

June 10, 2025

Docket Nos.: 52-025
52-026

NL-25-0205
10 CFR 50.90

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

Vogtle Electric Generating Plant – Units 3 and 4
License Amendment Request: Move Surveillance Requirements from Technical Specifications
(TS) 3.3.15 and 3.3.16, Engineered Safety Feature Actuation System (ESFAS) Actuation Logic
Response to Request for Additional Information

On January 24, 2025, Southern Nuclear Operating Company (SNC) submitted a license amendment request (LAR) for Vogtle Electric Generating Plant, Units 3 and 4 (ADAMS Accession No. ML25024A238). The proposed amendment revises Combined License (COL) Appendix A, Technical Specifications (TS) 3.3.15, “Engineered Safety Feature Actuation System (ESFAS) Actuation Logic – Operating,” and TS 3.3.16, “Engineered Safety Feature Actuation System (ESFAS) Actuation Logic – Shutdown,” to move Surveillance Requirements to other limiting conditions for operation to more appropriately address the scope and the required Actions for the various components.

On May 28, 2025 the NRC Staff provided a draft request for additional information (RAI). These RAIs were clarified on a call with the NRC Staff on the same day. SNC has incorporated appropriate clarifications regarding the RAIs into the enclosed responses.

The Enclosure to this letter provides the SNC response to the RAIs.

The additional information provided in the Enclosure to this letter does not impact the regulatory evaluation (including the Significant Hazards Consideration Determination) or environmental considerations for the proposed changes provided in the January 24, 2025, submittal.

This letter contains no regulatory commitments. This letter has been reviewed and determined not to contain security-related information.

In accordance with 10 CFR 50.91, SNC is notifying the State of Georgia by transmitting a copy of this letter and its enclosure to the designated State Official.

If you have any questions, please contact Ryan Joyce at (205) 992-6468.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 10th of June 2025.

Respectfully submitted,

A handwritten signature in black ink that reads "Jamie Coleman". The signature is written in a cursive, flowing style.

Jamie M. Coleman
Director, Regulatory Affairs
Southern Nuclear Operating Company

Enclosure: Response to Request for Additional Information

cc: NRC Regional Administrator, Region II
NRR Project Manager – Vogtle 3 & 4
Senior Resident Inspector – Vogtle 3 & 4
Director, Environmental Protection Division – State of Georgia
Document Services RTYPE: VND.LI.L00

The NRC request for additional information is repeated below and followed by the Southern Nuclear Operating Company (SNC) responses for Vogtle Electric Generating Plant (VEGP) Units 3 and 4.

REQUEST FOR ADDITIONAL INFORMATION (RAI)

SNSB-RAI 1

As indicated in Attachments 1 and 2 of the LAR, Required Action B.2 of proposed LCO 3.4.18, "Pressurizer Heater Circuit Breakers," requires being in Mode 4 with at least one cold leg temperature at or below 275°F within a Completion Time of 36 hours when the Required Action and Completion Time of LCO 3.4.18, Condition A have not been met, or when one or more pressurizer heater(s) has (have) both circuit breakers inoperable. For the purposes of pressurizer heater circuit breaker inoperability, this new Required Action is intended to replace Required Action B.2 of existing LCO 3.3.15, which requires being in Mode 5 within a Completion Time of 36 hours.

Entering Mode 4 with at least one cold leg temperature at or below 275°F appropriately exits the Applicability of proposed LCO 3.4.18. However, the proposed 36-hour Completion Time for Required Action B.2 of LCO 3.4.18, Condition B, is inconsistent with the Completion Times to reach Mode 4 following loss of function (i.e., inability to accommodate a single failure) for ESFAS instrumentation that causes pressurizer heater trips under TS 3.3.8, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation" (Functions 7 and 10). Under LCO 3.3.8, a 24-hour Completion Time is allotted to reach Mode 4 with at least one cold leg temperature at or below 275°F (Function 10) or with the Reactor Coolant System (RCS) cooling provided by the Normal Residual Heat Removal System (RNS) (Function 7). As stated in the Bases for TS 3.3.8, this Completion Time is considered reasonable, based on operating experience, to reach the required plant conditions in an orderly manner without challenging plant systems, in order to ultimately exit the Applicability of the associated LCO.

In order to provide assurance that the remedial actions specified under proposed LCO 3.4.18 will provide sufficient compensatory measures for loss of an automatic protection function, justify why use of a 36-hour Completion Time for LCO 3.4.18, Required Action B.2 is acceptable considering the 24-hour Completion Times to reach Mode 4 in LCO 3.3.8. In addition, the 36-hour Completion Time for LCO 3.4.18, Required Action B.2 is inconsistent with the information provided in Attachment 3 of the LAR; the TS Bases for Required Action B.2 state that the associated Completion Time is 24 hours.

SNC Response to SNSB-RAI 1

The current TS 3.3.15 Required Action B.2 (which proposed TS 3.4.18 Required Action B.2 is based on) provides a 36 hour Completion Time to reach MODE 5, which would exit the Applicability of TS 3.3.15. The specific requirement that is proposed to be moved into new TS 3.4.18 is SR 3.3.15.1 for pressurizer heater circuit breakers, which includes a Note limiting its applicability to when all four cold leg temperatures are > 275°F (i.e., lower end of MODE 4). As such, the current TS 3.3.15 Required Action B.2 when applied to an inoperability of pressurizer heater circuit breakers would provide the 36-hour Completion Time to exit the SR

applicability which occurs when all four cold leg temperatures are $> 275^{\circ}\text{F}$. This currently allowed 36-hour Completion Time to exit the applicability is administratively moved to proposed LCO 3.4.18 Required Action B.2. The LAR Attachment 3 TS Bases included a typo reflecting "24 hours" in lieu of being consistent with the TS Completion Time of "36 hours." This will be corrected during implementation should the LAR be approved.

With a maximum reactor coolant system (RCS) cooldown rate of 100°F in any one hour period allowed by the VEGP Units 3 and 4 Pressure and Temperature Limits Report (PTLR) in accordance with TS 3.4.3, RCS Pressure and Temperature (P/T) Limits, the difference between MODE 5 and MODE 4 with all four cold leg temperatures are $> 275^{\circ}\text{F}$ could reflect a difference of less than one hour. Given the potential actions of TS 3.3.8, for Functions 7 and 10 do not reflect requirements for the TS 3.3.15 tripping of pressurizer heater circuit breakers, and given the minimal effective difference between the two requirements, maintaining the current licensing basis Completion Time of 36 hours to exit the applicability for the requirements moved from SR 3.3.15.1 to TS 3.4.18 continue to reflect sufficient compensatory measures for the potential inoperability(ies).

SNSB-RAI 2

As shown in Attachments 1 and 2 of the LAR, Required Action B.1 of proposed LCO 3.4.20, "Chemical and Volume Control System (CVS) Letdown Isolation Valves," requires initiating action to isolate the Chemical and Volume Control System (CVS) letdown flow path by use of at least one closed and deactivated automatic valve with a Completion Time of Immediately when the Required Action and Completion Time of LCO 3.4.20, Condition A have not been met, or when two CVS letdown isolation valves are inoperable. For the purposes of CVS isolation valve inoperability in Mode 6 with water level < 23 feet above the top of the reactor vessel flange, this new Required Action is intended to replace Required Actions C.1 and C.2 of existing LCO 3.3.16. LCO 3.3.16 Required Action C.1 requires immediate suspension of positive reactivity additions. LCO 3.3.16 Required Action C.2 requires immediately initiating action to establish water level ≥ 23 feet above the top of the reactor vessel flange.

Section 3 of the LAR indicates that the current TS 3.3.16 Conditions broadly address the actions for inoperable ESFAS Actuation Logic. The LAR justifies Required Action B.1 of new LCO 3.4.20 by stating:

"These Actions are revised to be more specifically applicable to an inoperable isolation valve where isolating the flow path accomplishes the safety function. The Actions of TS 3.3.16 Action (sic) B do not provide compensatory actions specifically applicable to supporting maintaining RCS inventory in the event of a LOCA (loss-of-coolant accident), which is the safety function provided by the CVS letdown isolation. As such, it provides an equivalent level of safety to restoring the valve to operable status but allows for continued efforts to restore the valve(s) to operable status without imposing unnecessary additional actions that could impact outage operations. This action is similar to that for other CVS isolation valves (refer to TS 3.1.9, "CVS Demineralized Water Isolation Valves and Makeup Line Isolation Valves"). These changes do not adversely impact a safety function assumed in the safety analyses."

While the Actions of Condition B in LCO 3.3.16 are not specifically relevant to maintaining RCS inventory during a LOCA or excessive reactor coolant letdown during Mode 5, Required Action C.2 of LCO 3.3.16 is directly applicable to mitigation of such events during Mode 6. While the

proposed Required Action B.1 of LCO 3.4.20 is similar to Required Action B.1 of LCO 3.1.9, as mentioned in the LAR, LCO 3.1.9 is not applicable in Mode 6. Function 2 of TS 3.3.10, “Engineered Safety Feature Actuation System (ESFAS) Reactor Coolant System (RCS) Hot Leg Level Instrumentation,” covers the hot leg level instruments that sense Hot Leg Level – Low 2 conditions and initiate the closure of the CVS letdown isolation valves. TS 3.3.10, Function 2, is applicable in Mode 5 below the P-12 pressurizer level interlock and Mode 6 with water level < 23 feet above the top of the reactor vessel flange, and extended loss of instrument function (i.e., inability to accommodate a single failure) would have the same plant effect as an extended inoperability (inability to close) of both CVS letdown isolation valves. In Mode 6 with water level < 23 feet above the top of the reactor vessel flange, Required Action E.1 of LCO 3.3.10 requires the same Required Action (initiate action to establish water level \geq 23 feet above the top of the reactor vessel flange) with the same Completion Time (immediately) as existing LCO 3.3.16, Required Action C.2.

In order to provide assurance that the remedial actions specified under proposed LCO 3.4.20 will provide sufficient compensatory measures for loss of an automatic protection function while in Mode 6 in reduced inventory conditions, justify why a Required Action to initiate action to raise water level to exit the Applicability of proposed LCO 3.4.20 is not required in Mode 6 with reactor water level < 23 feet above the top of the reactor vessel flange, when loss of function (i.e., inability to accommodate a single failure) for the associated instrumentation (LCO 3.3.10, Condition E) requires such an action in order to provide additional inventory to mitigate event consequences.

SNC Response to SNSB-RAI 2

SNC has submitted a LAR “Shutdown Actions Mode Change Restrictions” on January 23, 2025 (ML25023A275), that proposes to replace both the TS 3.3.16 Required Action C.2 and TS 3.3.10 Required Action E.1 that require initiating action to establish water level \geq 23 feet above the top of the reactor vessel flange.

It is noted that removing this prescriptive requirement, which would exit the proposed TS 3.4.20 Applicability, does not change the option to raise level and exit the Applicability. If the operators evaluation of the plant status and ongoing activities determine the appropriate course of action to achieve compliance with 10CFR 50, Appendix B, Criterion XVI, Corrective Action, that requires the nonconformance be “promptly identified and corrected” is to raise water level \geq 23 feet above the top of the reactor vessel flange, then that course of action is not precluded.

To assess plant safety, SNC General Operating Procedure B-ADM-OPS-011, “Outage Risk Assessment Monitoring,” outlines programmatic requirements for effectively managing shutdown risks in modes 4, 5, 6, or defueled. This procedure guides the Outage Safety Assessment (OSA) process, which serves as a method for assessing and recording the availability of SSCs that provide defense-in-depth (DID) for key safety functions. It mandates that the OSA be performed each shift and be reviewed throughout the shift as plant conditions change. This ongoing review is crucial for recognizing plant configuration changes that could impact DID.

The proposed Actions for TS 3.4.20 are consistent with other TS Actions for inoperable isolation functions allowing continued operation with an isolated flow path providing the safety function.

As such, the proposed Action provides an equivalent level of safety to the existing Action to restore the valve to operable status.

SNSB-RAI 3

As shown in Attachments 1 and 2 of the LAR, proposed LCO 3.4.20 introduces a Note, applicable under all LCO 3.4.20 Conditions, that allows the previously isolated CVS letdown flow path to be unisolated intermittently under administrative controls. Existing LCO 3.3.16 contains no such allowance.

Section 3 of the LAR justifies this Note by stating:

"Also similar to the TS 3.1.9 actions allowing continued operation with an isolated flow path providing the safety function, the proposed TS 3.4.20 Actions includes a Note allowing the CVS letdown flow path to be unisolated intermittently under administrative control. These administrative controls consist of stationing a dedicated operator at the valve controls, who is in continuous communication with the control room. In this way the flow path can be rapidly isolated when a need for CVS letdown line isolation is indicated. As such, this change does not adversely impact a safety function assumed in the safety analyses."

While the proposed Note is similar to Note 1 of LCO 3.1.9, as mentioned in the LAR, LCO 3.1.9 is not applicable in Mode 6. Function 2 of TS 3.3.10, "Engineered Safety Feature Actuation System (ESFAS) Reactor Coolant System (RCS) Hot Leg Level Instrumentation," covers the hot leg level instruments that sense Hot Leg Level – Low 2 conditions and initiate the closure of the CVS letdown isolation valves. TS 3.3.10, Function 2, is applicable in Mode 5 below the P-12 pressurizer level interlock and Mode 6 with water level < 23 feet above the top of the reactor vessel flange, and extended loss of instrument function (i.e., inability to accommodate a single failure) would have the same plant effect as an extended inoperability (inability to close) of both CVS letdown isolation valves. In Mode 5 below the P-12 interlock, the Required Actions associated with flow path isolation for an extended loss of function (i.e., inability to accommodate a single failure; Required Actions D.1.1, D.1.2.1, and D.1.2.2) are modified with a Note allowing the flow path to be unisolated intermittently under administrative controls. However, in Mode 6 with water level < 23 feet above the top of the reactor vessel flange, Condition E/Required Action E.1 of LCO 3.3.10 do not allow the same flexibility, as extended loss of function (i.e., inability to accommodate a single failure) requires raising reactor water level to exit the Applicability for that Function, rather than allowing for isolation of the affected flow path as an option.

In order to provide assurance that the remedial actions and associated allowances specified under proposed LCO 3.4.20 will provide sufficient compensatory measures for loss of an automatic protection function while in Mode 6 in reduced inventory conditions, justify why a Note allowing the CVS letdown flow path to be unisolated intermittently under administrative controls while in Mode 6 with reactor water level < 23 feet above the top of the reactor vessel flange does not adversely affect a safety function, when loss of function (i.e., inability to accommodate a single failure) for the associated instrumentation (LCO 3.3.10, Condition E) does not allow such flexibility due to the need to provide additional inventory to mitigate event consequences.

SNC Response to SNSB-RAI 3

Refer to response to SNSB-RAI-2 above to support that the remedial actions and associated allowances specified under proposed LCO 3.4.20 will provide sufficient compensatory measures for loss of an automatic protection function while in Mode 6 in reduced inventory conditions.

Specifically, for SNSB-RAI-3, the proposed Note allowing the CVS letdown flow path to be unisolated intermittently under administrative controls is consistent with the current licensing basis allowance for inoperable CVS letdown isolation flow path to be unisolated intermittently under administrative controls that is found in TS 3.3.10 Action D for MODE 5. The allowance for MODE 5 is equally applicable to MODE 6 to provide sufficient compensatory measures that the flow path can be rapidly isolated when a need for flow path isolation is indicated.