PUBLIC NOTICE COPY
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4
Atlanta, Georgia

Prevention of Significant Deterioration Permit
For Greenhouse Gas Emissions
Permit PSD-EPA-R4010

In accordance with the provisions of the Clean Air Act (CAA), Subchapter I, Part C, 42 U.S.C. § 7470, and the implementing Prevention of Significant Deterioration (PSD) of Air Quality Regulations at the Code of Federal Regulations (CFR) Title 40, Section 52.21 (40 CFR § 52.21), the United States Environmental Protection Agency Region 4 hereby authorizes

Florida Power & Light Company
700 Universe Boulevard
Juno Beach, FL 33408

to construct and operate Greenhouse Gas air emissions units as a modification to the existing Port Everglades Plant located at 8100 Eisenhower Boulevard within the City of Hollywood, in Broward County, Florida.

This modification to the Port Everglades facility shall be constructed and operated in accordance with the terms and conditions set forth in this permit.

This permit becomes effective on [**INSERT EFFECTIVE DATE]**.

This permit shall not relieve the owner or operator of the responsibility to comply fully with all applicable provisions of federal and state law.

_____
Date Signed

_____
Beverly H. Banister
Director
Air, Pesticides, and Toxics
Management Division

AUTHORITY

The United States Environmental Protection Agency (EPA) issues this permit pursuant to Subchapter I, Part C, of the Clean Air Act (CAA), 42 U.S.C. § 7470, and the implementing PSD Regulations at 40 CFR § 52.21. This permit is based upon application materials submitted to EPA by Florida Power & Light Company (FPL), dated January 23, 2012, May 8, 2012, August 31, 2012, November 2, 2012, and November 16, 2012, supplemental submittals in the administrative record for this permit action, and upon the technical analysis performed by EPA.

APPLICANT

Florida Power & Light Company
700 Universe Boulevard
Juno Beach, FL 33408

PROJECT LOCATION

FPL's project will be located at the existing Port Everglades Plant located at 8100 Eisenhower Boulevard within the City of Hollywood, in Broward County, Florida.

PROJECT DESCRIPTION

Florida Power & Light Company (FPL) will result in modernization of the existing Port Everglades Plant into a higher efficiency, lower emission, clean energy center using combined cycle technology (Project). This Prevention of Significant Deterioration (PSD) permit requires the retirement and replacement of four existing oil-fired units with one nominal 1,250 MW 3-on-1 combined cycle unit, which will use natural gas.

FPL's existing facility consists of two nominal 200 MW fossil fuel-fired steam generating units (FFFSGU) (Units 1 and 2), two nominal 400 MW FFFSGU (Units 3 and 4), and 12 simple cycle natural gas turbines (GT1 - GT12). Units 1 through 4 are authorized to operate pursuant to Florida Department of Environmental Protection (FDEP) Final Title V Permit No. 0110036-009-AV. Existing Units 1 through 4 will be retired and replaced with one nominal 1,250 MW 3-on-1 combined cycle unit. This Project includes the construction and operation of the 3-on-1 unit that consists of three nominal 250 MW advanced combustion turbines (CTs) and three heat recovery steam generators (HRSGs), which will utilize the waste heat from the CTs to produce steam to be utilized in a single nominal 500 MW steam turbine generator. The Project also includes the construction and operation of additional equipment, including an auxiliary boiler, emergency generators, gas compressors, fire pump engine, fuel oil storage tank, circuit breakers, and temporary construction boilers.

This PSD permit for the Project requires the use of Best Available Control Technology (BACT) to limit emissions of greenhouse gases (GHGs), to the greatest extent feasible.

EQUIPMENT LIST

The following devices and activities are subject to this PSD permit:

Unit ID	Description
CTs/HRSGs (3)	• 1,250 MW (gross) 3-on-1 combined cycle combustion turbine generator (CT), with a maximum combined heat input rate of 3,034 MMBtu/hr (HHV)
Auxiliary Boiler (1)	• 99.8 MMBtu/hr (HHV) firing natural gas
Emergency Generators (2)	• 2,250 kilowatt (kw) each firing ULSD fuel oil
Gas Compressors (2)	• Three Solar Centaur 50 compressor sets, or equivalent, each including a natural gas turbine and natural gas compressor (only 2 compressor sets will operate at a time)
Fire Pump Engine (1)	• 300 horsepower (hp) firing ULSD fuel oil
Fuel Oil Storage Tank (1)	• vertical fixed roof design • rated storage capacity of 7 million gallons (165,000 barrels)
Circuit Breakers (2)	• Enclosed-pressure SF_6 Circuit Breakers 0.5 % per year (by weight) annual leakage rate leak detection system
Temporary Construction Boilers (2)	• 150 MMBtu/hr (HHV) each firing natural gas

PERMIT CONDITIONS

I. PERMIT EXPIRATION

As provided in 40 CFR § 52.21(r), this PSD Permit shall become invalid if construction:

A. is not commenced (as defined in 40 CFR § 52.21(b)(9)) within 18 months after the approval takes effect; or

B. is discontinued for a period of 18 months or more; or

C. is not completed within a reasonable time.

II. PERMIT NOTIFICATION REQUIREMENTS

Pursuant to Condition IX, Permittee shall notify EPA Region 4 of the:

A. date construction is commenced, postmarked within 30 days of such date;

B. actual date of initial startup, as defined in 40 CFR § 60.2, postmarked within 15 days of such date;

C. date upon which initial performance tests will commence, in accordance with the provisions of Condition IX.G, postmarked not less than 30 days prior to such date. Notification may be provided with the submittal of the performance test protocol required pursuant to Condition IX.G; and

D. date upon which initial performance evaluation of the continuous emissions monitoring system (CEMS) will commence in accordance with 40 CFR § 60.13(c), postmarked not less than 30 days prior to such date. Notification may be provided with the submittal of the CEMS performance test protocol required pursuant to Condition IX.F.

III. FACILITY OPERATION

A. At all times, including periods of startup, shutdown, shakedown, and malfunction, Permittee shall, to the extent practicable, maintain and operate the facility, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to EPA, which may include, but is not limited to, monitoring results, opacity observations, review of operating maintenance procedures and inspection of the facility.

B. The Permittee shall operate and maintain the CTs and associated components in a manner consistent with good engineering practices for its full utilization.

C. As soon as practicable following initial startup of the CTs (as defined in 40 CFR § 60.2) but prior to commencement of commercial operation (as defined in 40 CFR § 72.2), and thereafter, the Permittee shall develop and implement an operation and maintenance plan for the facility, consistent with Condition III.B above. At a minimum, the plan shall identify measures for assessing the performance of the facility, the acceptable range of the plant performance measures for achieving the design electrical output, the methods for monitoring the plant performance measures, and the routine procedures for maintaining the facility in good operating condition.

IV. MALFUNCTION REPORTING

A. Permittee shall notify EPA Region 4 via the contact information provided in Condition X within two (2) calendar days following the discovery of any failure of air pollution control equipment or process equipment, or failure of a process to operate in a normal manner, which results in an increase in emissions above the allowable

emission limits stated in Condition IX of this permit.

B. In addition, pursuant to Condition X, Permittee shall provide written notification to EPA within fifteen (15) calendar days of any such failure described under Condition IV.A. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of the initial malfunction, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed in Condition IX, and the methods utilized to mitigate emissions and restore normal operations.

C. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violation of this permit or any law or regulation such malfunction may cause.

V. RIGHT OF ENTRY

The EPA Regional Administrator, and/or an authorized representative, upon the presentation of credentials, shall be permitted:

A. to enter the premises where the facility is located or where any records are required to be kept under the terms and conditions of this PSD Permit;

B. during normal business hours, to have access to and to copy any records required to be kept under the terms and conditions of this PSD Permit;

C. to inspect any equipment, operation, or method subject to requirements in this PSD Permit; and

D. to sample materials and emissions from the source(s).

VI. TRANSFER OF OWNERSHIP

In the event of any changes in control or ownership of the facility, this PSD Permit shall be binding on all subsequent owners and operators. Within 14 days of any such change in control or ownership, Permittee shall notify the succeeding owner and operator of the existence of this PSD Permit and its conditions by letter. Permittee shall send a copy of this letter pursuant to Condition X to EPA Region 4 within thirty (30) days of its issuance.

VII. SEVERABILITY

The provisions of this PSD Permit are severable, and, if any provision of the PSD Permit is held invalid, the remainder of this PSD Permit shall not be affected.

VIII. ADHERENCE TO APPLICATION AND COMPLIANCE WITH OTHER ENVIRONMENTAL LAWS

Permittee shall construct the Project in compliance with this PSD permit, the application on which this permit is based, and all other applicable federal, state, and local air quality regulations. This PSD permit does not release the Permittee from any liability for compliance with other applicable federal, state and local environmental laws and regulations, including the Clean Air Act.

IX. SPECIAL CONDITIONS

A. Endangered Species Act

In accordance with Section 7 of the Endangered Species Act, Permittee shall adhere to conditions set forth in the Biological Opinion issued for the Project on **[INSERT ISSUANCE DATE]** by the National Oceanic and Atmospheric Administration National Marine Fisheries Service.

B. Air Pollution Control Equipment and Operation

Permittee shall perform any necessary operations to minimize emissions so that emissions are at or below the emission limits specified in this permit.

C. Combustion Turbine (CT) Emission Limits

1. Except as noted below under Condition IX.D, on and after the date of initial startup, Permittee shall not discharge or cause the discharge of emissions from the CT Unit into the atmosphere in excess of the following:

	Emission Limit (per CT) (natural gas firing)	**Emission Limit (per CT) (fuel oil burning)**
GHG Limit (as CO_2e)	832 lb CO_2e/MWh net output (12-month rolling average)	1,176 lb CO_2e/MWh net output (12-month rolling average)

2. Each CT shall not operate firing Ultra Low Sulfur Diesel (ULSD) more than 1,000 hours/year on a 12-month rolling total. The Permittee shall monitor and record the number of hours each CT operates on ULSD to be recorded monthly and totalled every month for the previous 12 months.

D. Requirements during Combustion Turbine Startup and Shutdown

1. Startup is defined as the commencement of operation of any emissions unit which has shut down or ceased operation for a period of time sufficient to cause temperature,

pressure, chemical, or pollution control device imbalances, which result in excess emissions above the limits in Condition IX.C.

a. A cold startup means a startup when the CT has not been in operation during the preceding 48 hours.

b. Warm and hot start-ups include all startups that are not a cold startup.

2. Shutdown is defined as the period beginning with the lowering of equipment from normal operating load and lasting until fuel flow is completely off and combustion has ceased.

3. The duration of startup and shutdown periods shall not exceed the following in any 24 hour period, for the CT unit, as verified by the CEMS:

	Duration
Cold Startup	4 hours
Warm and Hot Startup	2 hours
Shutdown	2 hours

4. Permittee must operate the CEMS during startup and shutdown periods.

5. Permittee must record the time, date, and duration of each startup and shutdown event. These records must be kept for five years following the date of such event.

E. Auxiliary Equipment Emission Limits and Work Practices

1. At all times, including equipment startup and shutdown, Permittee shall not discharge or cause the discharge of emissions from each unit into the atmosphere in excess of the following, and shall otherwise comply with the following specifications on a 12-month rolling total**:**

Unit ID (description)	**GHG Limit (as CO_2e)**
Auxiliary Boiler (1) 99.8 MMBtu/hr (HHV)	11,670 TPY
Emergency Generators (2) 2,250 kW per engine	344 TPY

Unit ID (description)	GHG Limit (as CO_2e)
Gas Compressors (2) 5,514 hp per engine	55,313 TPY
Fire Pump Engine (1) 300 hp firewater pump	15.2 TPY
Circuit Breakers (2) SF_6 Circuit Breakers	2.25 TPY
Temporary Construction Boilers (2) 150 MMBtu/hr per boiler	18,350 TPY

2. The Auxiliary Boiler shall not operate during normal operations of the CT, except during periods of, or immediately following, startup. The Auxiliary Boiler shall be shut down as soon as practicable after the completion of any startup process as defined in Condition IX.D.1. Annual hours of operation for the Auxiliary Boiler shall not exceed 2,000 hours per 12-month rolling total.

3. The Auxiliary Boiler shall undergo annual tune-ups and meet the associated requirements as follows (if the unit is not operating on the required date for a tune-up, the tune-up must be conducted within one week of startup):

    a. Inspect the burner, and clean or replace any components of the burner as necessary (you may delay the burner inspection until the next scheduled unit shutdown, but you must inspect each burner at least once every 18 months).

    b. Inspect the flame pattern, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications.

    c. Inspect the system controlling the air-to-fuel ratio, and ensure that it is correctly calibrated and functioning properly.

4. Except during an emergency, the Emergency Generators shall be limited to operation of the engine for maintenance and testing purposes. Annual hours of operation for Emergency Generators, for maintenance and testing, shall not exceed 24 hours per 12-month rolling total for each generator.

5. The Gas Compressors shall be used to increase pressure from the existing natural gas pipeline to the CTs. Except during an emergency, only two of the three compressors will operate at any given time. Records of operation shall be kept in accordance with Condition IX.I.

6. Except during an emergency, the Fire Pump Engine shall be limited to operation of the engine for maintenance and testing purposes. Annual hours of operation for the Fire Pump Engine, for maintenance and testing, shall not exceed 24 hours per 12-month rolling total.

7. Circuit Breakers shall be used as electrical interrupters in the event of a power surge, shall be equipped with low-density alarms, and shall be visually inspected on a daily basis. In addition, breakers shall be inspected by the manufacturer once every 5 years, and shall be overhauled at the end of their 20 year life cycle. Records of inspection shall be kept in accordance with Condition IX.I. Given that this is a work practice standard, no quantification of SF_6 emissions is required for compliance with the BACT emissions limit of 2.25 tons per year of CO_2e per breaker.

8. The Temporary Construction Boilers shall be limited to use only during the Project construction period to provide steam for HRSG cleaning and associated steam blows. Annual hours of operation for each boiler shall not exceed 1,500 hours per 12-month rolling total. The Temporary Construction Boilers will be permanently shut down and removed from the facility once commercial operation of the Project begins.

F. Continuous Emissions Monitoring System (CEMS) for CTs

1. At the earliest feasible opportunity after first firing of CTs and before CTs commence commercial operation (as defined in 40 CFR § 72.2), in accordance with the recommendations of the equipment manufacturer and the construction contractor:

    a. Permittee shall install, calibrate, and operate a CEMS for each CT that measures stack gas CO_2 concentrations in parts per million by volume (ppmv). The concentrations shall be corrected to 15% O_2 on a dry basis. No later than the end of the shakedown period as defined in Condition IX.J. or upon commencing commercial operations, whichever comes first, Permittee shall also maintain, certify, and quality-assure a CEMS for each CT that measures stack gas CO_2 concentrations in ppmv, and shall conduct initial certification of the CEMS in accordance with Condition IX.F.6. The concentrations shall be corrected to 15% O_2 on a dry basis.

2. The CO_2 CEMS shall meet the applicable requirements of 40 CFR Part 75.

3. Each CEMS shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute clock-hour period.

4. The initial certification of the CEMS may either be conducted separately, as specified in 40 CFR § 60.334(b)(1), or as part of the initial performance test of each emission unit. The CEMS must undergo and pass initial performance specification testing on or before the date of the initial performance test.

5. The CEMS shall meet the requirements of 40 CFR § 60.13. Data sampling, analyzing,

and recording shall also be adequate to demonstrate compliance with emission limits during startup and shutdown.

6. Not less than 90 days prior to the date of initial startup of the facility, the Permittee shall submit to the EPA a quality assurance project plan for the certification and operation of the CEMS. Such a plan shall conform to EPA requirements contained in 40 CFR Part 60 Appendix F for CO_2, and 40 CFR Part 75 Appendix B for stack flow. The plan shall be updated and resubmitted upon request by EPA. The plan shall specify how emissions during startups and shutdowns will be determined and calculated, including quantifying flow accurately if calculations are used.

7. The gas turbine CEMS shall be audited quarterly and tested annually in accordance with 40 CFR Part 60 Appendix F, Procedure 1. Permittee shall perform a full stack traverse during initial run of annual RATA testing of the CEMS, with testing points selected according to 40 CFR Part 60 Appendix A, Method 1.

8. Permittee shall submit a CEMS performance test protocol to the EPA no later than 30 days prior to the test date to allow review of the test plan and to arrange for an observer to be present at the test. The performance test shall be conducted in accordance with the submitted protocol and any changes required by EPA.

9. Permittee shall furnish the EPA a written report of the results of performance tests within 60 days of completion via the contact information provided in Condition X.

10. The stack gas volumetric flow rates shall be calculated in accordance with the fuel flowmeter requirements of 40 CFR Part 75 Appendix D in combination with the appropriate parts of EPA Method 19.

12. Permittee shall measure and record, for each CT, the actual heat input (Btu) on an hourly basis.

13. Permittee shall measure and record, for each CT, the following:

    a. Net energy output (MWh_{net} and kWh_{net}) on an hourly basis;

    b. Pounds of CO_2 per net energy output (lb CO_2/MWh_{net}) on an hourly basis;

    c. Net heat rate (Btu/kWh_{net}) on an hourly basis, based on total heat input for the facility;

    d. The type of fuel (natural gas or ULSD) burned on an hourly basis;

    e. The 12-month rolling average emission rate of lb CO_2/MWh_{net} and Btu/kWh_{net}. The 12-month rolling average shall be based on the average hourly recordings summed for each operating month and averaged with the respective rates from the previous 11 months for each fuel type.

G. Performance Tests

1. Stack Tests

   a. Within 60 days after achieving normal operation, but not later than 180 days after the initial startup of equipment, and, unless otherwise specified, annually thereafter (within 30 days of the initial performance test anniversary), Permittee shall conduct performance tests (as described in 40 CFR § 60.8) as follows:

      i. CO_2 emissions from each CT

   b. Permittee shall submit a performance test protocol to EPA no later than 30 days prior to the test to allow review of the test plan and to arrange for an Agency observer to be present at the test. The performance test shall be conducted in accordance with the submitted protocol, and any changes required by EPA.

   c. Performance tests shall be conducted in accordance with the test methods set forth in 40 CFR § 60.8 and 40 CFR Part 60 Appendix A, as modified below. In lieu of the specified test methods, equivalent methods may be used with prior written approval from EPA:

      i. EPA Methods 1-4 and 3B for CO_2 emissions, and
      ii. the provisions of 40 CFR § 60.8(f).

   d. Upon written request and adequate justification from the Permittee, EPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity.

   e. For performance test purposes, sampling ports, platforms, and access shall be provided on the emission unit exhaust system in accordance with the requirements of 40 CFR § 60.8(e).

   f. Permittee shall furnish the EPA a written report of the results of performance tests within 60 days of completion to the address listed in Condition X.

H. Monitoring for Auxiliary Equipment

1. Permittee shall install and maintain an operational non-resettable totalizing mass or volumetric flow meter in each fuel line for the 99.8 MMBtu/hr boiler (Auxiliary Boiler), the 2,250 kW emergency use engines (Emergency Generators), and the 300 hp emergency-use firewater pump (Fire Pump Engines), to be recorded monthly and totalled every month for the previous 12 months.

2. Permittee shall install and maintain an operational non-resettable elapsed time meter for the 99.8 MMBtu/hr boiler (Auxiliary Boiler), the 2,250 kW emergency use engines (Emergency Generators), the 300 hp emergency-use firewater pump (Fire Pump

Engines), and the 150 MMBtu/hr boilers (Temporary Construction Boilers) to be recorded monthly and totalled every month for the previous 12 months.

3. Permittee shall install and maintain a leak detection system on the circuit breakers that signals an alarm in the facility's control room in the event that any circuit breaker loses more than 10% of its dielectric fluid. The owner/operator shall promptly respond to any alarm, investigate the circuit breaker involved, and fix any leak-tightness problems that caused the alarm.

I. Recordkeeping and Reporting

1. Permittee shall maintain a file of all records, data, measurements, reports, and documents related to the operation of the facility, including, but not limited to, the following: all records or reports pertaining to adjustments and/or maintenance performed on any system or device at the facility; all records relating to performance tests and monitoring of auxiliary combustion equipment; and all other information required by this permit recorded in a permanent form suitable for inspection.

2. Permittee shall maintain CEMS records that include the following: the occurrence and duration of any startup, shutdown, shakedown, or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance, duration of any periods during which a continuous monitoring system or monitoring device is inoperative, and corresponding emission measurements.

3. Permittee shall maintain records of all source tests and monitoring and compliance information required by this permit.

4. Permittee shall maintain records and submit a written report of all excess emissions to EPA semi-annually, except when: more frequent reporting is specifically required by an applicable subpart; or the Administrator, on a case-by-case basis, determines that more frequent reporting is necessary to accurately assess the compliance status of the source. The report is due on September 30th and March 31st and shall include the following:

    a. Time intervals, data and magnitude of the excess emissions, the nature and cause (if known), corrective actions taken and preventive measures adopted;

    b. Applicable time and date of each period during which the CEMS was inoperative (monitor down-time), except for zero and span checks, and the nature of CEMS repairs or adjustments;

    c. A statement in the report of a negative declaration; that is, a statement when no excess emissions occurred or when the CEMS has not been inoperative, repaired, or adjusted;

    d. Any failure to conduct any required source testing, monitoring, or other compliance activities; and

e. Any violation of limitations on operation, including but not limited to restrictions on hours of operation.

5. Excess emissions shall be defined as any period in which the facility emissions exceed the maximum emission limits set forth in this permit.

6. A period of monitor down-time shall be any unit operating clock hour in which sufficient data are not obtained by the CEMS to validate the hour for CO_2.

7. Excess emissions indicated by the CEM system, source testing, or compliance monitoring shall be considered violations of the applicable emission limit for the purpose of this permit.

8. Permittee shall record the pounds of dielectric fluid added to the circuit breakers each month.

9. The Permittee shall maintain a copy of the current operation and maintenance plan for the facility, and shall keep a copy of all prior versions of the plan for a minimum of five years. The Permittee shall also keep records of the monitoring data for each of the facility performance measures and all maintenance activities; the Permittee shall maintain such records for a minimum of five years following the date they are created

10. Unless otherwise specified herein, all records required by this PSD Permit shall be retained for not less than five years following the date of such measurements, maintenance, reports, and/or records. These records shall be made available for review upon request by the Agency or authorized representative during the course of an inspection.

J. Shakedown Periods

The combustion turbine and auxiliary equipment emission limits and requirements in Conditions IX.C, IX.D, and IX.E shall not apply during combustion shakedown periods. Shakedown is defined as the period beginning with initial startup and ending no later than initial performance testing, during which the Permittee conducts operational and contractual testing and tuning to ensure the safe, efficient and reliable operation of the plant. The shakedown period shall not exceed 90 days. The requirements of Section III of this permit shall apply at all times.

K. Global Warming Potential (GWP)

For the purposes of showing compliance with any GHG emission limit in this permit, the GWP factors listed in 40 CFR Part 98 Subpart A, Table A-1 as of the date of this permit shall be used. The current GWP factors are listed below:

GHG Pollutant	GWP Factor
CO_2	1
CH_4	21
N_2O	310
SF_6	23,900

X. AGENCY NOTIFICATIONS

All notifications, reporting or other communications relating to this permit shall be submitted to:

Chief
Air & EPCRA Enforcement Branch
Air, Pesticides and Toxics Management Division
U.S. EPA Region 4
61 Forsyth Street, SW
Atlanta, GA 30303

In addition, electronic copies of the above-referenced notifications and communications shall be submitted to the following individuals at their corresponding email address:

Name	Email	Phone
Jason Dressler	dressler.jason@epa.gov	404-562-9208
Katy R. Forney	forney.kathleen@epa.gov	404-562-9130
Heather Ceron	ceron.heather@epa.gov	404-562-9185