

From: Billy Gleaves
Sent: Monday, June 5, 2023 3:35 PM
To: Dorsey, Keith A.; Dan Williamson (X2DWWILL@SOUTHERNCO.COM)
Cc: Cayetano Santos; Lauren Nist (She); Vogtle PEmails; Chamberlain, Amy Christine; Williamson, Daniel W.; Robert Elliott; Vic Cusumano; Rebecca Patton; Greg Oberson (He/Him); Pravin Sawant; Ryan Nolan; Ravi Grover; Brian Wittick; Harry Wagage
Subject: Final RAI on Vogtle LAR-23-005 - Timing of U/4 T.S. Exceptions Prior to Initial Criticality
Attachments: Vogtle LAR-23-005 U4 TS Exceptions Prior to Initial Criticality Final RAI.pdf

Keith and Dan,

Attached is the final RAI. It is identical to the draft with no significant changes. The changes from the draft, found in this final RAI, relate only to punctuation and abbreviations.

Due to the short turnaround requested by SNC for the NRC's review, any acceleration that SNC can make to complete the RAI response will help ensure that SNC can stay on schedule.

Respectfully

William (Billy) Gleaves
Senior Project Manager
NRR/Vogtle Project Office
US Nuclear Regulatory Commission

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From: Dorsey, Keith A. <kadorsey@southernco.com>
Sent: Monday, June 5, 2023 11:52 AM
To: Billy Gleaves <Bill.Gleaves@nrc.gov>
Cc: Cayetano Santos <Cayetano.Santos@nrc.gov>; Lauren Nist (She) <lauren.nist@nrc.gov>; Vogtle PEmails <Vogtle.PEmails@usnrc.onmicrosoft.com>; Chamberlain, Amy Christine <ACCHAMBE@southernco.com>; Williamson, Daniel W. <X2DWWILL@SOUTHERNCO.COM>
Subject: [External_Sender] RE: Draft RAI on Vogtle LAR-23-005 U4 TS Exceptions Prior to Initial Criticality

We accept the draft RAI as-is. No clarification call is needed.

From: Billy Gleaves <Bill.Gleaves@nrc.gov>
Sent: Thursday, June 1, 2023 9:14 AM
To: Dorsey, Keith A. <kadorsey@southernco.com>; Williamson, Daniel W. <X2DWWILL@SOUTHERNCO.COM>
Cc: Santos, Cayetano <cayetano.santos@nrc.gov>; Lauren Nist (She) <lauren.nist@nrc.gov>; Vogtle PEmails <Vogtle.PEmails@usnrc.onmicrosoft.com>
Subject: Draft RAI on Vogtle LAR-23-005 U4 TS Exceptions Prior to Initial Criticality

Keith,

Please see the attached .pdf file for the subject draft RAI with 7 questions related to the current NRC review of the Vogtle LAR 23-005, TIMING OF UNIT 4 TECHNICAL SPECIFICATIONS EFFECTIVENESS PRIOR TO INITIAL CRITICALITY.

By this email, the draft RAI is being entered into public ADAMS capture system and no accession number has yet been assigned.

The next step is for SNC to either accept the draft RAI as-is or identify any changes, questions, or comments on this draft RAI. If a clarification call is needed, let me know dates that will work for you.

Once SNC accepts this (or a future revision of this) draft RAI as “final,” please let me know and then I will reissue this as a “Final” RAI and request that the RAI response will be within 1 calendar month (30 days) unless otherwise agreed.

The release to the public in ADAMS is typically in 7 days so if there is SUNSI information in this draft RAI, please let me know immediately. If there is SUNSI information in the RAI response, please so state in the response letter and mark appropriately.

William (Billy) Gleaves
Senior Project Manager
NRR/Vogtle Project Office
US Nuclear Regulatory Commission

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Hearing Identifier: Vogtle_COL_Docs_Public
Email Number: 675

Mail Envelope Properties (DM6PR09MB4839B0599756265B28715DF29F4DA)

Subject: Final RAI on Vogtle LAR-23-005 - Timing of U4 T.S. Exceptions Prior to Initial Criticality
Sent Date: 6/5/2023 3:35:04 PM
Received Date: 6/5/2023 3:35:10 PM
From: Billy Gleaves

Created By: Bill.Gleaves@nrc.gov

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Post Office: DM6PR09MB4839.namprd09.prod.outlook.com

Files	Size	Date & Time
MESSAGE	3888	6/5/2023 3:35:10 PM
Vogtle LAR-23-005 U4 TS Exceptions Prior to Initial Criticality Final RAI.pdf		

146750

Options

Priority:	Normal
Return Notification:	No
Reply Requested:	No
Sensitivity:	Normal
Expiration Date:	

REQUEST FOR ADDITIONAL INFORMATION
LICENSE AMENDMENT REQUEST FOR LAR 23-005
TIMING OF UNIT 4 TECHNICAL SPECIFICATIONS
EFFECTIVENESS PRIOR TO INITIAL CRITICALITY (LAR-23-005)
DOCKET NO. 52-026
VOGTLE ELECTRIC GENERATING PLANT, UNIT 4
SOUTHERN NUCLEAR OPERATING COMPANY, INC.

By letter dated April 17, 2023 (Agencywide Documents Access and Management System Accession No. ML23107A278), the Southern Nuclear Operating Company submitted a license amendment request (LAR) in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 50.90, for the Vogtle Electric Generating Plant (VEGP) Combined License (COL).

The LAR proposes to modify the current Unit 4 COL Condition 2.D(9), Technical Specifications (TS), to limit the scope of COL Appendix A TS that become effective upon a Commission finding in accordance with 10 CFR 52.103(g). The proposed revision to the COL Condition would provide temporary exceptions prior to initial criticality of the reactor core for certain TS while operating in Modes 4, 5, and 6. The COL Appendix A TS are proposed to be permanently effective at Unit 4 initial criticality of the reactor core. The proposed change also includes revision to COL Appendix A TS Limiting Condition for Operation (LCO) 3.0.7 to coordinate with the TS compliance provisions proposed in the COL Condition.

The staff have reviewed the LAR in accordance with the Office of Nuclear Reactor Regulation Office Instruction LIC-101, "License Amendment Review Procedures" and has determined that the following additional information is needed to complete the review of the LAR.

The licensee's stated purpose for this LAR is:

During the VEGP Unit 3 startup testing phase, there has been experience with unnecessary hardships imposed by the TS that are based on worse-case assumptions reflecting the full range of the 40-year operating licensed period. In order to avoid unnecessary delays, VEGP Unit 3 TS amendments were requested based on both an emergency situation and exigent circumstances resulting in Amendment Nos. 189 and 190, respectively...

This proposed Unit 4 LAR is intended to avoid similar future unnecessary startup test phase maintenance constraints and schedule impacts that would otherwise be imposed by TS that do not reflect the lower functional capability or performance levels of equipment required for safe operation of the facility given that there is no fission product inventory, no decay heat, and no nuclear fission power being generated. This is also intended to avoid the potential for additional LAR(s) for emergency situation and/or exigent circumstances [emphasis added].

The requested exclusions to TS Section 5 programs and reports do not appear to be consistent with the stated purpose of the LAR as they do not have LCOs associated with them and would

not, therefore, create the potential need for emergency or exigent LARs. This observation is related to items 1-5 below.

- 1) In the LAR, the licensee requests to temporarily exclude the requirement to comply with TS 5.6.2, "Radioactive Effluent Release Report" and TS 5.5.1, "Offsite Dose Calculation Manual (ODCM)" until after initial criticality.
 - a. TS 5.6.2 implements the 50.36a regulatory requirement for the Radioactive Effluent Release Report. Excluding compliance with TS 5.6.2 does not change the requirement to meet 50.36a. It appears to the staff that to exclude this reporting requirement, an exemption would be required.

Please revise the application accordingly (e.g., provide the exemption request or withdraw the request to exclude TS 5.6.2) or provide an explanation as for not needing an exemption.

- b. The LAR also requests to exclude TS 5.5.1, "Offsite Dose Calculation Manual (ODCM)." However, per TS 5.5.1, the "ODCM shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints, and in the conduct of the radiological environmental monitoring program;" and it "**shall also contain the radioactive effluent controls and radiological environmental monitoring activities, and descriptions of the information that should be included in the Annual Radiological Environmental Operating, and Radioactive Effluent Release Reports required by Specification 5.6.1 and Specification 5.6.2 [emphasis added].**"

In addition, the licensee's COL Condition 2.D.(10)(g) requires that the ODCM be implemented before initial fuel load.

Without an exemption for the Annual Effluent Release Report, the requirements for the ODCM would be needed to support the development of the Annual Effluent Release Report. The staff requests clarification of this request as necessary to be consistent with the response to Question 1.a above. The licensee's response should also address whether any necessary conforming revision to COL Condition 2.D.(10)(g) is required.

- 2) The licensee requested to temporarily exclude meeting the requirements of TS 5.5.2, "Radioactive Effluent Control Program" until initial criticality. However, 10 CFR 50.36a states:

(a) To keep releases of radioactive materials to unrestricted areas during normal conditions, including expected occurrences, as low as is reasonably achievable, each licensee of a nuclear power reactor and each applicant for a design certification or a manufacturing license will include technical specifications that, in addition to requiring compliance with applicable provisions of § 20.1301 of this chapter, require that:

(1) **Operating procedures developed pursuant to § 50.34a(c) for the control of effluents be established and followed and that the radioactive waste system, pursuant to § 50.34a, be maintained and used [emphasis added].** The licensee shall retain the operating procedures in effect as a record until the Commission terminates the license and shall retain each

superseded revision of the procedures for 3 years from the date it was superseded.

And TS 5.5.2, "Radioactive Effluent Control Program," states:

This program conforms to 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to members of the public from radioactive effluents as low as reasonably achievable **[emphasis added]**.

In addition, the Radioactive Effluent Control Program is needed to demonstrate compliance with other regulatory requirements, such as 10 CFR 20.1302, "Compliance with dose limits for individual members of the public." Also, COL Condition 2.D.(10)(f) requires that "Standard Radiological Effluent Controls" be implemented before initial fuel load.

Accordingly, it appears that this exclusion may also require an exemption or exemptions to implement as the requirements of the tech spec are required by regulations. COL Condition 2.D.(10)(f) would also need to be modified to address this exclusion. Please revise the application accordingly or provide an explanation as to the basis for not needing an exemption. The licensee's response should also address any necessary conforming revision of COL Condition 2.D.(10)(f).

- 3) The licensee requested to temporarily exclude TS 5.7, "High Radiation Area," prior to initial criticality. However, 10 CFR 20.1601, "Control of access to high radiation areas," states:

(a) The licensee shall ensure that each entrance or access point to a high radiation area has one or more of the following features [emphasis added]

(1) A control device that, upon entry into the area, causes the level of radiation to be reduced below that level at which an individual might receive a deep-dose equivalent of 0.1 rem (1 mSv) in 1 hour at 30 centimeters from the radiation source or from any surface that the radiation penetrates;

(2) A control device that energizes a conspicuous visible or audible alarm signal so that the individual entering the high radiation area and the supervisor of the activity are made aware of the entry; or

(3) Entryways that are locked, except during periods when access to the areas is required, with positive control over each individual entry.

(b) In place of the controls required by [paragraph \(a\)](#) of this section for a high radiation area, the licensee may substitute continuous direct or electronic surveillance that is capable of preventing unauthorized entry.

(c) A licensee may apply to the Commission for approval of alternative methods for controlling access to high radiation areas.

In addition, COL Condition 2.D.(10)(j) requires all other Radiation Protection Program features as identified in UFSAR Section 12.5 (including the As Low As Reasonably

Achievable (ALARA) principle) except for those applicable to control radioactive waste shipment be implemented before initial fuel load. Section 12.5.4 of the UFSAR states, "High and very high radiation areas are segregated and identified in accordance with 10 CFR 20. The entrances to high and very high radiation areas are locked or barricaded and equipped with audible and/or visible alarms, as required."

Accordingly, it appears that this exclusion may also require an exemption to implement as the requirements of the technical specification implement the requirements of 10 CFR 20.1601. Please revise the application accordingly or provide an explanation as to the basis for not needing an exemption. The licensee's response should also address any necessary conforming changes to COL Condition 2.D(10)(j).

- 4) The LAR requests to exclude TS 5.6.1, "Annual Radiological Environmental Operating Report." However, this report is not due until May 15th, and it covers the previous operating year. It is unclear from the LAR description how excluding this report would work because if the licensee achieves criticality prior to May 15th, the report would still be required to be submitted. In addition, COL Condition 2.D.(10)(h) requires that the Radiological Environmental Monitoring Program be implemented before initial fuel load.

Please provide an explanation of the intent for excluding this TS and the supporting technical basis. Also, if appropriate, please revise the license condition 2.D.(9) to more accurately reflect how this TS will be excluded. If the intention is to not require a report in 2024 for calendar year 2023, then the license condition for excluding TS 5.6.1 will need to be revised and a justification for not providing the report will need to be included in the LAR. The staff notes that excluding the report would not exclude the requirement to implement the program and to conduct the required monitoring as required by COL Condition 2.D.(10)(h).

- 5) Under the category of Main Control Room (MCR) Emergency Habitability System (VES) Radiological Controls, the LAR proposes to exclude two administrative control programs and two surveillance requirements (SR) prior to initial criticality: 1) TS 5.5.12, "Main Control Room Envelope Habitability Program" 2) TS 5.5.13, "Ventilation Filter Testing Program (VFTP)", 3) SR 3.7.6.9, "Perform required MCRE unfiltered air inleakage testing in accordance with the Main Control Room Envelope Habitability Program," and 4) SR 3.7.6.10, "Perform required VES Passive Filtration system filter testing in accordance with the Ventilation Filter Testing Program (VFTP)." The technical basis for excluding these programs is that the "VES requirements that involve protection from the release of radioactivity (and support actuation) are proposed to be excluded while operating in Mode 4 until initial criticality since there are no fission products to be released that would challenge MCR habitability."

The MCR Emergency Habitability System (VES) provides a protected environment from which operators can control the plant following an uncontrolled release of radioactivity, **hazardous chemicals, or smoke.**

- a. As stated in TS 5.5.12, "A Main Control Room Envelope (MCRE) Habitability Program shall be established and implemented to ensure that MCRE habitability is maintained such that...MCRE occupants can control the reactor safely under

normal conditions and maintain it in a safe condition following a radiological event, **hazardous chemical release, or a smoke challenge [emphasis added]**.” Similarly, as stated in the VEGP 3/4 TS Bases, SR 3.7.6.9 verifies the operability of the MCRE boundary to ensure that MCRE occupants are protected from hazardous chemicals and smoke. Please explain how protection of the MCRE from fire and hazardous chemicals would be maintained or is not needed prior to initial criticality.

- b. As stated in TS 5.5.13, a program shall be established to implement the required testing of the VES. Specific testing is required by 5.5.13 when events occur that could have an adverse effect on the HEPA filter, charcoal adsorber, or carbon media functional capabilities, **such as penetration of water, or painting, fire or chemical release in any ventilation zone communicating with the VES [emphasis added]**. Similarly, SR 3.7.6.10 verifies that required VES testing is performed in accordance with the VFTP. Please explain why testing of the ventilation filters following water penetration, or following events such as painting, fire or chemical release, would be maintained or is not needed prior to initial criticality.
- 6) LCOs 3.4.11, “Automatic Depressurization System (ADS) – Operating,” 3.5.6 “In-containment Refueling Water Storage Tank (IRWST) – Operating,” 3.6.3, and “Containment Isolation Valves” are proposed for exclusion in the LAR while operating in Mode 4 prior to initial criticality. It is the staff’s understanding from the LAR that excluding the LCO includes excluding the requirement to perform any related surveillances (SR) for each excluded LCO. However, these three LCO’s include SRs are that are specifically required by the Inservice Testing Program, which is required by 10CFR50.55a.

Accordingly, excluding the LCO would not remove the requirement to perform the testing of these components in accordance with the IST program. In order to exclude the IST related SRs, an exemption would be required. Please modify the application accordingly or provide an explanation as to why an exemption is not required to support this portion of the requested changes in the LAR.

- 7) The LAR proposes to add a paragraph to LCO 3.0.7 that states:

Additionally, for Unit 4 only, Combined License Condition 2.D.(9) provides temporary exclusions for specified TS requirements prior to becoming permanently effective at initial criticality of the reactor core. **Compliance with TS requirements that are excluded from becoming effective while operating in MODES 4, 5, and 6 in accordance with the COL Condition is optional [emphasis added]**.

However, the Bases provided with the LAR state: “LCO 3.0.7 recognizing this COL provision, **allows changing the TS requirements that are deferred to initial criticality [emphasis added]**, which would otherwise be required to be met.” The staff recognizes that the TS Bases are not reviewed and approved by the NRC. However, the staff notes that this statement reflects an incorrect interpretation of the revised LCO 3.0.7 that needs to be clarified. The revised LCO 3.0.7 would only delay the requirement to comply with the LCOs listed in Combined License Condition 2.D(9) until initial criticality and then all LCOs listed in the 2.D(9) would be

permanently required to be met. If approved, the license amendment would not allow the licensee to make any changes to the requirements of the listed LCOs regardless of any TS Bases statements. The staff recommends the Bases be revised to accurately reflect the technical basis for the revised LCO 3.0.7.