Southern Nuclear

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NL-22-0801

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Edwin I. Hatch Nuclear Plant – Units 1 & 2
Response to Request for Additional Information Regarding:
Application to Revise Technical Specifications to Adopt
Technical Specifications Task Force (TSTF) Traveler TSTF-208, Revision 0,
"Extension of Time to Reach Mode 2 in LCO 3.0.3" and
Administrative Correction for Duplicate Technical Specification 3.4.10

Ladies and Gentlemen:

On March 25, 2022, pursuant to the provisions of Section 50.90 of Title 10 of the *Code of Federal Regulations*, Southern Nuclear Operating Company (SNC) submitted a license amendment request (LAR) for renewed facility operating licenses DPR-57 and NPF-5 to revise the Technical Specifications (TS) for the Edwin I. Hatch Nuclear Plant (HNP), Units 1 and 2, respectively [NRC ADAMS Accession No. ML22087A169]. The amendment would eliminate the Limiting Condition for Operation (LCO) 3.0.3 requirement to be in Mode 2 within an allowable time limit based on the approved Technical Specifications Task Force (TSTF) Traveler TSTF-208, Revision 0, "Extension of Time to Reach Mode 2 in LCO 3.0.3." Additionally, SNC requested an administrative change for deletion of a duplicate TS 3.4.10, on TS Page 3.4-25 of each unit's TS.

On April 29, 2022 [ML22111A086] NRC notified SNC via letter the results of the acceptance review of SNC's submittal dated March 25, 2022 requesting adoption of TSTF Traveler TSTF-208 and administrative correction for duplicate TS 3.4.10. In response to the NRC's April 29, 2022 letter, SNC supplemented the request for amendments by letter dated May 17, 2022 [ML22137A001] to propose a new TS markup to more closely align with the intent of TSTF-208 and revise the discussion of the change in Enclosure 1 of the original submittal.

Via request for additional information (RAI) dated July 26, 2022 [ML22208A133], NRC requested SNC provide plant specific data and analysis to support extending the allowed time to reach MODE 2 upon entry into TS Limiting Condition for Operation (LCO) 3.0.3.

Enclosure 1 provides the requested plant specific data and analysis to support SNC's request to extend the allowed time to reach MODE 2 upon entry into TS LCO 3.0.3.

SNC requests the same approval and implementation schedule as requested in its original application [ML22087A169]. The conclusions of the No Significant Hazards Consideration Determination and Environmental Consideration contained in the supplement to the original application have been reviewed and are unaffected by this RAI response.

This document contains no regulatory commitments.

In accordance with 10 CFR 50.91(b)(1), SNC is notifying the State of Georgia of this RAI response by transmitting a copy of this letter and enclosure to the designated State Official.

If you have any questions regarding this submittal, please contact Amy Chamberlain at 205.992.6361.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 14th day of October 2022.

Respectfully submitted,

Cheryl A. Gayheart
Regulatory Affairs Director
Southern Nuclear Operating Company

CAG/agq/cbg

Enclosures: 1. Response to Request for Additional Information

cc: Regional Administrator, Region ll
NRR Project Manager – Hatch
Senior Resident Inspector – Hatch
Director, Environmental Protection Division – State of Georgia
RType: CHA02.004

NL-22-0801

Response to Request for Additional Information Regarding:
Edwin I. Hatch Nuclear Plant – Units 1 & 2
Supplement to Application to Revise Technical Specifications to Adopt Technical Specifications Task Force (TSTF) Traveler TSTF-208, Revision 0, "Extension of Time to Reach Mode 2 in LCO 3.0.3" and
Administrative Correction for Duplicate Technical Specification 3.4.10

Enclosure 1

Response to Request for Additional Information

SNC Response to NRC Request for Additional Information

Nuclear Regulatory Commission (NRC) Staff transmitted request for additional information (RAI) via email dated July 26, 2022 [ML22208A133]. The RAI was in regard to SNC's license amendment request (LAR) supplement dated May 17, 2022 [ML22137A001] for Hatch Nuclear Plant (HNP) Units 1 and 2 to adopt Technical Specifications Task Force (TSTF) traveler TSTF-208, "Extension of Time to Reach Mode 2 in LCO 3.0.3" and Administrative Correction for Duplicate Technical Specification 3.4.10. The NRC Staff's RAIs are below and followed by SNC's response.

REQUEST FOR ADDITIONAL INFORMATION (RAI)

By letter dated March 25, 2022 (Agencywide Documents and Access Management System (ADAMS) Accession No. ML22087A169), Southern Nuclear Operating Company (SNC, the licensee) submitted a license amendment request (LAR) for Edwin I. Hatch Nuclear Plant (HNP), Units 1 and 2. The proposed amendments would eliminate the Limiting Condition for Operation (LCO) 3.0.3 requirement to be in Mode 2 within an allowable time limit based on the approved Technical Specifications (TS) Task Force (TSTF) Traveler TSTF-208, Revision 0, "Extension of Time to Reach Mode 2 in LCO 3.0.3." The amendment request maintained the LCO 3.0.3 requirement to be in Mode 3 within 13 hours. In addition, SNC requested an administrative change for deletion of a duplicate TS 3.4.10, on TS Page 3.4-25 of each unit's TS.

By letter dated April 29, 2022 (ADAMS Accession No. ML22111A086), the NRC informed SNC of the need for supplemental information for acceptance of the requested licensing action. By letter dated May 17, 2022 (ADAMS Accession No. ML22137A001), SNC responded with supplemental information. The supplemental information proposed a change from 7 hours to 10 hours for the allowable time limit to reach Mode 2 in LCO 3.0.3.

NRC staff has reviewed the application and the supplemental information. To complete its review, the NRC staff requests additional information as shown below.

RAI-01

The regulations of Title 10 of the Code of Federal Regulations (10 CFR) Part 50.36, Technical specifications, establish the requirements related to the content of the TS. Section 50.36(c)(2) states, in part:

> Limiting conditions for operation. (i) 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.

The requirements of LCO 3.0.3 establish the actions that must be implemented when an LCO is not met and either an associated Required Action and Completion Time is not met and no other Condition applies, or the condition of the unit is not specifically addressed by the associated actions.

NUREG-1433, Revision 5, BWR/4 standard technical specifications, requires actions to be initiated within one hour to place the unit in Mode 2 within 7 hours when in LCO 3.0.3. Therefore, the NUREG effectively allows six hours from the start of the shutdown to reach Mode 2. The time limits specified to enter lower MODES of operation permit the shutdown to proceed in a controlled and orderly manner that is well within the specified maximum cooldown rate and within the capabilities of the unit, assuming that only the minimum required equipment is OPERABLE.

TSTF-208, Revision 0 (ADAMS Accession No. ML040570174), determined that older BWRs can take longer than the currently available six hours to reach conditions where the plant can be placed in Mode 2. In addition, a Reviewer's Note is added to LCO 3.0.3 stating that plant specific data must be provided to support the extension of the time to reach Mode 2.

The second and third paragraphs of Section 3.0 of the May 17, 2022, supplement states:

> In accordance with TSTF-208, Revision 0, it has been determined that older BWRs can take longer than the currently available six hours to reach conditions where the plant can be placed in Mode 2. HNP is a BWR/4 with 137 control rods.
>
> At HNP, review of plant data indicates approximately 16 hours are typically required for an orderly shutdown. An orderly shutdown involves lowering reactor power to ~20% using control rods and reactor recirculation pumps, and then inserting a manual scram from ~20% power by placing the reactor mode switch in the Shutdown position. While extending the allowed time to reach Mode 2 upon entry into LCO 3.0.3 from 7 hours to 10 hours will still result in an aggressive shutdown, it provides additional time for a more orderly shutdown and reduces stress on the operators.

TSTF-208 contains a reviewers note that the licensee must provide the plant specific data to support the extension. This information has not been provided in your initial submittal or supplement. Staff requests the licensee provide the plant specific data and analysis that reached the 10-hour LCO time requested in the LAR submittal. The information should include a summary analysis of the applicable operating procedure(s) and action steps for completing LCO 3.0.3 actions required to exit Mode 1 as well as historical operational data or simulator training data which demonstrate reliable completion in the requested 10-hour LCO time. The analysis should explain how the extended completion time will ensure maintaining the existing transient safety analysis for LCO 3.0.3 Manual SCRAM from 20% power.

SNC Response to RAI-01

Summary analysis of applicable operating procedure(s) and actions steps for completing LCO 3.0.3 actions required to exit Mode 1 as well as historical operational data which demonstrates reliable completion in the requested 10-hour LCO time.

The Plant Hatch procedure for shutting down the plant in a controlled and orderly manner is 34GO-OPS-013-# (where "#" represents the unit number, 1 or 2), "Normal Shutdown." The procedure provides the precautions, limitations, and instructions for decreasing power, separating the unit from the grid, and placing and maintaining the plant in either HOT or COLD SHUTDOWN. It is the procedure that Hatch Operations would use to perform LCO 3.0.3 actions required to exit Mode 1. For a normal shutdown, and LCO 3.0.3 shutdown, Operations' activities include reducing generator load, reducing reactor power, transferring 4160V buses from the Unit Auxiliary Transformers to the Startup Auxiliary Transformers, positioning valves, shutting down the main turbine/generator, reducing reactor power to approximately 20% rated thermal power (RTP), and entering a manual SCRAM. The net effect of this sequence of actions is that Plant Hatch bypasses Mode 2 and moves directly from Mode 1 to Mode 3. Therefore, for the purposes of LCO 3.0.3, reaching Mode 2 is the same as reaching Mode 3 for Plant Hatch.

Figure 1 (see page 5 of 5 of this enclosure) shows the Reactor Power vs Time for a recent reactor shutdown performed at Hatch Unit 2 for a maintenance outage. The sharp decrease from ~20% RTP to ~0% RTP is the point at which the manual SCRAM was inserted (i.e., the point at which Mode 3 was reached). The total elapsed time to go from 100% RTP to Mode 3 was approximately 11 hours, including an initial hold at 100% RTP for 1 hour (similar to the 1 hour allowed by LCO 3.0.3 to initiate action). The shutdown was performed per procedure 34GO-OPS-013, the same procedure that would be followed in the event of an LCO 3.0.3 shutdown, but with some additional activities involved in outage preparation that would not be performed during an LCO 3.0.3 shutdown. Operations held reactor power at ~50% RTP for approximately 2 hours 45 minutes, which would not be done in an LCO 3.0.3 shutdown, while these activities took place. These additional activities included:

- Conducting an As Low as Reasonably Achievable (ALARA) briefing and commencing a condenser bay walkdown.
- Holding a normal shift turnover. During an LCO 3.0.3 shutdown, Operations would perform a turnover without interrupting the shutdown process.

These additional actions accounted for a total of approximately 2 hours 45 minutes of the total time to reach Mode 3. Therefore, the estimated time to reach Mode 3 in an LCO 3.0.3 shutdown would be approximately 8 hours 15 minutes (11 hours minus 2 hours 45 minutes).

Explain how the extended completion time will ensure maintaining the existing transient safety analysis for LCO 3.0.3 Manual SCRAM from 20% power.

There is no specific transient safety analysis for an LCO 3.0.3 manual SCRAM from 20% power for Plant Hatch. A manual scram is not specifically credited in the accident analysis, but it is retained for the overall redundancy and diversity of the reactor protection system as required by the NRC approved licensing basis (Reference: TS Bases B 3.3.1.1 Item 11). Additionally, as noted in Section 4.3 of the Hatch TSTF-208 license amendment request [ML22137A001], the proposed change to the allowed time to reach Mode 2 in LCO 3.0.3 does not alter or exceed a

design basis or safety limit. Margins of safety are unaffected by the proposed change and the applicable requirements of 10 CFR 50.36(c)(2)(ii) and 10 CFR 50, Appendix A will continue to be met.

Part of the basis for LCO 3.0.3 is to enter lower MODES of operation while permitting the shutdown to proceed in a controlled and orderly manner that is well within the specified maximum cooldown rate and within the capabilities of the unit, assuming that only the minimum required equipment is OPERABLE. This reduces thermal stresses on components of the Reactor Coolant System and reduces the potential for a plant upset that could challenge safety systems under conditions to which LCO 3.0.3 applies. One emphasis of procedure 34GO-OPS-013, “Normal Shutdown,” the procedure that would apply in an LCO 3.0.3 shutdown, involves closely monitoring and recording the cooldown rate to provide assurance that the cooldown rate is not exceeded. The extended completion time provides additional assurance that the plant will be shut down at a rate that is well within the specified maximum cooldown rate limits.

Based on the presented data and analysis, and the importance of shutting down in a controlled and orderly manner, allowing 10 hours to reach Mode 2 is within the capabilities of the plant and would assure a more orderly and controlled shutdown than the currently allowed 7 hours.

Figure 1: Reactor Power vs Clock Time for Hatch Unit 2 Reactor Shutdown, October 9-10, 2022