



B. H. Whitley
Director
Regulatory Affairs

Southern Nuclear
Operating Company, Inc.
42 Inverness Center Parkway
Birmingham, AL 35242
Tel 205.992.7079
Fax 205.992.5296

March 23, 2018

Docket Nos.: 52-025
52-026

ND-18-0364
10 CFR 50.90

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

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Units 3 and 4
Supplement to Request for License Amendment:
Technical Specification Updates for Reactivity Controls
and other Miscellaneous Changes (LAR-17-024S2)

Ladies and Gentlemen:

Pursuant to 10 CFR 52.98(c) and in accordance with 10 CFR 50.90, Southern Nuclear Operating Company (SNC) previously requested an amendment to the combined licenses (COLs) for Vogtle Electric Generating Plant (VEGP) Units 3 and 4 (License Numbers NPF-91 and NPF-92, respectively). The requested amendment proposes to depart from approved COL Appendix A, Technical Specifications.

SNC originally submitted this request by SNC letter ND-17-1279, dated July 28, 2017 [ADAMS Accession No. ML17209A755] and supplemented by SNC letter ND-18-0058, dated January 23, 2018 [ADAMS Accession No. ML18023A440].

Enclosures 1 through 3 were provided with the original LAR and Enclosures 4 and 5 were provided with the first LAR supplement. Enclosure 6 provides responses to NRC Staff requests for additional information dated February 23, 2018 [ADAMS Accession No. ML18054B559].

Enclosure 7 provides the applicable revised markups depicting the requested change to the licensing basis documents requiring NRC staff approval.

Enclosure 8 provides the applicable revised conforming Technical Specifications Bases changes for information only.

The supplemental information provided in this LAR supplement does not expand the scope of the request, or alter the conclusions of the Significant Hazards Consideration Determination or Environmental Considerations submitted in LAR-17-024.

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

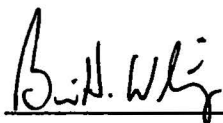
SNC now requests NRC staff review and approval of the license amendment by April 23, 2018, to support Operator training updates. Delayed approval of this license amendment could result in a delay in Operator training updates. SNC expects to implement the proposed amendment within thirty days of approval.

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

Should you have any questions, please contact Mr. Ryan D. Henderson at (205) 992-6426.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 23rd day of March 2018.

Respectfully submitted,



Brian H. Whitley
Director, Regulatory Affairs
Southern Nuclear Operating Company

- Enclosures
- 1) - 3) (previously submitted with the original LAR, LAR-17-024, in SNC letter ND-17-1279)
 - 4) - 5) (previously submitted as supplemental information with LAR-17-024S1 in SNC letter ND-18-0058)
 - 6) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 - Response to NRC Request for Additional Information Regarding the LAR-17-024 Review (LAR-17-024S2)
 - 7) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 - Supplement to Proposed Changes to Licensing Basis Documents (LAR-17-024S2)
 - 8) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 - Supplement to Conforming Technical Specifications Bases Changes (For Information Only) (LAR-17-024S2)

U.S. Nuclear Regulatory Commission

ND-18-0364

Page 3 of 4

cc:

Southern Nuclear Operating Company / Georgia Power Company

Mr. S. E. Kuczynski (w/o enclosures)

Mr. M. D. Rauckhorst

Mr. D. G. Bost (w/o enclosures)

Mr. M. D. Meier (w/o enclosures)

Mr. D. H. Jones (w/o enclosures)

Mr. J. B. Klecha

Mr. G. Chick

Mr. D. L. McKinney (w/o enclosures)

Mr. T. W. Yelverton (w/o enclosures)

Mr. B. H. Whitley

Ms. C. A. Gayheart

Mr. C. R. Pierce

Ms. A. G. Aughtman

Mr. D. L. Fulton

Mr. M. J. Yox

Mr. J. Tupik

Mr. W. A. Sparkman

Ms. A. C. Chamberlain

Ms. A. L. Pugh

Mr. F. J. Redwanz

Document Services RTYPE: VND.LI.L00

File AR.01.02.06

Nuclear Regulatory Commission

Mr. W. Jones (w/o enclosures)

Ms. J. Dixon-Herrity

Mr. C. Patel

Ms. J. M. Heisserer

Mr. B. Kemker

Mr. G. Khouri

Ms. S. Temple

Mr. F. Brown

Mr. T.E. Chandler

Ms. P. Braxton

Mr. T. Brimfield

Mr. C. J. Even

Mr. A. Lerch

State of Georgia

Mr. R. Dunn

Oglethorpe Power Corporation

Mr. M. W. Price
Mr. K. T. Haynes
Ms. A. Whaley

Municipal Electric Authority of Georgia

Mr. J. E. Fuller
Mr. S. M. Jackson

Dalton Utilities

Mr. T. Bundros

Westinghouse Electric Company, LLC

Mr. L. Oriani (w/o enclosures)
Mr. G. Koucheravy (w/o enclosures)
Mr. M. Corletti
Mr. M. L. Clyde
Ms. L. Iller
Mr. D. Hawkins
Mr. J. Coward

Other

Mr. S. W. Kline, Bechtel Power Corporation
Ms. L. A. Matis, Tetra Tech NUS, Inc.
Dr. W. R. Jacobs, Jr., Ph.D., GDS Associates, Inc.
Mr. S. Roetger, Georgia Public Service Commission
Ms. S. W. Kernizan, Georgia Public Service Commission
Mr. K. C. Greene, Troutman Sanders
Mr. S. Blanton, Balch Bingham
Mr. R. Grumbir, APOG
NDDocumentinBox@duke-energy.com, Duke Energy
Mr. S. Franzone, Florida Power & Light

Southern Nuclear Operating Company

ND-18-0364

Enclosure 6

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

**Response to NRC Request for Additional Information Regarding the LAR-17-024 Review
(LAR-17-024S2)**

(This Enclosure consists of 5 pages, including this cover page.)

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.

Response to Question 1:

SNC is removing the information from the LAR pertaining to the exclusion of the AO control bank RCCAs from Surveillance Requirement (SR) 3.1.4.2. Instead, the note will be deleted altogether from SR 3.1.4.2. As discussed on Page 7 of 39 of Enclosure 1 to ND-17-1279, “[...] the proposed change to the first SR 3.1.4.2 Note to delete GRCAs [is] consistent with the proposed LCO modification.” The proposed LCO modification is as described throughout the remainder of discussion of change L02 on Pages 5 and 6 of Enclosure 1 to ND-17-1279 and the Significant Hazards Consideration for L02 on Pages 24-27 of Enclosure 1 to ND-17-1279. The deletion of the Note altogether uses the same logic and justification regarding the change from “rod” to “RCCA” throughout the LCO and is equivalent to deleting the GRCAs from the Note.

The portion of the LAR identified as change “L02J” on Page 5 of 39 and Page 25 of 39 of Enclosure 1 to ND-17-1279, as supplemented by Page 2 of 2 of Enclosure 4 to ND-18-0058, is revised to state “Delete the Note to SR 3.1.4.2.” Refer to Enclosure 7 of this letter for the revised markup of SR 3.1.4.2.

The justification in the top paragraph of Page 7 of 39 of Enclosure 1 to ND-17-1279 is revised as follows:

The proposed change from “rod” to “RCCA” in SR 3.1.4.2, the proposed ~~change to the first deletion of~~ SR 3.1.4.2 Note ~~to delete GRCAs~~, the proposed deletion of SR 3.1.4.3 Note, and the proposed change to SR 3.1.4.3 “RCCA” instead of “rod” are consistent with the proposed LCO modification. ~~The Note modification to SR 3.1.4.2 exception for the control rods of the AO control bank RCCAs is proposed to prevent perturbing the power distribution. Moving the AO control bank will significantly and inappropriately perturb the power distribution. Although moving the rods individually is an option that would perturb power distribution less over the 92 day frequency, several steps of motion of the AO control bank RCCAs are expected during normal operations. As a result, any malfunction of an AO control bank RCCA causing loss of mobility would be self-revealing to the operator.~~

Removing the note from SR 3.1.4.2 does not expand the scope of the request or alter the conclusions of the Significant Hazards Consideration Determination or Environmental Considerations submitted in LAR-17-024.

Conforming changes to the Technical Specifications Bases to reflect the deletion of the note are included in Enclosure 8 of this letter.

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.

ND-18-0364

Enclosure 6

Response to NRC Request for Additional Information Regarding the LAR-17-024 Review
(LAR-17-024S2)

Response to Question 2:

The TRIP ACTUATING DEVICE OPERATIONAL TEST (TADOT) for the PRHR HX Outlet Valve Reactor Trip function involves testing at shutdown/defueled condition by placing the relevant Component Interface Modules (CIMs) into REMOTE, opening valves PXS-V108A/B, confirming the receipt of a Not Closed signal for each valve contact and Partial Trip signal from each PMS division, closing the valves, and then placing the CIMs into LOCAL again. The TADOT confirms the signal path from the PXS-V108A/B valve contacts through the Bistable Processor Logic (BPL), as well as the BPL outputs to the Local Coincidence Logic (LCL).

The CHANNEL CALIBRATION (CAL) for the PRHR HX Outlet Valve Reactor Trip function would be performed in the same manner by actuating the sensor, testing the inputs to the BPL, and then to the LCL; therefore, it would test the same signal path and be a redundant surveillance.

Given the description of the signal path provided above, inclusion of logic diagrams is not deemed necessary. If the NRC needs additional clarification, SNC will respond as necessary.

Southern Nuclear Operating Company

ND-18-0364

Enclosure 7

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

**Supplement to Proposed Changes to Licensing Basis Documents
(LAR-17-024S2)**

(This Enclosure consists of 2 pages, including this cover page.)

Replace the markup shown as L02J-M on Page 2 of 2 of Enclosure 5 of ND-18-0058 as shown below.

Revised COL Appendix A (Technical specifications), TS 3.1.4, Rod Group Alignment Limits, as follows (L02J-M):

SURVEILLANCE REQUIREMENTS

* * *	SURVEILLANCE	FREQUENCY
* * *	* * *	* * *
SR 3.1.4.2	<hr style="border: 1px solid red;"/> <p style="text-align: center;">—NOTE—</p> <p style="text-align: center;">Not applicable to GRCAs.</p> <hr style="border: 1px solid red;"/> <p>Verify rod freedom of movement (trippability) by moving each rodRCCA not fully inserted in the core ≥ 10 steps in either direction.</p>	* * *
SR 3.1.4.3	<hr style="border: 1px solid red;"/> <p style="text-align: center;">—NOTE—</p> <p style="text-align: center;">Not applicable to GRCAs.</p> <hr style="border: 1px solid red;"/> <p>Verify rod drop time of each rodRCCA, from the fully withdrawn position, is ≤ 2.7 seconds from the beginning of decay of stationary gripper coil voltage to dashpot entry, with:</p> <p style="text-align: center;">* * *</p>	* * *

Southern Nuclear Operating Company

ND-18-0364

Enclosure 8

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

**Supplement to Conforming Technical Specifications Bases Changes
(For Information Only)
(LAR-17-024S2)**

(This Enclosure consists of 2 pages, including this cover page.)

Replace the markup shown on Page 7 of 12 of Enclosure 3 of ND-17-1279 as shown below.

1.0. In MODE 2 with $k_{eff} < 1.0$, SR 3.1.4.2 is not applicable because GRCA's must be verified to be fully inserted to be credited in the calculation of SDM.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.1.4.3

Verification of ~~rod~~RCCA drop times allows the operator to determine that the maximum ~~rod~~RCCA drop time permitted is consistent with the assumed rod drop time used in the safety analysis. Measuring ~~rod~~RCCA drop times prior to reactor criticality, after each reactor vessel head removal and each earthquake requiring plant shutdown, ensures that the reactor internals and rod drive mechanism will not interfere with ~~rod~~RCCA motion or ~~rod~~RCCA drop time, and that no degradation in these systems has occurred that would adversely affect control rod motion or drop time. * * * GRCA are excluded from this Surveillance because they are not considered in the calculation of SDM in MODES 1 and 2 with $k_{eff} \geq 1.0$. In MODE 2 with $k_{eff} < 1.0$, SR 3.1.4.2 is not applicable because GRCA's must be verified to be fully inserted to be credited in the calculation of SDM.