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

April 30, 2019

Ms. Cheryl A. Gayheart
Regulatory Affairs Director
Southern Nuclear Operating Co., Inc.
3535 Colonnade Parkway
Birmingham, AL 35243

SUBJECT: EDWIN I. HATCH NUCLEAR PLANT, UNIT NOS. 1 AND 2 – ISSUANCE OF AMENDMENTS TO REVISE TECHNICAL SPECIFICATION 3.6.2.5, CONDITION C, RESIDUAL HEAT REMOVAL DRYWELL SPRAY END STATE (EPID L-2018-LLA-0227)

Dear Ms. Gayheart:

The U.S. Nuclear Regulatory Commission (NRC, the Commission) has issued the enclosed Amendment No. 296 to Renewed Facility Operating License No. DPR-57 and Amendment No. 241 to Renewed Facility Operating License No. NPF-5 for the Edwin I. Hatch Nuclear Plant, Unit Nos. 1 and 2, respectively. The amendments consist of changes to the Technical Specifications (TS) in response to your application dated August 6, 2018.

The amendments revise TS 3.6.2.5, "Residual Heat Removal (RHR) Drywell Spray," to allow the affected unit to remain in Hot Shutdown (Mode 3) instead of proceeding to Cold Shutdown (Mode 4) when the Required Actions of Condition C cannot be met for the drywell spray system.

These proposed TS changes are related to the approved Technical Specification Task Force (TSTF) traveler TSTF-423-A, Revision 1, "Technical Specifications End States, NEDC-32988-A," dated December 22, 2009.

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

Sincerely,

James R. Hall

James R. Hall, Senior Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-321 and 50-366

Enclosures:
1. Amendment No. 296 to DPR-57
2. Amendment No. 241 to NPF-5
3. Safety Evaluation

cc: Listserv

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SOUTHERN NUCLEAR OPERATING COMPANY, INC.

GEORGIA POWER COMPANY

OGLETHORPE POWER CORPORATION

MUNICIPAL ELECTRIC AUTHORITY OF GEORGIA

CITY OF DALTON, GEORGIA

DOCKET NO. 50-321

EDWIN I. HATCH NUCLEAR PLANT, UNIT NO. 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 296
Renewed License No. DPR-57

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

   A. The application for amendment to the Edwin I. Hatch Nuclear Plant, Unit No. 1 (the facility) Renewed Facility Operating License No. DPR-57 filed by Southern Nuclear Operating Company, Inc. (the licensee), acting for itself, Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and City of Dalton, Georgia (the owners), dated August 6, 2018, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as 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.

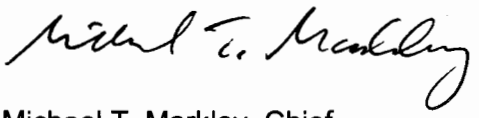
2. Accordingly, the license is hereby amended by page changes as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Renewed Facility Operating License No. DPR-57 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications (Appendix A) and the Environmental Protection Plan (Appendix B), as revised through Amendment No. 296, are hereby incorporated in the renewed license. Southern Nuclear 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 from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Michael T. Markley, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to Renewed Facility
Operating License No. DPR-57
and Technical Specifications

Date of Issuance: April 30, 2019

ATTACHMENT TO LICENSE AMENDMENT NO. 296

EDWIN I. HATCH NUCLEAR PLANT, UNIT NO. 1

RENEWED FACILITY OPERATING LICENSE NO. DPR-57

DOCKET NO. 50-321

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

Remove Pages	Insert Pages
License	License
4	4
TSs	TSs
3.6-29	3.6-29

for sample analysis or instrumentation calibration, or associated with radioactive apparatus or components;

(6) Southern Nuclear, 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 the facility.

C. This renewed license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Section 50.54 of Part 50, and Section 70.32 of Part 70; all applicable provisions of the Act and the rules, regulations, and orders of the Commission now or hereafter in effect; and the additional conditions specified or incorporated below:

(1) Maximum Power Level

Southern Nuclear is authorized to operate the facility at steady state reactor core power levels not in excess of 2804 megawatts thermal.

(2) Technical Specifications

The Technical Specifications (Appendix A) and the Environmental Protection Plan (Appendix B), as revised through Amendment No. 296, are hereby incorporated in the renewed license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

The Surveillance Requirement (SR) contained in the Technical Specifications and listed below, is not required to be performed immediately upon implementation of Amendment No. 195. The SR listed below shall be successfully demonstrated before the time and condition specified:

SR 3.8.1.18 shall be successfully demonstrated at its next regularly scheduled performance.

(3) Fire Protection

Southern Nuclear shall implement and maintain in effect all provisions of the fire protection program, which is referenced in the Updated Final Safety Analysis Report for the facility, as contained in the updated Fire Hazards Analysis and Fire Protection Program for the Edwin I. Hatch Nuclear Plant, Units 1 and 2, which was originally submitted by letter dated July 22, 1986. Southern Nuclear may make changes to the fire protection program without prior Commission approval only if the changes

3.6 CONTAINMENT SYSTEMS

3.6.2.5 Residual Heat Removal (RHR) Drywell Spray

LCO 3.6.2.5 Two RHR drywell spray subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RHR drywell spray subsystem inoperable.	A.1 Restore RHR drywell spray subsystem to OPERABLE status.	7 days
B. Two RHR drywell spray subsystems inoperable.	B.1 Restore one RHR drywell spray subsystem to OPERABLE status.	8 hours
C. Required Action and associated Completion Time not met.	C.1 -------NOTE------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.5.1	Verify each RHR drywell spray subsystem manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position or can be aligned to the correct position.	In accordance with the Surveillance Frequency Control Program

(continued)

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SOUTHERN NUCLEAR OPERATING COMPANY, INC.

GEORGIA POWER COMPANY

OGLETHORPE POWER CORPORATION

MUNICIPAL ELECTRIC AUTHORITY OF GEORGIA

CITY OF DALTON, GEORGIA

DOCKET NO. 50-366

EDWIN I. HATCH NUCLEAR PLANT, UNIT NO. 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 241
Renewed License No. NPF-5

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

   A. The application for amendment to the Edwin I. Hatch Nuclear Plant, Unit No. 2 (the facility) Renewed Facility Operating License No. NPF-5 filed by Southern Nuclear Operating Company, Inc. (the licensee), acting for itself, Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and City of Dalton, Georgia (the owners), dated August 6, 2018, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as 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 hereby amended by page changes as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Renewed Facility Operating License No. NPF-5 is hereby amended to read as follows:

2.C.(2) Technical Specifications

The Technical Specifications (Appendix A) and the Environmental Protection Plan (Appendix B), as revised through Amendment No. 241, are hereby incorporated in the renewed license. Southern Nuclear 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 from its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Michael T. Markley, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to Renewed Facility
Operating License No. NPF-5
and Technical Specifications

Date of Issuance: April 30, 2019

ATTACHMENT TO LICENSE AMENDMENT NO. 241

EDWIN I. HATCH NUCLEAR PLANT, UNIT NO. 2

RENEWED FACILITY OPERATING LICENSE NO. NPF-5

DOCKET NO. 50-366

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

Remove Pages	Insert Pages
License	License
4	4
TSs	TSs
3.6-29	3.6-29

(6) Southern Nuclear, 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 the facility.

C. This renewed license shall be deemed to contain, and is subject to, the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Section 50.54 of Part 50, and Section 70.32 of Part 70; all applicable provisions of the Act and the rules, regulations, and orders of the Commission now or hereafter in effect; and the additional conditions[2] specified or incorporated below:

(1) Maximum Power Level

Southern Nuclear is authorized to operate the facility at steady state reactor core power levels not in excess of 2,804 megawatts thermal, in accordance with the conditions specified herein.

(2) Technical Specifications

The Technical Specifications (Appendix A) and the Environmental Protection Plan (Appendix B), as revised through Amendment No. 241, are hereby incorporated in the renewed license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Additional Conditions

The matters specified in the following conditions shall be completed to the satisfaction of the Commission within the stated time periods following the issuance of the renewed license or within the operational restrictions indicated. The removal of these conditions shall be made by an amendment to the license supported by a favorable evaluation by the Commission.

(a) Fire Protection

Southern Nuclear shall implement and maintain in effect all provisions of the fire protection program, which is referenced in the Updated Final Safety Analysis Report for the facility, as contained

[2] The original licensee authorized to possess, use, and operate the facility with Georgia Power Company (GPC). Consequently, certain historical references to GPC remain in certain license conditions.

3.6 CONTAINMENT SYSTEMS

3.6.2.5 Residual Heat Removal (RHR) Drywell Spray

LCO 3.6.2.5 Two RHR drywell spray subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RHR drywell spray subsystem inoperable.	A.1 Restore RHR drywell spray subsystem to OPERABLE status.	7 days
B. Two RHR drywell spray subsystems inoperable.	B.1 Restore one RHR drywell spray subsystem to OPERABLE status.	8 hours
C. Required Action and associated Completion Time not met.	C.1 -------NOTE------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.5.1	Verify each RHR drywell spray subsystem manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position or can be aligned to the correct position.	In accordance with the Surveillance Frequency Control Program

(continued)

UNITED STATES
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WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO

AMENDMENT NO. 296 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-57

AND

AMENDMENT NO. 241 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-5

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

EDWIN I. HATCH NUCLEAR PLANT, UNIT NOS. 1 AND 2

DOCKET NOS. 50-321 AND 50-366

1.0 INTRODUCTION

By letter dated August 6, 2018 (Reference 1), Southern Nuclear Operating Company (SNC, or the licensee), submitted a license amendment request (LAR) which proposed changes to the Technical Specifications (TS) for the Edwin I. Hatch Nuclear Plant (HNP), Unit Nos. 1 and 2. The proposed amendments would modify the TS requirements for end states associated with TS 3.6.2.5, "Residual Heat Removal (RHR) Drywell Spray," specifically, Required Actions C.1 and C.2.

These proposed TS changes are related to the approved Technical Specification Task Force (TSTF) traveler TSTF-423-A, Revision 1, "Technical Specifications End States, NEDC-32988-A," dated December 22, 2009 (Reference 2).

The proposed changes to the TS 3.6.2.5 Required Actions end states would allow the licensee to place the affected unit(s) into a Hot Shutdown (Mode 3) end state rather than a Cold Shutdown (Mode 4) end state, when the required actions for the RHR drywell spray system cannot be met.

2.0 REGULATORY EVALUATION

2.1 RHR and Drywell Spray System Description

The RHR System consists of several operating modes, including:

- Low Pressure Coolant Injection (LPCI), which is part of the Emergency Core Cooling System (ECCS) network – TS 3.5.1 and 3.5.2,
- RHR Shutdown Cooling (SDC) – TS 3.4.7 and 3.4.8,
- RHR Suppression Pool Cooling – TS 3.6.2.3,

- RHR Suppression Pool Spray – TS 3.6.2.4, and
- RHR Drywell Spray – TS 3.6.2.5.

The RHR system is required to be operable during refueling operations in accordance with TS 3.9.7 and 3.9.8, as described in Section 4.8, "Residual Heat Removal System", of the HNP Final Safety Analysis Report (FSAR). Section 4.8.7 of the FSAR further describes that the RHR system's containment spray mode includes both the RHR drywell spray and the RHR suppression pool sprays. The focus of this LAR is the drywell spray mode of RHR.

In Reference 1, the licensee describes how the drywell spray mode of the RHR system may be initiated under post-accident conditions to reduce the temperature and pressure of the primary containment atmosphere. Each of the two RHR subsystems consists of two pumps, one heat exchanger, containment spray valves, and a spray header in the drywell. RHR drywell spray is a manually initiated function which can only be placed in service if adequate core cooling is assured. A physical interlock prevents the opening of the spray valves unless reactor water level is above two-thirds core height.

The primary containment for each of the HNP units is a steel-lined, reinforced concrete vessel that surrounds the reactor primary system and provides an essentially leak-tight barrier against an uncontrolled release of radioactive material to the environment. The upper portion of the primary containment, known as the drywell, surrounds the reactor pressure vessel and piping. The bottom portion, known as the suppression chamber, is a toroidal shaped, steel pressure vessel containing a volume of water known as the suppression pool. The suppression pool is designed to absorb the energy associated with a reactor blowdown from safety and/or relief valve discharges or from certain design basis accidents (DBAs).

Water is pumped from the suppression pool through the RHR heat exchangers and is then diverted to the spray headers in the drywell. The drywell spray reduces primary containment temperature and pressure through the combined effects of evaporative or convective cooling, depending on the drywell atmospheric conditions. If the atmosphere is superheated, a rapid evaporative cooling process will ensue. If the environment in the drywell is saturated, temperature and pressure will be reduced via a convective cooling process.

The RHR drywell spray is also operated to distribute a portion of the inorganic radioactive iodine and particulates from the drywell atmosphere into the suppression pool. The drywell spray mode is credited in the loss-of-coolant accident (LOCA) analysis for both iodine removal and temperature and pressure reduction effects. The drywell spray mode is not credited in determining the post-LOCA peak primary containment internal pressure in the containment pressure analysis. However, the radiological dose analysis does credit the drywell spray temperature and pressure reduction over time in reducing the post-LOCA primary containment leakage and main steam isolation valve leakage.

2.2 HNP Operating Modes

The following five operating "MODES" are defined in the HNP TS Table 1.1-1:

MODE 1 - Power Operation: The reactor mode switch is in the Run position.

MODE 2 - Startup: The reactor mode switch is in the Refuel[(a)] or Startup/Hot Standby position.

MODE 3 - Hot Shutdown[a]: The reactor mode switch is in the Shutdown position and average Reactor Coolant System (RCS) temperature is greater than 212 degrees Fahrenheit (°F).

MODE 4 - Cold Shutdown[a]: The reactor mode switch is in the Shutdown position and average RCS temperature is less than or equal to 212°F.

MODE 5 – Refueling[b]: The reactor mode switch is in the Shutdown or Refuel position.

[a] All reactor vessel head closure bolts fully tensioned.
[b] One or more reactor vessel head closure bolts less than fully tensioned.

The proposed TS 3.6.2.5 changes are specifically relevant to MODES 3 and 4.

2.3 TSTF-423, "Technical Specifications End States, NEDC-32988-A"

General Electric (GE) Topical Report NEDC-32988-A, "Technical Justification to Support Risk-Informed Modification to Selected Required Action End States for BWR [Boiling Water Reactor] Plants," (Reference 10), which was approved by the NRC in September 2002 (Reference 12), provides a systematic, generic review of the risks associated with Required Actions in placing the unit in a Cold Shutdown (Mode 4) end state. Cold Shutdown is normally required when an inoperable system or train cannot be restored to an Operable status within the allowed completion time. However, placing the unit in Cold Shutdown results in the loss of steam-driven core cooling systems, challenges the shutdown heat removal systems, and requires restarting the plant over a greater range of plant conditions. The preferred operating Mode is one that maintains adequate risk levels while repairs can be completed without causing unnecessary challenges to plant equipment during shutdown and startup transitions. The analysis summarized in the GE topical report considered Hot Shutdown (Mode 3) as a preferred alternative end state to Cold Shutdown (Mode 4).

The plant risks associated with the two operating Modes were evaluated and compared using the Probabilistic Safety Analysis (PSA) for a typical BWR/4 plant, but the results are applicable for all the BWR models (BWR/2 through 6). The PSA model was modified to evaluate the core damage frequency (CDF) and large early release frequency (LERF) during operations in Mode 3 and Mode 4. This allowed a comparison of the risks between the two shutdown Modes for various inoperable conditions specified in the TS. In addition to the quantitative analysis, the two operating Modes were evaluated based on defense-in-depth considerations.

The topical report demonstrates that, for the modified conditions, remaining in Mode 3 is appropriate for the primary purpose of performing the short-duration repairs needed to correct the failure that necessitated exiting the original operating Mode. In response to the NRC staff's questions, the Boiling Water Reactor Owners' Group (BWROG) stated that, "The BWRs are most likely to stay in Hot Shutdown for no more than 2 to 3 days and definitely not more than a week." In the NRC staff's safety evaluation (SE) of the topical report (Reference 12), the staff stated that it expects licensees to follow this guidance regarding revised end states.

Full implementation of TSTF-423 end states for HNP RHR systems is essentially precluded by retaining a TS for RHR Drywell Spray that requires a more restrictive operating mode (i.e., Cold Shutdown versus Hot Shutdown) as an end state.

2.4 Licensee's Reason for the Proposed TS 3.6.2.5 Changes

On December 22, 2016, the NRC approved a license amendment to the HNP TS to implement TSTF traveler TSTF-423, "Technical Specifications End States, NEDC-32988-A" (References 3 and 7). TSTF-423 provides the technical justification for changing the required end states for various TS Required Actions. The TS end states for the TSs related to the RHR system, including TS 3.5.1, "ECCS - Operating," TS 3.6.2.3, "Residual Heat Removal (RHR) Suppression Pool Cooling," and TS 3.6.2.4, "Residual Heat Removal (RHR) Suppression Pool Spray," were among TS end states that were changed.

TSTF-423 and the HNP amendment did not include a change to the end state of HNP TS 3.6.2.5, because that specification does not appear in the Standard Technical Specifications (STS) for boiling water reactor BWR/4 plants (Reference 5) and was not evaluated in NEDC-32988-A (Reference 10). The HNP TS are based on the STS, but TS 3.6.2.5 was added to the HNP TS in 2008 as part of an amendment to adopt the alternate source term (AST) methodology for analyzing DBA radiological consequences (Reference 11). Therefore, TS 3.6.2.5 still requires the plant to be placed in Mode 4 (Cold Shutdown) if the Required Actions and associated Completion Times (CT) are not met. The licensee stated that the change in the RHR system TS end state implemented by TSTF-423 is negated by having a TS in place related to the RHR System that requires a more restrictive operating mode (i.e., Cold Shutdown versus Hot Shutdown) and that it impacts plant operational flexibility and regulatory efficiency.

2.5 Applicable Regulatory Requirements and Guidance

2.5.1 Regulatory Requirements

Title 10 of the *Code* of *Federal Regulations* (10 CFR) Section 50.90 states that whenever a holder of an operating license desires to amend the license (in this case, a proposed change to TS 3.6.2.5), an application for an amendment must be filed with the Commission, fully describing the changes desired, and following as far as applicable, the form prescribed for original applications. As stated in 10 CFR 50.36(a)(1), each applicant for an operating license shall include in its application proposed TS in accordance with the requirements of 10 CFR 50.36. Further, per 10 CFR 50.36(a)(1), a summary statement of the bases or reasons for such specifications, other than those covering administrative controls, shall also be included in the application, but shall not become part of the technical specifications.

In 10 CFR 50.36, "Technical specifications," the Commission established its regulatory requirements related to the content of TS. Pursuant to 10 CFR 50.36(c), TSs, in part, are required to include items in the following specific categories related to station operation: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation (LCOs); (3) surveillance requirements (SRs); (4) design features; and (5) administrative controls. The regulation in 10 CFR 50.36(c)(2)(i) states, in part, that:

> Limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met.

Licensees control shutdown risk by controlling conditions that can cause potential initiating events and responses to those initiating events that do occur. Initiating events are a function of equipment malfunctions and human error. Responses to events are a function of plant sensitivity, ongoing activities, human error, defense-in-depth (DID), and additional equipment malfunctions. In practice, the risk during shutdown operations is often addressed by voluntary actions and the application of 10 CFR 50.65, 'Requirements for monitoring the effectiveness of maintenance at nuclear power plants," which is called the Maintenance Rule. The regulation in 10 CFR 50.65(a)(4) (Reference 13) states, in part, that:

> Before performing maintenance activities (including but not limited to surveillance, post-maintenance testing, and corrective and preventive maintenance), the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. The scope of the assessment may be limited to structures, systems, and components that a risk-informed evaluation process has shown to be significant to public health and safety.

As described in 10 CFR 50.92(a), in determining whether an amendment to a license will be issued to the applicant, the Commission will be guided by the considerations that govern the issuance of initial licenses to the extent applicable and appropriate. Considerations common to many types of licenses that guide the Commission's determination as to whether a license will be issued are provided in 10 CFR 50.40. The specific findings that the Commission must make to issue an operating license are identified in 10 CFR 50.57(a). Therefore, to issue amended TS containing modified end states, the Commission must find, among other things, that the remedial actions permitted by the TS (i.e., the modified end states), when considered as part of the overall activities authorized by the license, provide reasonable assurance that the health and safety of the public will not be endangered.

2.5.2 Regulatory Guidance

The NRC-approved BWROG Topical Report (TR) NEDC-32988-A, Revision 2, "Technical Justification to Support Risk-Informed Modification to Selected Required Action End States for Boiling Water Reactor Plants" (NEDC-32988-A, Reference 4), provides the technical basis supporting changes to certain required end states when the TS actions for continued power operation cannot be met within the required CTs. The end states are part of the remedial actions described by 10 CFR 50.36(c)(2)(i) in that they are an action other than shutting down the reactor.

The TSTF-423 justification references Regulatory Guide (RG) 1.182, "Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants" (Reference 14). On November 27, 2012, the NRC published a *Federal Register* notice stating that RG 1.182 has been withdrawn, and the subject matter has been incorporated into RG 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants" (Reference 15). RG 1.160 endorses NUMARC 93-01, Revision 4A, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," (Reference 16).

3.0 TECHNICAL EVALUATION

3.1 Licensee's Summary of NRC Staff's Approval of NEDC-32988

By letter dated September 27, 2002 (Reference 12), the NRC staff issued its safety evaluation approving the use of TR NEDC-32988, Revision 2 for referencing in licensing applications for GE-designed boiling water reactors to the extent specified and under the limitations delineated in the TR and in the NRC safety evaluation. In Section 3.0 of the LAR (Reference 1), the licensee summarized the TR and the NRC staff's findings from that SE, as cited in the following paragraphs.

> The methodology used and approved to evaluate a Mode 3 end state for the RHR system in TSTF-423 [Reference 7] and the HNP TSTF-423 license amendment [Reference 3] is applicable to the drywell spray mode of the RHR system and justifies a Mode 3 end state for TS 3.6.2.5.
>
> Applicability of NEDC-32988 to HNP Technical Specification 3.6.2.5
>
> NEDC-32988 did not specifically address the RHR drywell spray function for a GE BWR/4 design, but the report did address similar spray functions.
>
> - The suppression chamber spray function was addressed in NEDC-32988 and supports a Mode 3 end state when one or both RHR suppression pool spray subsystems are inoperable and the allowed times to restore are exceeded. Following a DBA, the RHR suppression pool spray subsystem removes heat from the suppression chamber airspace. This function is comparable to the function of the drywell spray function in that both are heat removal systems. NEDC-32988 noted that changing the end state of the RHR suppression pool spray function is not risk significant based on the low probability of an event requiring the safety function's (i.e., LOCA), availability of alternate methods to remove heat from the primary containment, and the number of systems available in Mode 3.
>
> - NEDC-32988 addressed the containment spray function for the GE BWR/6 design. This system is similar in function to the HNP RHR drywell spray system. For the GE BWR/6 design, NEDC-32988 supported a containment spray Mode 3 end state based on the low probability of an event requiring the safety function, alternate methods to remove heat from primary containment, and the additional systems available in Mode 3. As a result, the RHR Containment Spray System STS for the GE BWR/6 design in NUREG-1434 was modified to allow an end state of Mode 3 when one or both RHR containment spray subsystems are inoperable and the allowed times to restore are exceeded [Reference 2].
>
> - NEDC-32988 addressed the fission product removal capability for the GE BWR/4 and BWR/6 design and includes an assessment of the Standby Gas Treatment (SGT) system and main control room emergency filtration systems. The function of the SGT System is to ensure that radioactive materials that leak from the primary containment into the secondary containment following a DBA are filtered and adsorbed prior to exhausting to

the environment. The BWR/4 main control room environmental control (MCREC) and BWR/6 control room fresh air (CRFA) systems provide a radiologically controlled environment from which the unit can be safely operated following a DBA. The function of these systems is similar in scope to the radioactive material "scrubbing" effect of the RHR system drywell spray mode. With regard to these fission product cleanup systems, NEDC-32988 noted that the unavailability of one or both subsystems has no impact on CDF or LERF, independent of the mode of operation at the time of the accident and it was determined that allowing an end state of Mode 3 when one or both subsystems are inoperable is acceptable.

NRC Assessment of BWR/4 Suppression Pool Spray Function

As stated in Section 6 of the NRC SE associated with GE topical report NEDC-32988 (Reference 12) regarding the RHR suppression pool spray TS (i.e., TS 3.6.2.4, "Residual Heat Removal (RHR) Suppression Pool Spray"), steam blown down from the break under the conditions assumed in the DBA could bypass the suppression pool and end up in the suppression chamber air space and the RHR suppression spray system could be needed to condense such steam so that the pressure and temperature inside primary containment remain within analyzed design basis limits. However, the frequency of a DBA is very small, and the containment has considerable margin to failure above the design limits. For this reason, the unavailability of one or both RHR suppression spray subsystems has no significant impact on CDF or LERF, even for accidents initiated during operation at power. Therefore, it is very unlikely that the RHR suppression spray system will be challenged to mitigate an accident occurring during power operation. This probability becomes extremely unlikely for accidents that would occur during a small fraction of the year (less than three days) during which the plant would be in Mode 3 (associated with lower initial energy level and reduced decay heat load as compared to power operation) to repair the failed RHR suppression spray system.

Section 5.1 of NEDC-32988 summarizes the staff's risk assessment for approval of the end state change to TS 3.6.2.4. The justification for staying in Mode 3 instead of going to Mode 4 to repair the RHR suppression pool spray system (one or both trains) is also supported by defense-in-depth considerations. Section 5.2 makes a comparison between cold shutdown (Mode 4) and hot shutdown (Mode 3) end states, with respect to the means available to perform critical functions (i.e., functions contributing to the defense-in-depth philosophy) whose success is needed to prevent core damage and containment failure and mitigate radiation releases.

In addition, the probability of a DBA (large break) is much smaller during shutdown as compared to power operation. A DBA in Mode 3 would be considerably less severe than a DBA occurring during power operation since Mode 3 is associated with lower initial energy level and reduced decay heat load. Under these extremely unlikely conditions, an alternate method that can be used to remove heat from the primary containment, in order to keep the pressure and temperature within the analyzed design basis limits, is containment venting. For more realistic accidents that could occur in Mode 3, several alternate means are

available to remove heat from the primary containment, such as the RHR system in the suppression pool cooling mode and the containment spray mode.

The risk and defense-in-depth reasoning, used according to the "integrated decision-making" process of NRC RGs 1.174 and 1.177 (References 8 and 9), supports the conclusion that Mode 3 is as safe as Mode 4 (if not safer) for repairing an inoperable RHR suppression spray system. The staff concluded in the SE for NEDC-32988 that the proposed change to the BWR/4 RHR suppression pool spray TS is acceptable in light of defense-in-depth considerations and because the time spent in Mode 3 to perform the repair is infrequent and limited.

NRC Assessment of BWR/6 Containment Spray Function

The assessment regarding the BWR/6 RHR containment spray system TS (i.e., TS 3.6.1.7, "Residual Heat Removal (RHR) Containment Spray System"), as summarized in Section 6 of the NRC SE associated with GE topical report NEDC-32988 [Reference 12] is comparable to the assessment associated with the BWR/4 RHR suppression pool spray function. The staff concluded in the SE for NEDC-32988 that the proposed change to the BWR/6 RHR containment spray system TS is acceptable in light of defense-in-depth considerations and because the time spent in Mode 3 to perform the repair is infrequent and limited.

NRC Assessment of BWR/4 and BWR/6 Fission Product Cleanup Function

GE topical report NEDC-32988 [Reference 10] evaluated the following fission product cleanup systems: SGT system (i.e., TS 3.6.4.3 "Standby Gas Treatment (SGT) System"), BWR/4 MCREC System (TS 3.7.4, "Main Control Room Environmental Control (MCREC) System"), and BWR/6 CRFA System (TS 3.7.3, "Control Room Fresh Air (CRFA) System"). As stated in Section 6 of the NRC SE associated with GE topical report NEDC-32988 regarding these fission product cleanup systems, the unavailability of one or both subsystems has no impact on CDF or LERF, independent of the mode of operation at the time of the accident. Furthermore, the challenge frequency of these systems (i.e., the frequency with which the system is expected to be challenged to mitigate offsite or main control room radiological dose resulting from materials that leak from the primary containment above TS limits) is less than 1.0 E-6/yr. Consequently, the conditional probability that these systems will be challenged during the repair time interval while the plant is at either the current or the proposed end state (i.e., Mode 4 or Mode 3, respectively) is less than 1.0E-8. This probability is considerably smaller than the probabilities considered "negligible" in RG 1.177 (Reference 9) for much higher consequence risks, such as large early release.

Section 5.1 of NEDC-32988 [Reference 4] summarizes the staff's risk assessment for approval of the end state change to TS 3.6.4.3, BWR/4 TS 3.7.4, and BWR/6 TS 3.7.3. The justification for staying in Mode 3 instead of going to Mode 4 to repair the system (one or both subsystems) is also supported by defense-in-depth considerations. Section 5.2 makes a comparison between the current (Mode 4) and the proposed (Mode 3) end state, with respect to the means available to perform critical functions (i.e., functions contributing to the defense-in-depth philosophy) whose success is needed to prevent core damage

and containment failure and mitigate radiation releases. The risk and defense-in-depth reasoning, used according to the "integrated decision-making" process of RGs 1.174 and RG 1.177 (References 8 and 9), supports the conclusion that Mode 3 is as safe as Mode 4 (if not safer) for repairing an inoperable system. The staff finds the proposed change to the BWR/4 and BWR/6 fission product cleanup TS is acceptable in light of defense-in-depth considerations and because the time spent in Mode 3 to perform the repair is infrequent and limited.

Comparison of RHR Drywell Spray Function to Similar Containment Heat Removal and Fission Product Cleanup Functions

There are no unique aspects of the HNP RHR drywell spray function that [are] different than the BWR/4 RHR suppression pool spray function and the BWR/6 RHR containment spray function. Therefore, SNC has determined that the NEDC-32988 conclusion that a Mode 3 end state is acceptable for TS associated with comparable containment heat removal systems is also acceptable for the RHR drywell spray TS. The drywell spray mode of the HNP RHR system and the BWR/4 and BWR/6 fission product cleanup systems are functionally similar in that, the drywell spray limits the radioactive release from the primary containment and the fission product cleanup systems evaluated in the GE topical report provide a radioactive filtration function that limits the radioactive release from the secondary containment to the environment and limits the radiation dose to the operators in the control room. Therefore, SNC has determined that the NEDC-32988 conclusion that a Mode 3 end state is acceptable for the fission product cleanup systems' TS is also acceptable for the RHR drywell spray TS.

The proposed change does not alter the design of the drywell spray mode of the RHR system, the associated LCO, or its applicability. The RHR drywell system subsystems will still be required to be Operable when the reactor is in Modes 1, 2, and 3. The proposed change only alters the end state with one or more RHR drywell spray subsystems inoperable, and requires the reactor to be subcritical (Mode 3). Finally, the requested change has no impact on the assumptions, calculations, or commitments made in the AST license amendment (Ref. 5) [Reference 11 of this safety evaluation].

3.2 NRC Staff Evaluation of Proposed TS 3.6.2.5

The proposed amendment would revise TS 3.6.2.5, RHR Drywell Spray, to change the Required Action C.1 and C.2 end states when the TS Conditions A and B and their corresponding Required Actions cannot be met within the associated CTs.

Condition C of the current TS 3.6.2.5 states:

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time not met	C.1 Be In MODE 3. AND C.2 Be in MODE 4.	12 hours 36 hours

Condition C of the proposed TS 3.6.2.5 would state:

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time not met	C.1 ------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3 ---------- Be in MODE 3.	12 hours

Condition C is entered if either Condition A, "One RHR drywell spray subsystem inoperable," with a CT of 7 days, or Condition B, "Two RHR drywell spray subsystems inoperable," with a CT of 8 hours are not met. The Required Action associated with Condition A is to restore the RHR drywell spray subsystem to operable status, and the Required Action associated with Condition B is to restore one RHR drywell spray subsystem to Operable status.

For proposed TS 3.6.2.5, Required Action C.2 is deleted for entry into Mode 4 if the Required Actions and associated Completion Time are not met. In addition, TS 3.6.2.5, Required Action C.1 is modified by a Note prohibiting the use of LCO 3.0.4.a for entry into Mode 3 during startup when the LCO is not met.

Following a design-basis accident (DBA), when the RHR drywell spray subsystem is used, water is pumped from the suppression pool through the RHR heat exchangers, then is diverted to the spray headers in the drywell. The drywell spray reduces primary containment temperature and pressure through the combined effects of evaporative and convective cooling. Also, the RHR drywell spray is operated to remove a portion of the inorganic radioactive iodine and particulates from the drywell atmosphere and retain them in the suppression pool. RHR drywell spray is credited in the LOCA analysis for both iodine removal and for temperature and pressure reduction effects; however, the drywell spray mode is not credited in determining the post-LOCA peak primary containment internal pressure in the containment pressure analysis. The radiological dose analysis does credit the drywell spray temperature and pressure reduction over time in reducing the post-LOCA primary containment leakage and main steam isolation valve leakage.

The licensee cites the bases in the NRC staff's safety evaluation approving Topical Report NEDC-32988 and the associated changes to the BWR Standard Technical Specifications for various BWR plant systems (Reference 12). The licensee asserts in the LAR that those bases, for similar containment heat removal and fission product cleanup systems, are also applicable to the HNP RHR drywell spray subsytems and provide appropriate justification for the proposed TS changes.

In Reference 12, the NRC staff considered a broad range of BWR systems and functions and concluded that staying in Mode 3 (hot shutdown) instead of going to Mode 4 (cold shutdown) to carry out equipment repairs does not have an adverse effect on plant risk and may reduce risk. The NRC staff further concluded that defense-in-depth considerations also supported the changes in TS end states for the BWR systems considered. Specifically, the NRC staff's SE stated that more means are available when the plant is operating in Mode 3 than when it is operating in Mode 4, to perform critical functions such as core heat removal, containment heat

removal and water makeup, due, in part, to the availability of the steam-driven high pressure core cooling systems. Additionally, the same means are available when the plant is operating in Mode 3 as when it is operating in Mode 4 for mitigating any radiation releases above TS limits.

Based on its review of the HNP RHR drywell spray subsystem, the NRC staff agrees that it is similar in design and function to other BWR containment heat removal and fission product cleanup systems evaluated in the NRC staff's SE approving NEDC-32988. The HNP RHR drywell spray function is similar to the BWR/4 RHR suppression pool spray function and the BWR/6 RHR containment spray function; and the drywell spray mode of the HNP RHR system is functionally similar to the BWR/4 and BWR/6 fission product cleanup systems in limiting potential radioactive releases. Therefore, the NRC staff concludes that its previous conclusions in Reference 12 for similar systems also apply to the HNP RHR drywell spray subsystem.

The NRC staff further concludes that the proposed change to HNP TS 3.6.2.5, with Mode 3 as the end state, is acceptable because the plant risk in Mode 3 is similar to or lower than the risk in Mode 4 and because the time spent in Mode 3 to perform the necessary repairs to restore the system to Operable status will be short. However, voluntary entry into Mode 4 may be made, as it is also an acceptable low-risk state.

LCO 3.0.4 states:

> When an LCO is not met, entry into a MODE or other specified Condition in the Applicability shall only be made:
>
> a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time,
>
> b. After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate (exceptions to this specification are stated in the individual Specifications); or
>
> c. When an allowance is stated in the individual value, parameter, or other Specification.
>
> This Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

The purpose of adding the Note to TS 3.6.2.5 is to provide assurance that entry into the end state Mode 3 during reactor startup with one or more drywell spray subsystems inoperable will only be made based upon an appropriate risk assessment. With the proposed Note, entry into Mode 3 during startup with an inoperable RHR drywell spray subsystem would only be permitted after evaluation under LCO 3.0.4.b.

The NRC staff finds this acceptable because LCO 3.0.4.b allows entry only after performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the Mode or other specified condition in the Applicability, and establishment of risk management actions, if appropriate.

3.3 NRC Staff Summary

Based on the above, the NRC staff finds that the proposed change revises the end state when the Completion Times for the TS 3.6.2.5 Required Actions A or B are exceeded for the drywell spray mode of the RHR system. The proposed TS change allows the unit to be maintained in Hot Shutdown (Mode 3) rather than Cold Shutdown (Mode 4) to repair equipment, if risk is assessed and managed consistent with the program in place for complying with the requirements of 10 CFR 50.65(a)(4). This proposed TS change is consistent with similar NRC-approved TS changes for the RHR system (Reference 3) which include:

TS 3.5.1, Required Action B.1, ECCS (RHR- LPCI) – TS end state Mode 3,
TS 3.6.2.3, Required Action B.1, RHR Suppression Pool Cooling – TS end state Mode 3, and
TS 3.6.2.4, Required Action C.1, RHR Suppression Pool Spray – TS end state Mode 3.

The proposed TS 3.6.2.5 is also modified by a Note that prohibits entering a mode during reactor startup for which the TS applies (Mode 3) by using LCO 3.0.4.a when the LCO is not met. Risk insights from both qualitative and quantitative assessments in GE topical report NEDC-32988-A, Revision 2, "Technical Justification to Support Risk Informed Modification to Selected Required Action End States for BWR Plants," support this proposed change.

The proposed amendment does not adversely alter the remedial actions or shutdown requirements required by 10 CFR 50.36(c)(2)(i). Rather, the proposed amendment changes the end state requirement from Cold Shutdown (Mode 4) to Hot Shutdown (Mode 3). The risk and defense-in-depth reasoning provided in GE topical report NEDC-32988 (References 10 and 12) also support the conclusion that Mode 3 is as safe as Mode 4 for repairing an inoperable RHR drywell spray system. Since it is expected that the need to repair the system would be infrequent, that the time spent in Mode 3 to perform any repairs would be limited, and considering the defense-in-depth design features of HNP Unit Nos. 1 and 2, the NRC staff concludes that the proposed TS 3.6.2.5 changes are acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Georgia State official was notified of the proposed issuance of the amendments on April 4, 2019, and the State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20. 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 that the amendments involve no significant hazards consideration, and there has been no public comment on such finding published in the *Federal Register* on December 4, 2018 (83 FR 62618).

Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or

environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

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

7.0 REFERENCES

1. Southern Nuclear Operating Company, letter to U.S. Nuclear Regulatory Commission, "Edwin I. Hatch Nuclear Plants – Unit 1 & 2, Revision to Technical Specification End State for Residual Heat Removal Drywell Spray," dated August 6, 2018 ADAMS Package Accession No. ML18218A297).

2. Technical Specifications Task Force, letter to U.S. Nuclear Regulatory Commission, "Transmittal of Revised Risk-Informed End State Travelers," dated December 22, 2009 (ADAMS Accession No. ML093570241); includes TSTF-423, Revision 1, "Technical Specifications End States, NEDC-32988-A."

3. NRC letter to SNC, Edwin I. Hatch Nuclear Plant, Unit Nos. 1 and 2 - Issuance of Amendments to Adopt TSTF-423, Revision 1, "Technical Specifications End States, NEDC-32988-A," December 19, 2016 (ADAMS Accession No. ML16257A724).

4. BWR Owners Group, NEDC-32988-A, Revision 2, "Technical Justification to Support Risk-Informed Modification to Selected Required Action End States for BWR Plants," December 2002 (ADAMS Accession No. ML030170090).

5. U.S. Nuclear Regulatory Commission, NUREG-1433, Revision 4, "Standard Technical Specifications – General Electric BWR/4 Plants," April 2012 (ADAMS Accession No. ML12104A192).

6. U.S. Nuclear Regulatory Commission, NUREG-1434, Revision 4, "Standard Technical Specifications – General Electric BWR/6 Plants," April 2012 (ADAMS Accession No. ML12104A195).

7. Federal Register, 76 FR 9614, Availability of the model application and model Safety evaluation TSTF-423, Revision 1, Technical Specifications End States, NEDC-32988-A, dated February 18, 2011.

8. U.S. Nuclear Regulatory Commission, Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant Specific Changes to the Licensing Basis," July 1998 (ADAMS Accession No. ML003740133).

9. U.S. Nuclear Regulatory Commission, Regulatory Guide 1.177, "An Approach for Plant Specific Risk-Informed Decisionmaking: Technical Specifications," August 1998 (ADAMS Accession No. ML003740176).

10. GE Nuclear Energy Topical Report, NEDC-32988-A, "Technical Justification to Support Risk-Informed Modification to Selected Required Action End States for BWR Plants," Revision 2, December 2002 (ADAMS Accession No. ML030170060).

11. NRC letter to SNC, "Edwin I. Hatch Nuclear Plant, Unit Nos. 1 and 2, Issuance of Amendments Regarding Alternate Source Term (TAC Nos. MD2934 AND MD2935)," August 28, 2008 (ADAMS Accession No. ML081770071).

12. NRC letter to BWR Owners Group, "Safety Evaluation of Topical Report NEDC-32988, Rev. 2, 'Technical Justification to Support Risk-Informed Modification to Selected Required Action End States for BWR Plants' (TAC No. MB1054)," September 27, 2002, (ADAMS Accession No. ML022700603).

13. Title 10 of the *Code of Federal Regulations*, Section 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants."

14. U.S. Nuclear Regulatory Commission, Regulatory Guide 1.182, "Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants," May 2000 (ADAMS Accession No. ML003699426).

15. U.S. Nuclear Regulatory Commission, Regulatory Guide 1.160, Revision 3, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," May 2012 (ADAMS Accession No. ML113610098).

16. Nuclear Management and Resource Council, NUMARC 93-01, Revision 4A, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," April 2011 (ADAMS Accession No. ML11116A198).

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Date: April 30, 2019

SUBJECT: EDWIN I. HATCH NUCLEAR PLANT, UNIT NOS. 1 AND 2 – ISSUANCE OF AMENDMENTS TO REVISE TECHNICAL SPECIFICATION 3.6.2.5, CONDITION C, RESIDUAL HEAT REMOVAL DRYWELL SPRAY END STATE (EPID L-2018-LLA-0227) DATED APRIL 30, 2019

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