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Serial: RA-22-0270

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U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Oconee Nuclear Station (ONS), Units 1, 2, and 3
Docket Numbers 50-269, 50-270, and 50-287
Renewed Facility Operating License Nos. DPR-38, DPR-47, and DPR-55

Subject: Response to Request for Additional Information Regarding License Amendment
Request to Address Technical Specifications Mode Change Limitations

Ladies and Gentlemen:

By application dated March 31, 2022 (Agencywide Documents Access and Management System Accession No. ML22090A090), Duke Energy Carolinas, LLC (Duke Energy), submitted a license amendment request (LAR) to amend the Technical Specifications (TS) for Oconee Nuclear Station (ONS) Units 1, 2, and 3. The proposed amendment would revise ONS TS to address additional mode change limitations applicable to the adoption of Technical Specifications Tasks Force (TSTF) Traveler No. 359, Revision 9, "Increase Flexibility in Mode Restraints" (ADAMS Accession No. ML031190607) per Amendment Numbers 417, 419, and 418 to Renewed Facility Operating Licenses for ONS Units 1, 2, and 3, respectively (ADAMS Accession No. ML20237F435).

The U.S. Nuclear Regulatory Commission (NRC) staff reviewed the LAR and determined that additional information is needed to complete their review. Duke Energy received the request for additional information (RAI) from the NRC through electronic mail on September 8, 2022 (ADAMS Accession No. ML22251A290).

The Enclosure to this letter provides Duke Energy's response to the RAI. This additional information does not change the conclusions of the No Significant Hazards Consideration and Environmental Consideration in the original LAR. There are no regulatory commitments contained within this letter.

Duke Energy is notifying the State of South Carolina of this RAI response by transmitting a copy of this letter to the designated State Officials.

If there are any questions or if additional information is needed, please contact Ryan Treadway, Corporate Regulatory Affairs Licensing Director, at 980-373-5873.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on October 7, 2022.

Sincerely,

A handwritten signature in black ink, appearing to read "Steven M. Snider". The signature is fluid and cursive, with a large initial "S" and "M".

Steven M. Snider
Site Vice President
Oconee Nuclear Station

Enclosure: Response to Request for Additional Information

cc: L. Dudes, NRC Regional Administrator, Region II
J. Nadel, USNRC Senior Resident Inspector – ONS
S. A. Williams, NRR Project Manager – ONS
R. Mack – Assistant Bureau Chief, SC Department of Health & Environmental Control

U.S. Nuclear Regulatory Commission
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Enclosure

Enclosure

Response to Request for Additional Information

Response to Request for Additional Information

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RAI No. 1

In the Technical Evaluation of the proposed change on Page 4 of 7 in the application, the licensee states:

"The ONS TS identified in Section 2.2 above are plant-specific TS that are not contained in NUREG-1430 and, therefore, were not included in the NUREG-1430 mark-ups provided in TSTF-359. Additionally, the identified systems and components are not considered higher-risk systems per the industry owners groups analyses provided in TSTF-359."

The TSTF-359 Notice of Availability (NOA) (68 FR 16579) dated April 4, 2003, states:

"Those licensees opting to apply for the subject change to technical specifications are responsible for reviewing the staff's evaluation, referencing the applicable technical justifications, **and providing any necessary plant-specific information.**" [Emphasis added]

The model SE [safety evaluation] in the NOA states:

"TS systems and components which may be of higher risk during mode changes have been identified generically by each owner's group for each plant operational mode or condition. **Licensees will identify such plant-specific systems and components in the individual plant TS. The proposed LCO [limiting condition for operation] 3.0.4(b) allowance does not apply to these systems and components for the mode or condition in the applicability of an LCO at which they are of higher risk.**" [Emphasis added]

In the approved TSTF-359 traveler, the B&WOG [Babcock and Wilcox Owners Group] "Qualitative Risk Assessment for Increased Flexibility in MODE Restraints" states:

“The objective of this evaluation is to perform a qualitative risk assessment that focuses on STS [Standard Technical Specifications] delineated systems required to be operable prior to changing modes during a return to power from a plant shutdown. Performance of the qualitative assessment is based on a return to power operations following a plant shutdown. The results of this assessment are presented in terms of STS required systems that are more important during Modes 5,4, 3, and 2 than during at-power operations, i.e., Mode 1.”

Based on the above, the qualitative risk assessment performed by the B&WOG only accounts for SSCs [systems, structures, and components] in the STS and does not account for plant-specific systems. Please provide the results and a description of the plant-specific technical evaluation or a qualitative evaluation concluding that the systems in ONS’s LAR are not higher risk systems or components.

Duke Energy Response

TS 3.6.5 – Reactor Building Spray and Cooling Systems

By letter dated June 4, 2004 (ADAMS Accession No. ML041660477), the NRC issued License Amendment No. 340 for Unit 2 as an emergency amendment to allow continued startup of Unit 2 while Reactor Building Cooling Unit (RBCU) 2A was being repaired. This particular amendment modified TS 3.6.5 to include the Note indicating that the provisions of LCO 3.0.4 do not apply for Unit 2. Specifically, this change allowed, for systems and components, mode changes into a TS condition that has a specific required action and Completion Time (CT). This allowance was to be utilized only if ONS determined that there was a high likelihood that the LCO would be satisfied within the LCO CT, after the mode change.

Per Section 1.0 of the associated safety evaluation (SE):

The requested change would modify TS requirements for mode change limitations for TS 3.6.5 to adopt the provisions of Technical Specification Task Force (TSTF) change TSTF-359, "Increase Flexibility in Mode Restraints." The availability of TSTF-359 for adoption by licensees was announced in the Federal Register on April 4, 2003 (68 FR 16579).

Furthermore, Section 3.1.2 of the SE states:

With all safety systems and components operable, a plant can transition up in mode to power operation. With an RBCU inoperable, this change permits a plant to transition up in mode to power operation if a 10 CFR 50.65(a)(4)-based risk assessment is performed prior to the mode transition, and the requisite risk management actions are taken.

The NRC has previously approved the adoption of the provisions of TSTF-359 for Unit 2 TS 3.6.5. Removing the Note in accordance with the current proposed LAR will restore the operational flexibility to perform a 10 CFR 50.65(a)(4)-based risk assessment to support transition up in mode to power operation, as approved for Unit 2 per License Amendment 340.

TSTF-359 B&WOG Qualitative Analysis

As part of the complete TSTF-359 Traveler, the Owners Groups developed Qualitative Risk assessments to justify the relaxation and increased flexibility of the Mode restrictions in their respective STS NUREG documents. These assessments identified those systems and components that are more important from a risk standpoint during the transition up through the shutdown and startup Modes, and subsequently to power operation, than the risk in Mode 1

itself. In reviewing the information provided in the TSTF-359 B&WOG Qualitative Analysis and applying the approach outlined in the assessment, Duke Energy determined that the systems and components associated with the proposed LAR are not "higher risk." The basis of the assessment, a qualitative comparison of risk associated with lower mode operation to at-power operation in Mode 1, gave consideration to events that are unique to a specific mode or that have an increased probability of occurrence in a specific mode, and the availability of required mitigation systems. Ultimately, operation in the lower modes with equipment available should not be more limiting than operation in Mode 1 unless there are unique events to the mode of interest, the typical events in the mode of interest have an increased probability of occurrence, or the mode of interest has a reduced mitigation system capability.

- TS 3.7.10a – Protected Service Water (PSW) Battery Cell Parameters

By letter dated August 13, 2014 (ADAMS Accession No. ML14206A790), the NRC issued License Amendment Nos. 386, 388, and 387 for Units 1, 2, and 3, respectively. The amendments consisted of changes to the ONS operating licenses, TS, and Updated Final Safety Analysis Report (UFSAR) to add a new PSW system to the plant's licensing basis as an additional method of achieving and maintaining safe shutdown of the reactors in the event of a high-energy line break or a fire in the Turbine Building, which is shared by all three units.

Section 3.8.1 of the SE, as it relates to the new TS for the PSW, states:

The STS version of LCO 3.0.4 is a conditional allowance to enter the mode of applicability when the LCO is not met. The licensee uses LCO 3.0.4 as a conditional prohibition from entering the mode of applicability when an LCO is not met. While there is no functional difference between treating LCO 3.0.4 as a conditional prohibition or conditional allowance, there is a difference in how and when LCO 3.0.4 exceptions are listed. The proposed Actions table is preceded by a NOTE that states LCO 3.0.4 is not applicable. The exception for LCO 3.0.4 provided in the NOTE would permit entry into MODES 1 or 2 with the PSW system not OPERABLE. The licensee's justification for this exception is that the PSW is not required to support normal operation of the facility or to mitigate a design basis event. The proposed use of the LCO 3.0.4 note is not consistent with STS usage, however it is consistent with the current ONS TS due to the minor differences in how LCO 3.0.4 is described and used in other ONS TS.

Furthermore, Section 3.8.2 of the SE goes on to discuss the application of the exception Note to the PSW battery cell parameters in TS 3.7.10a, which states:

The proposed Actions table is preceded by a NOTE that states LCO 3.0.4 is not applicable. The exception for LCO 3.0.4 provided in the NOTE would permit entry into MODES 1 or 2 with the PSW system not OPERABLE. The licensee's justification for this exception is that the PSW is not required to support normal operation of the facility or to mitigate a design basis event. The proposed use of the LCO 3.0.4 note is not consistent with STS usage, however it is consistent with ONS TS due to the minor differences in how LCO 3.0.4 is described and used in other ONS TS.

Based on the qualitative approach utilized in the B&WOG Qualitative Risk Assessment for TSTF-359 and the identification of the key parameters and systems, the key activities in progress by mode, the initiating events, and the key events in

Sections 3.1 through 3.4 of the assessment, respectively, these components were found to be no more important during startup and return to power than when in Mode 1. Therefore, these components are not 'high risk' within the context of the Model Safety Evaluation for TSTF-359. Removing the Note in accordance with the current proposed LAR will restore the operational flexibility previously afforded TS 3.7.10a per License Amendment Nos. 386, 387, and 388 for Units 1, 2, and 3, respectively.

- TS 3.7.16 – Control Room Area Cooling Systems (CRACS)

The CRACS provides temperature control for the control areas (i.e., control room, cable room, and equipment room for each unit) and is arranged in redundant trains. Designed to remove sensible and latent heat loads from the control area, a single active failure of a CRACS component does not impair the ability of the system to perform its design function to maintain control area temperature to ensure cooling of vital equipment. As it relates to the exemption from the previous LCO 3.0.4 prior to implementation of TSTF-359, the associated TS Bases state:

The Required Actions are modified by a Note that states LCO 3.0.4 is not applicable. In consideration of the redundant CRACS train available, the small variation in temperature expected between 12 hour surveillances, and the marginal impact small temperature variations may have on the ability of a CRACS train to maintain the control room temperature within limits, an exception to LCO 3.0.4 is applicable for this condition.

Based on the qualitative approach utilized in the B&WOG Qualitative Risk Assessment for TSTF-359 and the identification of the key parameters and systems, the key activities in progress by mode, the initiating events, and the key events in Sections 3.1 through 3.4 of the assessment, respectively, this system was found to be no more important during startup and return to power than when in Mode 1. Therefore, this system is not 'high risk' within the context of the Model Safety Evaluation for TSTF-359. Removing the Note in accordance with the current proposed LAR will restore the operational flexibility previously afforded TS 3.7.16.

- TS 3.8.5 – Battery Cell Parameters

The battery cell parameters are required solely for the support of the associated direct current (DC) electrical power sources and therefore only required to be met when the DC power source is required to be operable. As it relates to the exemption from the previous LCO 3.0.4 prior to implementation of TSTF-359, the associated TS Bases state:

A second Note states that LCO 3.0.4 is not applicable. This is acceptable since a battery remains OPERABLE when one or more cells does not meet Category A or B limits but continues to meet Category C limits. Failure to meet Category C limits requires declaring the associated battery inoperable. LCO 3.0.4 requirements are applicable to the requirements of LCO 3.8.3, "DC Sources – Operating" for an inoperable battery.

Based on the qualitative approach utilized in the B&WOG Qualitative Risk Assessment for TSTF-359 and the identification of the key parameters and systems, the key activities in progress by mode, the initiating events, and the key events in Sections 3.1 through 3.4 of the assessment, respectively, these components were

found to be no more important during startup and return to power than when in Mode 1. Therefore, these components are not 'high risk' within the context of the Model Safety Evaluation for TSTF-359. Removing the Note in accordance with the current proposed LAR will restore the operational flexibility previously afforded TS 3.8.5.

- TS 3.10.1 – Standby Shutdown Facility (SSF)

Required in Modes 1, 2, and 3, the SSF serves as a backup for existing safety systems to provide an alternate and independent means to achieve and maintain one, two, or three ONS units in Mode 3 with average Reactor Coolant System (RCS) temperature $\geq 525^{\circ}\text{F}$ (unless the initiating event causes the unit to be driven to a lower temperature) for up to 72 hours following a fire or a turbine building flood. The SSF is also credited for station blackout (SBO) coping, which has a 4-hour coping duration. As it relates to the exemption from the previous LCO 3.0.4 prior to implementation of TSTF-359, the associated TS Bases state:

The exception for LCO 3.0.4, provided in the Note of the Actions, permits entry into MODES 1, 2, and 3 with the SSF not OPERABLE. This is acceptable because the SSF is not required to support normal operation of the facility or to mitigate a design basis accident.

Based on the qualitative approach utilized in the B&WOG Qualitative Risk Assessment for TSTF-359 and the identification of the key parameters and systems, the key activities in progress by mode, the initiating events, and the key events in Sections 3.1 through 3.4 of the assessment, respectively, this system was found to be no more important during startup and return to power than when in Mode 1. Therefore, this system is not 'high risk' within the context of the Model Safety Evaluation for TSTF-359. Removing the Note in accordance with the current proposed LAR will restore the operational flexibility previously afforded TS 3.10.1.

- TS 3.10.2 – Standby Shutdown Facility (SSF) Battery Cell Parameters

The SSF battery cell parameters are required solely for the support of the associated SSF power system battery and therefore only required to be met when the SSF DC power source is required to be operable. As it relates to the exemption from the previous LCO 3.0.4 prior to implementation of TSTF-359, the associated TS Bases state:

The ACTIONS Table is modified by a Note which indicates that LCO 3.0.4 is not applicable. This is acceptable since a battery remains OPERABLE when one or more cells does not meet Category A or B limits but continues to meet Category C limits. Failure to meet Category C limits requires declaring the SSF battery inoperable.

Based on the qualitative approach utilized in the B&WOG Qualitative Risk Assessment for TSTF-359 and the identification of the key parameters and systems, the key activities in progress by mode, the initiating events, and the key events in Sections 3.1 through 3.4 of the assessment, respectively, these components were found to be no more important during startup and return to power than when in Mode 1. Therefore, these components are not 'high risk' within the context of the Model Safety Evaluation for TSTF-359. Removing the Note in accordance with the current proposed LAR will restore the operational flexibility previously afforded TS 3.10.2.