. The emergency Service Water Feed Pump is used as a back-up to the Auxiliary Feed Water System (EU 006), which is used as a back-up to the main Service Feed Water System (electric pumps). These engines fire ultra low sulfur diesel fuel (0.0015% S).

In the event station power is lost, Turkey Point Units 3 and 4 (nuclear reactors) have emergency generators (EU 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 two 325 HP Caterpillar diesel engine-driven generators provide backup power to the instrument air compressors (i.e., the instrument air compressor diesel engines (part of EU 007) are a backup to the backup system of EU 005).

To provide cooling water to the nuclear reactors in normal, non-emergency situations, electric motors are utilized to drive service water feed pumps for the system. In emergency situations due to a loss of electrical power, an emergency engine (part of EU 007) is used to drive a back-up feed water pump.

This section of the permit addresses only the replacement of the existing engines for the back-up service water feed pump and the emergency generator at the 10-Meter Land Utilization Meteorological Tower.

EQUIPMENT

A.1. Replacement Emergency Diesel Engines. The permittee is authorized to install two replacement diesel fuel fired compression ignition RICE to provide emergency backup power for the Service Feed Water Pump and the generator at the 10-Meter Land Utilization Meteorological Tower. The following table provides important details for the two new replacement engines:

Engine Identification	Engine Brake HP	Date of Purchase	Model Year	Displacement liters/cylinder (l/c)	Engine Manufacturer	Model No.
Back-up Service Feed Water Pump	149 (115 kW)	11/28/12	2012	1.13	John Deere	Model 4045HF485 (Serial No. PE4045L217923)
10-Meter Land Utilization Meteorological Tower Generator	24 (18 kW)	November 2011	2011	1.64	Yanmar	Model 3CE1

[Application No. 0250003-020-AC]

{Permitting Notes: These compression ignition reciprocating internal combustion engines (CI RICE) are regulated under 40 CFR 63, Subpart ZZZZ, NESHAP for Stationary RICE and 40 CFR 60, Subpart IIII, NSPS for Stationary Compression Ignition RICE, adopted in Rules 62.204.800(11)(b) & (8)(b), F.A.C., respectively. These RICE are not used for fire pumps. These are "new" stationary emergency CI RICE with a displacement of less than 10 liters per cylinder, located at a major source of HAP, that have been modified, reconstructed or commenced construction on or after 6/12/2006, and that have a post-2007 model year. In

accordance with provisions of 40 CFR 63.6590(c)(6), meeting the requirements of 40 CFR 60, Subpart IIII, satisfies compliance with the requirements of Subpart ZZZZ. As emergency use engines, these units are not subject to the VOC and NO_X RACT requirements contained in Rules 62-296.500 & 570, F.A.C.}

Essential Potential to Emit (PTE) Parameters

A.2. Authorized Fuel. These 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.

c. *Marking Provisions.* The diesel fuel fired shall be free of marker solvent yellow 124 until November 30, 2014. After December 1, 2014, there are no requirements or restrictions on the use of marker solvent yellow 124.

d. *Use of Existing Fuel.* Any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted.

[40 CFR 60.4207(b), 80.510(c), 80.510(f)(2) & 80.510(f)(7)]

A.3. Restricted Hours of Operation.

a. *Maintenance and Testing.* These engines are 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.

b. *Emergency Situations*. There is no time limit on the use of emergency stationary RICE in emergency situations.

c. *Non-emergency Situations*. These engines may operate up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing.

d. *Other Situations*. These engines cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply non-emergency power as part of a financial arrangement with another entity.

[40 CFR 60.4211(f)]

A.4. Operation and Maintenance. The owner or operator must operate and maintain the stationary CI internal combustion engines 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. These RICE must be maintained and operated to meet the emissions limits in Specific Conditions **A.5. - A.7.** over the entire life of the engine. [40 CFR 60.4206, 4211(a)(1), (2) & (3)]

Emissions Standards

A.5. NO_X + NMHC Emissions. Emissions of NO_X plus non-methane hydrocarbons shall not exceed:

a. *149 HP John Deere Engine*. 4.0 grams per kilowatt hour (g/KW-hr). [40 CFR 60.4205(b), 40 CFR 60.4202(a)(2) & 40 CFR 89.112(a)]

b. *24 HP Yanmar Engine*. 7.5 grams per kilowatt hour (g/KW-hr) (5.6 grams per horsepower hour (g/HP-hr)). [40 CFR 60.4205(b), 40 CFR 60.4202(a)(1)(i) & Table 2 of Subpart IIII]

A.6. CO Emissions. Carbon monoxide (CO) emissions shall not exceed:

a. *149 HP John Deere Engine.* Carbon monoxide (CO) emissions shall not exceed 5.0 g/KW-hr. [40 CFR 60.4205(b), 40 CFR 60.4202(a)(2) & 40 CFR 89.112(a)]

b. *24 HP Yanmar Engine.* 6.6 g/KW-hr (4.9 g/HP-hr). [40 CFR 60.4205(b), 40 CFR 60.4202(a)(1)(i) & Table 2 of Subpart IIII]

A.7. PM Emissions. Particulate matter (PM) emissions shall not exceed:

a. *149 HP John Deere Engine.* 0.3 g/KW-hr. [40 CFR 60.4205(b), 40 CFR 60.4202(a)(2) & 40 CFR 89.112(a)]

b. *24 HP Yanmar Engine.* 0.40 g/KW-hr (0.3 g/HP-hr). [40 CFR 60.4205(b), 40 CFR 60.4202(a)(1)(i) & Table 2 of Subpart IIII]

Testing and Compliance Requirements

A.8. Engine Certification Requirements. The owner or operator must comply with the emissions standards specified above by having purchased an engine certified by the manufacturer to meet those limits. The engine must have been installed and configured according to the manufacturer's emission-related specifications, except as permitted in Specific Condition **A.9.** [40 CFR 60.4211(c)]

A.9. Compliance Requirements Due to Loss of Certification. If you do not install, configure, operate, and maintain your engine and control device according to the manufacturer's emission-related written instructions, or you change emission-related settings in a way that is not permitted by the manufacturer, you must demonstrate compliance as follows:

a. *24 HP Yanmar Engine*. You must keep a maintenance plan and records of conducted maintenance to demonstrate compliance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, if you do not install and configure the engine and control device according to the manufacturer's emission-related written instructions, or you change the emission-related settings in a way that is not permitted by the manufacturer, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of such action.

b. *149 HP John Deere Engines.* You must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer.

[40 CFR 60.4211(g)(1) & (2)]

A.10. Testing Requirements. In the event performance tests are required pursuant to Specific Condition **A.9.**, the following requirements shall be met:

a. *Testing Procedures*. The performance test must be conducted according to the in-use testing procedures in 40 CFR Part 1039, Subpart F. Link to Subpart F

b. *NTE Standards*. Exhaust emissions from these engines must not exceed the not-to-exceed (NTE) numerical requirements, rounded to the same number of decimal places as the applicable standard (STD) in Specific Conditions **A.5.**a., **A.6.**a. and **A.7.**a., determined from the following equation:
NTE Requirement For Each Pollutant = (1.25) x (STD) (Eq. 1)

[40 CFR 60.4212(a) & (c)]

A.11. Common Testing Requirements. Unless otherwise specified, tests shall be conducted in accordance with the requirements and procedures specified in Appendix TR, Facility-Wide Testing Requirements, of this permit. [Rule 62-297.310, F.A.C.]

Monitoring Requirements

A.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)]

Records and Reports

A.13. Hours of Operation Records. The 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]

A.14. Maintenance Records. To demonstrate conformance with the manufacturer's written instructions for maintaining the certified engine and to document when compliance testing must be performed pursuant to Specific Condition **A.9.**, the owner or operator must keep the following records:

a. Engine manufacturer data indicating compliance with the standards.
b. A copy of the manufacturer's written instructions for operation and maintenance of the certified engine.
c. A written maintenance log detailing the date and type of maintenance performed on the engine, as well as any deviations from the manufacturer's written instructions.

[Rule 62-4.070, F.A.C.]

A.15. Testing Notification. At such time that the requirements of Specific Condition **A.9.** become applicable, the owner or operator shall notify the compliance authority of the date by which the initial compliance test must be performed. [Rule 62-4.070, F.A.C.]

General Provisions

A.16. 40 CFR 60 Subpart A, General Provisions. The owner or operator shall comply with the applicable requirements of 40 CFR 60 Subpart A, General Provisions, as specified below. Link to 40 CFR 60, Subpart A - General Provisions.

General Provisions Citation	Subject of Citation
§ 60.1	General applicability of the General Provisions
§ 60.2	Definitions (see also § 60.4219)
§ 60.3	Units and abbreviations
§ 60.4	Address
§ 60.5	Determination of construction or modification
§ 60.6	Review of plans
§ 60.9	Availability of information
§ 60.10	State Authority
§ 60.12	Circumvention
§ 60.14	Modification
§ 60.15	Reconstruction
§ 60.16	Priority list
§ 60.17	Incorporations by reference
§ 60.19	General notification and reporting requirements

[40 CFR 60.4218]

B. Existing Emergency Generators for Instrument Air Compressors (Part of EU 007)

The specific conditions in this section apply to the following emissions unit:

ID No.	Emission Unit Description
007	Four Emergency Diesel Engines Used to Support Plant Equipment. • Two Industrial Backup Generators for the Instrument Air Compressors (Caterpillar 325 HP - C11 ACERT ™) • One Diesel Engine-driven Generator for the Service Water Feed Pump (John Deere 149 HP) • One Diesel Engine for the Land Utilization Meteorological Tower Generator Set (Yanmar 24 HP)

This section of the permit addresses corrections to some of the applicable requirements for the two 325 HP instrument air compressor emergency generators that were imposed in permit No. 0250003-015-AC, which was issued on August 3, 2011.

B.1. Other Permits and Requirements. Except as specified below, all other applicable requirements established in permit No. 0250003-015-AC, other previous permits or by state or federal rules remain in effect and unchanged. [Rule 62-4.070, F.A.C.]

B.2. Revised Requirements. Since the time of issuance of permit No. 0250003-015-AC, the Department has determined that the VOC and NO_X RACT standards contained in Rule 62-296.500 & 570, F.A.C., were not intended to apply to emergency engines. To clarify that the previously permitted emergency generators for the instrument air compressors are only subject to the federal RICE requirements contained in 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ, and not to the requirements of Rules 62-296.500 & 570, F.A.C., Specific Conditions 2, 5 and 6 of permit No. 0250003-015-AC are hereby deleted:

~~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.]~~

~~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.]~~

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