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

August 3, 2017

Mr. Mano Nazar
President and Chief Nuclear Officer
Nuclear Division
NextEra Energy
Mail Stop NT3/JW
15430 Endeavor Drive
Jupiter, FL 33478

SUBJECT: TURKEY POINT NUCLEAR GENERATING UNIT NOS. 3 AND 4 – ISSUANCE OF AMENDMENTS REGARDING TECHNICAL SPECIFICATIONS FOR CONTROL ROOM EMERGENCY VENTILATION SYSTEM (CAC NOS. MF8221 AND MF8222)

Dear Mr. Nazar:

The U.S. Nuclear Regulatory Commission (NRC or the Commission) has issued the enclosed Amendment No. 275 to Renewed Facility Operating License No. DPR-31 and Amendment No. 270 to Renewed Facility Operating License No. DPR-41 for Turkey Point Nuclear Generating Unit Nos. 3 and 4, respectively. The amendments change the technical specifications in response to the application from Florida Power & Light Company dated August 3, 2016, as supplemented by letters dated October 4, 2016; January 27, 2017; March 31, 2017; and May 24, 2017.

The amendments revise the technical specifications for the Control Room Emergency Ventilation System. The amendments change the limiting condition for operation, required actions, and surveillance requirements to reflect the system's current design.

A copy of the related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

Michael J. Wentzel, 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. 275 to DPR-31
2. Amendment No. 270 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. 275
Renewed License No. DPR-31

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Florida Power & Light Company (the licensee) dated August 3, 2016, as supplemented by letters dated October 4, 2016; January 27, 2017; March 31, 2017; and May 24, 2017, 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 Renewed Facility 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. 275, 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 90 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Undine Shoop, Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed Facility Operating License
and Technical Specifications

Date of Issuance: August 3, 2017

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. 270
Renewed License No. DPR-41

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Florida Power & Light Company (the licensee) dated August 3, 2016, as supplemented by letters dated October 4, 2016; January 27, 2017; March 31, 2017; and May 24, 2017, 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 Renewed Facility 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. 270, 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 90 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Undine Shoop, Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed Facility Operating License
and Technical Specifications

Date of Issuance: August 3, 2017

ATTACHMENT TO LICENSE AMENDMENTS

TURKEY POINT NUCLEAR GENERATING UNIT NOS. 3 AND 4

AMENDMENT NO. 275 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-31

AMENDMENT NO. 270 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-41

DOCKET NOS. 50-250 AND 50-251

Replace page 3 of Renewed Facility Operating License No. DPR-31 with the attached page 3. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

Replace page 3 of Renewed Facility Operating License No. DPR-41 with the attached page 3. The revised page is identified by amendment number and contains a marginal line indicating the area 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	Insert
3/4 7-18	3/4 7-18
3/4 7-19	3/4 7-19
3/4 7-20	3/4 7-20
3/4 7-21	3/4 7-21

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. 275, 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. 270, 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.

3/4.7.5 CONTROL ROOM EMERGENCY VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.5 The Control Room Emergency Ventilation System shall be OPERABLE* with:

a. Three air handling units,

b. Two condensing units,

c. Two control room recirculation fans,

d. Two recirculation dampers,

e. One filter train,

f. Two isolation dampers in the normal outside air intake duct,

g. Two isolation dampers in the emergency outside air intake duct,

h. Control Room Envelope.

APPLICABILITY: MODES 1, 2, 3, 4, 5 and 6 or during movement of irradiated fuel assemblies.

ACTION:

a.1 With one air handling unit inoperable, within 7 days, restore the inoperable air handling unit to OPERABLE status or, immediately suspend all movement of irradiated fuel and be in at least HOT STANDBY within the next 6 hours for one Unit, or 12 hours for both Units, and in COLD SHUTDOWN within the following 30 hours.

a.2 With only one OPERABLE condensing unit, within 30 days, restore at least one of the inoperable condensing units to OPERABLE status or, immediately suspend all movement of irradiated fuel and be in at least HOT STANDBY within the next 6 hours for one Unit, or 12 hours for both Units, and in COLD SHUTDOWN within the following 30 hours.

a.3 With one recirculation fan inoperable, within 7 days, restore the inoperable fan to OPERABLE status or, immediately suspend all movement of irradiated fuel and be in at least HOT STANDBY within the next 6 hours for one Unit, or 12 hours for both Units, and in COLD SHUTDOWN within the following 30 hours.

*The Control Room Envelope (CRE) boundary may be opened intermittently under administrative control.

LIMITING CONDITION FOR OPERATION (continued)

a.4 With one recirculation damper inoperable, within 7 days, restore the inoperable damper to OPERABLE status or, place and maintain at least one of the recirculation dampers in the open position and place the system in recirculation mode or, immediately suspend all movement of irradiated fuel and be in at least HOT STANDBY within the next 6 hours for one Unit, or 12 hours for both Units, and in COLD SHUTDOWN within the following 30 hours.

a.5 With the filter train inoperable, e.g., an inoperable filter, and/or two inoperable recirculation fans, and/or two inoperable recirculation dampers, immediately suspend all movement of irradiated fuel and immediately initiate action to place the compensatory filtration unit in service and verify proper operation within 24 hours, following which movement of irradiated fuel may resume, and within 7 days, restore the filter train to OPERABLE status.

With the above requirements not met, immediately suspend all movement of irradiated fuel and be in at least HOT STANDBY within the next 6 hours for one Unit, or 12 hours for both Units, and in COLD SHUTDOWN within the following 30 hours.

a.6 With an inoperable damper in the normal outside air intake, within 7 days, restore the inoperable damper to OPERABLE status or, place and maintain at least one of the normal outside air intake isolation dampers in the closed position and place the system in recirculation mode or, immediately suspend all movement of irradiated fuel and be in at least HOT STANDBY within the next 6 hours for one Unit, or 12 hours for both Units, and in COLD SHUTDOWN within the following 30 hours.

a.7 With an inoperable damper in the emergency outside air intake, within 7 days, restore the inoperable damper to OPERABLE status or, place and maintain at least one of the emergency outside air intake isolation dampers in the open position or, immediately suspend all movement of irradiated fuel and be in at least HOT STANDBY within the next 6 hours for one Unit, or 12 hours for both Units, and in COLD SHUTDOWN within the following 30 hours.

3/4.7.5 CONTROL ROOM EMERGENCY VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION (continued)

b. With the Control Room Emergency Ventilation System inoperable due to an inoperable CRE boundary during MODES 1, 2, 3 or 4, immediately initiate action to implement mitigating actions. Within 24 hours, verify mitigating actions ensure CRE occupant radiological and chemical hazards will not exceed limits, and CRE occupants are protected from smoke hazards, and restore CRE boundary to OPERABLE status within 90 days.

With the above requirements not met, be in at least HOT STANDBY within the next 6 hours for one Unit, or 12 hours for both Units, and in COLD SHUTDOWN within the following 30 hours.

With the Control Room Emergency Ventilation System inoperable due to an inoperable CRE boundary during MODES 5, 6 or during the movement of irradiated fuel assemblies, immediately suspend all movement of irradiated fuel.

SURVEILLANCE REQUIREMENTS

4.7.5 The Control Room Emergency Ventilation System shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by verifying that the control room air temperature is less than or equal to 120°F;

b. In accordance with the Surveillance Frequency Control Program by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 minutes**;

c. In accordance with the Surveillance Frequency Control Program or (1) after 720 hours of system operation, or (2) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (3) following exposure of the filters to effluents from painting, fire, or chemical release in any ventilation zone communicating with the system that may have an adverse effect on the functional capability of the system, or (4) after complete or partial replacement of a filter bank by:

**As the mitigation actions of TS 3.7.5 Action a.5 include the use of the compensatory filtration unit, the unit shall meet the surveillance requirements of TS 4.7.5.b, by manual initiation from outside the control room and TS 4.7.5.c, d and f.

1) Verifying that the air cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of greater than or equal to 99.95% DOP and 99% halogenated hydrocarbon removal at a system flow rate of 1000 cfm ±10%**.

2) Verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, and analyzed per ASTM D3803 - 1989 at 30°C and 95% relative humidity, meets the methyl iodide penetration criteria of less than 2.5% or the charcoal be replaced with charcoal that meets or exceeds the stated performance requirement**, and

3) Verifying by a visual inspection the absence of foreign materials and gasket deterioration**.

d.1 In accordance with the Surveillance Frequency Control Program by verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches Water Gauge while operating the system at a flow rate of 1000 cfm ±10%**;

d.2 In accordance with the Surveillance Frequency Control Program, test the supply fans (trains A and B) and measure CRE pressure relative to external areas adjacent to the CRE boundary.**

e. In accordance with the Surveillance Frequency Control Program by verifying that on a Containment Phase "A" Isolation test signal the system automatically switches into the recirculation mode of operation,

f. By performing required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program.**

**As the mitigation actions of TS 3.7.5 Action a.5 include the use of the compensatory filtration unit, the unit shall meet the surveillance requirements of TS 4.7.5.b, by manual initiation from outside the control room and TS 4.7.5.c, d and f.

UNITED STATES
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

AMENDMENT NO. 275 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-31

AMENDMENT NO. 270 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 application dated August 3, 2016,[1] as supplemented by letters dated October 4, 2016; January 27, 2017; March 31, 2017; and May 24, 2017,[2] Florida Power & Light Company (the licensee or FPL) 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 proposed to revise TS 3/4.7.5, "Control Room Emergency Ventilation System [CREVS]." The licensee requested to change the limiting condition for operation, required actions, and surveillance requirements (SRs) of the TS to reflect the system's current design and to align the TS more closely with the Westinghouse Plants Standard Technical Specifications (STS), Section 3.7.10, "Control Room Emergency Filtration System (CREFS)," of NUREG-1431, Revision 4.[3]

By letter dated September 23, 2016,[4] the U.S. Nuclear Regulatory Commission (NRC or the Commission) staff requested supplemental information deemed necessary to complete the acceptance review of the requested amendments. The licensee responded by letter dated October 4, 2016. By e-mails dated December 5, 2016, and March 7, 2017,[5] the NRC staff sent the licensee requests for additional information (RAIs). The licensee responded to the RAIs by letters dated January 27, 2017, and March 31, 2017. The licensee supplemented its March 31, 2017, response by letter dated May 24, 2017. The licensee's responses provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the original proposed no significant hazards consideration determination that was published in the *Federal Register* (FR) on November 8, 2016 (81 FR 78653).

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[1] Agencywide Documents Access and Management System (ADAMS) Accession No. ML16230A003
[2] ADAMS Accession Nos. ML16291A495, ML17032A345, ML17090A331, and ML17144A348, respectively
[3] ADAMS Accession No. ML12100A222
[4] ADAMS Accession No. ML16265A075
[5] ADAMS Accession Nos. ML16340A037 and ML17067A057, respectively

2.0 REGULATORY EVALUATION

2.1. Description of the CREVS

The CREVS provides control room operators a protected environment during both normal and accident conditions from airborne challenges such as radioactive contamination, hazardous chemicals, and fire byproducts (e.g., fire suppression agents and smoke). Operability of the CREVS ensures that: (1) the ambient air temperature does not exceed the allowable temperature for continuous-duty rating for the equipment and instrumentation cooled by the system, and (2) the control room will remain habitable for occupants during and following an uncontrolled release of radioactivity, hazardous chemicals, or smoke. The control room envelope (CRE) is a component of the CREVS and consists of the control room and the mechanical equipment room, including the control room's offices, rack area, kitchen, and lavatory. Turkey Point 3 and 4 share a common CRE.

The CREVS is part of the control room ventilation system, which provides a controlled environment for the comfort and safety of occupants and ensures operability of components during normal operations, anticipated occupational occurrences, and design-basis accident (DBA) conditions. The design basis of the control room ventilation system for radiological emergencies is to be capable of automatically starting under accident conditions to initiate emergency control room pressurization and filtration, assuming the occurrence of a single active damper or supply fan failure. The design basis of the system with respect to other emergencies affecting the control room environment is to be capable of manual actuation.

The control room ventilation system consists of three 100 percent capacity air handling units located in a mechanical equipment room. The air handling units work in conjunction with three 100 percent capacity condensing units located on the control building roof, with one each of the condensing units dedicated to one of the air handling units. The cooling coils in the air handling units and their associated condensing units are interconnected by refrigerant lines, providing for a direct expansion refrigerant cooling to the CRE. Under normal operation, a fan in each air handling unit recirculates the ambient air in the CRE by common supply and return ducts, with a small amount of outside fresh air drawn into the duct system. The combined air quantity from recirculation and outside air passes through roughing filters and cooling coils in the air handling units before being distributed in the CRE through the duct system with motive force provided by electric motor driven fans in the air handling units.

The control room ventilation system at Turkey Point also contained kitchen and toilet exhaust fans. The operation of these fans is no longer required and was permanently disabled by a modification performed in 2012 to enhance the CRE boundary reliability. After the modification, air quantity approximately equal to the outside air quantity drawn into the duct system leaves the CRE boundary as exfiltration due to a slightly higher pressure within the CRE.

The control room ventilation system also has the capability to go into a filtered recirculation mode. During this mode, the normal outside air intake to the air handling units is closed, and a separate dual CREVS intake is opened. When in operation, the dual intake will have balanced intake flow rates capable of drawing outside air from both locations. A combination of recirculated air from the CRE drawn from the air handling unit return air duct and outside air drawn from the dual intakes is routed through a filtration unit containing high efficiency particulate air filters and charcoal filters and its associated fan back to the air handling unit return duct. At Turkey Point, there are two filtration units in the CREVS. The first unit is a single filter train with redundant active components (e.g., fans, motors) designated to satisfy the single

failure criteria. The first unit is a fully qualified unit capable of being initiated by manual containment Phase "A" or Phase "B" initiation, a high radiation signal from the containment atmosphere radiation monitors, manual initiation from a test switch, or a high radiation signal from the redundant monitors in the control room ventilation system normal air intake. The second filtration unit with a single fan and motor referred to as the compensatory filter unit, was added to Turkey Point as a result of the alternate source term implementation at Turkey Point to address an NRC concern regarding the potential inability of the CREVS to mitigate the consequences of a DBA if the single existing filter train becomes inoperable. The compensatory filter train is designed as a manual, safety-related, Seismic Class I backup to the emergency filtration train. The compensatory filter unit has no automatic initiation capability during emergency conditions. The licensee stated that once the compensatory filtration unit is placed in service, it is fully capable of performing its specified safety function of limiting CRE occupant radiological exposure to below the allowable limits.

By Amendment Nos. 248 and 244,[6] dated March 30, 2012, for Turkey Point 3 and 4, respectively, the NRC staff approved adoption of Technical Specifications Task Force (TSTF) Improved Standard Technical Specifications Change Traveler TSTF-448, Revision 3, "Control Room Habitability."[7] As part of Amendment Nos. 248 and 244, a new Limiting Condition for Operation (LCO) b and required action was added to TS 3/4.7.5 to address the inoperability of CREVS due to an inoperable CRE boundary, and a new administrative controls program TS 6.8.4.k, "Control Room Envelope Habitability Program," was added.

A detailed description of the control room ventilation system and CREVS is available in the Turkey Point Updated Final Safety Analysis Report (UFSAR), Section 9.9.1.

2.1.1 CREVS Operation Credited in the Radiological Consequence Analyses

The radiological consequences for the following DBAs are analyzed in Turkey Point's current licensing basis and presented in Chapter 14 of the UFSAR.

- Loss-of-Coolant Accident (LOCA)
- Fuel Handling Accident (FHA)
- Main Steam Line Break Accident (MSLB)
- Steam Generator Tube Rupture Accident (SGTR)
- Reactor Coolant Pump Shaft Seizure Accident (Locked Rotor)
- Rod Cluster Control Assembly (RCCA) Ejection Accident
- Waste Gas Decay Tank (WGDT) Rupture

For the LOCA analysis, the control room ventilation system is initially assumed to be operating in normal mode. After the start of the event, the control room isolation occurs on either a safety injection signal or a high radiation signal from either the containment or the normal control room intake. The licensee applied a 30-second delay to account for the time required to reach the signal, the time to start the diesel generator, and the time for damper actuation.

For the FHA analysis, the control room ventilation system is initially assumed to be operating in normal mode. For the FHA in containment, the control room isolation occurs on a high radiation signal from the containment monitors. The licensee applied a 30-second delay to account for

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[6] ADAMS Accession No. ML12067A176
[7] ADAMS Accession No. ML062210095

the time required to reach the signal, the time to start the diesel generator, and the time for damper actuation. For the FHA in the fuel handling building, the control room is assumed to be manually isolated by operator action 30 minutes after the initiating event.

For the MSLB analysis, the control room ventilation system is initially assumed to be operating in normal mode. After the start of the event, the control room isolation occurs on a safety injection signal. The licensee applied a 41.5-second delay for control room isolation, which is comprised of an 11.5-second delay to account for the initiation of the safety injection signal, and a 30-second delay to account for the signal processing and damper actuation.

For the SGTR analysis, the control room ventilation system is initially assumed to be operating in normal mode. After the start of the event, the control room isolation occurs on a safety injection signal that causes a plant trip at 291 seconds. The licensee applied a 30-second delay to account for the signal processing, diesel start, and damper actuation.

For the locked rotor analysis, the control room ventilation system is initially assumed to be operating in normal mode. After the start of the event, the control room isolation occurs on a high radiation signal from the normal control room intake monitors. The licensee applied a 60-second delay to account for the time to reach the setpoint, signal processing, and damper actuation.

For the RCCA ejection accident analysis, the control room ventilation system is initially assumed to be operating in normal mode. For the secondary side release case, the control room isolation occurs on a high radiation signal from the normal control room intake monitors. The licensee applied a 60-second delay to account for the time to reach the setpoint, signal processing, and damper actuation. For the containment release case, the control room isolation occurs on a high radiation signal from the containment monitors. The licensee applied a 60-second delay to account for the time to reach the setpoint, signal processing, and damper actuation.

For the WGDT rupture analysis, the control room ventilation system is assumed to be operating in normal mode. Because the intake and recirculation filters do not remove noble gas isotopes, and to maximize the radiological effect on the control room, the licensee assumed that the control room would not be isolated during the analysis period.

With the exception of the WGDT rupture, most of the above-stated accidents assume that the CREVS is in its normal mode of operation, a control room isolation signal occurs, and after a delay time, CREVS emergency mode is automatically initiated and remains in operation for the duration of the accident to ensure that the radiological dose to the control room operators remains below the regulatory limit of 5 Roentgen equivalent man (rem) total effective dose equivalent (TEDE).

The CREVS air flow distribution during normal mode of operation is 1,000 cubic feet per minute (cfm) of unfiltered fresh air makeup plus an unfiltered in-leakage of 100 cfm. After control room isolation, the air flow distribution consists of 525 cfm of filtered makeup flow from the outside, 100 cfm of unfiltered in-leakage, and 375 cfm of filtered recirculation flow.

2.2 Licensee's Proposed Changes

Turkey Point TS 3/4.7.5 LCO 3.7.5 requires, in all modes, that the CREVS shall be operable with:

a. Three air handling units,
b. Two of three condensing units,

c. Two control room recirculation fans,
d. Two recirculation dampers,
e. One filter train,
f. Two isolation dampers in the normal outside air intake duct,
g. Two isolation dampers in the emergency outside air intake duct,
h. Two isolation dampers in the kitchen area exhaust duct, and
i. Two isolation dampers in the toilet area exhaust duct.
j. Control Room Envelope.

Turkey Point TS 3/4.7.5 has ten required actions that are applicable during Modes 1 through 4 (3.7.5.a.1 through 3.7.5.a.9 and 3.7.5.b), and one required action that is applicable during Modes 5 and 6 (3.7.5.c), and requires the CREVS to be demonstrated to be operable by meeting eight SRs (4.7.5.a through 4.7.5.g).

The licensee proposes the following changes to Turkey Point TS 3/4.7.5:

1. Delete two isolation dampers in the exhaust ducts from the kitchen and toilet areas from TS 3/4.7.5 LCO (Conditions h and i above), associated Actions a.8 and a.9, and SR 4.7.5.f.

2. Delete TS 3.7.5 Action c, its applicability in Modes 5 and 6, its footnote ++, and the applicability of Modes 1 through 4 for Actions a.1 through a.9 and b, and revise the LCO applicability to Modes 1 through 6, or during movement of irradiated fuel assemblies.

3. Revise TS 3.7.5 Actions a.1 through a.4, a.6, and a.7 to suspend all movement of irradiated fuel from immediately upon determination of inoperability to immediately upon expiration of the allowed outage time (AOT) and change the AOT for Action a.2 from 7 days to 30 days.

4. Revise TS 3.7.5 Action a.5 to allow movement of irradiated fuel upon verification that mitigating actions ensure that CRE occupant radiological exposures will not exceed limits with the CREVS recirculation filter train inoperable, delete the required action to immediately initiate use of the compensatory filtration unit upon the CREVS recirculation filter train becoming inoperable, and add a required action to immediately suspend all movement of irradiated fuel if the requirement of Action 3.7.5.a.5 are not met.

5. Revise 3.7.5.b to allow movement of irradiated fuel upon verification that mitigating actions ensure CRE occupant radiological and chemical hazards will not exceed limits, and CRE occupants are protected from smoke hazards with the CRE boundary inoperable, add a required action to immediately suspend all movement of irradiated fuel if the actions are not met or if the actions apply to both units simultaneously, and delete reference to the spent fuel pool.

6. Re-letter and re-number TS 3/4.7.5 consistent with the above changes.

In NUREG-1431, Revision 4,[8] the content of the STS related to the emergency filtration system and the temperature control system (i.e., control room cooling) are addressed in three separate sections, STS 3.7.10, "Control Room Emergency Filtration System (CREFS)"; STS 3.7.11, "Control Room Emergency Air Temperature Control System (CREATCS)"; and 5.5.11, "Ventilation Filter Testing Program (VFTP)." The TSs for Turkey Point are in legacy custom TS format. The applicable aspects of STSs 3.7.10, 3.7.11, and 5.5.11 at Turkey Point are contained in a single TS, TS 3/4.7.5.

In its application dated August 3, 2016, the licensee stated that the proposed changes would achieve consistency between Turkey Point TS 3/4.7.5 and STS 3.7.10. In a letter dated January 27, 2017, responding to an NRC staff RAI, the licensee clarified that the proposed changes to TS 3/4.7.5 required actions, with the exception of Action a.2, are analogous with STS 3.7.10 Action A, for an inoperable filter train. However, the proposed change to Action a.2 is analogous to STS 3.7.11, Action A for an inoperable control room emergency temperature control system. The proposed elimination of TS 3/4.7.5 Actions a.8 and a.9 are intended to align with the current licensing basis at Turkey Point, which has eliminated the need for the control room kitchen and lavatory exhaust fans. TS 3/4.7.5 Actions a.8 and a.9 address the operability of the isolation dampers in the kitchen area exhaust and toilet area exhaust ductwork. TS 3/4.7.5 LCOs 3.7.5.h and 3.7.5.i require that two isolation dampers in the kitchen exhaust ductwork, and two isolation dampers in the toilet area exhaust duct shall be operable. TS 3/4.7.5 SR 4.7.5.f requires periodic verification of the kitchen and toilet area exhaust dampers. Because the kitchen and toilet exhaust paths are permanently isolated, the LCOs, required actions, and the SR related to those dampers are rendered unnecessary, and the licensee is proposing to delete them from TS 3/4.7.5.

2.3 Regulatory Review

The NRC staff reviewed the licensee's application to determine whether (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 the activities proposed 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 the health and safety of the public. The NRC staff considered the following regulatory requirements, guidance, and licensing and design-basis information during its review of the proposed changes.

Paragraph 50.36(a)(1) of Title 10 of the *Code of Federal Regulations* (10 CFR) states that each applicant for an operating license shall include in the application proposed TSs in accordance with the requirements of 10 CFR 50.36. Paragraph 50.36(c) of 10 CFR requires that the TSs include items in the following categories related to station operation: (1) safety limits, limiting safety system settings, and limiting control settings; (2) LCOs; (3) SRs; (4) design features; and (5) administrative controls. Paragraph 50.36(c)(2) states that LCOs are the lowest functional capability or performance levels of equipment required for safe operation of the facility, and when an LCO is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the TSs until the condition can be met. Paragraph 50.36(c)(3) states that 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 limiting conditions for operation will be met.

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[8] ADAMS Accession Nos. ML12100A222 (Volume 1) and ML12100A228 (Volume 2)

Section 50.67 of 10 CFR, "Accident source term," paragraph (b)(2), states:

> The NRC may issue the amendment only if the applicant's analysis demonstrates with reasonable assurance that:
>
> (i) An individual located at any point on the boundary of the exclusion area for any 2-hour period following the onset of the postulated fission product release, would not receive a radiation dose in excess of 0.25 Sv (25 rem)[9] total effective dose equivalent (TEDE).
>
> (ii) An individual located at any point on the outer boundary of the low population zone, who is exposed to the radioactive cloud resulting from the postulated fission product release (during the entire period of its passage), would not receive a radiation dose in excess of 0.25 Sv (25 rem) total effective dose equivalent (TEDE).
>
> (iii) Adequate radiation protection is provided to permit access to and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 0.05 Sv (5 rem) total effective dose equivalent (TEDE) for the duration of the accident.

Turkey Point was licensed prior to the 1971 publication of Appendix A, "General Design Criteria [GDC] for Nuclear Power Plants," to 10 CFR Part 50. As such, Turkey Point is not licensed to the current GDC of 10 CFR Part 50, Appendix A. Section 1.3 of the Turkey Point UFSAR provides a summary of the 1967 GDC proposed by the U.S. Atomic Energy Commission, as amended by the Atomic Industrial Forum (circa October 2, 1967). The licensee indicates throughout the Turkey Point UFSAR that it is committed to continued compliance with the proposed GDC to which it was licensed in 1967, with the exception of the control room. The licensee committed to 10 CFR 50, Appendix A, "Criterion 19 - Control Room," as part of the change to the alternative source term methodology for dose analysis as approved in Amendment Nos. 244 (Unit No. 3) and 240 (Unit No. 4), dated June 23, 2011 (ADAMS Accession No. ML110800666).

GDC 19, "Control room," states, in part:

> A control room shall be provided from which actions can be taken to operate the nuclear power unit safely under normal conditions and to maintain it in a safe condition under accident conditions, including loss-of-coolant accidents. Adequate radiation protection shall be provided to permit access and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 5 rem whole body, or its equivalent to any part of the body, for the duration of the accident. Equipment at appropriate locations outside the control room shall be provided (1) with a design capability for prompt hot shutdown of the reactor, including necessary instrumentation and controls to maintain the unit in a safe condition during hot shutdown, and (2) with a potential

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[9] The use of 0.25 Sv (25 rem) TEDE is not intended to imply that this value constitutes an acceptable limit for emergency doses to the public under accident conditions. Rather, this 0.25 Sv (25 rem) TEDE value has been stated in this section as a reference value, which can be used in the evaluation of proposed design basis changes with respect to potential reactor accidents of exceedingly low probability of occurrence and low risk of public exposure to radiation.

capability for subsequent cold shutdown of the reactor through the use of suitable procedures.

NUREG-0800, Revision 0, "Standard Review Plan [SRP] for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition," Section 15.0.1, "Radiological Consequence Analyses Using Alternative Source Terms," July 2000, provides guidance to the NRC staff for the review of alternative source term amendment requests. SRP 15.0.1 states that the NRC reviewer should evaluate the proposed change against the guidance in Regulatory Guide (RG) 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," July 2000.

The guidance in NUREG-1431, Revision 4, Sections STS 3.7.10; STS 3.7.11; and STS 5.5.11 are used, and in particular, Section 2.2 above provides discussion of NUREG-1431.

RG 1.183 provides the methodology for analyzing the radiological consequences of several DBAs to show compliance with 10 CFR 50.67. RG 1.183 provides guidance to licensees on acceptable application of alternate source term (also known as the accident source term) submittals, including acceptable radiological analysis assumptions for use in conjunction with the accepted alternate source term.

Amendment Nos. 244 (Unit No. 3) and 240 (Unit No. 4) used an alternate source term methodology for analyzing the radiological consequences of eight DBAs using RG 1.183. The NRC staff also considered relevant information in Chapter 14 of the Turkey Point UFSAR, which describes the DBA and evaluation of the radiological consequences.

The regulatory requirements applicable to the evaluation of radiological consequences from which the NRC staff based its acceptance are the reference values in 10 CFR 50.67, the accident-specific guideline values in Regulatory Position 4.4 of RG 1.183, and Table 1 of the SRP, Section 15.0.1.

3.0 TECHNICAL EVALUATION

The NRC staff evaluated the licensee's application to determine whether the proposed changes are consistent with the regulations, guidance, and plant-specific design and licensing basis information discussed in Section 2.3 of this safety evaluation. The NRC staff also took into consideration the differences between the STS and the Turkey Point TSs, such as a single control room for a single unit in STS and a common control room for a dual-unit site such as Turkey Point.

The NRC staff reviewed the acceptability of the proposed changes to the TSs by evaluating whether, among other things, the changes, including associated remedial actions, provide reasonable assurance of public health and safety. The NRC staff also verified that the proposed changes to the TSs 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.

The review phase of the license amendment request (LAR) involved significant interactions between the NRC staff and the licensee as documented in the staff RAIs and the licensee responses to the RAIs. As a result, the changes proposed in the initial submittal of the LAR by licensee letter dated August 3, 2016, were revised. The final proposed changes to the TSs are contained in letters from the licensee dated January 27, 2017, and May 24, 2017.

3.1 Evaluation of Proposed Changes

3.1.1 Deletion of Two Isolation Dampers in the Exhaust Ducts from the Kitchen and Toilet Areas from TS 3/4.7.5 LCO, Actions a.8 and a.9, and SR 4.7.5.f

The licensee proposed to delete the requirement to have two operable isolation dampers in each exhaust duct from the kitchen area and the toilet area from TS 3/4.7.5 LCO (Conditions h and i, respectively), their associated Actions a.8 and a.9, and their associated SR 4.7.5.f. TS 3/4.7.5 LCO requires two isolation dampers in both the kitchen area and the toilet area exhaust ducts to be operable. If one isolation damper is inoperable in either of these ducts, TS Action a.8 for the kitchen area and Action a.9 for the toilet area require the licensee to perform one of the following required actions:

- Immediately suspend all movement of irradiated fuel, and within 7 days, restore the inoperable damper to operable status, or
- Isolate the flow path, or
- Be in at least hot standby within the next 6 hours and in cold shutdown within the following 30 hours.

If the licensee chooses to isolate the flow path, then once the flow path isolation is complete, the TS action allows indefinite operation, and its associated footnote allows the licensee to resume movement of irradiated fuel after placing the CREVS in recirculation mode. However, if at any time TS Actions a.8 or a.9 apply to both units simultaneously, then the licensee is required to be in hot standby within 12 hours and in cold shutdown within the following 30 hours on both units. SR 4.7.5.f requires the licensee to verify operability of the kitchen and toilet area exhaust dampers in accordance with the surveillance frequency control program.

In a supplemental letter dated October 4, 2016, the licensee provided additional information. The exhaust pathways run from the lavatory and kitchen areas directly to the CRE boundary wall and do not connect to any other pathways. Each of the pathways consists of a motor-operated damper, a fire damper, and a gravity backdraft damper. The exhaust pathways were sealed at the control room building wall with ½-inch thick steel plates, which comprise the CRE boundary. The fire dampers were closed and the fusible links were removed. The lavatory exhaust fan was disconnected and physically removed from the CRE. The kitchen exhaust fan was disabled in place and electrically disconnected. The motor-operated dampers were closed but remained capable of being operated at the discretion of the operators. They are currently under administrative control using the equipment clearing process. The kitchen and lavatory areas are currently served by portable air purifier units. In addition, the licensee stated that the leak-tightness of the solid plates is verified during periodic air in-leakage (e.g., tracer gas) testing performed in accordance with SR 4.7.5.g.

The licensee stated that since 2012, the CREVS has been in TS Actions 3.7.5.a.8 and 3.7.5.a.9 for inoperable kitchen and lavatory area exhaust isolation dampers. Based on the information provided, the NRC staff concludes that the exhaust pathways are secured with no adverse impact on the CRE boundary. The NRC staff finds that the proposed removal of the isolation dampers from the TS (Conditions h and i, Actions a.8 and a.9, and SR 4.7.5.f) is acceptable, given that the licensee has implemented the modification and has been operating Turkey Point under the modified conditions for some time.

The NRC staff also reviewed the radiological impact of installing permanent solid plates in the kitchen and toilet area ventilation exhaust ducts on previously analyzed DBAs' radiological

consequences. The radiological consequences for the WGDT rupture do not assume CREVS emergency mode operation; CREVS remains in normal operation. Therefore, installation of permanent solid plates in the kitchen and toilet area ventilation exhaust ducts does not impact the radiological consequences of the WGDT rupture.

The radiological consequences for the other accidents discussed above in Section 2.1.1 assume that the normal mode of CREVS is isolated and that the emergency mode is initiated. The installation of permanent solid plates in the kitchen and toilet area ventilation exhaust ducts does not prevent the isolation of normal mode or the initiation of emergency mode of the CREVS. In addition, the kitchen and toilet area ventilation exhaust ducts are permanently isolated, which is consistent with the required position assumed in the radiological consequence analyses for CREVS operation in emergency mode. Furthermore, because there are no proposed changes to the control room habitability program and SR 4.7.5.g in Turkey Point TSs, the CREVS and its in-leakage will continue to be tested by these TS requirements. The TS requirements ensure that CREVS will continue to meet the in-leakage assumed in the DBA radiological consequences, and if CREVS fails the TS testing requirements due to in-leakage being outside that assumed in the DBA radiological consequences, Turkey Point TSs require that both Turkey Point units be shutdown.

Based on the above, the NRC staff finds this proposed change to be consistent with the DBAs' radiological consequences and, therefore, acceptable from a radiological dose perspective.

With the deletion of SR 4.7.5.f, the licensee proposes to redesignate SR 4.7.5.g as SR 4.7.5.f, which the NRC staff finds to be administrative in nature and acceptable.

The licensee also proposes to redesignate the footnote *** referenced in several SRs to **. The subject footnote clarifies which SRs apply to the compensatory filter unit. Because the footnote currently designated as ** is being removed, the NRC staff finds the proposed change acceptable.

3.1.2 Modification of LCO 3.7.5 Condition b

LCO 3.7.5.b currently requires that the CREVS be operable with "Two of three condensing units." In the current TS, the associated Action a.2 for the condensing units begins the Action statement by stating, "With two condensing units inoperable [...]." In its January 27, 2017, response to an NRC staff RAI, the licensee acknowledged the need to clarify the nexus between LCO 3.7.5.b and Action a.2, given that the LCO requires two of the three condensing units to be operable, whereas Action a.2 allows two inoperable condensing units. The licensee stated that the current LCO 3.7.5.b resulted from discussions with the NRC staff in May 2011 (ADAMS Accession No. ML11154A035) during the alternate source term amendment request, but with the newly proposed Action a.2, clarification in LCO 3.7.5.b that three condensing units are available is no longer necessary. In its letter dated January 17, 2017, the licensee proposed to change LCO 3.7.5.b to "Two condensing units" with an associated change to begin the Action a.2 statement, "With only one OPERABLE condensing unit --," in lieu of the current statement, "With two condensing units inoperable ---."

The NRC staff finds that the proposed changes to LCO 3.7.5.b and Action a.2 enhance clarity and greatly reduce the potential for misunderstanding or misapplication of the TS. As such, the NRC staff finds the proposed changes acceptable.

3.1.3 Change to TS Applicability and Deletion of TS 3/4.7.5 Action c

Turkey Point TS 3/4.7.5 currently states, "ALL MODES," with the actions subdivided into two groups, one for Modes 1, 2, 3, and 4 addressed by Actions a.1 through a.9 and Action b, and one for Modes 5 and 6 addressed by Action c. With the exception of the CRE boundary (Action b) and the CREVS filter train (Action a.5), which require action within 24 hours, Actions a.1 through a.9 allow 7 days to restore the component to operable status before requiring the units to be in hot standby and then cold shutdown. Whereas Action c applies when the units are shutdown and requires immediate suspension of all operations involving core alterations, movement of irradiated fuel in the spent fuel pool or positive reactivity changes. In addition, Action c has a footnote ++ that allows core alterations, movement of irradiated fuel in the spent fuel pool, and positive reactivity changes to resume if Actions a.4, a.6, a.7, a.8, or a.9 are taken such that they permit indefinite operation and the system is placed in recirculation mode.

The licensee proposes to delete Action c, including its footnote ++ and its applicability in Modes 5 and 6, and revise the current LCO applicability from all modes to Modes 1 through 6 and during movement of irradiated fuel assemblies, and proposes to apply the new applicability to Actions a.1 through a.7 (Actions a.8 and a.9 were deleted in the section above) and b. This change would make Actions a.1 through a.7 and b apply in all modes and during movement of irradiated fuel assemblies and would delete the required actions to suspend operations involving core alterations and positive reactivity changes.

When CREVS is inoperable in Modes 5 and 6, TS 3/4.7.5 Action c does not allow operations involving core alterations; this action ensures that an FHA cannot occur when the CREVS is not capable of performing its safety function, which maintains control room operator radiological dose below the regulatory limit. The TS footnote ++ allows core alterations to continue if the CREVS system is placed into emergency mode after action is taken to ensure the safety function is provided for the inoperable component. These actions ensure that the CREVS system is operating in emergency mode so that if an FHA were to occur, the radiological dose to the control room operators remains below the regulatory limit. The proposed change deletes these actions.

The regulation in 10 CFR 50.36 requires the TSs to be derived from the analyses and evaluation included in the safety analysis report, and amendments thereto, submitted pursuant to 10 CFR 50.34. Therefore, the NRC staff reviewed this change to determine whether it is consistent with Turkey Point's previously analyzed DBAs' radiological consequences, and specifically, how core alterations are accounted for in the FHA. The radiological consequences for FHA assume that a fuel assembly is dropped and that the failure of all fuel rods in one fuel assembly occurs. In order for this change to be consistent with the FHA radiological consequence analysis, it cannot create a larger source term than that currently analyzed and reflected in the Turkey Point UFSAR. The licensee stated in its response dated January 27, 2017, that the dose consequences from dropping any item allowed to be moved during core alterations, including neutron sources, control rods, new fuel assembly, etc., are bounded by the FHA analysis as discussed in Section 14.2.1 of the Turkey Point UFSAR.

The NRC staff reviewed the radiological impact of deleting Action c and revising the current LCO applicability to include Modes 1 through 6 and during movement of irradiated fuel assemblies on the radiological consequences of previously analyzed DBAs. This proposed change does not impact: (1) the system's capability to automatically start emergency mode of operation under accident conditions, (2) the filtration efficiencies, or (3) the occurrence of a single failure. In addition, the requirement for CREVS to be operable in Modes 1 through 6

remains unchanged, and a new requirement is added for CREVS to be operable during movement of irradiated fuel assemblies. Furthermore, core alterations will not create a larger source term than that currently analyzed by the FHA analysis. Therefore, the proposed changes would be consistent with the radiological consequences of previously analyzed DBAs and, as a result, acceptable from a radiological dose perspective.

Based on its review, the NRC staff finds that the proposed changes in TS applicability to compile all of the actions into a single grouping, with any needed deviations addressed within the actions, along with the deletion of Action c, is acceptable.

3.1.4 Revision of TS 3/4.7.5 Actions a.1 through a.7

The licensee proposes to relocate the requirement to immediately suspend irradiated fuel movement in the event of one inoperable air handling unit, two inoperable condensing units, one inoperable recirculation fan, one inoperable recirculation damper, one inoperable normal outside air intake damper, or one inoperable emergency outside air intake damper from immediately upon the finding of the inoperable equipment, to upon expiration of the 7-day AOT. In addition, the licensee proposes to extend the AOT for TS 3/4.7.5 Action a.2 from 7 days to 30 days and delete the footnote ** and the reference to it in TS 3/4.7.5 Actions a.4, a.6, and a.7. Once TS 3/4.7.5 Actions a.4, a.6, and a.7 are entered, footnote ** allows resuming movement of irradiated fuel if the respective damper is placed in its safety position such that it permits indefinite operation and the system is placed in recirculation mode.

Clarification of Shutdown Times in Actions a.1 through a.7 and the Evaluation of the Radiological Consequences from the Relocation of Requirements to Suspend Irradiated Fuel Movement in Actions a.1, a.3, a.4, a.6, and a.7

In Actions a.1 through a.7, the licensee's initial submittal proposed to move the requirement to immediately suspend movement of irradiated fuel from time of entry into the actions to the expiration of the AOT. If the AOT is not met, the actions further require the affected unit to "be in at least hot standby within the next 6 hours and in cold shutdown within the following 30 hours." In addition, Actions a.1 through a.7 contained a concluding sentence that states, "If this action applies to both units simultaneously, be in HOT STANDBY within 12 hours and in COLD SHUTDOWN within the following 30 hours." For ease of understanding, the NRC staff review of the proposed common change, as applicable to Action a.1, is detailed below.

Current Action a.1 states:

> With one air handling unit inoperable, immediately suspend all movement of irradiated fuel and, within 7 days, restore the inoperable air handling unit to OPERABLE status or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. If this ACTION applies to both units simultaneously, be in HOT STANDBY within 12 hours and in COLD SHUTDOWN within the following 30 hours.

Proposed change to Action a.1 states (licensee letter dated August 3, 2016):

> With one air handling unit inoperable, within 7 days, restore the inoperable air handling unit to OPERABLE status or, immediately suspend all movement of irradiated fuel and be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. If this ACTION applies to both

> units simultaneously, be in HOT STANDBY within 12 hours and in COLD SHUTDOWN within the following 30 hours.

The NRC staff had three RAIs concerning the proposed change. In its first request, the NRC staff stated that because Turkey Point is a dual-unit site, the inclusion of the last sentence in the proposed action statement a.1 above, if applied as it relates to STS, would require both units to be in hot standby within 12 hours and cold shutdown within the following 30 hours anytime Turkey Point met the conditions to enter Actions a.1 through a.7 and b. The NRC staff requested the licensee to revise the action statements to be consistent with STS 3.7.10 to avoid any misinterpretations of these actions. In response to this RAI, provided by letter dated January 27, 2017, the licensee concurred with the NRC staff recommendation and proposed to revise the action to clarify that a dual-unit shutdown is not required until the expiration of the AOT whenever a required action applies to both units.

In another RAI, the NRC staff stated that in the proposed Actions a.1 through a.7 and b, if the AOT is not met, entry into Mode 3 (hot standby) is required within 12 hours if actions are applied to both units simultaneously. The NRC staff further stated that the proposed change is inconsistent with STS 3.7.10, Action C, which requires entry into Mode 3 within 6 hours and entry into Mode 5 (cold shutdown) within 36 hours. The licensee was requested to justify the acceptability of the deviations from STS 3.7.10. In response to this RAI, provided by letter dated January 27, 2017, the licensee concurred that the proposed action is inconsistent with STS 3.7.10 actions in the context of allowing 12 hours for both units to reach hot standby in the event that one of the required actions applies to both units simultaneously; however, the requirement to be in hot standby within 6 hours and in cold shutdown within 36 hours is consistent with STS 3.7.10, Actions C and D for single-unit applicability. The licensee stated that for dual-unit applicability, STS 3.7.10 has no shutdown action requirement that addresses the uniqueness of Turkey Point's shared control room design. In addition, the licensee referred to a May 9, 1990, letter from the NRC staff to the licensee (ADAMS Accession No. ML013370532), in which the NRC staff acknowledged that 6 hours is required for one unit to reach hot standby from full power in an orderly process, and that 12 hours is, therefore, needed for two units to safely reach hot standby. The May 9, 1990, letter notes that added orderliness of control room activities and the reduced transient demand on plant equipment is safer by shutting down both units sequentially rather than simultaneously.

In another RAI, the NRC staff stated that because Turkey Point 3 and 4 have a common control room, the presumption would be that all of these actions will apply to both units simultaneously. The NRC staff requested additional information on the need to break down the actions into single-unit and dual-unit applicability. In response to this RAI, the licensee acknowledged that scenarios when actions would not apply to both units would be infrequent. The licensee stated that an example when dual-unit applicability would not apply is when a unit's core is fully off-loaded and there is no ongoing movement of irradiated fuel. In this short duration scenario, Actions a.1 through a.7 would not apply to the off-loaded unit until irradiated fuel movement is resumed.

The licensee proposed to change Actions a.1 through a.7 to incorporate the clarification provided in response to the NRC staff's RAIs. By letter dated January 27, 2017, the concluding statement of Action a.1 (and a.2 through a.7) was revised as follows:

> With one air handling unit inoperable, within 7 days, restore the inoperable air handling unit to OPERABLE status or, immediately suspend all movement of irradiated fuel and be in at least HOT STANDBY within the next 6 hours for one

> Unit, or 12 hours for both Units, and in COLD SHUTDOWN within the following 30 hours.

The NRC staff reviewed the licensee's response to the aforementioned RAIs and concluded that the proposed changes to the shutdown time following the expiration of the AOT are consistent with STS 3.7.10, given the differences between the Turkey Point TSs with the STS (i.e., single-unit versus dual-unit applicability of the control room). Further, because these changes are administrative in nature, they do not impact the previously analyzed DBAs' radiological consequences and, therefore, are acceptable from a radiological dose perspective. Relocating the requirement to immediately suspend irradiated fuel movement upon expiration of the 7-day AOT in TS 3/4.7.5 Actions a.1, a.3, a.4, a.6, and a.7 does not impact the radiological consequences of previously analyzed DBAs because there are redundant components that remain operable and capable of fulfilling the specified safety function in the event of a DBA.

Turkey Point has three air handling units in the CREVS; each one is capable of providing motive force in CREVS normal mode of operation. In the case of an inoperable air handling unit, the two remaining units are capable of fulfilling the specified safety function. CREVS has two recirculation fans in parallel, two recirculation dampers in parallel, two normal outside air intake isolation dampers in series, and two emergency outside air intake isolation dampers in parallel. Only one of each is needed to establish the CREVS emergency mode of operation. In the case of one of these components being inoperable, there is another that is capable of fulfilling its specified safety function. As such, the CREVS operation is consistent with that assumed in the radiological consequence analyses and, therefore, the proposed change is acceptable from a radiological dose perspective.

Based on the above, the NRC staff finds that the proposed changes to Actions a.1, a.3, a.4, a.6, and a.7 to move the requirement to suspend irradiated fuel movement until expiration of the 7-day AOT are acceptable.

Action a.1

Current Action a.1 states:

> With one air handling unit inoperable, immediately suspend all movement of irradiated fuel and, within 7 days, restore the inoperable air handling unit to OPERABLE status or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. If this ACTION applies to both units simultaneously, be in HOT STANDBY within 12 hours and in COLD SHUTDOWN within the following 30 hours.

The licensee proposed to change Action a.1 as follows:

> With one air handling inoperable, within 7 days, restore the inoperable air handling unit to OPERABLE status or, immediately suspend all movement of irradiated fuel and be in at least HOT STANDBY within the next 6 hours for one Unit, or 12 hours for both Units, and in COLD SHUTDOWN within the following 30 hours.

In its RAI response letter dated January 27, 2017, the licensee clarified that the proposed changes to TS 3/4.7.5 actions, with the exception of Action a.2, are analogous with STS 3.7.10 Action A (i.e., one CREFS train inoperable for reasons other than Condition B), with an AOT of

7 days. The proposed change to move the requirement to immediately suspend movement of irradiated fuel from time of entry into action to the expiration of the AOT is in alignment with that of STS 3.7.10, Action D, and is, therefore, acceptable. The clarification of the allowed times to be in hot standby for single-unit and dual-unit applicability is acceptable, as addressed in Section 3.1.4 above.

Based on the above, the NRC staff finds the proposed changes to Action a.1 acceptable.

Action a.2

Current Action a.2 states:

> With two condensing units inoperable, immediately suspend all movement of irradiated fuel and, within 7 days, restore at least one of the inoperable condensing units to OPERABLE status or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. If this ACTION applies to both units simultaneously, be in HOT STANDBY within 12 hours and in COLD SHUTDOWN within the following 30 hours.

In its August 3, 2016, request, the licensee proposed to change Action a.2 to state the following:

> With two condensing units inoperable, within 30 days, restore at least one of the inoperable condensing units to OPERABLE status or, immediately suspend all movement of irradiated fuel and be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. If this ACTION applies to both units simultaneously, be in HOT STANDBY within 12 hours and in COLD SHUTDOWN within the following 30 hours.

Turkey Point has three condensing units in the CREVS. Each one is fully capable of performing its specified safety function, which is to maintain the control room temperature and humidity within limits. TS 3/4.7.5 requires the CREVS to have two of three condensing units operable. TS 3/4.7.5 Action a.2 is entered when two condensing units are inoperable. It requires immediately suspending all movement of irradiated fuel and, within 7 days, restoring at least one of the inoperable condensing units to operable status or to be in at least hot standby within the next 6 hours (12 hours for both units) and in cold shutdown within the following 30 hours.

In the LAR, the licensee stated:

> ...relocating the requirement to immediately suspend irradiated fuel movement from the determination of inoperability to expiration of the AOT and extending the AOT for two inoperable condensing units from seven to thirty days maintains a commensurate level of safety when judged against the current regulatory standards established in the Westinghouse STS [Standard Technical Specifications] for an inoperable filter train and is thereby reasonable.

Currently, TS 3/4.7.5 Action a.2 is entered when the required two condensing units becomes inoperable. TS 3/4.7.5 Action a.2 allows a loss of safety function for 7 days and, therefore, is not equivalent to STS 3.7.11 Action A. It is equivalent to STS 3.7.11 Action E, which is entered when two CREATCS trains are inoperable while in Modes 1 through 4, and it requires immediately entering LCO 3.0.3. Therefore, the NRC staff requested that the licensee explain how a loss of CREVS function for 30 days, while continuing to move irradiated fuel, is consistent

with Turkey Point's current design-basis radiological dose consequence analyses and provide the technical basis for allowing the loss of CREVS function for 30 days, while continuing to move irradiated fuel. Alternatively, the licensee could propose a TS change that is consistent with both STS 3.7.11 and Turkey Point's current design-basis radiological dose consequence analyses. In a letter dated January 27, 2017, the licensee stated:

> ...FPL acknowledges that the proposed wording for TS 3/4.7.5 ACTION a.2 can be clarified given that LCO 3.7.5 requires two of three OPERABLE condensing units whereas ACTION a.2 allows two inoperable condensing units. FPL proposes to reword ACTION a.2 to state that entry is required when only one condensing unit is OPERABLE. Revising ACTION a.2 to apply when only one condensing unit is OPERABLE, rather than when two are inoperable, ensures that the Control Room temperature will be maintained within limits in the unlikely event of a design basis accident during the 30-day completion time and hence remains consistent with STS 3.7.11, ACTION A, for an inoperable CREATCS train.
>
> FPL additionally proposes to modify LCO 3.7.5.b to specify that two condensing units, rather than two of the three condensing units, are required to be OPERABLE.

In its response, the licensee proposed a TS change that is consistent with both STS 3.7.11 and Turkey Point's current design-basis radiological dose consequence analyses. The licensee proposed to change Action a.2 as follows:

> With only one OPERABLE condensing unit, within 30 days, restore at least one of the inoperable condensing units to OPERABLE status or, immediately suspend all movement of irradiated fuel and be in at least HOT STANDBY within the next 6 hours for one Unit, or 12 hours for both Units, and in COLD SHUTDOWN within the following 30 hours.

By proposing a change to the wording of TS 3/4.7.5 Action a.2 such that it is entered when only one condensing unit remains operable, the licensee clarifies that Action a.2 does not allow for a loss of safety function for the AOT. As stated above, Turkey Point has three condensing units in the CREVS; each one is capable of maintaining control room temperature and humidity within limits during CREVS operation. Therefore, the NRC staff concludes that the Turkey Point proposed change to increase the AOT from the current 7 days to 30 days is consistent with STS 3.7.11 Action A. The proposed change to move the requirement to immediately suspend movement of irradiated fuel from time of entry into the action to the expiration of the AOT is consistent with STS 3.7.11, Action C.2. Further, relocating the requirement to immediately suspend irradiated fuel movement upon expiration of the AOT in TS 3/4.7.5 Action a.2 does not impact the previously analyzed DBAs' radiological consequences, because there is another redundant component that remains operable and is capable of fulfilling its safety function in the event of a DBA. Extending the AOT from 7 days to 30 days does not impact the previously analyzed DBAs' radiological consequences. As long as the redundant condensing unit remains operable, it will be capable of fulfilling its safety function for the duration of the AOT in the event of a DBA. If the redundant condensing unit becomes inoperable, TSs require placing both units in hot standby within the next 12 hours and cold shutdown within the following 30 hours. TS 3/4.7.5 Action a.2 ensures that CREVS operation is consistent with that assumed in the radiological consequence analyses and, therefore, is acceptable from a radiological dose

perspective. The clarification of the allowed times to be in hot standby for single-unit and dual-unit applicability is acceptable, as addressed in Section 3.1.4 above.

For the reasons discussed above, the NRC staff finds the proposed changes to Action a.2 acceptable. The NRC staff's evaluation of the licensee's proposed changes to LCO 3.7.5.b are discussed in Section 3.1.2 above.

Action a.3

Current Action a.3 states:

> With one recirculation fan inoperable, immediately suspend all movement of irradiated fuel and, within 7 days, restore the inoperable fan to OPERABLE status or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. If this ACTION applies to both units simultaneously, be in HOT STANDBY within 12 hours and in COLD SHUTDOWN within the following 30 hours.

The licensee proposed to change Action a.3 as follows:

> With one recirculation fan inoperable, within 7 days, restore the inoperable fan to OPERABLE status or, immediately suspend all movement of irradiated fuel and be in at least HOT STANDBY within the next 6 hours for one Unit, or 12 hours for both Units, and in COLD SHUTDOWN within the following 30 hours.

In letter dated January 27, 2017, the licensee clarified that the proposed changes to TS 3/4.7.5 Action a.3 are analogous with STS 3.7.10 Action A (i.e., one CREFS train inoperable) with an AOT of 7 days. The proposed change to move the requirement to immediately suspend movement of irradiated fuel from time of entry into action to the expiration of the AOT is consistent with STS 3.7.10, Actions A and D. The clarification of the allowed times to be in hot standby for single-unit and dual-unit applicability is acceptable, as addressed in Section 3.1.4 above.

Based on the above, the NRC staff finds the proposed changes to Action a.3 acceptable.

Action a.4

Current Action a.4 states:

> With one recirculation damper inoperable, immediately suspend all movement of irradiated fuel and, within 7 days, restore the inoperable damper to OPERABLE status or, place and maintain at least one of the recirculation dampers in the open position and place the system in recirculation mode** or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. If this ACTION applies to both units simultaneously, be in HOT STANDBY within 12 hours and in COLD SHUTDOWN within the following 30 hours.

The licensee proposed to change Action a.4 as follows:

> With one recirculation damper inoperable, within 7 days, restore the inoperable damper to OPERABLE status or, place and maintain at least one of the recirculation dampers in the open position and place the system in recirculation mode or immediately suspend all movement of irradiated fuel and be in at least HOT STANDBY within the next 6 hours for one Unit, or 12 hours for both Units, and in COLD SHUTDOWN within the following 30 hours.

In letter dated January 27, 2017, the licensee clarified that the proposed changes to TS 3/4.7.5 Action a.4 are analogous with STS 3.7.10 Action A (i.e., one CREFS train inoperable) with an AOT of 7 days. The proposed change to move the requirement to immediately suspend movement of irradiated fuel from time of entry into action to the expiration of the AOT is consistent with STS 3.7.10, Actions A and D, and is, therefore, acceptable.

The licensee also proposed the deletion of the footnote **. The footnote states that "if action is taken such that indefinite operation is permitted and the system is placed in recirculation mode, then movement of irradiated fuel may resume." The licensee stated that the embedded statement in the current Action a.4 "place and maintain at least one of the recirculation dampers in the open position and place the system in recirculation mode," which is retained in the proposed change, already allows Turkey Point to operate indefinitely in this mode. The NRC staff agrees and finds the deletion of footnote ** reasonable. Further, as discussed earlier in Section 3.1.4, the NRC staff finds that the deletion of the footnote does not impact the radiological consequences of previously analyzed DBAs and, therefore, is acceptable from a radiological dose perspective.

The clarification of the allowed times to be in hot standby for single-unit and dual-unit applicability is acceptable, as addressed in Section 3.1.4 above.

Based on the above, the NRC staff finds the proposed changes to Action a.4 acceptable.

Action a.5

Current Action a.5 states:

> With the filter train inoperable, e.g., an inoperable filter, and/or two inoperable recirculation fans, and/or two inoperable recirculation dampers, immediately suspend all movement of irradiated fuel, and, immediately, initiate action to implement mitigating actions, [e.g., use of the compensatory filtration unit is required to be immediately initiated], and, within 24 hours, verify mitigating actions ensure CRE occupant radiological exposures will not exceed limits and, within 7 days, restore the filter train to OPERABLE status.
>
> With the above requirements not met, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. If this ACTION applies to both units simultaneously, be in HOT STANDBY within 12 hours and in COLD SHUTDOWN within the following 30 hours.

In its August 3, 2016, LAR, the licensee proposed to revise Action a.5 to state:

> With the filter train inoperable, e.g., an inoperable filter, and/or two inoperable recirculation fans, and/or two inoperable recirculation dampers, immediately suspend all movement of irradiated fuel and immediately initiate action to implement mitigating actions [e.g., use of the compensatory filtration unit]. Within 24 hours, verify mitigating actions ensure CRE occupant radiological exposure will not exceed limits, following which movement of irradiated fuel may resume and, within 7 days, restore the filter train to OPERABLE status.
>
> With the requirements not met, immediately suspend all movement of irradiated fuel and be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. If this ACTION applies to both units simultaneously, be in HOT STANDBY within 12 hours and in COLD SHUTDOWN within the following 30 hours.

In the case of an inoperable CREVS filter train, the licensee states that it would like to make the required action to immediately initiate use of the compensatory filtration unit in TS 3/4.7.5 Action a.5 a recommendation instead of a requirement so that it may use alternative mitigating actions. However, the alternative mitigating actions are not explicitly stated in the LAR. The LAR states that alternative mitigating actions may be necessary in the event the compensatory filtration unit cannot be manually aligned within the allowed 24 hours before the unit(s) must commence shut down and that station procedures would specify an alternative process or engineering controls that manage the radioactivity in the air. In addition, the licensee stated that consistent with 10 CFR 20.1701 and 10 CFR 20.1702, these alternative controls would not include the use of potassium-iodide pills and self-contained breathing apparatus respirators except as a last resort, in accordance with emergency operating procedures. Furthermore, the licensee stated that the compensatory filtration unit is a fully-qualified backup to the emergency filtration unit and will remain the preferred mitigating action in the event of an inoperable CREVS filter train.

The NRC staff does not consider Turkey Point's compensatory filtration unit to be fully qualified unless it can, in conjunction with the CREVS, meet all the automatic initiating requirements assumed in the Turkey Point radiological consequences analyses. Therefore, the NRC staff requested the licensee to explain whether CREVS emergency mode can be automatically initiated with the compensatory filtration unit, allowing it to meet all the requirements assumed in the radiological consequences analyses. The NRC staff also requested that the licensee provide the alternative mitigating actions and explain how they meet all the requirements assumed in the Turkey Point radiological consequence analyses such that they support a 7-day AOT. In letter dated January 27, 2017, the licensee stated:

> The compensatory filtration unit does not have automatic-start capability and hence is not fully qualified with regard to the design basis requirement to be capable of automatically starting under accident conditions to initiate emergency control room pressurization and filtration assuming the occurrence of a single failure. The compensatory filtration unit is designed as a manual, safety-related, Seismic Class I backup to the installed emergency filtration train. Once placed in service, the compensatory filtration unit is fully capable of performing its specified safety function of limiting CRE occupant radiological exposures to below the allowable limits. It was in this context that FPL inadvertently referred to the compensatory filtration unit as fully qualified... In this regard, the compensatory

> unit is a fully capable backup to the normal emergency filtration system train, once in service, because the compensatory filtration unit meets the radiological design requirements assumed in the radiological consequence analysis for the applicable design basis accidents.
>
> However, during a RAI clarification teleconference with FPL and NRC staff on December 1, 2016, the staff provided further explanation of their bases for requesting the nature of the proposed alternative mitigating actions. Based upon this discussion, FPL hereby withdraws its request for the allowance of alternative mitigating actions and agrees that the requirement to immediately initiate action to place the compensatory filtration unit in service in the event of an inoperable CREVS filter train is appropriate. Should it be determined that the compensatory filtration unit is incapable of operating within 24 hours, the Units would initiate shutdowns in accordance with TS 3/4.7.5 ACTION a.5. Accordingly, FPL has further modified the proposed ACTION a.5 to remove any uncertainty regarding the requirement to place the compensatory filtration unit in service in the event of an inoperable CREVS filter train...

The NRC staff has reviewed the licensee's response and acknowledges the licensee's decision to withdraw its request for the allowance of alternative mitigating actions in TS 3/4.7.5 Action a.5. In addition, the NRC staff agrees with the licensee's proposed change to Action a.5 to remove any uncertainty regarding the requirement to place the compensatory filtration unit in service in the event of an inoperable CREVS filter train.

In letter dated January 27, 2017, the licensee clarified that the proposed changes to TS 3/4.7.5 Action a.5 are analogous to STS 3.7.10 Action A (i.e., one CREFS train inoperable), which has an AOT of 7 days, and proposed changes to Action a.5. The revised Action a.5 now states:

> With the filter train inoperable, e.g., an inoperable filter, and/or two inoperable recirculation fans, and/or two inoperable recirculation dampers, immediately suspend all movement of irradiated fuel and immediately initiate action to place the compensatory filtration unit in service and verify proper operation within 24 hours, following which movement of irradiated fuel may resume, and within 7 days, restore the filter train to OPERABLE status.
>
> With the above requirements not met, immediately suspend all movement of irradiated fuel and be in at least HOT STANDBY within the next 6 hours for one Unit, or 12 hours for both Units, and in COLD SHUTDOWN within the following 30 hours.

Because the licensee has withdrawn its request for the allowance of alternative mitigating actions, the NRC staff finds that the current licensing basis as discussed in the NRC safety evaluation for Amendment Nos. 244 (Unit No. 3) and 240 (Unit No. 4) remains the licensing basis for the compensatory filtration unit. The NRC staff reviewed the proposed Action a.5 and concluded that the change is substantially consistent with STS 3.7.10, Action A. In STS 3.7.10, immediately placing the operable CREFS train in operation is only required in Modes 5, 6, and during movement of irradiated fuel assemblies (Action D). Immediate suspension of movement of irradiated fuel assemblies is not required unless the required action to place the operable filter train in operation is not successful. During Modes 1, 2, 3, and 4, STS 3.7.10 does not require immediate placement of the operable filter train in operation because it is available to meet the accident analyses requirements, including the auto start. In contrast, the proposed

Tukey Point Action a.5 requires the immediate suspension of movement of irradiated fuel assemblies and immediate initiation of actions to place the compensatory filter train into operation in all modes (i.e., Modes 1, 2, 3, 4, 5, and 6, and during movement of irradiated fuel assemblies), which are the appropriate actions. Only after verification of successful operation of the compensatory filter train can the movement of the irradiated fuel assemblies be resumed. The 24-hour time allowed for proper verification of the compensatory filter train operation is reasonable. The 7-day AOT is the same for both the STS and the Turkey Point TSs. The NRC staff concludes that the proposed change to Turkey Point TS 3/4.7.5, Action a.5 (i.e., emergency filter train not operable) provides a comparable measure of safety as STS 3.7.10, Actions A and D.

In addition, once the compensatory filtration unit is placed in service, it meets the radiological design requirements and, therefore, does not impact the radiological consequences of previously analyzed DBAs. Because it is capable of fulfilling the specified safety function of the CREVS recirculation filters in the event of a DBA, the CREVS operation remains consistent with that assumed in the radiological consequence analyses. Therefore, the NRC staff finds that movement of irradiated fuel after verification of proper operation of the compensatory filtration unit for the short duration of the 7-day AOT is acceptable from a radiological dose perspective. The clarification of the allowed times to be in hot standby for single-unit and dual-unit applicability is acceptable, as addressed in Section 3.1.4 above.

Based on the above, the NRC staff finds the proposed changes to Action a.5 acceptable.

Action a.6

Current Action a.6 states:

> With an inoperable damper in the normal outside air intake, immediately suspend all movement of irradiated fuel and, within 7 days, restore the inoperable damper to OPERABLE status or place and maintain at least one of the normal outside air intake isolation dampers in the closed position and place the system in recirculation mode** or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. If this ACTION applies to both units simultaneously, be in HOT STANDBY within 12 hours and in COLD SHUTDOWN within the following 30 hours.

The licensee proposed to change ACTION a.6 as follows:

> With an inoperable damper in the normal outside air intake, within 7 days, restore the inoperable damper to OPERABLE status or, place and maintain at least one of the normal outside air isolation dampers in the closed position and place the system in recirculation mode or, immediately suspend all movement of irradiated fuel and be in at least HOT STANDBY within the next 6 hours for one Unit, or 12 hours for both Units, and in COLD SHUTDOWN within the following 30 hours.

In letter dated January 27, 2017, the licensee clarified that the proposed changes to TS 3/4.7.5 Action a.6 are analogous with STS 3.7.10 Action A (i.e., one CREFS train inoperable) with an AOT of 7 days. The proposed change to move the requirement to immediately suspend movement of irradiated fuel from time of entry into action to the expiration of the AOT is consistent with STS 3.7.10, Actions A and D, and is, therefore, acceptable.

The licensee also proposed the deletion of footnote **. The footnote states that "if action is taken such that indefinite operation is permitted and the system is placed in recirculation mode, then movement of irradiated fuel may resume." The licensee stated that the embedded statement in the current ACTION a.6 "place and maintain at least one of the normal outside air intake isolation dampers in the closed position and place the system in recirculation mode," which is retained in the proposed change, already allows Turkey Point to operate indefinitely in this mode. The NRC staff agrees and finds the deletion of footnote ** reasonable. Further, as discussed earlier in Section 3.1.4, the NRC staff finds that the deletion of the footnote does not impact the radiological consequences of previously analyzed DBAs and, therefore, is acceptable from a radiological dose perspective.

The clarification of the allowed times to be in hot standby for single-unit and dual-unit applicability is acceptable, as addressed in Section 3.1.4 above.

Based on the above, the NRC staff finds the proposed changes to Action a.6 acceptable.

Action a.7

Current Action a.7 states:

> With an inoperable damper in the emergency outside air intake, immediately suspend all movement of irradiated fuel and, within 7 days, restore the inoperable damper to OPERABLE status or place and maintain at least one of the emergency outside air intake isolation dampers in the open position** or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. If this ACTION applies to both units simultaneously, be in HOT STANDBY within 12 hours and in COLD SHUTDOWN within the following 30 hours.

The licensee proposed to change ACTION a.7 as follows:

> With an inoperable damper in the emergency outside air intake, within 7 days, restore the inoperable damper to OPERABLE status or, place and maintain at least one of the emergency outside air intake isolation dampers in the open position or, immediately suspend all movement of irradiated fuel and be in at least HOT STANDBY within the next 6 hours for one Unit, or 12 hours for both Units, and in COLD SHUTDOWN within the following 30 hours.

In a letter dated January 27, 2017, the licensee clarified that the proposed changes to TS 3/4.7.5 Action a.7 are analogous with STS 3.7.10 Action A (i.e., one CREFS train inoperable) with an AOT of 7 days. The proposed change to move the requirement to immediately suspend movement of irradiated fuel from time of entry into action to the expiration of the AOT is consistent with STS 3.7.10, Actions A and D, and is, therefore, acceptable.

The licensee is also proposing the deletion of the footnote **. The footnote states that "if action is taken such that indefinite operation is permitted and the system is placed in recirculation mode, then movement of irradiated fuel may resume." The licensee stated that the embedded statement in the current Action a.7 "place and maintain at least one of the emergency outside air intake isolation dampers in the open position," which is retained in the proposed change, already allows Turkey Point to operate indefinitely in

this mode. The NRC staff agrees and finds the deletion of footnote ** reasonable. Further, as discussed earlier in Section 3.1.4, the NRC staff finds that the deletion of the footnote does not impact the radiological consequences of previously analyzed DBAs and, therefore, is acceptable from a radiological dose perspective.

The clarification of the allowed times to be in hot standby for single-unit and dual-unit applicability is acceptable, as addressed in Section 3.1.4 above.

Based on the above, the NRC staff finds the proposed changes to Action a.7 acceptable.

3.1.5 Revision of TS 3/4.7.5 Action b

Current TS 3/4.7.5 Action b requires:

> b. With the Control Room Emergency Ventilation System inoperable due to an inoperable CRE boundary, immediately suspend all movement of irradiated fuel in the spent fuel pool, and immediately initiate action to implement mitigating actions, and within 24 hours, verify mitigating actions ensure CRE occupant radiological and chemical hazards will not exceed limits, and CRE occupants are protected from smoke hazards, and restore CRE boundary to OPERABLE status within 90 days, or:
>
> 1) With the requirements not met, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
>
> 2) If this ACTION applies to both units simultaneously, be in HOT STANDBY within 12 hours and in COLD SHUTDOWN within the following 30 hours.

In the LAR, the licensee proposes to revise TS 3/4.7.5 Action b to: (1) allow movement of irradiated fuel upon verification that mitigating actions ensure CRE occupant radiological and chemical hazards will not exceed limits, and CRE occupants are protected from smoke hazards with the CRE boundary inoperable, (2) add a required action to immediately suspend all movement of irradiated fuel if the actions are not met or if the actions apply to both units simultaneously, and (3) delete reference to the spent fuel pool. LAR Section 3.2 of the technical evaluation states:

> In the case of an inoperable CRE boundary, the current TS ACTION 3.7.5.b does not require placing the Control Room in the emergency recirculation mode nor does the CREVS provide for a redundant component or train which assures CREVS specified functionality given a single failure. However Westinghouse STS ACTION 3.7.10.B provides for a ninety-day AOT without the suspension of irradiated fuel movement after first verifying within 24 hours that mitigating actions ensure CRE occupant exposures to radiological and chemical hazards will not exceed allowable limits and CRE occupants are protected from smoke hazards. In contrast, TS ACTION 3.7.5.b requires the suspension of irradiated fuel movement for the duration of the 90-day AOT even after first verifying within 24 hours that mitigating actions ensure CRE occupant exposures to radiological and chemical hazards will not exceed allowable limits and CRE occupants are protected from smoke hazards. FPL proposes for an inoperable CRE boundary for all plant MODES, the immediate suspension of fuel movement for the first 24 hours, during which mitigating actions would be verified to ensure CRE occupant

> exposures to radiological and chemical hazards will not exceed allowable limits and CRE occupants are protected from smoke hazards, and following which irradiated fuel movement may resume. Irradiated fuel movement would also be suspended if the 90-day AOT cannot be met. Though relaxing the requirement to suspend fuel movement for the duration of the 90-day AOT is less restrictive than the current Turkey Point TS, the proposed change maintains a commensurate level of safety when judged against the current regulatory standards established in the Westinghouse STS for an inoperable CRE boundary and is thereby reasonable.

Westinghouse STS 3.7.10 provides a protected environment from which occupants can control the unit following an uncontrolled release of radioactivity, hazardous chemicals, or smoke. STS 3.7.10 Action B is entered when one or more CREFS trains are inoperable due to an inoperable CRE boundary while in Modes 1, 2, 3, or 4. STS 3.7.10 Action B allows 90 days to restore the inoperable CRE boundary to operable status if actions are immediately taken to implement mitigating actions and CRE occupant exposure to radiological, chemical, and smoke hazards is verified within 24 hours to not exceed limits. STS 3.7.10 Action B is only entered in Modes 1 through 4. If the unit is in Modes 5 or 6 or moving recently irradiated fuel assemblies, then STS 3.7.10 Action E is applicable and must be entered. STS 3.7.10 Action E is entered when one or more CREFS trains are inoperable due to an inoperable CRE boundary while in Modes 5 or 6 or during movement of recently irradiated fuel assemblies. STS 3.7.10 Action E requires immediately suspending movement of recently irradiated fuel assemblies, which places the unit in a condition that minimizes the accident risk.

In letter dated June 18, 2009 (ADAMS Accession No. ML091690643), the Technical Specifications Task Force (TSTF) submitted Traveler TSTF-508, Revision 1, "Revise Control Room Habitability Actions to Address Lessons Learned from TSTF-448 Implementation," to the NRC staff for review and approval. TSTF-508 proposed the extension of the use of mitigating actions to Modes 5, 6, and during movement of recently irradiated fuel assemblies when one or more CREFS trains are inoperable due to an inoperable CRE boundary in Westinghouse STS 3.7.10, just as the licensee has requested in its LAR. During the review of TSTF-508, the NRC staff sent an RAI dated April 12, 2011 (ADAMS Accession No. ML110890817), stating that the extension of the use of mitigating actions to Modes 5, 6, and during movement of recently irradiated fuel assemblies is not adequately justified and is not warranted for the following reasons:

- The regulation at Subpart H of 10 CFR Part 20, "Standards for Protection Against Radiation," provides the requirements for respiratory protections and controls to restrict internal exposure in restricted areas. Specifically, 10 CFR 20.1701 states that licensees shall use, to the extent practicable, process or engineering controls to control the concentration of radioactivity in the air. Use of other controls as described in 10 CFR 20.1702 is only allowed by regulation when it is not practicable to apply process or other engineering controls.

- NEI 99-03, Appendix F, "Compensatory Measures Allowable On An Interim Basis," Page F-1, states:

  > The use of SCBA [self-contained breathing apparatus] and KI [potassium iodide] has been determined to be acceptable for addressing control room envelope integrity in the interim situation until the licensee remediates the issue. However, use of SCBA or

> KI in the mitigation of situations where in-leakage does not meet design basis limits is not acceptable as a permanent solution. 10 CFR 20.1701 essentially says that engineering/process controls shall be used to the extent practical. If not practical, then 10 CFR 20.1702 methods should be used. Therefore, the use of SCBAs should be a last resort. [emphasis added]

- The use of KI and SCBA is not without risk. The allowance to use KI and SCBA was not previously extended to Modes 5 and 6 because another practical control (stopping fuel movement) existed. The NRC staff does not believe that the proposed compensatory measures are appropriate given that the process control of stopping fuel movement is available.

The TSTF did not respond to the RAI; rather, it withdrew its request for the NRC to approve TSTF-508. The licensee's application did not appear to address how the proposed changes (i.e., to allow movement of irradiated fuel upon verification that the mitigating actions ensure CRE occupant radiological and chemical hazards will not exceed limits and CRE occupants are protected from smoke hazards while in Modes 5, 6, and during movement of irradiated fuel assemblies) meet the regulations below or the regulatory guidance in NUREG-1431.

Subpart H of 10 CFR Part 20 provides the requirements for respiratory protection and controls to restrict internal exposure in restricted areas. Specifically, 10 CFR 20.1701 states that licenses shall use, to the extent practical, process or engineering controls to control the concentration of radioactive material in the air. Use of other controls as described in 10 CFR 20.1702 is only allowed by regulation when it is not practical to apply process or other engineering controls.

Therefore, the NRC staff requested that the licensee either (1) explain how the proposed changes regarding the extension of the use of mitigating actions to Modes 5, 6, and during movement of irradiated fuel assemblies meet 10 CFR 20.1701, 10 CFR 20.1702, and the regulatory guidance in STS 3.7.10 of NUREG-1431; or (2) revise the proposed changes to remove the extension of the use of mitigating actions to Modes 5, 6, and during movement of irradiated fuel assemblies.

In a letter dated March 31, 2017, the licensee stated:

> Based upon the above discussion, FPL acknowledges that TS 3.7.5, ACTION b, as proposed in References 1 [the LAR] and 2 [FPL's letter dated January 27, 2017] of ARCB RAI-5, does not provide a commensurate level of safety during MODES 5, 6 and during the movement of irradiated fuel assemblies when compared to the requirements of NUREG-1431, Revision 4, Standard Technical Specifications - Westinghouse Plants [Westinghouse STS]. Specifically Westinghouse STS 3.7.10, ACTION E, requires the immediate suspension of irradiated fuel movement in the event of an inoperable Control Room Envelope (CRE) boundary during MODES 5, 6 and during the movement of irradiated fuel assemblies, and thereby takes immediate action to suspend activities that could result in a release of radioactivity that might require isolation of the CRE during these operational modes. As such, FPL hereby withdraws the request to extend the use of mitigating actions to MODES 5, 6, and during the movement of irradiated fuel assemblies in the event of an inoperable CRE boundary and instead proposes the immediate suspension of irradiated fuel movement for the

duration of CRE boundary inoperability during these operational modes. This revised proposal for TS 3.7.5, ACTION b assures a commensurate level of safety when judged against the regulatory standards established in Westinghouse STS 3.7.10, ACTION E, for an inoperable CRE boundary during MODES 5, 6 or during the movement of irradiated fuel assemblies, and is thereby reasonable.

The NRC staff has reviewed the licensee's request to withdraw the request to extend the use of mitigating actions to Modes 5, 6, and during these operational modes. However, the NRC staff observed and made the licensee aware of some inconsistencies between the marked up and clean copy versions of the affected TS pages in the licensee's letter. One such inconsistency was the TS 3/4.7.5, Action b requirement to immediately suspend the movement of irradiated fuel assemblies during Modes 1, 2, 3 and 4, which is redundant with the paragraph applicable to Modes 5, 6, or (anytime) during the movement of irradiated fuel assemblies. In a letter dated May 24, 2017, the licensee corrected the inconsistencies and revised TS 3/4.7.5 Action b to state:

b. With the Control Room Emergency Ventilation System inoperable due to an inoperable CRE boundary during MODES 1, 2, 3 or 4, immediately initiate action to implement mitigating actions. Within 24 hours, verify mitigating actions ensure CRE occupant radiological and chemical hazards will not exceed limits, and CRE occupants are protected from smoke hazards, and restore CRE boundary to OPERABLE status within 90 days.

   With the above requirements not met, be in at least HOT STANDBY within the next 6 hours for one Unit, or 12 hours for both Units, and in COLD SHUTDOWN within the following 30 hours.

   With the Control Room Emergency Ventilation System inoperable due to an inoperable CRE boundary during MODES 5, 6 or during the movement of irradiated fuel assemblies, immediately suspend all movement of irradiated fuel.

The NRC staff finds that the proposed changes are consistent with STS 3.7.10, Actions B and E. The proposed revision to TS 3/4.7.5 Action b clarifies how to apply the action requirements depending on the current plant operational mode and/or TS applicability in the event the CREVS is unable to ensure the CRE occupant safety within licensing basis limits because of an inoperable CRE boundary. During Modes 1, 2, 3, and 4, these required actions verify that in the event of a DBA, the mitigating actions will ensure that CRE occupant radiological exposures will not exceed the calculated dose of the licensing basis analyses of DBA consequences, and that CRE occupants are protected from hazardous chemicals and smoke. This is consistent with and does not impact the radiological consequences of previously analyzed DBAs and, therefore, is acceptable from a radiological dose perspective.

During Modes 5, 6, or during movement of irradiated fuel assemblies, it is appropriate to immediately suspend fuel movements if the CREVS is unable to ensure the CRE occupant safety within licensing basis limits because of an inoperable CRE boundary. This is consistent with and does not impact the previously analyzed DBAs' radiological consequences and, therefore, is acceptable from a radiological dose perspective.

Based on the above, the NRC staff finds this proposed change to Action b acceptable.

3.1.6 Re-letter and Re-number TS 3/4.7.5 Consistent with the Above Changes

The licensee proposes to re-letter and re-number TS 3/4.7.5 consistent with the above changes. The NRC staff finds that the proposed changes are acceptable, given the changes discussed above. Further, because these changes are administrative in nature, they do not impact the previously analyzed DBAs' radiological consequences and are, therefore, acceptable from a radiological dose perspective.

3.2 Technical Conclusion

Based on its evaluation, the NRC staff concludes that the proposed changes to Turkey Point TS 3/4.7.5 achieve consistency with STSs 3.7.10 and 3.7.11, when accounting for plant-specific differences at Turkey Point. Any minor deviations, such as the fully qualified filter train and a compensatory filter train at Turkey Point versus two fully qualified filter trains in the STS, component level actions at Turkey Point versus the system level actions in the STS, were adequately explained. Therefore, the NRC staff finds that the proposed changes discussed above meet the requirements of 10 CFR 50.36.

Further, the NRC staff reviewed the radiological impact of the licensee's proposed changes to TS 3/4.7.5 on previously analyzed radiological consequences of the postulated DBAs at Turkey Point. The NRC staff finds that the licensee's proposed changes do not impact any of the methodologies, assumptions, or inputs of the radiological consequences analyses, and there is reasonable assurance that the licensee's estimates of the exclusion area boundary, low-population zone, and control room doses will remain unchanged and continue to comply with the criteria stated above in Section 2.3. Therefore, the proposed changes to Turkey Point TS 3/4.7.5 are acceptable regarding the radiological consequences of postulated DBAs and meet the requirements of 10 CFR 50.67 and GDC 19.

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 June 28, 2017,[10] of the proposed issuance of the amendments. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to the use of facility components located within the restricted area as defined in 10 CFR Part 20 or change surveillance requirements. 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 has previously issued a proposed finding, which was published in the *Federal Register* on November 8, 2016 (81 FR 78653), that the amendments involve no significant hazards consideration, and there has been no public comment on such finding. 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

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[10] The NRC staff notified the State official by telephone and by e-mail (ADAMS Accession No. ML17179A865).

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 Contributors: K. Bucholtz
N. Karipineni

Date: August 3, 2017

SUBJECT: TURKEY POINT NUCLEAR GENERATING UNIT NOS. 3 AND 4 – ISSUANCE OF AMENDMENTS REGARDING TECHNICAL SPECIFICATIONS FOR CONTROL ROOM EMERGENCY VENTILATION SYSTEM (CAC NOS. MF8221 AND MF8222) DATED AUGUST 3, 2017

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