

Vogle PEmails

From: Habib, Donald
Sent: Tuesday, May 1, 2018 3:49 PM
To: Chamberlain, Amy Christine; WASPARKM@southernco.com; Amundson, Theodore Edwin; Hicks, Thomas E.
Cc: neil.haggerty@excelservices.com; Patel, Chandu; Vogle PEmails; Dixon-Herrity, Jennifer; Haggerty, Neil
Subject: RAI Transmittal for Vogle 3 and 4 LAR 17-037 (RAI LAR 17-037-5, -6, -7, and -8)
Attachments: HOIB RAI LAR 17-037-05 RAI_9514 As Issued 05-01-2018.docx; LB4 RAI LAR 17-037-6 RAI_9542 As Issued 05-01-2018.docx; ARPB RAI LAR 17-037-7 RAI_9544 As Issued 05-01-2018.docx; ICE RAI LAR 17-037-8 RAI_9541 As Issued 05-01-2018.docx

To All:

By letter dated December 21, 2017, Southern Nuclear Company submitted License Amendment Request No. 17-037 to the U. S. Nuclear Regulatory Commission (NRC) for Vogle Electric Generating Plant Units 3 and 4, Combined License Nos. NPF-91 and NPF-92 (ADAMS Accession No. ML17355A416). The NRC staff is reviewing the request to enable the staff to reach a conclusion on the safety of the proposed changes.

The NRC staff has identified that additional information is needed to continue the review. The staff's request for additional information (RAI) is contained in the attachment to this email.

To support the review schedule, you are requested to respond within 30 days of the date of this email. If changes are needed to the final safety analysis report, the staff requests that the RAI response include the proposed wording changes.

If you have any questions or comments concerning this matter, you may contact me at 301-415-1035.

Sincerely,

Donald Habib, Project Manager
Licensing Branch 4
Division of New Reactor Licensing
Office of New Reactors
301-415-1035

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Subject: RAI Transmittal for Vogtle 3 and 4 LAR 17-037 (RAI LAR 17-037-5, -6, -7, and -8)
Sent Date: 5/1/2018 3:49:03 PM
Received Date: 5/1/2018 3:49:09 PM
From: Habib, Donald
Created By: Donald.Habib@nrc.gov

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Tracking Status: None
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Tracking Status: None

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Files	Size	Date & Time	
MESSAGE	1232	5/1/2018 3:49:09 PM	
HOIB RAI LAR 17-037-05 RAI_9514 As Issued 05-01-2018.docx			31469
LB4 RAI LAR 17-037-6 RAI_9542 As Issued 05-01-2018.docx			19553
ARPB RAI LAR 17-037-7 RAI_9544 As Issued 05-01-2018.docx			19691
ICE RAI LAR 17-037-8 RAI_9541 As Issued 05-01-2018.docx			19850

Options

Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
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Request for Additional Information LAR 17-037-5

Issue Date: 05/01/2018

Application Title: VEGP Units 3 and 4, LAR 17-037
Operating Company: Southern Nuclear Operating Co.
Docket No. 52-025 and 52-026
Review Section 18 - Human Factors Engineering

Regulatory Basis

10 CFR 50.34(f)(2)(iii) states:

Provide, for Commission review, a control room design that reflects state-of-the-art human factor principles prior to committing to fabrication or revision of fabricated control room panels and layouts.

Amongst other things, 10 CFR Part 52 Appendix D:

- provides definitions of Tier 1, Tier 2, and Tier 2* as they pertain to the AP1000 design
- Section VIII provides a change process for controlling Tier 2 information

10 CFR 52.79(a)(41) requires applicants to provide an evaluation of the facility against the standard review plan (SRP) or discuss how any departures from the SRP provide an acceptable method of complying with regulations that underlie the SRP acceptance criteria.

NUREG-0800, Chapter 18 of the SRP is the guidance NRC staff uses to ensure that § 50.34(f)(2)(iii) is met. Chapter 18 references NUREG-0711 which contains acceptance criteria related to licensee's human factors engineering (HFE) programs

The Vogtle Units 3&4 Updated Final Safety Analysis Report (UFSAR), Section 18.2.1.2, "Regulatory Requirements," states, "The human factors engineering process is designed to meet the human factors engineering design process requirements specified in NUREG-0711. NUREG-0711 contains the SRP acceptance criteria for an acceptable human factors design program.

Description of the Issue

NRC human factors staff has reviewed the process described in LAR 17-037. The staff agrees that there is currently HFE information identified as Tier 2* that can be adequately controlled using the Tier 2 change process. However, it is unclear if the process proposed in LAR 17-037 will predictably and reliably identify human factors information that need not be controlled by the Tier 2* change process. Clarification is necessary to help the staff make a determination on the LAR.

Question

Section 3, "Technical Evaluation" (Enclosure 1, Page 10 of 19) of LAR 17-037 provides specific examples of "material changes" that may affect design processes. The examples of material changes and non-material changes are helpful. However, it's not clear that the examples provided will be sufficient for either the licensee or the NRC staff to determine whether a change is material or not, especially when the proposed change is unlike any of the examples given.

Clarifying this process is important because changes to the approved human factors implementation plans (IPs) may have significant effects on the iterative process, including generation of information from testing and interpretation of test results that employs various human factors processes to develop a final HFE design. Altering details that the NRC staff used in approving these implementation plans could, in some cases, invalidate the staff findings on the IPs, and may consequently challenge the staff's ability to rely on the results of HFE testing to confirm that the main control room HSIs will support safe operation. Moreover, lack of a clear definition of a "material change" or criteria for evaluating changes may be problematic in regard to both licensee and NRC inspections related to human factors inspections, tests, analyses, and acceptance criteria (ITAAC).

Please clarify how a determination will be made regarding changes to the Tier 2* information in the implementation plans using the examples given (which may or may not be applicable to the change being considered), or provide a clear threshold or set of criteria that will be applied to determine if a change is material. For example, one way to clarify this would be to add a statement to Enclosure 1 or the FSAR such as: "All proposed changes that are not clearly encompassed by the examples of non-material changes shall be treated as material changes."

Request for Additional Information LAR 17-037-6

Issue Date: 05/01/2018

Application Title: VEGP Units 3 and 4 - LARs

Operating Company: Southern Nuclear Operating Co.

Docket No. 52-025 and 52-026

10 CFR Part 50, Appendix B requires an applicant for a combined license to include in its final safety analysis report a description of the quality assurance applied to the design, and to be applied to the fabrication, construction, and testing of the structures, systems, and components of the facility and to the managerial and administrative controls to be used to assure safe operation.

The Vogtle UFSAR Section 13.5.1 describes administrative procedures that provide administrative control over activities that are important to safety for the operation of the facility.

Enclosure 1 of LAR 17-037 provides guidance for how the licensee intends to implement a proposed license condition and exemption that provides an alternative departure evaluation process for Tier 2* information in the Vogtle UFSAR. The licensee would use the guidance to implement the proposed license condition and exemption, which would involve determining whether Tier 2* information to be changed has safety significance commensurate with Tier 1 and requires prior NRC approval.

The guidance in Enclosure 1 describes how, in applying the proposed license condition criteria to proposed changes, the licensee would determine whether a proposed change requires prior NRC approval. The guidance includes the specific information to be considered by the licensee, including, for example:

- What constitutes a deviation from a code or standard (Criterion 1)
- What constitutes a material change (Criteria 2 and 3)
- What design processes would be considered by the licensee (Criterion 2)
- What constitutes an adverse change (Criterion 4)
- What screens and debris quantities are considered in debris screen design criteria (Criterion 4)

The subcriteria listed above are substantive to the licensee's eventual determination about whether a proposed change requires prior NRC review and approval as Tier 2* information. However, the LAR does not propose changes to the UFSAR or License to include these subcriteria or provide a commitment by the licensee.

The staff requests the licensee to propose revisions to the UFSAR or the proposed license condition, or to provide a commitment, as appropriate, (1) to commit to a procedure that would be used to implement the Tier 2* departure evaluation process and (2) to identify the minimum information from Enclosure 1 that it is committing to in the LAR, or explain why a commitment to such information is not necessary.

Request for Additional Information – LAR 17-037-7

Issue Date: 05/01/2018

Application Title: VEGP Units 3 and 4 - LARs

Operating Company: Southern Nuclear Operating Co.

Docket No. 52-025 and 52-026

As noted in SNC's license amendment request (LAR) (ML17355A416), SECY-17-0075, "Planned Improvements in Design Certification Tiered Information Designations," (ML16196A321) describes how the purpose of the Tier 2* designation is to control certain information which the staff has determined to have safety significance commensurate with that of Tier 1 information. NRC's letter dated January 25, 2018, which accepted the LAR for review (ML18019A362), stated that the process criteria and guidance described in the application do not clearly differentiate between Tier 2* information with safety significance commensurate with Tier 1, and any Tier 2* information which does not warrant the same level of control. For example, Criteria 2 and 3 address "a material change," but do not clearly describe how controls on those changes ensure information with safety significance commensurate with Tier 1 is not modified without prior NRC review and approval.

Another example is the guidance for Criteria 1, 2, and 3, which includes statements that the process is intended to permit changes to achieve consistency within the document. However, it is not clear how SNC intends to determine that a Tier 2* change is appropriate to achieve consistency, when changing other information outside the scope of Tier 2* is more appropriate. For example, if a discrepancy between Tier 1 and Tier 2* is identified, changing Tier 2* is appropriate if Tier 1 is correct. However, if Tier 2* is correct, then a Tier 1 change is needed.

Furthermore, Enclosure 5 identifies the categories of Tier 2* information the licensee plans to screen by the proposed process. However, Enclosure 5 does not identify what portions of Tier 2* information it considers to contain information that has safety significance commensurate with Tier 1.

Additionally, page 8 of the LAR states that SNC performed an analysis of Tier 2* matters against several criteria, including "safety significance." However, it is not clear to the staff how this criteria was applied to the existing Tier 2* material.

Therefore, SNC is requested to provide a discussion of how the criteria described in the proposed amendment reliably and predictably differentiate between Tier 2* information with safety significance commensurate with Tier 1 and other information which does not warrant the same level of control.

Request for Additional Information – LAR 17-037-8

Issue Date: 05/01/2018

Application Title: VEGP Units 3 and 4 - LARs

Operating Company: Southern Nuclear Operating Co.

Docket No. 52-025 and 52-026

10 CFR Part 52, Appendix D, Section VIII.B.6.b states, in part, that an applicant who references this appendix may not depart from the Tier 2* matters without prior NRC approval. In the LAR-17-037 submittal, Page 9 of Enclosure 1 states that Criterion 2 was developed as a screening criterion as a result of the analysis performed that was related to Tier 2* matters, which include, among other things, instrumentation and control (I&C) system design processes, methods, and standards. As mentioned in the LAR 17-037 submittal, the proposed Criterion 2 is to be used to screen material changes to the design processes for the following two I&C systems:

- Diverse Actuation System (DAS)
- Protection and Safety Monitoring System (PMS)

The Vogtle Units 3 and 4 UFSAR designates only the following technical or topical reports, as a whole, as Tier 2* items for I&C:

- WCAP-17201-P, "AC160 High Speed Link Communication Compliance to DI&C-ISG-04 Staff Position 9, 12, 13, and 15," Rev. 0
 - WCAP-15927, "Design Process for AP1000 Common Q Safety Systems," Rev. 2
 - WCAP-17179, "AP1000 Component Interface Module Technical Report," Rev. 2
 - WCAP-16097-P-A, "Common Qualified Platform," Rev. 0
 - WCAP-16096-NP-A, "Software Program Manual for Common Q Systems," Rev. 01A
1. Although the Component Interface Module (CIM) design process is briefly discussed in Tier 1 under the PMS description, WCAP-17179 states that the CIM interfaces with the PMS and other systems, indicating that it is separate from the PMS. In addition, the CIM design process is different from that for the PMS. The licensee is requested to identify the CIM design processes as among those considered under Criterion 2 by explicitly listing them as examples under that criterion, or explain why this is unnecessary.
 2. The design process for the DAS is covered in Tier 1 Section 2.5.1. The staff is not aware of any Tier 2* information governing the DAS design process. However, the staff notices that there is a discussion in the LAR on changes to the DAS design process. The licensee is requested to clarify how changes to the DAS design process will receive prior NRC approval. In particular, identify the DAS design process information that is designated as Tier 2* information.