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

SAFETY EVALUATION BY THE OFFICE OF NEW REACTORS

RELATED TO AMENDMENT NOS. 135 AND 134

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

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 January 31, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18031B181), and supplemented by letters dated April 25, 2018, (ADAMS Accession No. ML18115A309), and June 21, 2018 (ADAMS Accession No. ML18172A163), Southern Nuclear Operating Company, Inc. (SNC) requested that the U.S. Nuclear Regulatory Commission (NRC) amend Vogtle Electric Generating Plant (VEGP) Units 3 and 4, Combined License (COL) Nos. NPF-91 and NPF-92, respectively.

The License Amendment Request (LAR) 18-003 requested to depart from COL Appendix A, "Technical Specifications (TS)." The proposed amendment involves changes to the battery charger output amp value in TS Surveillance Requirement (SR) 3.8.1.2 and the surveillance frequency for SR 3.8.7.6. Specifically, LAR 18-003 requests modification of COL Appendix A, SR 3.8.1.2, to identify that the required minimum ampere output for the battery chargers, as well as, modifying COL Appendix A, SR 3.8.7.6, to align the test frequency with the expected life of the AP1000 Class 1E batteries.

The supplements dated April 25 and June 21, 2018, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the Nuclear Regulatory Commission (NRC or the Commission) staff's original proposed

no significant hazards consideration determination as published in the *Federal Register* on April 24, 2018 (83 FR 17858).

REGULATORY EVALUATION

The NRC Staff considered the following requirements in reviewing the LAR that included the proposed changes.

10 CFR Part 52, Appendix D, VIII.C.6 states that after issuance of a license, "Changes to the plant-specific TS will be treated as license amendments under 10 CFR 50.90." 10 CFR 50.90 addresses the application for amendment of license, construction permit, or early site permit. The proposed LAR requires changes in the TS, and therefore an LAR is required to be submitted for NRC approval.

10 CFR 50.36, "Technical specifications," impose limits, operating conditions, and other requirements upon reactor facility operation for the public health and safety. The TS are derived from the analyses and evaluations in the safety analysis report. TS must contain: (1) safety limits and limiting safety system settings; (2) limiting conditions for operation; (3) surveillance requirements; (4) design features; and (5) administrative controls.

10 CFR Part 50, Appendix A, General Design Criterion (GDC) 4, "Environmental and dynamic effects design bases," requires, in part, that structures, systems, and components (SSCs) important to safety shall be designed to accommodate the effects of and to be compatible with the environmental conditions associated with normal operation, maintenance, testing, and postulated accidents, including loss-of-coolant accidents. These SSCs shall be appropriately protected against dynamic effects, including the effects of missiles, pipe whipping, and discharging fluids, that may result from equipment failures and from events and conditions outside the nuclear power unit.

10 CFR Part 50, Appendix A, GDC 17, "Electric power systems," requires, in part, that an onsite electric power system and an offsite electric power system shall be provided to permit functioning of structures, systems, and components important to safety. The safety function for each system (assuming the other system is not functioning) shall be to provide sufficient capacity and capability to assure that (1) specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences and (2) the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents. The onsite electric power supplies, including the batteries, and the onsite electric distribution system, shall have sufficient independence, redundancy, and testability to perform their safety functions assuming a single failure.

10 CFR Part 50, Appendix A, GDC 18, "Inspection and testing of electric power systems," requires that electric power systems important to safety shall be designed to permit appropriate periodic inspection and testing of important areas and features, such as wiring, insulation, connections, and switchboards, to assess the continuity of the systems and the condition of their components. The systems shall be designed with a capability to test periodically (1) the operability and functional performance of the components of the systems, such as onsite power sources, relays, switches, and buses, and (2) the operability of the systems as a whole and, under conditions as close to design as practical, the full operation sequence that brings the systems into operation, including operation of applicable portions of the protection system, and

the transfer of power among the nuclear power unit, the offsite power system, and the onsite power system.

Regulatory Guide (RG) 1.129, "Maintenance, Testing, and Replacement of Vented Lead-Acid Storage Batteries for Nuclear Power Plants," endorses Institute of Electrical and Electronics Engineers Standard (IEEE Std.) 450, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications." RG 1.129 provides criteria for establishing conformance with IEEE Std. 450 requirements for maintenance, testing, and replacement of vented lead-acid storage batteries.

RG 1.32, "Criteria for Power Systems for Nuclear Power Plants," provides criteria to comply with GDC 17 and 18 with respect to the design, operation, and testing of safety-related electric power systems.

3.0 TECHNICAL EVALUATION OF THE REQUESTED CHANGES

The licensee proposes to make changes to COL Appendix A, which involves changes to the battery charger output amp value in TS SR 3.8.1.2 and the surveillance frequency for SR 3.8.7.6. Specifically, the licensee proposes to modify SR 3.8.1.2, to identify the required minimum ampere output for the battery chargers. In addition, the licensee proposes to modify SR 3.8.7.6, to align the test frequency with the expected life of the AP1000 Class 1E batteries. The staff reviewed SNC's proposed changes and the following paragraphs describe the staff's review and findings.

In LAR 18-003, the licensee seeks to change SR 3.8.1.2 of Appendix A of the COL from 200 amp minimum output current requirement for the battery chargers to 150 amp. RG 1.32 states that the capacity of the battery charger supply should be based on the largest combined demands of the various steady-state loads and the charging capacity to restore the battery from the design minimum charge state to the fully charged state. The staff verified that the proposed change, a 150 amp minimum output current for the battery chargers, is based on the minimum charger size required for the design of the battery chargers and is consistent with RG 1.32. Staff concluded that these changes do not involve a physical change to the plant or changes to the original design function of the plant. Accordingly, the staff finds these changes acceptable since the applicant continues to conform to the guidance in RG 1.32.

In LAR 18-003, the licensee seeks to change the frequency of the battery performance discharge test, in SR 3.8.7.6 of Appendix A of the COL, from "60 months" to "60 months or 25 percent of expected life, whichever is less." RG 1.129 states that Class 1E batteries should perform the battery performance test described in IEEE Std. 450-2002, Subsection 6.2, "Performance." According to Subsection 6.2, it is recommended that the performance test interval should not be greater than 25 percent of the expected service life. The staff verified that the proposed changes, to have the frequency of the battery performance discharge test changed to 60 months, or 25 percent of expected life, whichever is less, are consistent with RG 1.129 and IEEE Std. 450-2002; and therefore are acceptable.

In LAR 18-003, the licensee states that the 60 month test frequency is based on 25 percent of an expected battery life of 20 years. However, after undergoing only 16 modified performance tests, it was determined that the batteries have a qualified life of 17 years. As a result, the frequency of SR 3.8.7.6 is proposed to be modified to reflect the 17 year expected life of the batteries. The change in qualified life of the batteries also affects SR 3.8.1.3 (service test), which states in Note 1 that the modified performance discharge test in SR 3.8.7.6 may be

performed in lieu of SR 3.8.1.3. A modified performance test is a test of the batteries capacity/performance and the ability of the battery to satisfy the duty cycle (i.e., service test). However, in the LAR, the licensee did not identify the surveillance frequency for the modified performance test. The staff requested additional information from the licensee to confirm whether VEGP Units 3 and 4 will perform the modified performance test in Note 1 of SR 3.8.1.3. If the modified test will be performed, staff requested the modified performance test surveillance frequency and whether it will conform to the criteria of RG 1.129. In response to the staff's request for additional information, the licensee in the letter dated April 25, 2018, stated that per SR 3.8.1.3, a battery service test or a modified performance discharge test will be performed at a 24 month frequency, which is in conformance with the testing frequency requirements of RG 1.129, Revision 2. The staff requested the licensee to provide additional information as to whether they would perform a modified performance discharge test. In the letter, dated June 21, 2018, the licensee provided a submittal which acknowledged that in an effort to obtain the best data possible for trending purposes, they plan to perform the same test, a modified performance discharge test, for the entire life cycle of each battery subject to these SRs.

The staff has determined that if the licensee decides to perform the modified performance test, it will have a surveillance frequency of 24 months, and the same test will be used over the life of each set of batteries for trending purposes, which is consistent with RG 1.129. Based on the above discussion, these changes do not involve a physical change to the plant or changes to the original design function of the plant. The staff finds these changes acceptable since the changes are consistent with the guidance in RG 1.129.

The staff has reviewed the changes and updates to the TS bases for SR 3.8.1.2 and SR 3.8.7.6. The staff verified that the proposed changes are consistent with the remainder of the information within the paragraph and correspond to the appropriate SR. These changes do not impact equipment or system functionality or change the original design function of the plant. The staff reviewed the updated information and confirmed that it provides consistency. Therefore, the staff finds these changes acceptable.

The staff evaluated the information contained in LAR 18-003 and determined that the proposed changes do not affect the design of the Class 1E batteries. This change continues to ensure that the battery chargers and batteries accommodate the effects of and is compatible with environmental conditions, thus continues to meet the requirements of GDC 4. The staff determined that the proposed changes do not adversely affect the design of the plant electrical systems. Staff finds the functions of the battery chargers and batteries are not changed and the safety equipment continues to perform its intended safety function, thus continues to meet the requirements of GDC 17. Additionally, the staff evaluated the surveillance frequency for the SR and determined that the proposed changes do not adversely affect the ability to test the battery chargers and batteries, thus continues to meet the requirements of GDC 18. Based on the proposed information, the staff concludes that the proposed TS changes do not impact the licensee's compliance with the requirements in 10 CFR Part 50, Appendix A, GDC 4, 17 and 18. The staff finds the proposed changes to be acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations in 10 CFR 50.91(b)(2), on June 12, 2018, the Georgia State official was notified of the proposed issuance of the amendment. 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, "*Standards for Protection Against Radiation.*" 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. Also, 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 (83 FR 17858, published on April 24, 2018). 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.

6.0 CONCLUSION

The staff has concluded, based on the considerations discussed in Section 3.0 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. Therefore, the staff finds the changes proposed in this license amendment acceptable.

7.0 REFERENCES

1. Southern Nuclear Operating Company, Vogtle Electric Generating Plant Units 3 and 4, Request for License Amendment and Exemption LAR-18-003, "Change to Battery Charger Output Amp Value in Technical Specification SR 3.8.1.2 and the Surveillance Frequency for SR 3.8.7.6," January 31, 2018 (ADAMS Accession No. ML18031B181).

2. Southern Nuclear Operating Company, Vogtle Electric Generating Plant Units 3 and 4, Supplement to Request for License Amendment, "Change to Battery Charger Output Amp Value in Technical Specification SR 3.8.1.2 and the Surveillance Frequency for SR 3.8.7.6," April 25, 2018 (ADAMS Accession No. ML18115A309).

3. Southern Nuclear Operating Company, Vogtle Electric Generating Plant Units 3 and 4, Supplement to Request for License Amendment, "Change to Battery Charger Output Amp Value in Technical Specification SR 3.8.1.2 and the Surveillance Frequency for SR 3.8.7.6," June 21, 2018 (ADAMS Accession No. ML18172A163).

4. Institute of Electrical and Electronic Engineer Std. 450-2002, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications.

5. Regulatory Guide 1.32, "Criteria for Safety-Related Electric Power Systems for Nuclear Power Plants," Revision 2 (ADAMS Accession No. ML003739990).

6. Regulatory Guide 1.129, "Maintenance, Testing, and Replacement of Vented Lead-Acid Storage Batteries for Nuclear Power Plants," Revision 2 (ADAMS Accession No. ML063490110).