FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
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SECRETARY

PERMITTEE

Duke Energy Florida (DEF), Inc.
100 Central Avenue, Mail Code BP39
St. Petersburg, Florida 33701

Authorized Representative:
Reginald Anderson, General Manager

Air Permit No. 1030011-021-AC (PSD-FL-381D)
DEF P.L. Bartow Power Plant, Unit 4
Replacement of L-0 Steam Turbine Blades

Permit Expires December 31, 2015
Pinellas County, Florida

PROJECT AND LOCATION

This is the final air construction permit to replace the largest (i.e. last or L-0) blades within the low pressure section of the Unit 4 steam turbine-electric generator at the P.L. Bartow Power Plant. The facility is located at 1601 Weedon Island Drive, St. Petersburg, Pinellas County. The UTM coordinates are Zone 17, 342.4 km East and 3,082.6 km North.

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.). The permittee is authorized to conduct the proposed work 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. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C.

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

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

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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) 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.

Reginald Anderson, General Manager: reginald.anderson@duke-energy.com
Andrew Bass, P.E., ECT: abass@ectinc.com
Heather Ceron, U.S. EPA Region 4: ceron.heather@epa.gov
Kelley Boatwright, DEP SWD: kelley.boatwright@dep.state.fl.us
Peter Hessling, Pinellas County AQD phesslin@pinellascounty.org
Lynn Scearce, DEP OPC: lynn.scearce@dep.state.fl.us

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.

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FACILITY DESCRIPTION

The P.L. Bartow Power Plant includes the following emissions units.

- Four 59 MW General Electric MS7000 simple cycle gas turbine peaking units, designated as Nos. P-1, P-2, P-3 and P-4 (EU 005-008);
- Combined cycle Unit 4 consisting of four 215 MW Siemens SGT6-5000F combined cycle gas turbine-electrical generators (CTs), four duct-fired heat recovery steam generators (HRSGs) (EU 038 - 041);
- Four 3 MMBtu/hour natural gas fired process heaters (EU 044);
- Two 3,500,000 diesel fuel storage tanks (EU 045);
- One 300 HP diesel fueled emergency fire pump (EU046); and
- Various insignificant emissions units.

The steam generated in the four Unit 4 HRSGs is used in a single nominal 420 MW steam turbine-electrical generator (STG).

PROJECT DESCRIPTION

The project is to replace the largest (last or L-0) blades within the low pressure section of the Unit 4 STG.

FACILITY REGULATORY CLASSIFICATION

- The facility is a major source of hazardous air pollutants (HAP).
- 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 (PSD-major source) in accordance with Rule 62-212.400, F.A.C.
- The facility operates units subject to the Standards of Performance for New Stationary Sources (NSPS) pursuant to 40 Code of Federal Regulations (CFR) Part 60.
- The facility operates units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) pursuant to 40 CFR Part 63.
- The facility operates units subject to the Acid Rain provisions of the Clean Air Act.
- The facility is identified as a major source of greenhouse gases (GHGs).
- The facility operates units subject to the Federal Clean Air Interstate Rule (CAIR) in accordance with the Final Department Rules issued pursuant to CAIR as implemented by FDEP in Rule 62-296.470, Florida Administrative Code (F.A.C.).
- The facility is located in an area that is designated as “attainment”, “maintenance”, or “unclassifiable” for each pollutant subject to a National Ambient Air Quality Standard pursuant to Rule 62-204.340, F.A.C.
- The facility was <u>not</u> certified pursuant to Siting under 403.501-519, F.S. or Chapter 62-17, F.A.C.

RELEVANT DOCUMENTS

Several documents shown in the following link are not a part of this permit, but helped form the basis for this permitting action. Documents related to this permitting action are posted under permit No. 1030011-021-AC at the following web site address: http://appprod.dep.state.fl.us/air/emission/apds/listpermits.asp

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SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: All documents related to applications for permits to construct, operate or modify an emissions unit shall be submitted to the Office of Permitting and Compliance in the Division of Air Resource Management of the Department. The mailing address for the Office of Permitting and Compliance is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. Copies of all such documents shall also be submitted to the Compliance Authority.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the District Office and Local Air Program. All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Air Quality Division of the Pinellas County Department of Environmental Management Office at 300 South Garden Avenue, Clearwater, Florida 34616.

3. Appendices: Appendix GC (General Conditions) is included as Section 4 of this permit.

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: No emissions unit 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.]

7. Construction and Expiration. The expiration date shown on the first page of this permit provides time to complete the physical construction activities authorized by this permit. Notwithstanding this expiration date, all specific emissions limitations and operating requirements established by this permit shall remain in effect until the facility or emissions unit is permanently shut down. For good cause, the permittee may request that that a permit be extended. Pursuant to Rule 62-4.080(3), F.A.C., such a request shall be submitted to the Permitting Authority in writing before the permit expires.
[Rules 62-4.070(4), 62-4.080 & 62-210.300(1), F.A.C.]

8. Source Obligation:

   a. Rule 62-212.400(12)(a), F.A.C. regarding commencement of construction does not apply to this project.

   b. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

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c. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

[Rule 62-212.400(12)(b) and (c), F.A.C.]

9. Title V Permit – Not Required: This permit authorizes routine maintenance, repair or replacement on the affected emissions unit. The project does not change any condition in a previous air construction permit or the Title V operation permit. The project does not establish new testing, reporting or recordkeeping requirements. The Department has determined that a Title V operation permit is not required following completion of the project. [Chapter 62-213, F.A.C.]

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Combined Cycle Unit 4 (EU-038, 039, 040, 041)

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

EU ID	Emissions Units Comprising Combined Cycle Unit 4
038	Unit 4A–One 215 MW (ISO) Combustion Turbine with Duct-fired Heat Recovery Steam Generator
039	Unit 4B–One 215 MW (ISO) Combustion Turbine with Duct-fired Heat Recovery Steam Generator
040	Unit 4C–One 215 MW (ISO) Combustion Turbine with Duct-fired Heat Recovery Steam Generator
041	Unit 4D–One 215 MW (ISO) Combustion Turbine with Duct-fired Heat Recovery Steam Generator

Combined cycle Unit 4 consists of the four gas-fueled Siemens SGT6-5000F combustion turbines (CTs) and the four duct-fired heat recovery steam generators (HRSGs) listed above. The steam generated in the four HRSGs is used in a single nominal 420 MW steam turbine-electrical generator (STG).

Each CT is permitted to also operate in simple cycle mode by directing the exhaust to a bypass stack instead of the respective HRSG. Each CT is capable of firing low sulfur distillate fuel oil for the equivalent of 1000 hours per year. Unit 4 entered commercial operation in the summer of 2009.

{These emissions units were reviewed under the rules for the Prevention of Significant Deterioration (PSD), Rule 62-212.400, F.A.C. Best Available Control Technology (BACT) determinations were made for carbon monoxide (CO) and volatile organic compounds (VOC) in accordance with Rule 62-210.200 (Definitions). PSD was avoided for all types of particulate matter, sulfur dioxide (SO_2) and nitrogen oxides (NO_X) due to massive reductions from the dismantling of three conventional residual oil fueled units. The CTs are also regulated under Acid Rain-Phase II, 40 CFR 60 – NSPS Subpart KKKK and 40 CFR 63 – NESHAP, Subpart YYYY}

EQUIPMENT

1. Replacement of the L-0 Blades on the Steam Turbine Electrical Generator (STG): The permittee/operator is authorized to replace the largest (last or L-0) blades within the low pressure section of the SGT. [Application; Design]

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SECTION 4. APPENDIX A

General Conditions

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

1. The terms, conditions, requirements, limitations and restrictions set forth in this permit, are "permit conditions" and are binding and enforceable pursuant to Sections 403.141, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in subsections 403.987(6) and 403.722(5), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations. This permit is not a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in this permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed and used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at reasonable times, access to the premises where the permitted activity is located or conducted to:
   a. Have access to and copy any records that must be kept under conditions of the permit;
   b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and
   c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules. Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
   a. A description of and cause of noncompliance; and
   b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted

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source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.111 and 403.73, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance; provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules. A reasonable time for compliance with a new or amended surface water quality standard, other than those standards addressed in Rule 62-302.500, F.A.C., shall include a reasonable time to obtain or be denied a mixing zone for the new or amended standard.

11. This permit is transferable only upon Department approval in accordance with Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:
    a. Determination of Best Available Control Technology (not applicable for this project);
    b. Determination of Prevention of Significant Deterioration (not applicable for this project); and
    c. Compliance with New Source Performance Standards (affected unit shall continue to comply with 40 CFR 60, Subpart KKKK).

14. The permittee shall comply with the following:
    a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
    b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
    c. Records of monitoring information shall include:
        (a) The date, exact place, and time of sampling or measurements;
        (b) The person responsible for performing the sampling or measurements;
        (c) The dates analyses were performed;
        (d) The person responsible for performing the analyses;
        (e) The analytical techniques or methods used;
        (f) The results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware the relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

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