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March 16, 2018

Docket Nos.: 52-025
52-026

ND-18-0319
10 CFR 50.90
10 CFR 52.63

U.S. Nuclear Regulatory Commission
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 and Exemption:
Tier 1 and Tier 2* Editorial and Consistency Changes (LAR-17-042S1)

Ladies and Gentlemen:

Pursuant to 10 CFR 52.98(c) and in accordance with 10 CFR 50.90, Southern Nuclear Operating Company (SNC), the licensee for Vogtle Electric Generating Plant (VEGP) Units 3 and 4, requested an amendment to Combined License Numbers NPF-91 and NPF-92, by SNC letter ND-17-1955, dated November 30, 2017 [ADAMS Accession Number ML17334B211]. The requested amendment proposed changes to the Updated Final Safety Analysis Report (UFSAR) in the form of departures from the incorporated plant-specific Design Control Document (DCD) Tier 2* and Tier 2 information and related changes to the VEGP Units 3 and 4 COL Appendix C (and corresponding plant-specific DCD Tier 1) information. Pursuant to the provisions of 10 CFR 52.63(b)(1), an exemption from elements of the design as certified in the 10 CFR Part 52, Appendix D, design certification rule was also requested for the plant-specific Tier 1 material departures.

This letter supplements LAR-17-042 to incorporate changes discussed with the NRC, and captured by electronic mail (email), titled "Discussion of References to AP1000 DCD Rev. 19 in the Combined Licenses," which was transmitted to SNC on February 27, 2018 [ADAMS Accession Number ML18058A073] and discussed in a public meeting on March 1, 2018.

Enclosure 9 replaces Enclosure 1, which was included in the original submittal (LAR-17-042), in its entirety. Enclosure 9 adds additional scope, impacting the VEGP Unit 3 COL and the VEGP Unit 4 COL. The additional scope changes references to DCD Rev.19 and FSAR in the COL to reference the "updated" FSAR (UFSAR) and makes additional non-technical reference updates.

Enclosure 10 provides additional proposed changes to the licensing basis documents, as described above.

There are no changes to Enclosures 2 through 8, which were included in the original submittal of LAR-17-042, as a result of this supplement.

Enclosure 9 provides the description, technical evaluation, regulatory evaluation (including the Significant Hazards Consideration Determination), and environmental considerations for the proposed changes in the License Amendment Request (LAR). The additional discussion in the LAR affects the scope of the Significant Hazards Consideration Determination and Environmental Considerations.

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

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 enclosures to the designated State Official.

Should you have any questions, please contact Ms. Paige Ridgway at (205) 992-7516.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 16th of March 2018.

Respectfully submitted,



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

Enclosures: 1-8) (Previously submitted with the original LAR, LAR-17-042, in SNC letter ND-17-1955)

- 9) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Supplement to Request for License Amendment: Tier 1 and Tier 2* Editorial and Consistency Changes (LAR-17-042S1)
- 10) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Additional Proposed Changes to the Licensing Basis Documents (LAR-17-042S1)

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Southern Nuclear Operating Company

ND-18-0319

Enclosure 9

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

**Supplement to Request for License Amendment:
Tier 1 and Tier 2* Editorial and Consistency Changes
(LAR-17-042S1)**

Note:

Added text is shown as [Blue Underline](#)

(Enclosure 9 consists of 20 pages, including this cover page.)

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Pursuant to 10 CFR 52.98(c) and in accordance with 10 CFR 50.90, Southern Nuclear Operating Company (SNC, or the "Licensee") hereby requests an amendment to Combined License (COL) Nos. NPF-91 and NPF-92 for Vogtle Electric Generating Plant (VEGP) Units 3 and 4, respectively.

1. SUMMARY DESCRIPTION

The requested amendment consists of multiple non-technical editorial changes, which provide consistency within the licensing basis. The proposed changes impact [the COL](#), COL Appendix C (and associated plant-specific Tier 1) and Tier 2 and Tier 2* information in the Updated Final Safety Analysis Report (UFSAR).

The requested amendment requires changes to the [COL and to the](#) UFSAR in the form of departures from the plant-specific DCD Tier 2 and Tier 2* information (as detailed in Section 2) and involves changes to COL Appendix C. This enclosure requests approval of the license amendment necessary to implement the [COL and](#) COL Appendix C changes and the involved UFSAR changes. Another enclosure requests the exemption necessary to implement the involved changes to the Tier 1 information.

2. COMBINED DETAILED DESCRIPTION AND TECHNICAL EVALUATION

Design descriptions in the UFSAR are derived from plant design documents. 10 CFR 52, Appendix D, Section II.D states that Tier 1 design information is "derived from Tier 2 information." However, certain specific occurrences have been identified in which COL Appendix C (and associated plant-specific Tier 1) information is not consistent with its associated UFSAR design information. In addition, several editorial changes in COL Appendix C and Tier 2* information in the UFSAR are being proposed. [Additional changes are proposed to the COL to reference the "updated" FSAR \(UFSAR\), instead of AP1000 DCD Rev. 19 or the FSAR, and to make non-technical reference changes.](#) The editorial and consistency changes described below are being made to enhance reader understanding of the information already included in the licensing basis.

1. Personnel Hatch and Radiation Monitor Elevation Discrepancies

Upper personnel hatch (CNS-MY-Y03) and lower personnel hatch (CNS-MY-Y04) are provided to allow personnel to enter containment at the 135'-3" and the 107'-2" elevations, respectively. To monitor radiation and limit radioactive release outside of containment, radiation monitors are provided inside the personnel hatches. The upper personnel hatch contains radiation monitor RMS-RE009 and the lower personnel hatch contains radiation monitor RMS-RE021.

COL Appendix C and the UFSAR inconsistently list the design details related to the personnel hatches and radiation monitoring equipment inside the hatches. Firstly, it was identified that COL Appendix C Table 2.2.1-1, UFSAR Table 3.2-3, and UFSAR Table 6.2.3-1 reference personnel hatches leading into containment, without clarification of which hatch is referenced (upper or lower). A clarification change is proposed to clearly differentiate between the upper personnel hatch (CNS-MY-Y03) and the lower personnel hatch (CNS-MY-Y04) in the three tables listed above. This change is consistent with the elevations for the hatches presented in UFSAR Table 3.2-3, which indicates that CNS-MY-Y03 is the tag number of the upper personnel

hatch and CNS-MY-Y04 is the tag number of the lower personnel hatch. Additionally, COL Appendix C Table 3.5-5 and UFSAR Table 11.5-2 are revised to differentiate between the upper and lower personnel hatches, and the elevations of both hatches are removed, since the elevations in the tables are no longer needed to distinguish between the hatches.

Secondly, it was identified that the elevations of each of the personnel hatches and associated radiation monitors are inconsistently listed in COL Appendix C Figure 2.2.1-1. The upper hatch is located at an elevation of 135'-3" and the lower hatch is located at an elevation of 107'-2", as indicated in UFSAR Figure 1.2-7, Figure 1.2-10, and Table 3.2-3. Therefore, it is proposed to revise COL Appendix C Figure 2.2.1-1 to correct the hatch elevations.

Lastly, an editorial change is proposed to COL Appendix C Figure 2.2.1-1. This figure identifies that the lower personnel hatch (CNS-MY-Y04) has a penetration tag number of H04 and the upper personnel hatch (CNS-MY-Y03) has a penetration tag number of H03. It is proposed to switch the personnel hatch numbers (H03 and H04) for these personnel hatches, so that the upper hatch corresponds to penetration tag number H04 and the lower hatch corresponds to penetration tag number H03. This is a purely editorial change which does not affect a design function related to the upper or lower containment penetrations at the personnel hatches. Inspections, tests, analyses, and acceptance criteria (ITAAC) related to the personnel hatches remain unaffected by this change because the personnel hatch tag numbers in the figure are not impacted by this change.

2. PMS Class 1E Display Discrepancies

The protection and safety monitoring system (PMS) provides safety-related display information for those important variables and components in the reactor coolant system (RCS), the secondary heat removal system, the containment, and the systems used for attaining a safe shutdown condition. Additionally, the post-accident monitoring instrumentation system (PAMS) provides the capability to monitor plant variables and system operating status during and following an accident. The qualified data processing system (QDPS) of the PMS provides data to support the safety-related display of selected parameters in the control room.

Information that is included as part of the PMS safety-related displays is, in some cases, inconsistently listed throughout the licensing basis.

COL Appendix C Table 2.2.5-1 indicates that valves, VES-PL-V005A/B and VES-PL-V022A/B, are not included as part of the PMS safety-related displays. However, these valves are Class 1E components that have component position feedback status on the safety displays as required for PAMS. This information is reflected in UFSAR Table 3.9-16, which indicates that each of these valves has remote position indication. Additionally, UFSAR Tables 3.11-1 and 7.5-1 list a "PAMS" function for these valves, with QDPS indication provided. The "PAMS" function refers to those components which provide the capability to monitor plant variables and system operating status during and following an accident. Therefore, it is proposed to update COL Appendix C Table 2.2.5-1 to show the valves as included with the PMS safety-related displays.

COL Appendix C Table 2.6.1-1 indicates that the reactor coolant pump (RCP) circuit breakers (ECS-ES-31/-32/-41/-42/-51/-52/-61/-62) are not included as part of the PMS safety-related displays. The RCP circuit breakers are Class 1E components which have a position feedback status as required for PAMS. The breakers are shown as part of the PMS safety-related displays in COL Appendix C Table 2.1.2-3. Additionally, the circuit breakers are listed with PAMS functionality and QDPS indication provided as identified in UFSAR Tables 3.11-1 and 7.5-1. Therefore, it is proposed to update COL Appendix C Table 2.6.1-1 to show the RCP circuit breakers as included with the PMS safety-related displays.

The main control room (MCR) supply air radiation monitoring packages A and B each consist of a particulate detector, an iodine detector, and a gaseous radiation detector. COL Appendix C Table 3.5-1 and UFSAR Table 7.5-1 list the MCR supply air radiation monitoring packages as not being included as part of the PAMS displays. The MCR radiation monitors are included as part of the Class 1E QDPS, as required for PAMS. The MCR supply air radiation monitors are shown as PAMS components in UFSAR Table 3.11-1 and are discussed as being part of the Class 1E displays in UFSAR Subsection 11.5.2.3.1 and in UFSAR Figure 11.5-6. Therefore, it is proposed to update COL Appendix C Table 3.5-1 and UFSAR Table 7.5-1 to show MCR supply air radiation monitoring packages A and B as having QDPS indication.

Lastly, COL Appendix C Table 2.1.2-1 identifies RCS components which are designed and constructed in accordance with American Society of Mechanical Engineers (ASME) Code Section III requirements. Safety-related displays identified in Table 2.1.2-1 can be retrieved in the MCR. Three components, as described below, are currently shown in Table 2.1.2-1 as not being included as part of the PMS safety-related displays.

- a) RCP bearing water temperature sensors (RCS-TE211A/B/C/D, RCS-TE212A/B/C/D, RCS-TE213A/B/C/D, and RCS-TE214A/B/C/D)

The RCP bearing water temperature sensors are listed as part of the safety-related displays in UFSAR Subsection 5.2.5.6 and UFSAR Table 7.5-1, therefore, a consistency change is proposed to Table 2.1.2-1 to include these components.

- b) RCP speed sensors (RCS-ST281, RCS-ST282, RCS-ST283, and RCS-ST284)

These channels are used as inputs into the PMS to initiate a reactor trip on low RCS flow to preclude a departure from nucleate boiling in the core. This information is used to determine the safety status of the plant and, therefore, it is required to be on the safety-related displays. As such, a change is proposed to Table 2.1.2-1 to list these components as having a safety-related display.

- c) RCS hot leg flow sensors (RCS-FT101A/B/C/D and RCS-FT102A/B/C/D)

These channels are used as inputs into the PMS to initiate a reactor trip on low RCP speed to preclude a departure from nucleate boiling in the core. This information is used to determine the safety status of the plant and, therefore, it is required to be on the safety-related displays. As such, a change is proposed to Table 2.1.2-1 to list these components as having a safety-related display.

The changes above are consistency changes. As discussed in UFSAR Subsection 7.1.2.12, safety-related display instrumentation provides the operator with information to determine the effect of automatic and manual actions taken following reactor trip due to a Condition II, III, or IV event as defined in UFSAR Chapter 15. The RCP speed sensors and RCS hot leg flow sensors are used as inputs to initiate a trip on low RCP speed and low RCS flow, respectively, as discussed in the safety analyses, and can be used to assess the effect of operator actions following the events described in the safety analyses. Additionally, PMS functional diagrams for RCP speed sensors and the RCS hot leg flow sensors designate that the valve position indicators have qualified indication (QI) outputs. A QI point is used when the functional designer determines the signal should be available on the safety displays based upon consideration of plant operations during all operating modes, process variable inputs to the protection system, and internally calculated variables that provide useful information to the operator concerning the status of the plant.

3. Relief Valve (CVS-PL-V058) Inconsistency

Chemical and volume control system (CVS) relief valve CVS-PL-V058 protects the containment boundary between the inboard and outboard containment isolation valves on the CVS letdown line from thermal overpressurization. This valve relieves bottled fluid to the containment floor when the setpoint is reached.

This valve is included in COL Appendix C Figure 2.2.1-1 and Table 2.3.2-1 and in UFSAR Table 3.2-3 and Figure 9.3.6-1 but it was not included in the depiction of the CVS in COL Appendix C Figure 2.3.2-1. Therefore, this valve is added to COL Appendix C Figure 2.3.3-1 for consistency with other Figures and Tables in COL Appendix C and the UFSAR.

4. Code Case N-122-2 Title Discrepancy

UFSAR Table 5.2-3 contains a list of the ASME code cases which are used in the AP1000 design. Code Case N-122-2 is listed in this table with a title of "Stress Indices for Integral Structural Attachments Section III, Division 1, Class 1". However, the actual title of Code Case N-122-2 is "Procedure for Evaluation of the Design of Rectangular Cross Section Attachments on Class 1 Piping Section III, Division 1". Therefore, it is proposed to make an editorial change to the title of Code Case N-122-2 listed in UFSAR Table 5.2-3.

5. Tie Bar Yield Strength Change

The shield building is the structure and annulus area that surrounds the containment building. It shares a common basemat with the containment building and the auxiliary building. The shield building uses concrete-filled steel plate construction as well as reinforced concrete structure. The AP1000 design uses American Concrete Institute (ACI) Standard 349-01 as the applicable code for reinforced concrete design, as discussed in UFSAR Appendix A, Regulatory Guide (RG) 1.142 and throughout UFSAR Section 3.8. The shield building concrete-filled steel plate walls are anchored to the basemat and shield building concrete composite wall by mechanical connections, and these connections are discussed in Tier 2* incorporated by reference (IBR'd) document, APP-GW-GLR-602 (proprietary version) and APP-GW-GLR-603 (non-proprietary version) [ADAMS Accession Number ML110910541].

UFSAR Subsection 3.8.4.5.5.5 contains a discrepancy in the discussion of tie bar yield strength. UFSAR Subsection 3.8.4.5.5.5 states that, "the connection between the tie bars and the steel faceplates is designed to develop the full tensile strength of the tie bar." This text conflicts with the design of the shield building tie bars as discussed in APP-GW-GLR-602/-603, which states that, "tie bars are welded to the steel face plates using a weld detail that will develop 125% of the specified yield of the bar." A review of ACI 349-01 has indicated that the correct performance requirement of the tie bars is 125% of the specified yield strength of the bar.

UFSAR Subsection 3.8.4.5.5.5 is changed to state that the connection between the tie bar and the steel faceplates is designed to develop 125% of the specified yield strength of the tie bars. This consistency change aligns the design in UFSAR Subsection 3.8.4.5.5.5 with the design in IBR'd document, APP-GW-GLR-602/-603. The AP1000 uses industry standards as identified in ACI 349-01 for the design of safety-related concrete structures located outside of containment. This tie bar design meets the design requirements identified in ACI 349-01.

6. Remote Shutdown Workstation Minimum Inventory

The MCR and remote shutdown workstation (RSW) include appropriate plant displays, alarms, and controls needed to support a broad range of expected power generation, shutdown, and accident mitigation operations. During certain improbable weather conditions, it is possible for the pressure in the containment building to drop significantly below the outside atmospheric pressure if the containment purge inlet isolation valves are not open. The containment vacuum relief isolation valves can be opened to limit the negative pressure differential that can develop to prevent structural damage to the containment shell. Automatic and manual actuation signals can be used to open the containment vacuum relief isolation valves. Manual containment vacuum relief switches are included in both the MCR and RSW.

Containment vacuum relief switches are included in the minimum inventory of controls for both the MCR and RSW. One containment relief switch is available at each location, and actuation of each switch actuates manual containment vacuum relief. UFSAR Subsection 7.3.1.2.26, Table 7.3-1, Table 7.3-3, and Figure 7.2-1 support this design by discussing the two momentary controls which can be used for manual containment vacuum relief. Additionally, COL Appendix C Table 2.5.2-5 identifies that one of the manual containment vacuum relief switches is included in the MCR minimum inventory of controls.

The description of manual containment vacuum relief switches in the minimum inventory of controls which are included on the RSW is inconsistently listed in the licensing basis. COL Appendix C Table 2.5.4-1 and UFSAR Table 18.12.2-1 do not specifically list the manual containment vacuum relief switch with the minimum inventory of controls that is to be included on the RSW. For consistency with the design as described in UFSAR Chapter 7, the manual containment vacuum relief switches are added to the description of controls available in the RSW in COL Appendix C Table 2.5.4-1 and UFSAR Table 18.12.2-1

7. Inconsistent Terminology for RNS Pump Manual Controls

The normal residual heat removal system (RNS) removes both residual and sensible heat from the RCS. The RNS includes two mechanical trains, and each train includes one RNS pump and one RNS heat exchanger located in the auxiliary building. RNS Pumps 1A and 1B have controls in the MCR which can be used to manually start the pumps.

The discussion of RNS pump manual controls within COL Appendix C Section 2.3.6 contains inconsistent terminology. COL Appendix C Table 2.3.6-4 contains discussion of a required “listed action” and “listed function” for the pumps, and this table cross references Table 2.3.6-3 as the location of the “listed action” and “listed function” in the design commitment and acceptance criteria for the ITAAC. However, similar text in Table 2.3.6-3 references a “control function” for the pump.

To enhance reader understanding and provide consistency with COL Appendix C terminology, it is proposed to change COL Appendix C Table 2.3.6-4 and Subsection 2.3.6 to replace “listed action” and “listed function” with “control function” for consistency with the description in COL Appendix C Table 2.3.6-3.

8. CVS Piping/Component Tier 1 Inconsistency

The COL Appendix C Table 2.3.2-4, item 14, design commitment and acceptance criteria both reference nonsafety-related CVS piping located inside containment and designed as a reactor coolant pressure boundary. Additionally, the acceptance criteria references Table 2.3.2-2, which includes a list of CVS piping lines and indication of whether they comply with ASME Section III requirements.

COL Appendix C Table 2.3.2-4, item 14, indicates that “inspection will be conducted of the as-built components as documented in the CVS Seismic Analysis Report”. It is not appropriate to reference as-built components in this section, since this ITAAC intends to verify the design of CVS piping. Therefore, it is proposed to change item 14 in COL Appendix C Table 2.3.2-4 to state that “Inspection will be conducted of the as-built piping as documented in the CVS Seismic Analysis Report”.

9. APP-OCS-GEH-220 Consistency Changes

APP-OCS-GEH-220 “AP1000 Human Factors Engineering Task Support Verification Plan” (and non-proprietary version APP-OCS-GEH-222) is a Tier 2* IBR’d document in UFSAR Subsection 18.11.2. The purpose of this document is to define the human factors engineering (HFE) task support verification plan for the AP1000 plant. Operational sequence analysis (OSA) is one of the main task analysis activities identified in the AP1000 HFE Program Plan. There are two separate parts to the OSA: OSA-1 and OSA-2. OSA-1 focuses on the operational requirements and task demands in terms of the operator actions and/or processes necessary to complete the required AP1000 control and monitoring tasks, abnormal/emergency tasks, and maintenance, testing, surveillance, and inspection tasks for a selection of operator tasks. OSA-2 addresses post-accident risk important human actions.

APP-OCS-GEH-220 contains discrepancies related to the scope of OSA-1 and OSA-2. UFSAR Subsections 18.5.2.2, 18.5.2.3, 18.5.2.4, and 18.5.2.5 contain an

accurate description of the OSA-1 and OSA-2 verification activities. Therefore, it is proposed to change the scope of OSA-1 and OSA-2 as discussed within APP-OCS-GEH-220 for consistency with these UFSAR subsections. This portion of the change is a Tier 2* change, per the guidance of Note 2 in UFSAR Subsection 18.11.2. Additionally, as a result of this change, APP-OCS-GEH-220 is updated to Revision 5 in UFSAR Table 1.6-1 and Subsection 18.11.2. This is a Tier 2 change, per the guidance in UFSAR Subsection 18.11.2; however, this change is related to the Tier 2* change discussed above.

10. WWS-PL-L851 Description Clarification

Waste water system (WWS) lines, WWS-PL-L808 and WWS-PL-L851, are included in COL Appendix C Table 2.7.1-2 as pipe lines which must be designed to ASME Section III standards to maintain containment isolation functions. Both of these lines are waste water lines which extend through containment and drain into the WWS sumps. However, WWS-PL-L808 has been added to Table 2.7.1-2 as “Main Control Room Waste Water Line,” and WWS-PL-L851 has been added to the table with the line name “Main Control Room Water Line.”

The name of WWS-PL-L851 in COL Appendix C Table 2.7.1-2 is changed to “Main Control Room Waste Water Line” to enhance reader understanding with respect to the design function of WWS-PL-L851 and to provide consistency with the naming of similar piping WWS-PL-L808. This is a clarification change that only changes the title of WWS-PL-L851 in COL Appendix C Table 2.7.1-2.

11. Addition of Header to COL Appendix C Table 3.5-5

COL Appendix C Table 3.5-5, “Area Radiation Monitors,” is missing headers within the table for both of its columns. The columns are meant to indicate the “Equipment List” and the “Equipment Number,” consistent with the other tables under COL Appendix C Section 3.5. Therefore, it is proposed to add these headers to their respective columns within COL Appendix C Table 3.5-5. This is an editorial change to add appropriate headers to the table.

12. References to 10 CFR 52.47

Plant-specific Tier 1 Section 4.0 currently references 10 CFR 52.47(a)(1)(vii) as the appropriate regulation which specifies that interface requirements must be included in an application for design certification. Additionally, plant-specific Tier 1 Section 4.0 references 10 CFR 52.47(a)(1)(viii) as the appropriate regulation which specifies that those interface requirements must be verifiable through inspection, testing, or analysis. In each of the cases above, the plant-specific Tier 1 text references a section of 10 CFR 52.47 which does not exist. Both of the plant-specific Tier 1 sections above, along with appropriate UFSAR information, must update references to 10 CFR 52.47 to instead reference the correct 10 CFR 52.47 subsections which discuss this information.

Plant-specific Tier 1 Section 4.0 is changed to reference 10 CFR 52.47(a)(25) as the appropriate regulation which specifies that interface requirements must be included in an application for design certification. Plant-specific Tier 1 Section 4.0 is also changed to

reference CFR 52.47(a)(26) as the appropriate regulation which specifies that those interface requirements must be verifiable through inspection, testing, or analysis.

Conforming UFSAR Sections 1.2, 1.8, 14.3, 14.3.4, and 14.3.5 are updated to reference 10 CFR 52.47(a)(25) instead of 10 CFR 52.47 (a)(1)(iii), 10 CFR 52.47 (a)(1)(vii), 10 CFR 52.47(a)(1)(viii), and 10 CFR 52.47(a)(1)(ix) as the appropriate regulation for interface requirements to be included in an application for design certification. Additionally, conforming UFSAR Section 14.3 is changed to reference 10 CFR 52.47(a)(26) as the appropriate regulation which specifies that those interface requirements must be verifiable through inspection, testing, or analysis.

Since Section 4.0 is only contained in plant-specific Tier 1, there would be no corresponding change to COL Appendix C.

13. RCS-PL-V010A/B Class 1E Power Discrepancy

The common discharge line for each group of automatic depressurization system (ADS) valves on the pressurizer is equipped with a vacuum breaker to maintain an atmospheric discharge piping pressure following valve discharges, which prevents water from being siphoned into the ADS discharge sparger from the in containment refueling water storage tank (IRWST) as steam in the pipe cools and condenses following valve discharge. The ADS discharge header vacuum relief valves, RCS-PL-V010A/B, prevent a vacuum from forming in ADS discharge piping due to steam condensation and prevent a vacuum formation during RCS draindown operations during plant shutdown. Each valve is designed with a set pressure of -0.5 psig and, therefore, the valves will automatically perform their active function once this pressure setpoint is reached.

Valves, RCS-PL-V010A/B, are currently listed in COL Appendix C Table 2.1.2-1 as being powered from a Class 1E power source. As discussed in UFSAR Table 3.9-16, the ADS discharge header vacuum relief valves do not require a Class 1E power source to perform the safety-related active function of transferring open. Therefore, COL Appendix C Table 2.1.2-1 proposes to remove the Class 1E designation from ADS discharge header vacuum relief valves, RCS-PL-V010A/B.

14. Radiation Monitoring Package Tag Number Correction

The MCR radiation monitoring packages are listed as components in COL Appendix C Table 3.5-1 and Table 3.5-7. Both tables use a different tag number to identify the radiation monitoring packages. COL Appendix C Table 3.5-1 uses VBS-JS01A/B for the radiation monitoring packages, however, COL Appendix C Table 3.5-7 uses VBS-RY01A/B for the packages. UFSAR Figure 9.4.1-1 (Sheet 5) identifies the monitoring packages with tag number VBS-JS01A/B, therefore, this tag numbering convention will be used for the radiation monitoring packages.

It is proposed to implement an editorial change to COL Appendix C Table 3.5-7 to reference tag number VBS-JS01A/B as the tag number for the MCR radiation monitoring package A and B, respectively. This change provides alignment between the radiation monitoring package tag numbers listed in COL Appendix C Table 3.5-1 and Table 3.5-7.

15. VWS Cooling Coil Discrepancy

The central chilled water system (VWS), low capacity subsystem consists of two 100-percent capacity chilled water trains. Each train consists of a chilled water pump; an air-cooled chiller; an expansion tank; a chemical feed tank; and associated valves, piping, instrumentation, and controls. This configuration provides redundancy and independence of trains during the various modes of system operation.

The low capacity VWS supports the defense-in-depth function of providing chilled water to the RNS pump room unit coolers in the event that heat must be rejected from this room. COL Appendix C Figure 2.7.2-1 and UFSAR Figure 9.2.7-1 show the chiller pump VWS-MP-02 as providing water to the RNS pump room unit cooling coil, VAS-MY-C12A, and chiller pump, VWS-MP-03, as providing water to the RNS pump room unit cooling coil, VAS-MY-C12B. The tag numbers of the pump room unit cooling coils have been reversed and are changed because chiller pump, VWS-MP-02, provides water to the RNS pump room unit cooling coil, VAS-MY-C12B, and chiller pump, VWS-MP-03, provides water to the RNS pump room unit cooling coil, VAS-MY-C12A.

Additionally, an editorial change is required for the tag numbers of components identified in COL Appendix C Figure 2.7.2-1 (Sheets 1 and 2). This figure identifies cooling coils which use a different tag numbering convention than in COL Appendix C Table 2.7.2-2 and in UFSAR Figure 9.2.7-1. It is proposed to change the COL Appendix C Figure 2.7.2-1 tag numbers as identified below.

Figure 2.7.2-1 Tag Number	Proposed Change
VBS-MYC-01A/B	VBS-MY-C01A/B
VBS-MYC-02A/B	VBS-MY-C02A/B
VBS-MYC-02C/D	VBS-MY-C02C/D
VAS-MYC-07A/B	VAS-MY-C07A/B
VAS-MYC-12A/B	VAS-MY-C12A/B
VAS-MYC-06A/B	VAS-MY-C06A/B

This editorial change only impacts the tag numbers of the cooling coils and no design features are affected by the changes to the tag numbers.

16. COL Appendix C Table 3.2-1 Table Number Editorial Change

COL Appendix C Table 3.2-1 includes an extra period in the table number in the title bar. The table number is currently listed as “Table 3.2.-1,” instead of “Table 3.2-1.” The table number is changed for consistency with the table numbering throughout COL Appendix C.

Since this editorial change in Table 3.2-1 only impacts COL Appendix C, there would be no corresponding change to plant-specific Tier 1.

17. COL License Conditions Reference Changes

References to AP1000 DCD Rev.19 and FSAR in the VEGP Units 3 and 4 COL are replaced with references to the “updated” FSAR (UFSAR) and additional non-technical reference changes are made. The additional reference changes are described below.

- Language, such as “as revised by Amendment No. ##”, is removed if no longer needed. The “Amendment No. ##” in License Condition 2.D(8) and 2D(12)(d) are not revised.
- The reference to FSAR in License Condition 2.F(3)(a) is revised to reference the COL Application due to the discussion on exemptions being in Part 7 of the COL Application, rather than the FSAR.

At the time of issuance of the COL for VEGP Units 3 and 4, NRC distinguished between references to DCD Rev. 19 and the FSAR in the COL since the two documents were not physically integrated. Since the two documents are now integrated into a single document, the UFSAR, it is more appropriate to reference the UFSAR within the COL.

General Discussion of Changes

The proposed changes are consistency and editorial changes. These changes are proposed to maintain consistency between [the UFSAR](#), [COL](#), and COL Appendix C design descriptions, tables and figures, and to propose editorial clarifications. No structure, system or component (SSC) design function or analysis as described in the UFSAR is affected. No defense-in-depth safety function is affected. There are no technical changes to plant-specific ITAAC line items.

The COL Appendix C information is the design information and functions subject to verification by the COL Appendix C ITAAC closure process. The proposed changes neither affect the ability to meet design criteria or functions, nor involve a decrease in the safety provided by the associated systems. COL Appendix C information and ITAAC continue to adequately validate their corresponding UFSAR design commitments.

The proposed changes do not affect an SSC, function or feature used for the prevention or mitigation of accidents or their safety / design analyses. The changes do not affect any SSC accident initiator or initiating sequence of events, or involve any safety-related SSC or function used to mitigate an accident.

The proposed changes do not involve a change to a fission product barrier. The changes do not result in a new failure mode, malfunction or sequence of events that could affect safety. The changes would not allow for a new fission product release path, result in a new fission product barrier failure mode, or create a new sequence of events that would result in significant fuel cladding failures.

The proposed changes do not affect any safety-related equipment, design code limit, safety-related function, safety-related design analysis, safety analysis input or result, or design or safety margin. No safety analysis or design basis acceptance limit or criterion would be challenged or exceeded.

In conclusion, the proposed changes do not involve a technical (design, analysis, function or qualification) change (e.g., there is no change to an associated calculation, design parameter or design requirement). Therefore, the changes would not result in a decrease in plant safety.

The proposed changes do not adversely impact the emergency plan or the physical security plan implementation, because there are no changes to physical access to credited equipment inside the Nuclear Island (including containment or the auxiliary building) and no adverse impact to plant personnel's ability to respond to any plant operations or security event.

The proposed changes associated with this license amendment request do not affect the containment, control, channeling, monitoring, processing or releasing of radioactive and non-radioactive materials. No effluent release path is involved. The types and quantities of expected effluents are not changed. Therefore, radioactive or non-radioactive material effluents are not affected.

Plant radiation zones (as described in UFSAR Section 12.3) control under 10 CFR 20, and expected amounts and types of radioactive materials are not affected by the proposed changes. Therefore, individual and cumulative radiation exposures are not changed.

Licensing Bases Change Descriptions:

COL Changes

- The License Conditions, listed below, are updated to reference the UFSAR, instead of AP1000 DCD Rev. 19 or the FSAR.
 - [Section 2.A](#)
 - [Section 2.B\(3\)\(a\)](#)
 - [Section 2.B\(3\)\(b\)](#)
 - [Section 2.D\(2\)\(b\)](#)
 - [Section 2.D\(3\)\(c\)](#)
 - [Section 2.D\(3\)\(d\)](#)
 - [Section 2.D\(4\)\(b\)](#)
 - [Section 2.D\(4\)\(c\)](#)
 - [Section 2.D\(5\)\(b\)](#)
 - [Section 2.D\(5\)\(c\)](#)
 - [Section 2.D\(6\)](#)
 - [Section 2.D\(7\)\(a\)](#)
 - [Section 2.D\(10\)\(j\)](#)
 - [Section 2.D\(11\)](#)
 - [Section 2.D\(12\)\(c\)](#)
 - [Section 2.D\(12\)\(f\)1](#)
 - [Section 2.D\(12\)\(f\)4](#)
 - [Section 2.D\(12\)\(f\)9](#)
 - [Section 2.D\(12\)\(g\)1](#)
 - [Section 2.D\(12\)\(g\)2](#)
 - [Section 2.D\(12\)\(g\)4](#)
 - [Section 2.D\(12\)\(g\)5](#)
 - [Section 2.D\(12\)\(g\)7](#)
- COL 2.D(2)(a) and COL 2.D(12)(b) changes the reference from DCD Rev. 19 to the UFSAR and removes the language "as revised by Amendment No. ##."
- COL 2.F(3)(a) is revised to reference the COL Application, instead of the FSAR.

COL Appendix C (and associated plant-specific Tier 1) Changes

- Table 2.1.2-1 removes the Class 1E designation from RCS-PL-V010A/B.

- Table 2.1.2-1 updates the following sensors as being included with the PMS safety-related displays:
 - RCS-211A/B/C/D
 - RCS-212A/B/C/D
 - RCS-213A/B/C/D
 - RCS-214A/B/C/D
 - RCS-281
 - RCS-282
 - RCS-283
 - RCS-284
 - RCS-101A/B/C/D
 - RCS-102A/B/C/D
- Table 2.2.1-1 differentiates between the upper personnel hatch, CNS-MY-Y03, and the lower personnel hatch, CNS-MY-Y04.
- Figure 2.2.1-1 changes the personnel hatch numbers (H03 and H04) for both personnel hatches.
- Figure 2.2.1-1 updates the upper personnel hatch elevation to 135'-3" and the lower personnel hatch elevation to 107'-2".
- Table 2.2.5-1 updates valves VES-PL-V005A/B and VES-PL-V022A/B as being included with the PMS safety-related displays.
- Table 2.3.2-4 changes the inspections, tests, and analyses of item 14 to state that "Inspection will be conducted of the as-built piping as documented in the CVS Seismic Analysis Report."
- Figure 2.3.2-1 adds relief valve CVS-PL-V058 to the related CVS piping.
- Subsection 2.3.6, design commitment 13, replaces "listed function" with "control function."
- Table 2.3.6-4, design commitment and acceptance criteria, replaces "listed action" and "listed function" with "control function."
- Table 2.5.4-1 adds manual containment vacuum relief switches to the minimum inventory of controls, displays and alerts that are to be included at the RSW.
- Table 2.6.1-1 updates the RCP circuit breakers to be shown as included with the PMS safety-related displays.
- Table 2.7.1-2 changes the title of WWS-PL-L851 to "Main Control Room Waste Water Line".
- Figure 2.7.2-1 (Sheet 1) changes chiller pump, VWS-MP-02, to provide water to the RNS pump room unit cooling coil, VAS-MY-C12B.

- Figure 2.7.2-1 (Sheet 1) changes the tag number convention of cooling coils from VAS/VBS-MYC-xxx to VAS/VBS-MY-Cxxx.
- Figure 2.7.2-1 (Sheet 2) changes chiller pump, VWS-MP-03, to provide water to the RNS pump room unit cooling coil, VAS-MY-C12A.
- Figure 2.7.2-1 (Sheet 2) changes the tag number convention of cooling coils from VAS/VBS-MYC-xxx to VAS/VBS-MY-Cxxx.
- Table 3.5-1 is updated to show the MCR supply air radiation monitoring packages A and B as included with the PMS safety-related displays.
- Table 3.5-5 is revised to differentiate between the upper and lower personnel hatches. Additionally, the hatch elevations are removed from the table.
- Table 3.5-5 adds headers "Equipment List" to the top of the left column and "Equipment Number" to the top of the right column.
- Table 3.5-7 changes the tag numbers of MCR radiation monitoring packages A and B to VBS-JS01A and VBS-JS01B, respectively.

Plant-Specific Tier 1 Changes

- Section 4.0 is changed to reference 10 CFR 52.47(a)(25) as the appropriate regulation which specifies that interface requirements must be included in an application for design certification.
- Section 4.0 is changed to reference 10 CFR 52.47(a)(26) as the appropriate regulation which specifies that those interface requirements must be verifiable through inspection, testing, or analysis.

COL Appendix C Change

- Table 3.2-1 is changed to correct the table number for the table.

UFSAR Changes

- Section 1.2 is updated to reference 10 CFR 52.47(a)(25) as the appropriate regulation for interface requirements to be included in an application for design certification.
- Table 1.6-1 changes APP-OCS-GEH-220 to Revision 5.
- Section 1.8 is updated to reference 10 CFR 52.47(a)(25) as the appropriate regulation for interface requirements to be included in an application for design certification.
- Table 3.2-3 is updated to differentiate between the upper personnel hatch and the lower personnel hatch.
- Subsection 3.8.4.5.5.5 is changed to indicate that the connection between the tie bars and the steel faceplates is designed to develop 125% of the specified yield strength of the tie bars.
- Table 5.2-3 changes the title of Code Case N-122-2 to "Procedure for Evaluation of the Design of Rectangular Cross Section Attachments on Class 1 Piping Section III, Division 1."
- Table 6.2.3-1 is updated to differentiate between the upper personnel hatch and the lower personnel hatch.

- Table 7.5-1 is revised to show MCR supply air radiation as included in the QDPS indications.
- Figure 9.2.7-1 changes chiller pump, VWS-MP-02, to provide water to the RNS pump room unit cooling coil, VAS-MY-C12B.
- Figure 9.2.7-1 changes chiller pump, VWS-MP-03, to provide water to the RNS pump room unit cooling coil, VAS-MY-C12A.
- Table 11.5-2 is revised to differentiate between the upper and lower personnel hatches. Additionally, the hatch elevations are removed from the table.
- UFSAR Section 14.3 is updated to reference 10 CFR 52.47(a)(25) as the appropriate regulation for interface requirements to be included in an application for design certification.
- UFSAR Section 14.3 is changed to reference 10 CFR 52.47(a)(26) as the appropriate regulation which specifies that those interface requirements must be verifiable through inspection, testing, or analysis.
- UFSAR Section 14.3.4 is updated to reference 10 CFR 52.47(a)(25) as the appropriate regulation for interface requirements to be included in an application for design certification.
- UFSAR Section 14.3.5 is updated to reference 10 CFR 52.47(a)(25) as the appropriate regulation for interface requirements to be included in an application for design certification.
- Subsection 18.11.2 changes APP-OCS-GEH-220 to Revision 5.
- Table 18.12.2-1 adds manual containment vacuum relief switches to the minimum inventory of controls, displays and alerts that are to be included in the MCR and at the RSW.
- IBR'd document APP-OCS-GEH-220 updates the scope of OSA-1 and OSA-2 task support verification.

3. TECHNICAL EVALUATION (SEE SECTION 2)

4. REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

10 CFR 52.98(c) requires NRC approval for any modification to, addition to, or deletion from the terms and conditions of a COL, including any modification to, addition to, or deletion from the inspections, tests, analyses, or related acceptance criteria contained in the license. The proposed changes involve a departure from [the COL conditions](#), COL Appendix C Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) information and involved UFSAR changes. Therefore, this activity requires an amendment to the COL. Accordingly, NRC approval is required prior to making the plant specific changes in this license amendment request.

10 CFR 52, Appendix D, Section VIII.B.5.a allows an applicant or licensee who references this appendix to depart from Tier 2 information, without prior NRC approval, unless the proposed departure involves a change to or departure from Tier 1 information, Tier 2* information, or the Technical Specifications, or requires a license amendment under paragraphs B.5.b or B.5.c of the section. The proposed change involves a change to [the COL](#), COL Appendix C (and associated plant-specific Tier 1) ITAAC information. Therefore, NRC approval is required prior to making the change to Tier 2 information.

10 CFR Part 50, Appendix A General Design Criterion (GDC) 13, "Instrumentation and Control" requires that instrumentation shall be provided to monitor variables and systems over their anticipated ranges for normal operation, for anticipated operational occurrences, and for accident conditions as appropriate to assure adequate safety, including those variables and systems that can affect the fission process, the integrity of the reactor core, the reactor coolant pressure boundary, and the containment and its associated systems. The proposed changes to COL Appendix C (and associated plant-specific Tier 1) information assures the continued ability of the PMS, the safety-related displays, and the monitored systems to monitor variables and systems. [There is no impact from the COL changes](#). Therefore, the proposed changes comply with the requirements of GDC 13.

10 CFR Part 50, Appendix A GDC 19, "Control Room" includes a requirement that a control room be provided from which actions can be taken to operate the nuclear power unit safely under normal conditions and to maintain it in a safe condition under accident conditions, including loss-of-coolant accidents, and that equipment, including the necessary instrumentation, at appropriate locations outside the control room be provided with a design capability for prompt hot shutdown of the reactor. The proposed changes to [the COL and](#) COL Appendix C (and associated plant-specific Tier 1) information do not affect the ability of the control room operators to monitor plant status to maintain the plant in a safe condition and to promptly shutdown the reactor. Therefore, the proposed changes comply with the requirements of GDC 19.

10 CFR Part 50, Appendix A GDC 20, "Protection system functions" requires that the protection system shall be designed (1) to initiate automatically the operation of appropriate systems including the reactivity control systems, to assure that specified acceptable fuel design limits are not exceeded as a result of anticipated operational occurrences and (2) to sense accident conditions and to initiate the operation of systems and components important to safety. The proposed changes to [the COL and](#) COL Appendix C (and associated plant-specific Tier 1) information do not adversely affect a

design function of the PMS, the safety-related displays, and the monitored systems. Therefore, the proposed changes comply with the requirements of GDC 20.

4.2 Precedent

None.

4.3 Significant Hazards Consideration Determination

The proposed changes revise [the](#) Combined License (COL), [COL](#) Appendix C (and associated plant-specific Tier 1) information, and Tier 2 and Tier 2* information in the Updated Final Safety Analysis Report (UFSAR) to correct consistency and editorial errors.

An evaluation to determine whether or not a significant hazards consideration is involved with the proposed amendment was completed by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

4.3.1 Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

The proposed consistency and editorial changes to [the COL](#), COL Appendix C (and associated plant-specific Tier 1) and Tier 2 and Tier 2* information in the UFSAR do not involve a technical change, (e.g.; there is no design parameter or requirement, calculation, analysis, function or qualification change). No structure, system, or component (SSC) design or function would be affected. No design or safety analysis would be affected. The proposed changes do not affect any accident initiating event or component failure, thus the probabilities of the accidents previously evaluated are not affected. No function used to mitigate a radioactive material release and no radioactive material release source term is involved, thus the radiological releases in the accident analyses are not affected.

Therefore, the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

4.3.2 Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

The proposed consistency and editorial changes to [the COL](#), COL Appendix C (and associated plant specific Tier 1) and Tier 2 and Tier 2* information in the UFSAR do not change the design or functionality of safety-related SSCs. The proposed change does not affect plant electrical systems, and does not affect the design function, support, design, or operation of mechanical and fluid systems. The proposed change does not result in a new failure mechanism or introduce any new accident precursors. No design function described in the UFSAR is affected by the proposed changes. Therefore, the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

4.3.3 Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No

The proposed consistency and editorial changes to [the COL](#), COL Appendix C (and associated plant specific Tier 1) and Tier 2 and Tier 2* information in the UFSAR do not involve any change to the design as described in the COL. There would be no change to an existing design basis, design function, regulatory criterion, or analysis. No safety analysis or design basis acceptance limit/criterion is involved. Therefore, the proposed amendment does not involve a significant reduction in a margin of safety.

Based on the above, it is concluded that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of “no significant hazards consideration” is justified.

4.4 Conclusions

Based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission’s regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

5. ENVIRONMENTAL CONSIDERATIONS

The proposed changes revise [the](#) Combined License (COL), [COL](#) Appendix C (and associated plant-specific Tier 1) information and Tier 2 and Tier 2* information in the Updated Final Safety Analysis Report (UFSAR) to correct consistency and editorial errors. No structure, system, or component (SSC), design function or analysis as described in the UFSAR would be affected by these non-technical and editorial changes.

(i) *There is no significant hazards consideration.*

As documented in Section 4.3, Significant Hazards Consideration Determination, of this license amendment request, an evaluation was completed to determine whether or not a significant hazards consideration is involved by focusing on the three standards set forth in 10 CFR 50.92, “Issuance of amendment.” The Significant Hazards Consideration Determination determined that (1) the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated; (2) the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated; and (3) the proposed amendment does not involve a significant reduction in a margin of safety. Therefore, it is concluded that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of “no significant hazards consideration” is justified.

- (ii) *There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite.*

The proposed changes in the requested amendment identify editorial and consistency changes which do not affect an aspect of the AP1000 design. The proposed changes are unrelated to any aspect of plant construction or operation that would introduce any change to effluent types (e.g., effluents containing chemicals or biocides, sanitary system effluents, and other effluents) or affect any plant radiological or non-radiological effluent release quantities. Furthermore, the proposed changes do not affect any effluent release path or diminish the functionality of any design or operational features that are credited with controlling the release of effluents during plant operation. Therefore, it is concluded that the proposed amendment does not involve a significant change in the types or a significant increase in the amounts of any effluents that may be released offsite.

- (iii) *There is no significant increase in individual or cumulative occupational radiation exposure.*

The proposed changes in the requested amendment identify editorial and consistency changes which do not affect any aspect of the AP1000 design. The proposed changes in the requested amendment do not affect or alter any walls, floors, or other structures that provide shielding. Plant radiation zones and controls under 10 CFR 20 preclude a significant increase in occupational radiation exposure. Therefore, the proposed amendment does not involve a significant increase in individual or cumulative occupational radiation exposure.

Based on the above review of the proposed amendment, it has been determined that anticipated construction and operational effects of the proposed amendment do not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment and proposed exemption.

6. REFERENCES

None.

Southern Nuclear Operating Company

ND-18-0319

Enclosure 10

**Vogtle Electric Generating Plant (VEGP) Units 3 and 4
Additional Proposed Changes to the Licensing Basis Documents
(LAR-17-042S1)**

Note:

Added text is shown as bold Blue Underline
Deleted text is shown as bold ~~Red Strikethrough~~

(Enclosure 10 consists of 6 pages, including this cover page)

Revise information, as shown below, for the following Combined License (COL) License Conditions.

Note: Markups are shown on the VEGP Unit 3 COL. Corresponding changes are also required for the VEGP Unit 4 COL.

Section 2.A

This license applies to the VEGP Unit 3, a light-water nuclear reactor and associated equipment (the facility), owned by the VEGP Owners. The facility would be located adjacent to existing VEGP Units 1 and 2 on a 3,169-acre coastal plain bluff on the southwest side of the Savannah River in eastern Burke County, GA, approximately 15 miles east-northeast of Waynesboro, GA, and 26 miles southeast of Augusta, GA, and is described in the licensees' updated final safety analysis report ~~(FSAR)~~ (UFSAR), as supplemented and amended.

Section 2.B(3)(a)

SNC pursuant to the Act and 10 CFR Part 70, to receive and possess at any time, special nuclear material as reactor fuel, in accordance with the limitations for storage and in amounts necessary for reactor operation, described in the ~~FSAR~~ UFSAR, as supplemented and amended;

Section 2.B(3)(b)

SNC pursuant to the Act and 10 CFR Part 70, to use special nuclear material as reactor fuel, after a Commission finding under 10 CFR 52.103(g) has been made, in accordance with the limitations for storage and in amounts necessary for reactor operation, described in the ~~FSAR~~ UFSAR, as supplemented and amended;

Section 2.D(2)(a)

SNC shall perform the design-specific pre-operational tests identified below:

1. In-Containment Refueling Water Storage Tank (IRWST) Heatup Test (first plant test as identified in ~~AP1000 Design Control Document (DCD), Rev. 19,~~ UFSAR Section 14.2.9.1.3 Item (h));
2. Pressurizer Surge Line Stratification Evaluation (first plant test as identified in ~~AP1000 DCD, Rev. 19,~~ UFSAR Section 14.2.9.1.7 Item (d)) ~~as revised by Amendment No. 83~~;
3. Reactor Vessel Internals Vibration Testing (first plant test as identified in ~~AP1000 DCD, Rev. 19,~~ UFSAR Section 14.2.9.1.9);
4. Core Makeup Tank Heated Recirculation Tests (first three plants test as identified in ~~AP1000 DCD, Rev. 19,~~ UFSAR Section 14.2.9.1.3 Items (k) and (w)); and
5. Automatic Depressurization System Blowdown Test (first three plants test as identified in ~~AP1000 DCD, Rev. 19,~~ UFSAR Section 14.2.9.1.3 Item (s)).

Section 2.D(2)(b)

SNC shall review and evaluate the results of the tests identified in Section 2.D.(2)(a) of this license and confirm that these test results are within the range of acceptable values predicted or otherwise confirm that the tested systems perform their specified functions in accordance with ~~AP1000 DCD, Rev. 19,~~ UFSAR Section 14.2.9,

Section 2.D(3)(c)

SNC shall perform the pre-critical tests identified in ~~AP1000 DCD, Rev. 19,~~ UFSAR Section 14.2.10.1;

Section 2.D(3)(d)

SNC shall review and evaluate the results of the tests identified in Section 2.D.(3)(c) of this license and confirm that these test results are within the range of acceptable values predicted or otherwise confirm that the tested systems perform their specified functions in accordance with ~~AP1000 DCD, Rev. 19,~~ UFSAR Section 14.2.10; and

Section 2.D(4)(b)

SNC shall perform the initial criticality and low-power tests identified in ~~AP1000 DCD, Rev. 19,~~ UFSAR Sections 14.2.10.2 and 14.2.10.3, respectively, the Natural Circulation (first plant test) identified in ~~AP1000 DCD, Rev. 19,~~ UFSAR Section 14.2.10.3.6, and the Passive Residual Heat Removal Heat Exchanger (first plant test) identified in ~~AP1000 DCD, Rev. 19,~~ UFSAR Section 14.2.10.3.7;

Section 2.D(4)(c)

SNC shall review and evaluate the results of the tests identified in Section 2.D.(4)(b) of this license and confirm that these test results are within the range of acceptable values predicted or otherwise confirm that the tested systems perform their specified functions in accordance with ~~AP1000 DCD, Rev. 19,~~ UFSAR Sections 14.2.10.2 and 14.2.10.3; and

Section 2.D(5)(b)

SNC shall perform the power ascension tests identified in ~~AP1000 DCD, Rev. 19,~~ UFSAR Section 14.2.10.4, the Rod Cluster Control Assembly Out of Bank Measurements (first plant test) identified in ~~the AP1000 DCD, Rev. 19,~~ UFSAR Section 14.2.10.4.6, and the Load Follow Demonstration (first plant test) identified in ~~AP1000 DCD, Rev. 19,~~ UFSAR Section 14.2.10.4.22;

Section 2.D(5)(c)

SNC shall review and evaluate the results of the tests identified in Section 2.D.(5)(b) of this license and confirm that these test results are within the range of acceptable values predicted or otherwise confirm that the tested systems perform their specified functions in accordance with ~~AP1000 DCD, Rev. 19,~~ UFSAR Section 14.2.10.4; and

Section 2.D(6)

Upon submission of the notification required by Section 2.D.(5)(d) of this license, SNC is authorized to operate the facility at steady state reactor core power levels not to exceed 3400 MW thermal (100-percent thermal power), as described in the ~~FSAR~~ UFSAR, in accordance with the conditions specified herein.

Section 2.D(7)(a)

Within 30 days of a change to the initial test program described in ~~FSAR~~ UFSAR Section 14, Initial Test Program, made in accordance with 10 CFR 50.59 or in accordance with 10 CFR Part 52, Appendix D, Section VIII, "Processes for Changes and Departures," SNC shall report the change to the Director of NRO, or the Director's designee, in accordance with 10 CFR 50.59(d).

Section 2.D(10)(j)

Radiation Protection Program (RPP) (including the ALARA principle) or applicable portions as identified in ~~FSAR~~ UFSAR Section 12.5 thereof:

Section 2.D(11)

No later than 12 months after issuance of the COL, SNC shall submit to the Director of NRO, or the Director's designee, a schedule for implementation of the operational programs listed in ~~FSAR~~ UFSAR Table 13.4-201, including the associated estimated date for initial loading of fuel. The schedule shall be updated every 6 months until 12 months before scheduled fuel loading, and every month thereafter until all the operational programs listed in ~~FSAR~~ UFSAR Table 13.4-201 have been fully implemented.

Section 2.D(12)(b)

Before commencing installation of individual piping segments and connected components in their final locations, SNC shall complete the as-designed pipe rupture hazards analysis for compartments (rooms) containing those segments in accordance with the criteria outlined in the ~~AP1000 DCD, Rev. 19, UFSAR~~ Sections 3.6.1.3.2 ~~(as revised by Amendment No. 51 and Amendment No. 107)~~ and 3.6.2.5, and shall inform the Director of NRO, or the Director's designee, in writing, upon the completion of this analysis and the availability of the as-designed pipe rupture hazards analysis reports.

Section 2.D(12)(c)

Before commencing installation of individual piping segments, identified in ~~AP1000 DCD, Rev. 19,~~ UFSAR Section 3.9.8.7, and connected components in their final locations in the facility, SNC shall complete the analysis of the as-designed individual piping segments and shall inform the Director of NRO, or the Director's designee, in writing, upon the completion of these analyses and the availability of the design reports for the selected piping packages.

Section 2.D(12)(f)1

The construction and inspection procedures for steel concrete composite (SC) construction activities for seismic Category I nuclear island modules (including shield building SC modules) described in ~~AP1000 DCD, Rev. 19,~~ UFSAR Section 3.8.4.8;

Section 2.D(12)(f)4

A turbine maintenance and inspection program, which must be consistent with the maintenance and inspection program plan activities and inspection intervals identified in ~~FSAR~~ UFSAR Section 10.2.3.6 (before initial fuel load);

Section 2.D(12)(f)9

The ITP procedures identified in ~~FSAR~~ UFSAR Section 14.2.3:

- a. administrative manual (before the first component test)
- b. preoperational testing (before scheduled performance)
- c. startup testing (before initial fuel load)

Section 2.D(12)(g)1

Update the seismic interaction analysis in ~~AP1000 DCD, Rev. 19,~~ UFSAR Section 3.7.5.3 to reflect as-built information, which must be based on as-procured data, as well as the as-constructed condition;

Section 2.D(12)(g)2

Reconcile the seismic analyses described in Section 3.7.2 of the ~~AP1000 DCD, Rev. 19,~~ UFSAR, to account for detailed design changes, including, but not limited to, those due to as-procured or as-built changes in component mass, center of gravity, and support configuration based on as-procured equipment information;

Section 2.D(12)(g)4

Update the pressure temperature (P-T) limits using the pressure temperature limits report (PTLR) methodologies approved in ~~AP1000 DCD, Rev. 19~~ [the UFSAR](#), using the plant-specific material properties or confirm that the reactor vessel material properties meet the specifications of and use the Westinghouse generic PTLR curves;

Section 2.D(12)(g)5

Verify that plant-specific belt line material properties are consistent with the properties given in ~~AP1000 DCD, Rev. 19~~ [UFSAR](#) Section 5.3.3.1 and Tables 5.3-1 and 5.3-3. The verification must include a pressurized thermal shock (PTS) evaluation based on as-procured reactor vessel material data and the projected neutron fluence for the plant design objective. Submit this PTS evaluation report to the Director of NRO, or the Director's designee, in writing, at least 18 months before initial fuel load;

Section 2.D(12)(g)7

Review differences between the as-built plant and the design used as the basis for the AP1000 probabilistic risk assessment (PRA) and ~~the AP1000 DCD, Rev. 19~~ [UFSAR](#) Table 19.59-18. SNC shall evaluate the plant-specific PRA-based insight differences and shall modify the plant-specific PRA model as necessary to account for the plant-specific design and any design changes or departure from the PRA certified in Rev. 19 of the AP1000 DCD;

Section 2.F(3)(a)

The licensees are exempt from the requirements of 10 CFR 70.22(b), 10 CFR 70.32(c), 10 CFR 74.31, 10 CFR 74.41, and 10 CFR 74.51 because the licensees meet the requirements of 10 CFR 70.17 and 74.7 as follows: The exemption is authorized by law, will not present an undue risk to the public health or safety, and is consistent with the common defense and security. Additionally, special circumstances are present in that the application of the regulations in this particular circumstance is not necessary to achieve the underlying purpose of the rule (10 CFR 50.12(a)(2)(ii)) as described in the ~~FSAR~~ [COL Application](#) and the staff SER dated August 5, 2011.