UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NEW REACTORS

RELATED TO AMENDMENT NOS. 157 and 155

TO THE COMBINED LICENSE NOS. NPF-91 AND NPF-92, RESPECTIVELY

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

GEORGIA POWER COMPANY

OGLETHORPE POWER CORPORATION

MEAG POWER SPVM, LLC

MEAG POWER SPVJ, LLC

MEAG POWER SPVP, LLC

CITY OF DALTON, GEORGIA

VOGTLE ELECTRIC GENERATING PLANT UNITS 3 AND 4

DOCKET NOS. 52-025 AND 52-026

1.0 INTRODUCTION

By letter dated November 29, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18333A337), Southern Nuclear Operating Company (SNC) submitted to the U.S. Nuclear Regulatory Commission (NRC) a request for license amendment, exemption, and alternative for the Vogtle Electric Generating Plant (VEGP) Units 3 and 4, Combined License (COL) Numbers NPF-91 and NPF-92, respectively. The License Amendment Request (LAR) 18-031 proposes changes to plant-specific Tier 1 information and corresponding changes to COL Appendix C to clarify that when the Design Commitment or Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) provides that an item or activity must comply with American Society of Mechanical Engineers (ASME) Code Section III, this means compliance with the ASME Section III Code, as incorporated by reference in Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a with specific conditions, or in accordance with alternatives authorized by the NRC pursuant to 10 CFR 50.55a. Accordingly, pursuant to 10 CFR 50.55a(z)(2), SNC requested NRC authorization to use an alternative to the requirements of ASME Section III, NB-6221(a), NC-6221(a), ND-6221(a), NB-6321(a), NC-6321(a), and ND-6321(a) of the ASME Boiler and Pressure Vessel (B&PV) Code, 1998 Edition through the 2000 Addenda (Code of Record) for VEGP Units 3 and 4. The alternative is applicable to ASME Section III pressure testing after repair and/or replacement activities that occur following the completion of all ASME Section III construction activities and application of the ASME certification marking.

Pursuant to Section 52.63(b)(1) of 10 CFR, SNC also requested an exemption from the provisions of 10 CFR Part 52, Appendix D, "Design Certification Rule for the AP1000 Design," Section III.B, "Scope and Contents." The requested exemption would allow a departure from the corresponding portions of the certified information in Tier 1 of the generic design control document (DCD).[1] In order to modify the UFSAR (the plant-specific DCD (PS-DCD)) Tier 1 information, the NRC must find the licensee's exemption request included in its submittal for the LAR to be acceptable. The staff's review of the exemption request, as well as the LAR and the alternative request, is included in this safety evaluation.

2.0 REGULATORY EVALUATION

The request proposes changes to plant-specific Tier 1 information and corresponding changes to COL Appendix C, Section 1.2.

The NRC staff considered the following regulatory requirements in reviewing the proposed LAR:

Appendix D, Section VIII.A.4 to 10 CFR Part 52 states that exemptions from Tier 1 information are governed by the requirements in 10 CFR 52.63(b)(1) and 10 CFR 52.98(f). It also states that the Commission will deny such a request if it finds that the design change will result in a significant decrease in the level of safety otherwise provided by the design.

10 CFR 52.63(b)(1) allows the licensee who references a design certification rule to request NRC approval for an exemption from one or more elements of the certification information. The Commission may only grant such a request if it determines that the exemption will comply with the requirements of 10 CFR 52.7, which, in turn, points to the requirements listed in 10 CFR 50.12 for specific exemptions. In addition to the factors listed in 10 CFR 52.7, the Commission shall consider whether the special circumstances outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption. Therefore, any exemption from the Tier 1 information certified by Appendix D to 10 CFR Part 52 must meet the requirements of 10 CFR 50.12, 52.7, and 52.63(b)(1).

10 CFR 52.98(f) requires NRC approval for any modification to, addition to, or deletion from the terms and conditions of a COL. This activity involves changes to COL Appendix C, with corresponding changes to the associated PS-DCD Tier 1 information. Therefore, this activity requires an amendment to the COL. Accordingly, NRC approval is required prior to making the plant-specific changes in this LAR.

The regulations in 10 CFR 50.55a(c)(1) require components that are part of the reactor coolant pressure boundary must meet the requirements for Class 1 components in Section III of the ASME Code, except as provided in paragraphs (c)(2) through (4) of 10 CFR 50.55a.

Per 10 CFR 50.55a(z), alternatives to the requirements of paragraphs (b) through (h) of 10 CFR 50.55a or portions thereof may be used when authorized by the Director, Office of New Reactors. In proposing alternatives, the licensee must demonstrate that: (1) the proposed

[1] While SNC describes the requested exemption as being from Section III.B of 10 CFR Part 52, Appendix D, the entirety of the exemption pertains to proposed departures from Tier 1 information in the PS-DCD. In the remainder of this evaluation, the NRC will refer to the exemption as an exemption from Tier 1 information to match the language of Section VIII.A.4 of 10 CFR Part 52, Appendix D, which specifically governs the granting of exemptions from Tier 1 information.

alternative would provide an acceptable level of quality and safety; or (2) compliance would result in hardship or unusual difficulty without a compensating increase in quality and safety.

3.0 TECHNICAL EVALUATION

In LAR 18-031, SNC proposed changes to Licensing Basis Documents Tier 1 (and COL Appendix C) Section 1.2, which are shown below.

In Section 1.2 “General Provisions,” under the Section of “Treatment of Individual Items,” after the third paragraph, SNC proposes to include the following paragraph:

> “When the Design Commitment or ITAAC provides that an item or activity must comply with ASME Code Section III, this means compliance with the ASME Code Section III, as incorporated by reference in 10 CFR 50.55a with specific conditions, or in accordance with alternatives authorized by the NRC pursuant to 10 CFR 50.55a.”

10 CFR Part 52, Appendix D, Section VIII.A.4 and 10 CFR 52.63(b)(1) govern the issuance of exemptions from elements of the certified design information for AP1000 nuclear power plants. SNC has identified changes to the Tier 1 information as discussed in Enclosure 1 of Reference 1.

SNC proposed alternative requirements for ASME Section III pressure tests conducted following the completion of ASME Section III construction activities (VEGP 3&4-PSI/ISI-Alt-12). The alterative requirements for the pressure test are:

> In lieu of performance of a pressure test for repair and/or replacement activities following completion ASME Section III construction as required by ASME Section III, Division I, Articles NB-6221(a), NC-6221(a), ND-6221(a), NB-6321(a), NC-6321(a), and ND-6321(a), SNC proposed to perform a pressure test in accordance with the 2007 Edition and 2008 Addenda of ASME Section XI IWB-5221(a), IWC-5221, and IWD-5221.

The staff evaluation of the requested amendment and alternative are provided in the following sections.

3.1 TECHNICAL EVALUATION OF THE REQUESTED AMENDMENT AND ALTERNATIVE

License Amendment

SNC proposed the additional information to DCD Tier 1 (and COL Appendix C) Section 1.2 and is revised as shown below:

In Section 1.2 “General Provisions,” under Section of “Treatment of Individual Items,” after the third paragraph, include the following:

> “When the Design Commitment or ITAAC provides that an item or activity must comply with ASME Code Section III, this means compliance with the ASME Code Section III, as incorporated by reference in 10 CFR 50.55a with specific conditions, or in accordance with alternatives authorized by the NRC pursuant to 10 CFR 50.55a.”

The use and conditions on the use of standards is identified in 10 CFR 50.55a(b), which establishes the conditions which must be followed for systems and components of pressurized water-cooled nuclear power reactors. The staff finds that the addition of the paragraph proposed by SNC is in accordance with the use and conditions on the use of standards established in 10 CFR 50.55a(b). 10 CFR 50.55a(z) provides provisions for a licensee to use alternatives to the requirements of 10 CFR 50.55a(b) when approved by the Director, Office of New Reactors. Therefore, the NRC staff finds the changes acceptable since the additional information to Tier 1 (and COL Appendix C) is consistent with the requirements of 10 CFR 50.55a.

Alternative

The ASME Code Section XI establishes jurisdiction in Section IWA-1200 and states that the Section XI jurisdiction commences when all the construction code requirements have been met. The construction code for VEGP Units 3 and 4 is the 1998 Edition of the ASME Code, Section III, through the 2000 Addenda. The construction code contains specific requirements for hydrostatic testing of components. The hydrostatic testing requirements of the construction code must be completed for jurisdiction to transfer to ASME Code, Section XI. Under 10 CFR 50.55a, facilities licensed under 10 CFR Part 52 are required to implement the requirements of ASME Code Section XI after the Commission makes the finding under 10 CFR 52.103(g). ASME Code Section III, Division I, Articles NB-6221(a), NC-6221(a), ND-6221(a), NB-6321(a), NC-6321(a), and ND-6321(a) contain the requirements for pressure testing of piping and components.

The staff finds that each article states the installed system shall be hydrostatically tested at not less than 1.1 or 1.25 times the lowest Design Pressure of any component within the boundary protected by the overpressure protection devices. This ASME Code Section III hydrostatic test (1.1 or 1.25 times the lowest Design Pressure) shall be performed to satisfy the ITAACs. Following the 10 CFR 52.103(g) finding, the licensee is subject to ASME Code Section XI. If the piping and components will need to be repaired and/or replaced following the completion of all ASME Code Section III construction and application of the ASME certification marking, pressure tests at “nominal system operating pressure,” in accordance with the 2007 Edition and 2008 Addenda of ASME Section XI IWB-5221(a), IWC-5221, and IWD-5221, will be performed in lieu of ASME Code Section III hydrostatic test (pressure of 1.1 or 1.25 times the lowest Design Pressure).

The staff finds this proposed alternative of using ASME Section XI pressure test requirements after ASME Code, Section III, hydrostatic tests have been completed and all construction activities are completed to be acceptable as this is consistent with the jurisdiction between ASME Code Section III and ASME Code Section XI, and the proposed Edition and Addenda are incorporated for reference in 10 CFR 50.55a as acceptable for use without any conditions related to pressure test requirements. Use of the ASME Section XI requirements for pressure

testing provides an acceptable level of quality and safety, as 10 CFR 50.55a mandates the use of ASME Section XI for inservice inspection activities after construction is completed.

ITAAC are required to be maintained until the Commission makes the finding under 10 CFR 52.103(g). The ITAAC for VEGP Units 3 and 4 require the components and piping to be hydrostatically tested as required by the ASME Code Section III. With the definition added to Tier 1 in accordance with the approved exemption and license amendment, compliance with the approved alternative will maintain the ITAAC between the period that construction activities are complete and when the Commission makes the finding under 10 CFR 52.103(g).

3.2 EVALUATION OF EXEMPTION

The regulations in Section III.B of Appendix D to 10 CFR Part 52 require a holder of a COL referencing Appendix D to 10 CFR Part 52 to incorporate by reference and comply with the requirements of Appendix D, including certified information in Tier 1 of the generic AP1000 DCD. Exemptions from Tier 1 information are governed by the change process in Section VIII.A.4 of Appendix D of 10 CFR Part 52. Because the licensee has identified changes to plant-specific Tier 1 information, with corresponding changes to the associated COL Appendix C information resulting in the need for a departure, an exemption from the certified design information within plant-specific Tier 1 material is required to implement the LAR.

The Tier 1 information for which a plant-specific departure and exemption was requested is described above. The result of this exemption would be that the licensee could implement modifications to Tier 1 information to the UFSAR as well as departures from the corresponding COL Appendix C 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 is requested for the involved Tier 1 information described and justified in LAR 18-031. This exemption is a permanent exemption limited in scope to the particular Tier 1 information specified.

As stated in Section VIII.A.4 of Appendix D to 10 CFR Part 52, an exemption from Tier 1 information is governed by the requirements of 10 CFR 52.63(b)(1) and 52.98(f). Additionally, Section VIII.A.4 of Appendix D to 10 CFR Part 52 provides that the Commission will deny a request for an exemption from Tier 1 if it finds that the requested change will result in a significant decrease in the level of safety otherwise provided by the design. Pursuant to 10 CFR 52.63(b)(1), the Commission may grant exemptions from one or more elements of the certification information, so long as the criteria given in 10 CFR 52.7, which, in turn, references 10 CFR 50.12, are met and that the special circumstances, which are defined by 10 CFR 50.12(a)(2), outweigh any potential decrease in safety due to reduced standardization.

Pursuant to 10 CFR 52.7, the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of 10 CFR Part 52. As 10 CFR 52.7 further states, the Commission's consideration will be governed by 10 CFR 50.12, "Specific exemptions," which states that an exemption may be granted when: (1) the exemptions are authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security; and (2) special circumstances are present. Specifically, 10 CFR 50.12(a)(2) lists six circumstances for which an exemption may be granted. It is necessary for one of these bases to be present in order for the NRC to consider granting an exemption request. The licensee stated that the requested exemption meets the special circumstances of 10 CFR 50.12(a)(2)(ii). That subparagraph defines special circumstances as when "[a]pplication of the regulation in the particular circumstances would not

serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule." The staff's analysis of these findings is presented below:

3.2.1 AUTHORIZED BY LAW

The requested exemption would allow SNC to implement the amendment described above. This exemption is a permanent exemption limited in scope to particular Tier 1 information. Subsequent changes to this plant-specific Tier 1 information, and corresponding changes to Appendix C, or any other Tier 1 information would be subject to the exemption process specified in Section VIII.A.4 of Appendix D to 10 CFR Part 52 and the requirements of 10 CFR 52.63(b)(1). As stated above, 10 CFR Part 52, Appendix D, Section VIII.A.4 allows the NRC to grant exemptions from one or more elements of the Tier 1 information. The NRC staff has determined that granting of SNC's proposed exemption will not result in a violation of the Atomic Energy Act of 1954, as amended, or the Commission's regulations. Therefore, as required by 10 CFR 50.12(a)(1), the exemption is authorized by law.

3.2.2 NO UNDUE RISK TO PUBLIC HEALTH AND SAFETY

As discussed above in the technical evaluation, the proposed changes comply with the NRC's substantive safety regulations. Therefore, there is no undue risk to the public health and safety.

3.2.3 CONSISTENT WITH COMMON DEFENSE AND SECURITY

The proposed exemption would allow changes as described above in the technical evaluation, thereby departing from the AP1000 certified (Tier 1) design information. The change does not alter or impede the design, function, or operation of any plant structures, systems, or components associated with the facility's physical or cyber security and, therefore, does not affect any plant equipment that is necessary to maintain a safe and secure plant status. In addition, the changes have no impact on plant security or safeguards. Therefore, as required by 10 CFR 50.12(a)(1), the staff finds that the common defense and security is not impacted by this exemption.

3.2.4 SPECIAL CIRCUMSTANCES

Special circumstances, in accordance with 10 CFR 50.12(a)(2), are present, in part, whenever application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule. The underlying purpose of the Tier 1 information is to ensure that a licensee will safely construct and operate a plant based on the certified information found in the AP1000 DCD, which was incorporated by reference into the VEGP Units 3 and 4 licensing basis. The proposed changes described in the above technical evaluation do not impact the ability of any SSCs to perform their functions or negatively impact safety.

Special circumstances are present in the particular circumstances discussed in LAR 18-031 because the application of the specified Tier 1 information is not necessary to achieve the underlying purpose of the rule. The proposed changes are equal or provide additional clarity to the existing requirement. The proposed changes do not affect any function or feature used for the prevention and mitigation of accidents or their safety analyses, and no safety-related SSC or function is involved. This exemption request and associated revisions to the Tier 1 information and corresponding changes to Appendix C demonstrate that the applicable regulatory requirements will continue to be met. Therefore, for the above reasons, the staff finds that the

special circumstances required by 10 CFR 50.12(a)(2)(ii) for the granting of an exemption from the Tier 1 information exist.

3.2.5 SPECIAL CIRCUMSTANCES OUTWEIGH REDUCED STANDARDIZATION

This exemption would allow the implementation of changes to Tier 1 information in the plant-specific DCD and corresponding changes to COL Appendix C that are being proposed in the LAR. The justification provided in LAR 18-031, the exemption request, and the associated licensing basis mark-ups demonstrate that there is a limited change from the standard information provided in the generic AP1000 DCD. The design functions of the ASME Class 1, 2, and 3 systems associated with this request will continue to be maintained because the associated revisions to the Tier 1 information support the design functions of the ASME Class 1, 2, and 3 systems. Consequently, the safety impact that may result from any reduction in standardization is minimized, because the proposed design change does not result in a reduction in the level of safety. In addition, the proposed changes provide better clarity in the existing requirements because the changes add specific language about the meaning of existing stated requirements. Based on the foregoing reasons, as required by 10 CFR 52.63(b)(1), the staff finds that the special circumstances outweigh any decrease in safety that may result from the reduction of standardization of the AP1000 design.

3.2.6 NO SIGNIFICANT REDUCTION IN SAFETY

This exemption would allow the implementation of changes discussed above. The exemption request proposes to depart from the certified design by allowing changes discussed above in the technical evaluation. The changes for consistency will not impact the functional capabilities of this system. The proposed changes will not adversely affect the ability of the ASME Class 1, 2, and 3 systems to perform their design functions, and the level of safety provided by the current systems and equipment therein is unchanged. Therefore, based on the foregoing reasons and as required by 10 CFR 52.7, 10 CFR 52.98(f), and 10 CFR Part 52, Appendix D, Section VIII.A.4, the staff finds that granting the exemption would not result in a significant decrease in the level of safety otherwise provided by the design.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Georgia State official was notified of the proposed issuance of the amendment on February 4, 2019. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (84 FR 496 published on January 30, 2019). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

Because the exemption is necessary to allow the changes proposed in the license amendment, and because the exemption does not authorize any activities other than those proposed in the license amendment, the environmental consideration for the exemption is identical to that of the license amendment. Accordingly, the exemption 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 needs to be prepared in connection with the issuance of the exemption.

6.0 CONCLUSION

The staff has determined that pursuant to Section VIII.A.4 of Appendix D to 10 CFR Part 52, the exemption (1) is authorized by law, (2) presents no undue risk to the public health and safety, (3) is consistent with the common defense and security, (4) presents special circumstances, and (5) does not reduce the level of safety at the licensee's facility. Therefore, the staff grants the licensee an exemption from the Tier 1 information requested by the licensee.

The staff has concluded, based on the considerations discussed in Section 3.1 that there is reasonable assurance that: (1) the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that 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. Accordingly, the NRC staff concluded that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z) and is in compliance with the ASME Code requirements. Therefore, the staff finds the changes proposed in this license amendment acceptable, and the staff authorizes LAR-18-031, PSI/ISI-ALT-12 at VEGP Units 3 and 4, until the 52.103(g) finding has been made. All other requirements of ASME Code, Sections III and XI, and 10 CFR 50.55a, for which an alternative has not been specifically requested and authorized, remain applicable.

7.0 REFERENCES

1. Vogtle Electric Generating Plant, Units 3 and 4, "Request for License Amendment, Exemption, and Alternative: Clarification of ASME Code Section III Compliance and Alternative Requirements for ASME Section III Pressure Tests Conducted Following the Completion of ASME Section III Construction Activities (LAR-18-031) (VEGP 3&4-PSI/ISI-Alt-12)," dated November 29, 2018 (ADAMS Accession No. ML18333A337).

2. Vogtle Electric Generating Plant, Units 3 and 4, Updated Final Safety Analysis Report, Tier 1, Revision 6, dated June 15, 2018 (ADAMS Accession No. ML18179A250).

3. AP1000 Design Control Document, Revision 19, dated June 13, 2011 (ADAMS Accession No. ML11171A500).

4. Vogtle Electric Generating Plant Final Safety Evaluation Report, NUREG-2124, Volume 1, "Final Safety Evaluation Report Related to the Combined Licenses for Vogtle Electric Generating Plant, Units 3 and 4," dated September 30, 2012 (ADAMS Accession No. ML12271A045).