



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

July 27, 2015

Mr. Mano Nazar
President and Chief Nuclear Officer
Nuclear Division
NextEra Energy
P.O. Box 14000
Juno Beach, FL 33408-0420

**SUBJECT: TURKEY POINT NUCLEAR GENERATING UNIT NOS. 3 AND 4 – ISSUANCE
OF AMENDMENTS REGARDING ADOPTION OF TECHNICAL
SPECIFICATION TASK FORCE TRAVELER 523 (TSTF-523), REVISION 2
(TAC NOS. MF4381 AND MF4382)**

Dear Mr. Nazar:

The U.S. Nuclear Regulatory Commission (NRC or the Commission) has issued the enclosed Amendment No. 264 to Renewed Facility Operating License (RFOL) No. DPR-31 and Amendment No. 259 to RFOL No. DPR-41 for the Turkey Point Nuclear Generating Unit Nos. 3 and 4, respectively. The amendments change the Technical Specifications (TSs) in response to Florida Power & Light Company's application dated July 8, 2014, as supplemented by letter dated July 15, 2015.

The amendments modify the TSs to address NRC Generic Letter 2008-01, "Managing Gas Accumulation in emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems," as described in TSTF-523, Revision 2, "Generic Letter 2008-01, Managing Gas Accumulation." The amendments revise and add surveillance requirements to verify that the system locations susceptible to gas accumulation are sufficiently filled with water and to provide allowances that permit performance of the verification.

M. Nazar

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The NRC staff's safety evaluation of the amendments is enclosed. A Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,



Audrey L. Klett, Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-250 and 50-251

Enclosures:

1. Amendment No. 264 to DPR-31
2. Amendment No. 259 to DPR-41
3. Safety Evaluation

cc w/enclosures: Distribution via Listserv



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

FLORIDA POWER & LIGHT COMPANY

DOCKET NO. 50-250

TURKEY POINT NUCLEAR GENERATING UNIT NO. 3

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 264
Renewed License No. DPR-31

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Florida Power & Light Company (the licensee) dated July 8, 2014, as supplemented by letter dated July 15, 2015, 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;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

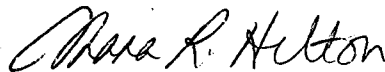
2. Accordingly, the license is amended by changes to the Operating License and Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Renewed Facility Operating License No. DPR-31 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 264 are hereby incorporated into this renewed license. The Environmental Protection Plan contained in Appendix B is hereby incorporated into this renewed license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented within 120 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Shana R. Helton, Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Operating License and
Technical Specifications

Date of Issuance: July 27, 2015



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

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 259
Renewed License No. DPR-41

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Florida Power & Light Company (the licensee) dated July 8, 2014, as supplemented by letter dated July 15, 2015, 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;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

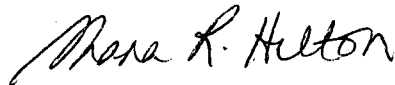
2. Accordingly, the license is amended by changes to the Operating License and Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Renewed Facility Operating License No. DPR-41 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 259 are hereby incorporated into this renewed license. The Environmental Protection Plan contained in Appendix B is hereby incorporated into this renewed license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented within 120 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Shana R. Helton, Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Operating License and
Technical Specifications

Date of Issuance: July 27, 2015.

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 264 RENEWED FACILITY OPERATING LICENSE NO. DPR-31

AMENDMENT NO. 259 RENEWED FACILITY OPERATING LICENSE NO. DPR-41

DOCKET NOS. 50-250 AND 50-251

Replace page 3 of Renewed Facility Operating License DPR-31 with the attached page 3. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Replace page 3 of Renewed Facility Operating License DPR-41 with the attached page 3. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

3/4 4-4
3/4 4-5
3/4 4-6
3/4 5-5
3/4 6-12
3/4 6-13
3/4 9-7
3/4 9-8

Insert

3/4 4-4
3/4 4-5
3/4 4-6
3/4 5-5
3/4 6-12
3/4 6-13
3/4 9-7
3/4 9-8

- 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 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. 264 are hereby incorporated into this renewed license. The Environmental Protection Plan contained in Appendix B is hereby incorporated into this renewed license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.
 - C. Final Safety Analysis Report

The licensee's Final Safety Analysis Report supplement submitted pursuant to 10 CFR 54.21(d), as revised on November 1, 2001, describes certain future inspection activities to be completed before the period of extended operation. The licensee shall complete these activities no later than July 19, 2012.

The Final Safety Analysis Report supplement as revised on November 1, 2001, described above, shall be included in the next scheduled update to the Final Safety Analysis Report required by 10 CFR 50.71(e)(4), following the issuance of this renewed license. Until that update is complete, the licensee may make changes to the programs described in such supplement without prior Commission approval, provided that the licensee evaluates each such change pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements in that section.

- 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 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. 259 are hereby incorporated into this renewed license. The Environmental Protection Plan contained in Appendix B is hereby incorporated into this renewed license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.
 - C. Final Safety Analysis Report

The licensee's Final Safety Analysis Report supplement submitted pursuant to 10 CFR 54.21(d), as revised on November 1, 2001, describes certain future inspection activities to be completed before the period of extended operation. The licensee shall complete these activities no later than April 10, 2013.

The Final Safety Analysis Report supplement as revised on November 1, 2001, described above, shall be included in the next scheduled update to the Final Safety Analysis Report required by 10 CFR 50.71(e)(4), following the issuance of this renewed license. Until that update is complete, the licensee may make changes to the programs described in such supplement without prior Commission approval, provided that the licensee evaluates each such change pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements in that section.

REACTOR COOLANT SYSTEM

SURVEILLANCE REQUIREMENTS

4.4.1.3.1 The required reactor coolant pump(s), if not in operation, shall be determined OPERABLE by verifying correct breaker alignments and indicated power availability in accordance with the Surveillance Frequency Control Program.

4.4.1.3.2 The required steam generator(s) shall be determined OPERABLE by verifying secondary side water level to be greater than or equal to 10% in accordance with the Surveillance Frequency Control Program.

4.4.1.3.3 At least one reactor coolant or RHR loop shall be verified in operation and circulating reactor coolant in accordance with the Surveillance Frequency Control Program.

4.4.1.3.4 Verify required RHR loop locations susceptible to gas accumulation are sufficiently filled with water in accordance with the Surveillance Frequency Control Program.*

* Not required to be performed until 12 hours after entering MODE 4.

REACTOR COOLANT SYSTEM

COLD SHUTDOWN - LOOPS FILLED

LIMITING CONDITION FOR OPERATION

3.4.1.4.1 At least one residual heat removal (RHR) loop shall be OPERABLE and in operation*, and either:

- a. One additional RHR loop shall be OPERABLE**, or
- b. The secondary side water level of at least two steam generators shall be greater than 10%.

APPLICABILITY: MODE 5 with reactor coolant loops filled***.

ACTION:

- a. With one of the RHR loops inoperable or with less than the required steam generator water level, immediately initiate corrective action to return the inoperable RHR loop to OPERABLE status or restore the required steam generator water level as soon as possible.
- b. With no RHR loop in operation, suspend all operations involving a reduction in boron concentration of the Reactor Coolant System and immediately initiate corrective action to return the required RHR loop to operation.

SURVEILLANCE REQUIREMENTS

4.4.1.4.1.1 The secondary side water level of at least two steam generators when required shall be determined to be within limits in accordance with the Surveillance Frequency Control Program.

4.4.1.4.1.2 At least one RHR loop shall be determined to be in operation and circulating reactor coolant in accordance with the Surveillance Frequency Control Program.

4.4.1.4.1.3 Verify required RHR loop locations susceptible to gas accumulation are sufficiently filled with water in accordance with the Surveillance Frequency Control Program.

* The RHR pump may be deenergized for up to 1 hour provided: (1) no operations are permitted that would cause dilution of the Reactor Coolant System boron concentration, and (2) core outlet temperature is maintained at least 10°F below saturation temperature.

** One RHR loop may be inoperable for up to 2 hours for surveillance testing provided the other RHR loop is OPERABLE.

*** A reactor coolant pump shall not be started with one or more of the Reactor Coolant System cold leg temperatures less than or equal to 275°F unless the secondary water temperature of each steam generator is less than 50°F above each of the Reactor Coolant System cold leg temperatures.

REACTOR COOLANT SYSTEM

COLD SHUTDOWN - LOOPS NOT FILLED

LIMITING CONDITION FOR OPERATION

3.4.1.4.2 Two residual heat removal (RHR) loops shall be OPERABLE* and at least one RHR loop shall be in operation.**

APPLICABILITY: MODE 5 with reactor coolant loops not filled.

ACTION:

- a. With less than the above required RHR loops OPERABLE, immediately initiate corrective action to return the required RHR loops to OPERABLE status as soon as possible.
- b. With no RHR loop in operation, suspend all operations involving a reduction in boron concentration of the Reactor Coolant System and immediately initiate corrective action to return the required RHR loop to operation.

SURVEILLANCE REQUIREMENTS

4.4.1.4.2.1 At least one RHR loop shall be determined to be in operation and circulating reactor coolant in accordance with the Surveillance Frequency Control Program.

4.4.1.4.2.2 Verify RHR loop locations susceptible to gas accumulation are sufficiently filled with water in accordance with the Surveillance Frequency Control Program.

* One RHR loop may be inoperable for up to 2 hours for surveillance testing provided the other RHR loop is OPERABLE.

** The RHR pump may be deenergized for up to 1 hour provided: (1) no operations are permitted that would cause dilution of the Reactor Coolant System boron concentration, and (2) core outlet temperature is maintained at least 10°F below saturation temperature.

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS

4.5.2 Each ECCS component and flow path shall be demonstrated OPERABLE:

- a. In accordance with the Surveillance Frequency Control Program by verifying by control room indication that the following valves are in the indicated positions with power to the valve operators removed:

<u>Valve Number</u>	<u>Valve Function</u>	<u>Valve Position</u>
864A and B	Supply from RWST to ECCS	Open
862A and B	RWST Supply to RHR pumps	Open
863A and B	RHR Recirculation	Closed
866A and B	H.H.S.I. to Hot Legs	Closed
HCV-758*	RHR HX Outlet	Open

To permit temporary operation of these valves for surveillance or maintenance purposes, power may be restored to these valves for a period not to exceed 24 hours.

- b. In accordance with the Surveillance Frequency Control Program by:
- 1) Verifying ECCS locations susceptible to gas accumulation are sufficiently filled with water, and
 - 2) Verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position**.
- c. By verifying that each SI and RHR pump develops the indicated differential pressure applicable to the operating conditions when tested pursuant to Specification 4.0.5:
- 1) SI pump ≥ 1083 psid at a metered flowrate ≥ 300 gpm (normal alignment or Unit 4 SI pumps aligned to Unit 3 RWST), or
 ≥ 1113 psid at a metered flowrate ≥ 280 gpm (Unit 3 SI pumps aligned to Unit 4 RWST).
 - 2) RHR pump Develops the indicated differential pressure applicable to the operating conditions in accordance with Figure 3.5-1.

*Air Supply to HCV-758 shall be verified shut off and sealed closed in accordance with the Surveillance Frequency Control Program.

**Not required to be met for system vent flow paths opened under administrative control.

CONTAINMENT SYSTEMS

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

CONTAINMENT SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.1 Two independent Containment Spray Systems shall be OPERABLE with each Spray System capable of taking suction from the RWST and manually transferring suction to the containment sump via the RHR System.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

- a. With one Containment Spray System inoperable restore the inoperable Spray System to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With two Containment Spray Systems inoperable restore at least one Spray System to OPERABLE status within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore both Spray Systems to OPERABLE status within 72 hours of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.1 Each Containment Spray System shall be demonstrated OPERABLE:

- a. In accordance with the Surveillance Frequency Control Program by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position* and that power is available to flow path components that require power for operation;
- b. By verifying that on recirculation flow, each pump develops the indicated differential pressure, when tested pursuant to Specification 4.0.5:

Containment Spray Pump ≥ 241.6 psid while aligned in recirculation mode.
- c. In accordance with the Surveillance Frequency Control Program by verifying containment spray locations susceptible to gas accumulation are sufficiently filled with water.

*Not required to be met for system vent flow paths opened under administrative control.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- d. In accordance with the Surveillance Frequency Control Program during shutdown by:
 - 1) Verifying that each automatic valve in the flow path actuates to its correct position on a containment spray actuation test signal, and
 - 2) Verifying that each spray pump starts automatically on a containment spray actuation test signal. The manual isolation valves in the spray lines at the containment shall be locked closed for the performance of these tests.
- e. In accordance with the Surveillance Frequency Control Program by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

REFUELING OPERATIONS

3/4.9.8 RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION

HIGH WATER LEVEL

LIMITING CONDITION FOR OPERATION

3.9.8.1 At least one residual heat removal (RHR) loop shall be OPERABLE and in operation.*

APPLICABILITY: MODE 6, when the water level above the top of the reactor vessel flange is greater than or equal to 23 feet.

ACTION:

With no RHR loop OPERABLE and in operation, suspend all operations involving an increase in the reactor decay heat load or a reduction in boron concentration of the Reactor Coolant System and immediately initiate corrective action to return the required RHR loop to OPERABLE and operating status as soon as possible. Close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours.

SURVEILLANCE REQUIREMENTS

4.9.8.1.1 At least one RHR loop shall be verified in operation and circulating reactor coolant at a flow rate of greater than or equal to 3000 gpm in accordance with the Surveillance Frequency Control Program.

4.9.8.1.2 The RHR flow indicator shall be subjected to a CHANNEL CALIBRATION in accordance with the Surveillance Frequency Control Program.

4.9.8.1.3 Verify required RHR loop locations susceptible to gas accumulation are sufficiently filled with water in accordance with the Surveillance Frequency Control Program.

*The required RHR loop may be removed from operation for up to 1 hour per 8 hour period, provided no operations are permitted that would cause reduction of the Reactor Coolant System boron concentration.

REFUELING OPERATIONS

LOW WATER LEVEL

LIMITING CONDITION FOR OPERATION

3.9.8.2 Two independent residual heat removal (RHR) loops shall be OPERABLE, and at least one RHR loop shall be in operation*.

APPLICABILITY: MODE 6, when the water level above the top of the reactor vessel flange is less than 23 feet.

ACTION:

- a. With less than the required RHR loops OPERABLE, immediately initiate corrective action to return the required RHR loops to OPERABLE status, or to establish greater than or equal to 23 feet of water above the reactor vessel flange, as soon as possible.
- b. With no RHR loop in operation, suspend all operations involving a reduction in boron concentration of the Reactor Coolant System and immediately initiate corrective action to return the required RHR loop to operation. Close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours.

SURVEILLANCE REQUIREMENTS

4.9.8.2.1 At least one RHR loop shall be verified in operation and circulating reactor coolant at a flow rate of greater than or equal to 3000 gpm in accordance with the Surveillance Frequency Control Program.

4.9.8.2.2 Verify RHR loop locations susceptible to gas accumulation are sufficiently filled with water in accordance with the Surveillance Frequency Control Program.

* One required RHR loop may be inoperable for up to 2 hours for surveillance testing, provided that the other RHR loop is OPERABLE and in operation.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION FOR
AMENDMENT NO. 264 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-31 AND
AMENDMENT NO. 259 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-41
FLORIDA POWER & LIGHT COMPANY
TURKEY POINT NUCLEAR GENERATING UNIT NOS. 3 AND 4
DOCKET NOS. 50-250 AND 50-251

1.0 INTRODUCTION

By letter dated July 8, 2014, as supplemented by letter dated July 15, 2015,¹ Florida Power & Light Company (the licensee) requested changes to the Technical Specifications (TSs) for Turkey Point Nuclear Generating Unit Nos. 3 and 4 (Turkey Point 3 and 4), which are contained in Appendix A of Renewed Facility Operating License Nos. DPR-31 and DPR-41. The licensee requested to revise or add surveillance requirements (SRs) to the TSs to verify that system locations susceptible to gas accumulation are sufficiently filled with water and to provide allowances that permit performance of the verification. The licensee requested to adopt the U.S. Nuclear Regulatory Commission (NRC)-approved Technical Specifications Task Force (TSTF) Standard Technical Specifications (STTs) Change Traveler TSTF-523, Revision 2, "Generic Letter [GL] 2008-01, Managing Gas Accumulation," dated February 21, 2013.² The *Federal Register* (FR) notice published on January 15, 2014 (79 FR 2700), announced the availability of this TSTF.

The supplemental letter dated July 15, 2015, did not expand the scope of the application as originally noticed and did not change the NRC staff's original proposed no significant hazards consideration determination, as published in the FR on October 14, 2014 (79 FR 61661).

¹ Agencywide Documents and Management System (ADAMS) Accession Nos. ML14205A278 and ML15201A064, respectively.

² ADAMS Accession No. ML13053A075.

Enclosure

2.0 REGULATORY EVALUATION

2.1 Background

On January 11, 2008, the NRC issued GL 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems,"³ to address the issue of gas accumulation in emergency core cooling systems (ECCSs), decay heat removal (DHR) systems, and containment spray (CS) systems. Gas accumulation in such systems can result in water hammer, pump cavitation, and pumping of noncondensable gas into the reactor vessel. These effects may result in the subject system being unable to perform its specified safety function. The industry and NRC staff agreed that a change to the STSs and plant-specific TSs would be necessary to address some issues discussed in GL 2008-01. TSTF-523, Revision 2 contains proposed changes to the STSs SRs and Bases to address some of the concerns in GL 2008-01.

2.2 Description of Proposed Changes

The licensee proposed revising the Turkey Point 3 and 4 TSs to adopt the changes described in TSTF-523, Revision 2, with variations to address plant-specific numbering, format, and titles in the Turkey Point TSs. The proposed changes would revise ECCS SRs related to gas accumulation and add new SRs related to gas accumulation for the residual heat removal (RHR) and CS systems. The licensee also included associated draft changes to its TS Bases in its application.

The licensee proposed the following changes to the TSs (Section 3 of this Safety Evaluation describes the changes in more detail):

- TS 3/4.4.1.3, "Reactor Coolant System – Hot Shutdown": add new SR 4.4.1.3.4;
- TS 3/4.4.1.4.1, "Reactor Coolant System – Cold Shutdown - Loops Filled": add new SR 4.4.1.4.1.3;
- TS 3/4.4.1.4.2, "Reactor Coolant System – Cold Shutdown - Loops Not Filled": renumber SR 4.4.1.4.2 to SR 4.4.1.4.2.1 and add new SR 4.4.1.4.2.2;
- TS 3/4.5.2, "ECCS Subsystems – T_{avg} [average reactor coolant system temperature] Greater than or Equal to 350 °F [degrees Fahrenheit]": revise SRs 4.5.2b.1 and 4.5.2b.2;
- TS 3/4.6.2, "Containment Systems - Depressurization and Cooling Systems": revise SR 4.6.2.1a, add new SR 4.6.2.1c, and renumber the remaining SRs;
- TS 3/4.9.8.1, "Residual Heat Removal and Coolant Circulation – High Water Level": add new SR 4.9.8.1.3; and
- TS 3/4.9.8.2, "Residual Heat Removal and Coolant Circulation – Low Water Level": renumber SR 4.9.8.2 to 4.9.8.2.1 and add new SR 4.9.8.2.2.

³ ADAMS Accession No. ML072910759.

2.3 Regulatory Review

The NRC staff considered the following regulatory requirements, guidance, and plant-specific licensing and design basis information during its review of the licensee's application.

TSTF 523, Revision 2 and its associated model safety evaluation⁴ discuss applicable regulatory requirements and guidance, including 10 CFR Part 50, Appendix A. However, the Turkey Point 3 and 4 design approval for the construction phase was based on the proposed general design criteria (GDC) published by the Atomic Energy Commission in the FR (32 FR 10213) on July 11, 1967. Section 1.3, "General Design Criteria," of the Turkey Point 3 and 4 Updated Final Safety Analysis Report (UFSAR) describes the Turkey Point GDC. The UFSAR evaluation of the following draft GDC reflect design requirements similar to those specified in the final GDC discussed in TSTF-523, Revision 2: Criterion 1, "Quality Standards," Criterion 37, "Engineered Safety Features Basis for Design," Criterion 44, "Emergency Core Cooling Systems Capability," Criterion 45, "Inspection of Emergency Core Cooling Systems," Criterion 46, "Testing of Emergency Core Cooling Systems Components," Criterion 47, "Testing of Emergency Core Cooling Systems," Criterion 48, "Testing of Operational Sequence of Emergency Core Cooling Systems," Criterion 52, "Containment Heat Removal Systems," Criterion 58, "Inspection of Containment Pressure-Reducing Systems," Criterion 59, "Testing of Containment Pressure-Reducing Systems," Criterion 60, "Testing of Containment Spray Systems," and Criterion 61, "Testing of Operational Sequence of Containment Pressure-Reducing Systems." Additionally, the regulations in 10 CFR 50.46 provide specified ECCS performance criteria.

Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to Part 50 requires that applicants for construction permits include in their preliminary safety analysis reports a description of the quality assurance program to be applied to the design, fabrication, construction, and testing of the structures, systems, and components of the facility. Part 50, Appendix B also requires that applicants for operating licenses include, in their final safety analysis reports, information pertaining to the managerial and administrative controls to be used to assure safe operation. The quality assurance criteria provided in Part 50, Appendix B that apply to gas management in the subject systems include: Criteria III, V, XI, XVI, and XVII. Criteria III and V require measures to ensure that applicable regulatory requirements and the design basis, as defined in 10 CFR 50.2, "Definitions," and as specified in the license application, are correctly translated into controlled specifications, drawings, procedures, and instructions. Criterion XI requires a test program to ensure that the subject systems will perform satisfactorily in service and requires that test results shall be documented and evaluated to ensure that test requirements have been satisfied. Criterion XVI requires measures to ensure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances, are promptly identified and corrected, and that significant conditions adverse to quality are documented and reported to management. Criterion XVII requires maintenance of records of activities affecting quality.

The NRC's regulatory requirements related to the content of the TSs are contained in 10 CFR 50.36(c). The regulations in 10 CFR 50.36 require that the TSs include items in the

⁴ ADAMS Accession No. ML13255A169.

following categories: (1) safety limits, limiting safety systems settings, and limiting control settings; (2) limiting conditions for operation (LCOs); (3) SRs; (4) design features; and (5) administrative controls. SRs are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the LCOs will be met. Section 6 of the Turkey Point TSs requires the licensee to establish, implement, and maintain written procedures covering the applicable procedures recommended in Appendix A to Regulatory Guide (RG) 1.33, "Quality Assurance Program Requirements (Operation)." Furthermore, Appendix A to RG 1.33 identifies instructions for filling and venting the ECCS and DHR system, as well as for draining and refilling heat exchangers.

3.0 TECHNICAL EVALUATION

The SRs the licensee proposed to add are consistent with TSTF-523, Revision 2, and are appropriate to address the issues discussed in GL 2008-01. The NRC staff compared the proposed changes to the existing SRs, as well as the regulatory requirements of 10 CFR 50.36(c). The proposed SRs must be sufficient to provide reasonable assurance that the necessary quality of systems and components are maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met.

The licensee proposed the following TS changes:

- (1) Add SR 4.4.1.3.4, which states, "Verify required RHR loop locations susceptible to gas accumulation are sufficiently filled with water in accordance with the Surveillance Frequency Control Program.*" The added Footnote (*) states, "Not required to be performed until 12 hours after entering MODE 4."
- (2) Add SR 4.4.1.4.1.3, which states, "Verify required RHR loop locations susceptible to gas accumulation are sufficiently filled with water in accordance with the Surveillance Frequency Control Program."
- (3) Renumber SR 4.4.1.4.2 to SR 4.4.1.4.2.1, and add SR 4.4.1.4.2.2, which states, "Verify RHR loop locations susceptible to gas accumulation are sufficiently filled with water in accordance with the Surveillance Frequency Control Program."
- (4) Revise the language for SR 4.5.2b.1, which currently states, "Verifying that the ECCS piping is full of water by venting the ECCS pump casings and accessible discharge piping, and[.]" to state, "Verifying ECCS locations susceptible to gas accumulation are sufficiently filled with water, and[.]"
- (5) Add Footnote (**) to SR 4.5.2b.2, which states, "Not required to be met for system vent flow paths opened under administrative control."
- (6) Add Footnote (*) to SR 4.6.2.1a, which states, "Not required to be met for system vent flow paths opened under administrative control."
- (7) Renumber current SRs 4.6.2.1c and 4.6.2.1d to SRs 4.6.2.1d and 4.6.2.1e, respectively and add a new SR 4.6.2.1c, which states, "In accordance with the

Surveillance Frequency Control Program by verifying containment spray locations susceptible to gas accumulation are sufficiently filled with water.”

- (8) Add SR 4.9.8.1.3, which states, “Verify required RHR loop locations susceptible to gas accumulation are sufficiently filled with water in accordance with the Surveillance Frequency Control Program.”
- (9) Renumber SR 4.9.8.2 to SR 4.9.8.2.1, and add SR 4.9.8.2.2, which states, “Verify RHR loop locations susceptible to gas accumulation are sufficiently filled with water in accordance with the Surveillance Frequency Control Program.”
- (10) Add and revise the affected TS SR Bases language to state the purpose of the SRs, discuss methods of identifying locations susceptible to gas accumulation, discuss gas volume acceptance criteria, discuss methods for performing the SR consistent with licensee actions and ongoing programs related to GL 2008-01, and describe the SR frequency.
- (11) Add and revise TS LCO Bases language to describe what is required for operability of the systems and to reiterate the importance of gas management.

The new language for the SRs was developed using licensee responses to GL 2008-01 and the NRC discussion contained in Task Interface Agreement (TIA) 2008-03, “Emergency Core Cooling System (ECCS) Voiding Relative to Compliance with Surveillance Requirements (SR) 3.5.1.1, 3.5.2.3, and 3.5.3.1.”⁵ Many of the GL 2008-01 responses stated that licensees identified system locations susceptible to gas accumulation. In the TIA, the NRC stated that the intent of the TS SRs, which state “full of water,” may be met if the licensee can establish, through an Operability Determination, that there is a reasonable expectation that the system in question will perform its specified safety function. Therefore, the phrase, “sufficiently filled with water,” was recommended for the proposed TS changes. In the TSs, “sufficiently filled with water” is understood to mean, “sufficiently filled with water to support Operability.” The regulations in 10 CFR 50.36(c)(3) state that one of the purposes of the SR is to verify that the LCO is met. Therefore, the NRC staff finds that the new SR language that states, “Verify the [system name] locations susceptible to gas accumulation are sufficiently filled with water,” is acceptable because this language will allow the licensee to make a conclusion as to whether or not a system is operable.

The language for the notes that state that the SR does not have to be performed until 12 hours after entering Mode 4 is acceptable because the note provides a limited time to perform the Surveillance after entering the Applicability of the LCO. The licensee must have confidence that the SR can be met, or else the licensee must declare the LCO not met.

The language for the notes that allow the SRs to not be met for system vent flow paths opened under administrative control is necessary to allow the licensee to credit administratively controlled manual action to close the system vent flow path in order to maintain system

⁵ ADAMS Accession No. ML082560209.

Operability during system venting and performance of the proposed gas accumulation SR. Therefore, the NRC finds that these notes are acceptable.

The NRC staff found that the proposed SRs meet the regulatory requirements of 10 CFR 50.36 because they provide assurance that the necessary quality of systems and components will be maintained and that the LCOs will be met. Therefore, the NRC staff finds the proposed change acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the NRC staff notified the State of Florida official (Ms. Cynthia Becker, M.P.H., Chief of the Bureau of Radiation Control, Florida Department of Health) on July 16, 2015,⁶ of the proposed issuance of the amendments. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20 and changes SRs. The NRC staff has determined that the amendments involve no significant increase in the amounts and no significant change in the types of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on the proposed finding published in the FR on October 14, 2014 (79 FR 61661). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner; (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations; and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Caroline E. Tilton

Date: July 27, 2015

⁶ The NRC staff notified the State official by telephone and by e-mail. The e-mail is in ADAMS under Accession No. ML15197A220.

M. Nazar

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The NRC staff's safety evaluation of the amendments is enclosed. A Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

/RA/

Audrey L. Klett, Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-250 and 50-251

Enclosures:

1. Amendment No. 264 to DPR-31
2. Amendment No. 259 to DPR-41
3. Safety Evaluation

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