From:	Habib, Donald
Sent:	Friday, February 23, 2018 3:28 PM
To:	ptapscot@southernco.com; Chamberlain, Amy Christine; Henderson, Ryan Donald
Cc:	neil.haggerty@excelservices.com; Patel, Chandu; Vogtle PEmails; Palmrose, Donald; Sweat, Tarico; Roggenbrodt, William; Tjader, Theodore; WASPARKM@southernco.com
Subject:	RAI Transmittal for Vogtle 3 & 4 LAR 17-024 (RAI LAR 17-024-1)
Attachments:	2018-02-23 RAI_9243 as issued.pdf

To All:

By letter dated July 28, 2017, Southern Nuclear Company submitted License Amendment Request No. 17-024 to the U. S. Nuclear Regulatory Commission (NRC) for Vogtle Electric Generating Plant Units 3 and 4, Combined License Nos. NPF-91 and NPF-92 (ADAMS Accession No. ML17209A755). 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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From: Habib, Donald

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Request for Additional Information LAR 17-024-1
Issue Date: 02/23/2018 (eRAI No. 9243)
Application Title: VEGP Units 3 and 4 - LARs
Operating Company: Southern Nuclear Operating Co.
Docket No. 52-025 and 52-026
Review Section: NONE - NO SRP SECTION
Application Section:

QUESTION 1

The applicable criteria for reactivity and power distribution design requirements are found in 10 CFR 50, Appendix A, General Design Criterion (GDC) 10, "Reactor Design," GDC 26, "Reactivity Control System Redundancy and Protection," and 10 CFR 50.46, "Acceptance Criteria for Emergency Core Cooling Systems for Light Water Nuclear Power Plants." Vogtle LAR-17-024 on pages 5 and 7 of Enclosure 1 proposes to remove the Axial Offset (AO) control bank rod cluster control assemblies (RCCAs) from Surveillance Requirement (SR) 3.1.4.2 for verification of rod freedom of movement. The rationale for this change is given on page 7 of Enclosure 1 stating: "Moving the AO control bank will significantly and inappropriately perturb the power distribution." While the technical basis for SR 3.1.4.2 provided on page 6 of Enclosure 3 states that "[m]oving *each* *RCCA* by 10 steps will not cause radial or axial power tilts, or oscillations, to occur," no technical basis revision is being proposed to state movement of the AO *control bank* RCCAs would cause a perturbation to the power distribution. Additionally, while the justification on page 7 of Enclosure 1 states that several steps of motion of the AO control bank RCCAs are expected during normal operations, "several steps" is not defined as being in line with the surveillance requirement of rod movement greater than or equal to 10 steps in either direction.

Additionally, in Section 7.7.1.1.2, "Axial Offset Control," of Revision 6 of the Vogtle Updated Final Safety Analysis Report (UFSAR), it states, in part, "To minimize the potential for interactions between the power and axial offset rod control subsystems, the power control subsystem takes precedence." This statement coupled with the statement made in Section 7.7.1.2, "Rod Control System," that states, in part, "For axial offset control, the rod speed demand signals are set to a fixed constant speed of 5 inches per minute (8 steps per minute)." Therefore, the staff understands the power control subsystem takes priority over the AO rods such that the movement of the AO rods would be minimized when compared to the operational use of the power control rods and that, during normal operation, the AO rods would have to operate for 75 seconds (i.e., 10 steps per the current technical specification, for rods that travel at 8 steps per minute, thus 10 steps / 8 steps per minute = 1.25 minutes) to satisfy the current SR.

The NRC requests that the licensee provide 1) additional technical justification for the exclusion of the AO control bank RCCAs explaining how applying the original surveillance requirement of 10 steps or more would result in radial or axial power tilts or oscillations to occur, and 2) documentation showing that during normal operations the expected movement of the AO control bank RCCAs would satisfy the 10 step requirement. (Question 30957)

Question 2

10 CFR Part 50.36, “Technical Specifications,” requires, in part, that “Where a limiting safety system setting is specified for a variable on which a safety limit has been placed, the setting must be so chosen that automatic protective action will correct the abnormal situation before a safety limit is exceeded.” The Protection and Safety Monitoring System (PMS), the instrumentation and controls (I&C) safety system for the AP1000 reactor, has been designed to assure safe operation of the reactor. This is achieved by specifying limiting safety system settings (LSSS) in terms of parameters directly monitored by the reactor trip system (RTS) portion of the PMS, as well as specifying limiting conditions for operation (LCOs) on other reactor system parameters and equipment performance. Technical Specifications (TSs) are required by 10 CFR 50.36 to include LSSS for variables that have significant safety functions.

Vogtle LAR-17-024 on pages 10 and 32 to 34 of Enclosure 1 proposes to amend TS 3.3.1, “Reactor Trip System Instrumentation,” Table 3.3.1-1 FUNCTION 12, Passive Residual Heat Removal Actuation (PRHR), by deleting the specification to SR 3.3.1.9, Channel Calibration. The licensee states that SR 3.3.1.9 is not applicable to the PRHR reactor trip actuation function, and therefore not needed as input to the PRHR RTS actuation. The licensee indicates that the proper adjustment of the valve position indication contact inputs to the breaker position are verified by performance of SR 3.3.1.10, Trip Actuating Device Operational Test (TADOT).

The NRC staff requests that the licensee provide, or make available by reference, the specific functional logic diagrams and other supporting documentation that demonstrate the execution of SR 3.3.1.9 and 3.3.1.10 as they pertain to the Passive Residual Heat Removal Actuation for the RTS in Table 3.3.1-1 (Function 12). This would enable the staff to better understand how the actions taken in SR 3.3.1.9 may be redundant to the actions taken in SR 3.3.1.10 and thus confirm that the requirement to undertake this activity as part of SR 3.3.1.9 in Table 3.3.1-1 is unnecessary. (Question Number 30958)