



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

FLORIDA POWER & LIGHT COMPANY

DOCKET NO. 50-251

TURKEY POINT NUCLEAR GENERATING UNIT NO. 4

SUBSEQUENT RENEWED FACILITY OPERATING LICENSE NO. DPR-41

The U.S. Nuclear Regulatory Commission (the Commission) having previously made the findings set forth in Renewed License No. DPR-41 issued on June 6, 2002, has now found that:

- a. The application for Subsequent Renewed Facility Operating License No. DPR-41 filed by Florida Power and Light Company, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I and all required notifications to other agencies or bodies have been duly made;
- b. Actions have been identified and have been or will be taken with respect to (1) managing the effects of aging during the subsequent period of extended operation on the functionality of structures and components that have been identified to require review under 10 CFR 54.21(a)(1), and (2) time-limited aging analyses that have been identified to require review under 10 CFR 54.21(c), such that there is reasonable assurance that the activities authorized by this subsequent renewed operating license will continue to be conducted in accordance with the current licensing basis, as defined in 10 CFR 54.3, for the Turkey Point Unit 4 plant, and that any changes made to the plant's current licensing basis in order to comply with 10 CFR 54.29(a) are in accord with the Act and the Commission's regulations;
- c. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;
- d. There is reasonable assurance (i) that the facility can be operated at steady state power levels up to 2644 megawatts thermal in accordance with this subsequent renewed operating license without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the rules and regulations of the Commission;
- e. Florida Power and Light Company is technically and financially qualified to engage in the activities authorized by this subsequent renewed operating license in accordance with the rules and regulations of the Commission;
- f. The applicable provisions of 10 CFR Part 140 have been satisfied;
- g. The subsequent renewal of this renewed operating license will not be inimical to the common defense and security or to the health and safety of the public; and
- h. After weighing the environmental, economic, technical and other benefits of the facility against environmental costs and considering available alternatives, the issuance of Subsequent Renewed Facility Operating License No. DPR-41 is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

Subsequent Renewed License No. DPR-41

On the basis of the foregoing findings regarding this facility, Renewed Facility Operating License No. DPR-41, issued on June 6, 2002, is superseded by Subsequent Renewed Facility Operating License No. DPR-41, which is hereby issued to Florida Power and Light Company (FPL), to read as follows:

1. This subsequent renewed operating license applies to the Turkey Point Nuclear Generating Unit No. 4 nuclear power reactor, a pressurized, light water moderated and cooled reactor, and associated steam generators and electrical generating equipment (the facility). The facility is located on the applicant's Turkey Point site in Miami-Dade County, about 25 miles south of Miami, Florida, and is described in the Final Safety Analysis Report as supplemented and amended, and the Environmental Report as supplemented and amended.
2. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses FPL:
  - A. Pursuant to Section 104b of the Atomic Energy Act of 1954, as amended (the Act), and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," to possess, use, and operate the facility as a utilization facility at the designated location on the Turkey Point site, in accordance with the procedures and limitations set forth in this subsequent renewed operating license;
  - B. Pursuant to the Act and 10 CFR Part 70, to receive, possess, and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;
  - C. Pursuant to the Act and 10 CFR Parts 30, 40, and 70 to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
  - D. Pursuant to the Act and 10 CFR Part 30 to receive, possess, and use at any time 100 millicuries each of any byproduct material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactively contaminated apparatus;
  - E. Pursuant to the Act and 10 CFR Parts 40 and 70 to receive, possess, and use at any time 100 milligrams each of any source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactively contaminated apparatus;
  - F. Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of Turkey Point Units Nos. 3 and 4.
3. This subsequent renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations: 10 CFR Part 20, Section 30.34 of 10 CFR Part 30, Section 40.41 of 10 CFR Part 40, Sections 50.54 and 50.59 of 10 CFR Part 50, and Section 70.32 of 10 CFR Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect, and is subject to the additional conditions specified below:

A. Maximum Power Level

The applicant is authorized to operate the facility at reactor core power levels not in excess of 2644 megawatts (thermal).

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 296, are hereby incorporated into this subsequent renewed operating license. The Environmental Protection Plan contained in Appendix B is hereby incorporated into this subsequent renewed license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

C. Deleted.

D. Fire Protection

FPL shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the licensee amendment requests dated June 28, 2012 and October 17, 2018 (and supplements dated September 19, 2012; March 18, April 16, and May 15, 2013; January 7, April 4, June 6, July 18, September 12, November 5, and December 2, 2014; and February 18, 2015; October 24, and December 3, 2018; and January 31, 2019), and as approved in the safety evaluations dated May 28, 2015 and March 27, 2019. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

Risk-Informed Changes that May Be Made Without Prior NRC Approval

A risk assessment of the change must demonstrate that the acceptance criteria below are met. The risk assessment approach, methods, and data shall be acceptable to the NRC and shall be appropriate for the nature and scope of the change being evaluated; be based on the as-built, as-operated, and maintained plant; and reflect the operating experience at the plant. Acceptable methods to assess the risk of the change may include methods that have been used in the

peer-reviewed fire PRA model, methods that have been approved by NRC through a plant-specific license amendment or NRC approval of generic methods specifically for use in NFPA 805 risk assessments, or methods that have been demonstrated to bound the risk impact.

- (a) Prior NRC review and approval is not required for changes that clearly result in a decrease in risk. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.
- (b) Prior NRC review and approval is not required for individual changes that result in a risk increase less than  $1 \times 10^{-7}$ /year (yr) for CDF and less than  $1 \times 10^{-8}$ /yr for LERF. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.

#### Other Changes that May Be Made Without Prior NRC Approval

1. Changes to NFPA 805, Chapter 3, Fundamental Fire Protection Program  
Prior NRC review and approval are not required for changes to the NFPA 805, Chapter 3, fundamental fire protection program elements and design requirements for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is functionally equivalent or adequate for the hazard. The licensee may use an engineering evaluation to demonstrate that a change to an NFPA 805, Chapter 3, element is functionally equivalent to the corresponding technical requirement. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement, using a relevant technical requirement or standard.

The licensee may use an engineering evaluation to demonstrate that changes to certain NFPA 805, Chapter 3, elements are acceptable because the alternative is "adequate for the hazard." Prior NRC review and approval would not be required for alternatives to four specific sections of NFPA 805, Chapter 3, for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is adequate for the hazard. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement, using a relevant technical requirement or standard. The four specific sections of NFPA 805, Chapter 3, are as follows:

- "Fire Alarm and Detection Systems" (Section 3.8);
- "Automatic and Manual Water-Based Fire Suppression Systems" (Section 3.9);
- "Gaseous Fire Suppression Systems" (Section 3.10); and
- "Passive Fire Protection Features" (Section 3.11).

This License Condition does not apply to any demonstration of equivalency under Section 1.7 of NFPA 805.

2. Fire Protection Program Changes that Have No More than Minimal Risk Impact

Prior NRC review and approval are not required for changes to the licensee's fire protection program that have been demonstrated to have no more than a minimal risk impact. The licensee may use its screening process as approved in the NRC safety evaluation dated May 28, 2015, to determine that certain fire protection program changes meet the minimal criterion. The licensee shall ensure that fire protection defense-in-depth and safety margins are maintained when changes are made to the fire protection program.

- E. The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provision of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contains Safeguards Information protected under 10 CFR 73.21, is entitled: "Florida Power and Light Turkey Point Nuclear Plant Physical Security Plan, Training and Qualification Plan, Safeguards Contingency Plan, and Independent Spent Fuel Storage Installation Security Program - Revision 15" submitted by letter dated August 3, 2012.

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Turkey Point Nuclear Generating Station CSP was approved by License Amendment No. 241 as supplemented by a change approved by Amendment Nos. 252 and 261.

- F. 1. The licensee shall restrict the combined number of fuel assemblies loaded in the existing spent fuel pool storage racks and cask pit rack to no more than the capacity of the spent fuel pool storage racks. This condition applies at all times,

except during activities associated with a reactor core offload/reload refueling condition. This restriction will ensure the capability to unload and remove the cask pit rack when cask loading operations are necessary.

2. The licensee shall establish two hold points within the rack installation procedure to ensure proper orientation of the cask rack in each unit's spent fuel pool. Verification of proper cask pit rack orientation will be implemented by an authorized Quality Control inspector during installation of the racks to ensure consistency with associated spent fuel pool criticality analysis assumptions.

G. Mitigation Strategy License Condition

Develop and maintain strategies for addressing large fires and explosions and that include the following key areas:

- (a) Fire fighting response strategy with the following elements:
  1. Pre-defined coordinated fire response strategy and guidance
  2. Assessment of mutual aid fire fighting assets
  3. Designated staging areas for equipment and materials
  4. Command and control
  5. Training of response personnel
- (b) Operations to mitigate fuel damage considering the following
  1. Protection and use of personnel assets
  2. Communications
  3. Minimizing fire spread
  4. Procedures for implementing integrated fire response strategy
  5. Identification of readily-available pre-staged equipment
  6. Training on integrated fire response strategy
  7. Spent fuel pool mitigation measures
- (c) Actions to minimize release to include consideration of:
  1. Water spray scrubbing
  2. Dose to onsite responders

H. Deleted

I. FPL is authorized to implement the Risk Informed Completion Time Program as approved in License Amendment No. 278 subject to the following conditions:

1. Deleted

2. The risk assessment approach and methods, shall be acceptable to the NRC, be based on the as-built, as-operated, and maintained plant, and reflect the operating experience of the plant as specified in RG 1.200. Methods to assess the risk from extending the completion times must be PRA methods accepted as part of this license amendment, or other methods approved by the NRC for generic use. If the licensee wishes to change its methods, and the change is outside the bounds of this license condition, the licensee will seek prior NRC approval via a license amendment.

J. Subsequent License Renewal License Conditions

1. The information in the Final Safety Analysis Report (FSAR) supplement submitted pursuant to 10 CFR 54.21(d), as revised during the subsequent license renewal application review process, and FPL commitments as listed in Appendix A of the "Safety Evaluation Report Related to the Subsequent License Renewal of Turkey Point Generating Units 3 and 4," dated July 22, 2019, are collectively the "Subsequent License Renewal FSAR Supplement." This Supplement is henceforth part of the FSAR, which will be updated in accordance with 10 CFR 50.71(e). As such, FPL may make changes to the programs, activities, and commitments described in the Subsequent License Renewal FSAR Supplement, provided FPL evaluates such changes pursuant to the criteria set forth in 10 CFR 50.59, "Changes, Tests, and Experiments," and otherwise complies with the requirements in that section.
2. The Subsequent License Renewal FSAR Supplement, as defined in renewed license condition (J)(1) above, describes programs to be implemented and activities to be completed prior to the subsequent period of extended operation, which is the period following the April 10, 2033, expiration of the initial renewed license.
  - a. FPL shall implement those new programs and enhancements to existing programs no later than 6 months before the subsequent period of extended operation.
  - b. FPL shall complete those activities by the 6-month date prior to the subsequent period of extended operation or by the end of the last refueling outage before the subsequent period of extended operation, whichever occurs later.
  - c. FPL shall notify the NRC in writing within 30 days after having accomplished item (2)(a) above and include the status of those activities that have been or remain to be completed in item (2)(b) above.
3. FPL shall complete the replacement of a portion of the existing containment spray system carbon steel piping with stainless steel piping by December 1, 2024, so that any remaining carbon steel piping will not normally be internally exposed to borated water during the subsequent period of extended operation. The scope of replacement is the carbon steel piping from the stainless steel to the carbon steel dissimilar metal weld for the two containment spray piping headers (4A and 4B) at penetrations P-19A and P-19B to a minimum plant elevation of 65 feet inside containment. FPL shall notify the NRC in writing within 60 days following completion of the refueling outage during which the piping replacement is completed. The notification will confirm the elevation of

the air-to-borated water interface inside the piping, and confirm that the installation of the stainless steel piping exceeds this elevation.

4. This subsequent renewed license is effective as of the date of issuance, and shall expire at midnight April 10, 2053.

K. Improved Technical Specifications Implementation License Conditions

1. Relocation of Certain Technical Specification Requirements

License Amendment 290 authorizes the relocation of certain Technical Specifications previously included in Appendix A to other licensee-controlled documents. Implementation of this amendment shall include relocation of the requirements to the specified documents, as described in Table R, Relocated Specifications and Removed Detail Changes, attached to the NRC staff's Safety Evaluation, which is enclosed in this amendment.

2. Schedule for New and Revised Surveillance Requirements (SRs)

The schedule for performing SRs that are new or revised in License Amendment 290 shall be as follows:

- a. For SRs that are new in this amendment, the first performance is due at the end of the first Surveillance interval, which begins on the date of implementation of this amendment.
- b. For SRs that existed prior to this amendment, whose intervals of performance are being reduced, the first reduced Surveillance interval begins upon completion of the first Surveillance performed after implementation of this amendment.
- c. For SRs that existed prior to this amendment, whose intervals of performance are being extended, the first extended Surveillance interval begins upon completion of the last Surveillance performed prior to implementation of this amendment.
- d. For SRs that existed prior to this amendment that have modified acceptance criteria, the first performance subject to the modified acceptance criteria is due at the end of the first Surveillance interval that began on the date the Surveillance was last performed prior to the implementation of this amendment.

FOR THE NUCLEAR REGULATORY COMMISSION

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Ho K. Nieh, Director  
Office of Nuclear Reactor Regulation

Attachments:

Appendix A - Technical Specifications for Unit 4

Appendix B - Environmental Protection Plan

Date of Issuance: December 4, 2019

## Appendix A: Technical Specifications

Turkey Point 4 uses the same Appendix A as Turkey Point 3. Please refer to Turkey Point 3 for Appendix A (ML052790649).

## Appendix B: Environmental Protection Plan

Turkey Point 4 uses the same Appendix B as Turkey Point 3. Please refer to Turkey Point 3 for Appendix B (ML052790649).