

January 31, 2018

Docket Nos.: 52-025  
52-026

ND-18-0025  
10 CFR 50.90

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

Southern Nuclear Operating Company  
Vogtle Electric Generating Plant Units 3 and 4  
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 (LAR-18-003)

Ladies and Gentlemen:

Pursuant to 10 CFR 52.98(c) and in accordance with 10 CFR 50.90, Southern Nuclear Operating Company (SNC), requests an amendment to the combined licenses (COLs) for Vogtle Electric Generating Plant (VEGP) Units 3 and 4 (License Numbers NPF-91 and NPF-92, respectively). The requested amendment proposes to depart from approved COL Appendix A, Technical Specifications. The proposed changes revise COL Appendix A, Surveillance Requirement (SR) 3.8.1.2, to identify that the required minimum ampere output for the battery chargers is 150 amps. Additionally, the proposed changes revise COL Appendix A SR 3.8.7.6 to align the test frequency with the expected life of the AP1000 Class 1E batteries.

Enclosure 1 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).

Enclosure 2 identifies the requested changes and provides markups depicting the requested changes to the VEGP Units 3 and 4 licensing basis documents.

Enclosure 3 provides conforming Technical Specification Bases changes for information only.

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

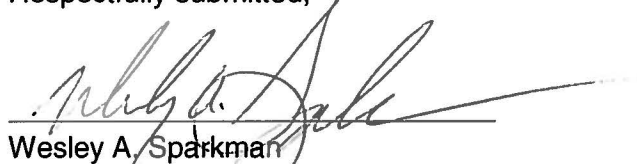
SNC requests staff approval of the license amendment by July 31, 2018 to support Operator training updates. Delayed approval of this license amendment could result in a delay in Operator training updates and subsequent dependent construction activities. SNC expects to implement the proposed amendment within 30 days of approval of the requested changes.

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

Should you have any questions, please contact Mr. Wesley A. Sparkman at (205) 992-5061.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 31<sup>st</sup> of January 2018.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Wesley A. Sparkman', is written over a horizontal line.

Wesley A. Sparkman  
Licensing Manager, Regulatory Affairs  
Southern Nuclear Operating Company

- Enclosures: 1) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 - Request for License Amendment Regarding 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 (LAR-18-003)
- 2) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Proposed Changes to the Licensing Basis Documents (LAR-18-003)
- 3) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Conforming Technical Specification Bases Changes (For Information Only) (LAR-18-003)

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**Southern Nuclear Operating Company**

**ND-18-0025**

**Enclosure 1**

**Vogtle Electric Generating Plant (VEGP) Units 3 and 4**

**Request for License Amendment Regarding**

**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**

**(LAR-18-003)**

(This Enclosure consists of 11 pages, including this cover page.)

## **Table of Contents**

1. SUMMARY DESCRIPTION
2. DETAILED DESCRIPTION AND TECHNICAL EVALUATION
3. TECHNICAL EVALUATION (Included in Section 2)
4. REGULATORY EVALUATION
  - 4.1. Applicable Regulatory Requirements/Criteria
  - 4.2. Precedents
  - 4.3. Significant Hazards Consideration Determination
  - 4.4. Conclusions
5. ENVIRONMENTAL CONSIDERATIONS
6. REFERENCES

## 1. SUMMARY DESCRIPTION

Pursuant to 10 CFR 52.98(c) and in accordance with 10 CFR 50.90, Southern Nuclear Operating Company (SNC), requests an amendment to the combined licenses (COLs) for Vogtle Electric Generating Plant (VEGP) Units 3 and 4 (License Numbers NPF-91 and NPF-92, respectively). The proposed changes revise COL Appendix A (VEGP 3 and 4 Technical Specifications), Surveillance Requirement (SR) 3.8.1.2, to identify that the required minimum ampere output for the battery chargers is 150 amps (Change Activity #1). Additionally, the proposed changes revise COL Appendix A SR 3.8.7.6 to align the test frequency with the expected life of the AP1000 Class 1E batteries (Change Activity #2). This enclosure requests approval of the license amendment necessary to implement these changes.

## 2. DETAILED DESCRIPTION AND TECHNICAL EVALUATION

The 250V DC electrical power system consists of four independent safety related Class 1E DC electrical power subsystems (Division A, B, C, and D). Divisions A and D each consist of one battery bank, one battery charger, and the associated control equipment and interconnecting cabling. Divisions B and C each consist of two battery banks, two battery chargers, and the associated control equipment and interconnecting cabling.

### Change Activity #1

COL Appendix A, Surveillance Requirement (SR) 3.8.1.2 verifies the design capacity of the battery chargers. This SR provides two options. Option #1 requires that each battery charger be capable of supplying  $\geq 200$  amps at the minimum established float voltage for 8 hours. Currently, this ampere requirement stated in the SR is based on the output rating of the chargers. The voltage requirements are based on the charger voltage level after a response to a loss of AC power. The time period is sufficient for the charger temperature to have stabilized and to have been maintained for at least 2 hours. Option #2 requires that each battery charger be capable of recharging the battery after a service test coincident with supplying the largest combined demands of the various continuous steady state loads (irrespective of the status of the plant during which these demands occur).

Per UFSAR (plant-specific Design Control Document) Table 8.3.2-5, the design capacity of the battery chargers is 200 amps. The ampere requirement in the SR is currently based on the 200 amp output rating of the battery charger. However, the requirement should be based on the current output required (i.e., 150 amps) to satisfy design and safety analysis requirements. Each charger is capable of providing the continuous demand on its associated DC system while providing sufficient power to charge a fully discharged battery within a 24-hour period. Testing the battery chargers to their procured output current rating is unnecessary and risks test failure.

COL Appendix A, SR 3.8.1.2 is proposed to be revised to change the 200 amp minimum output current requirement for the battery chargers to 150 amps. According to Regulatory Guide 1.32, the battery charger supply is recommended to 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, irrespective of the status of the unit during these demand occurrences. According to the battery charger sizing calculation, 150 Amps is sufficient

output to charge the 72 hour or 24 hour batteries from their design minimum charge state to a fully charged state while supplying the largest combined demands of the steady state loads.

The proposed change to COL Appendix A, SR 3.8.1.2 does not adversely affect any safety function, design function, or safety analysis described in UFSAR Chapter 6 or UFSAR Chapter 15. The proposed change to COL Appendix A, SR 3.8.1.2 is done to revise the battery charger output rating cited in the SR to be consistent with the design, and safety analysis requirements for minimum battery charger output. Therefore, the proposed change does not affect any of the inputs, methodology, assumptions, or acceptance criteria that are modeled in the safety analyses.

### Summary

The proposed change to COL Appendix A, SR 3.8.1.2 is done to revise the battery charger output rating cited in the SR to be consistent with the design and safety analysis requirements for battery charger output. The proposed change to the battery charger output does not affect the ability of the battery chargers to supply power based on the largest combined demands of the various steady state loads and does not affect the capacity of the charger to restore the battery from the design minimum charge state to the fully charged state. In addition, the proposed change has no adverse impact on the emergency plan or the physical security plan implementation because there is no change to physical access to credited equipment inside the Nuclear Island and no adverse impact on the ability to monitor plant parameters post-accident.

### Proposed Licensing Basis Changes

#### COL Appendix A, Technical Specification Changes:

- The surveillance requirement (SR) 3.8.1.2 is proposed to be revised to change the  $\geq 200$  amp minimum output current requirement for the battery chargers to  $\geq 150$  amps.

### Change Activity #2

As described in UFSAR Subsection 8.3.2.1, the Class 1E batteries supply DC loads when the battery chargers are not available. The batteries are sized in accordance with IEEE Std. 485-1997 to carry the expected shutdown loads following a plant trip and a loss of all alternating current power without battery terminal voltage falling below its minimum required voltage. This ensures that adequate DC power will be available for running instrumentation and controls and emergency lighting.

COL Appendix A, SR 3.8.7.6 verifies that the Class 1E battery capacity is  $\geq 80\%$  of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test. Currently, the frequency of this battery discharge test is 60 months, and 12 months when the battery shows degradation, or has reached 85% of the expected life with capacity  $< 100\%$  of manufacturer's rating, and 24 months when the battery has reached 85% of the expected life with capacity  $\geq 100\%$  of manufacturer's rating.

COL Appendix A, SR 3.8.7.6 is proposed to be revised to indicate that the frequency of the battery performance discharge test is to be performed at a frequency the lesser of 60 months, or 25% of expected life. NRC Information Notice IN 2013-05 (Reference 1) states that the 60 month test



frequency is based on 25% of an expected battery life of 20 years. Per UFSAR Subsection 8.3.2.1, type 3 modified battery discharge performance tests are performed in accordance with IEEE 450-2002 as an aging mechanism for qualification testing of the batteries. As stated in NRC Inspection Report No. 99901467/2016-201 (Reference 2), in order to obtain a qualified life of 20 years, the batteries needed to successfully undergo 16 modified performance tests; however, the batteries only completed 12 modified performance tests equivalent to a qualified life of 16.5 years. An additional 2.2 years of qualified life was added due to: 1) accelerated thermal aging above 100 degrees Fahrenheit (37.8 degrees Celsius) during 9 heat ups and 9 cool downs, and 2) natural aging during the test duration at 77°F (25°C). Thus, the total qualified life for the batteries is 17 years, which includes a margin of 10 percent consistent with the guidance in IEEE 323-1974, "IEEE Standard for Qualifying Class 1E Equipment for Nuclear Power Generating Stations." Per IEEE 308-2001, "IEEE Standard Criteria for Class 1E Power Systems for Nuclear Power Generating Stations," tests shall be performed on Class 1E equipment at scheduled intervals to detect within practical limits the deterioration of the equipment toward an unacceptable condition. IEEE 450-2002 recommends that the performance test interval not exceed 25% of the expected service life of the battery. Therefore, the frequency of SR 3.8.7.6 is proposed to be modified to conservatively reflect the 17 year expected life of the batteries.

### Summary

The proposed change to modify the frequency of SR 3.8.7.6 is done to conservatively reflect the expected service life of the batteries that was determined through type 3 modified performance discharge testing performed during qualification testing, as described in UFSAR Subsection 8.3.2.1. The proposed change does not adversely affect the ability of the Class 1 E batteries to provide power to any safety related load described in the UFSAR, and the proposed change does not affect the operability of the batteries assumed in the accident analysis. In addition, the proposed change has no adverse impact on the emergency plan or the physical security plan implementation because there is no change to physical access to credited equipment inside the Nuclear Island and no adverse impact on the ability to monitor plant parameters post-accident.

### Proposed Licensing Basis Changes

#### COL Appendix A, Technical Specification Changes:

- The surveillance requirement (SR) 3.8.7.6 is proposed to be revised to indicate that the frequency of the battery performance discharge test is to be performed at a frequency the lesser of 60 months, or 25% of expected life, whichever is less.

### **3. TECHNICAL EVALUATION (Included in 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 Combined License (COL). This activity involves a departure from COL Appendix A, Surveillance Requirements 3.8.1.2 and 3.8.7.6. Therefore, NRC approval is required prior to making the plant-specific proposed changes in this license amendment request.

Request for License Amendment Regarding 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 (LAR-18-003)

10 CFR 52, Appendix D, VIII.C.6 states that after issuance of a license, "Changes to the plant specific TS (Technical Specifications) will be treated as license amendments under 10 CFR 50.90." 10 CFR 50.90 addresses the applications for amendments of licenses, construction permits and early site permits. As discussed above, changes to Technical Specifications are requested. Therefore, NRC approval is required for these Technical Specification changes.

10 CFR 50.36 Technical specifications – (c) Technical specifications will include items in the following categories: (1) Safety limits, limiting safety system settings, and limiting control settings. (2) Limiting conditions for operation. (3) Surveillance Requirements. The safety limits, limiting safety system settings, limiting control settings, and limiting conditions for operation are not affected by the proposed changes. The proposed changes to surveillance requirements maintain the initial conditions and operating limits required by the accident analysis.

10 CFR 50, Appendix A, "General Design Criteria for Nuclear Power Plants" General Design Criterion (GDC) 4 – *Environmental and dynamic effects design bases*. Structures, systems, and components 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 structures, systems, and components 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. However, dynamic effects associated with postulated pipe ruptures in nuclear power units may be excluded from the design basis when analyses reviewed and approved by the Commission demonstrate that the probability of fluid system piping rupture is extremely low under conditions consistent with the design basis for the piping.

The proposed change to COL Appendix A, SR 3.8.7.6 for the frequency of the battery performance discharge test is done to align the SR frequency with the qualified life of the batteries determined by the AP1000 qualification. SR 3.8.7.6 testing is performed to detect battery deterioration towards an unacceptable condition. The proposed changes do not affect the design of the class 1E batteries 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, nor do the proposed changes affect the design of the class 1E batteries for protection 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. Therefore, compliance to GDC 4 is not changed.

10 CFR 50, Appendix A, (GDC) 17 – *Electrical Power Systems*. 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. Electric power from the transmission network to the onsite electric distribution system shall be supplied by two physically independent circuits (not necessarily on separate rights of way) designed and located so as to minimize to the extent practical the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions. A switchyard common to both circuits is acceptable. Each of these circuits shall be designed to be available in sufficient time following a loss of all onsite alternating current power supplies and the other offsite electric power circuit, to assure that specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded. One of these circuits shall be designed to be available within a few seconds following a loss-of-coolant accident to assure that core cooling, containment integrity, and other vital safety functions are maintained. Provisions shall be included to minimize the probability of losing electric power from any of the remaining supplies as a result of, or coincident with, the loss of power generated by the nuclear power unit, the loss of power from the transmission network, or the loss of power from the onsite electric power supplies.

The proposed change to COL Appendix A, SR 3.8.1.2 for required output of the battery charger, and the proposed change to COL Appendix A, SR 3.8.7.6 for frequency of the battery performance discharge test do not adversely affect the ability of the battery chargers and batteries to perform any of their safety functions. The proposed changes do not affect the independence, redundancy, and testability of the batteries and battery chargers nor their ability to perform their safety functions assuming a single failure. Therefore, the degree of compliance with GDC-17 is not changed.

10 CFR 50, Appendix A, GDC-18 – *Inspection and testing of electric power systems*. 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.

The proposed change to COL Appendix A, SR 3.8.1.2 for required output of the battery charger is being done to align the required output of the battery charger cited in the SR with the required output to satisfy design and safety analysis requirements. The proposed change does not affect the design of the battery charger or the overall system. Therefore, the ability to periodically test the battery charger and overall system is not adversely impacted. The proposed change to COL Appendix A, SR 3.8.7.6 for the required frequency of the battery discharge performance test is being done to conservatively align the frequency of the test cited in the SR with the qualified life of the Class 1E batteries by stating that the frequency is to be the lesser of 60 months or 25% of expected life. The

proposed change does not affect the design of the class 1E batteries or the overall system. Therefore, the ability to periodically test the class 1E batteries and overall system is not adversely impacted. Thus, compliance with GDC-18 is not changed.

#### **4.2 Precedent**

No precedent is identified.

#### **4.3 Significant Hazards Consideration Determination**

The review supports a request to amend the licensing basis documents to allow departure from the certified design with regard to COL Appendix A information. The requested changes revise COL Appendix A, Surveillance Requirement (SR) 3.8.1.2 to identify the required battery charger output for the battery charger service test as  $\geq 150$  amps. COL Appendix A, Surveillance Requirement 3.8.7.6 is also requested to be revised to identify that the frequency of the battery performance discharge test is to be performed the lesser of 60 months, or 25% of expected life. An evaluation to determine whether a significant hazards consideration is involved with the requested 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 changes do not involve an interface with any SSC accident initiator or initiating sequence of events, and thus, the probabilities of the accidents evaluated in the plant-specific UFSAR are not affected. The proposed changes do not involve a change to any mitigation sequence or the predicted radiological releases due to postulated accident conditions, thus, the consequences of the accidents evaluated in the UFSAR 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 changes do not adversely affect any system or design function or equipment qualification as the change does not modify any SSCs that prevent safety functions from being performed. The changes do not introduce a new failure mode, malfunction or sequence of events that could adversely affect safety or safety-related equipment. 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 changes would not affect any safety-related design code, function, design analysis, safety analysis input or result, or existing design/safety margin. No safety analysis or design basis acceptance limit/criterion is challenged or exceeded by the requested changes. Therefore, the proposed amendment does not involve a significant reduction in a margin of safety.

#### **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. Therefore, it is concluded that the requested 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.

### **5. ENVIRONMENTAL CONSIDERATIONS**

This review supports a request to amend the licensing basis documents to allow departure from the certified design with regard to COL Appendix A, Technical Specifications. Changes are proposed to COL Appendix A, Surveillance Requirement (SR) 3.8.1.2 to identify the required battery charger output for the battery charger service test as  $\geq 150$  amps. In addition, COL Appendix A, SR 3.8.7.6 is also requested to be revised to identify that the frequency of the battery performance discharge test is to be performed the lesser of 60 months, or 25% of expected life.

A review has determined that the requested amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR Part 20, or would change an inspection or surveillance requirement. However, facility construction and operation following implementation of the requested amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or a 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 requested amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9), in that:

*(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 requested amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated; (2) the

Request for License Amendment Regarding 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 (LAR-18-003)

requested amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated; and (3) the requested amendment does not involve a significant reduction in a margin of safety. Therefore, it is concluded that the requested 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 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 adversely affect any effluent release path or diminish the design functions or operational features that are credited with controlling the release of effluents during plant operation. Therefore, it is concluded that the requested 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 change to COL Appendix A, SR 3.8.1.2 for required battery charger output does not adversely impact radiation exposure requirements as exposure rates are not increased and radiation levels are not changed. Plant radiation zones are not affected, and there are no changes to the controls required under 10 CFR Part 20 that preclude a significant increase in occupational radiation exposure. The proposed change to COL Appendix A, SR 3.8.7.6 modifies the frequency of the surveillance requirement to the lesser of 60 months or 25% of qualified battery life. Although the proposed change presents a potential increase in the frequency of the surveillance requirement, the class 1E batteries are located in the Auxiliary Building within radiation zone I which has very low or no radiation sources ( $\leq 0.25$  mRem/hr per UFSAR 12.3-1, Sheet 1). In addition, the frequency of this surveillance requirement is only performed every 60 months, or 25% of expected battery life. Furthermore, the proposed change does not adversely affect walls, floors, or other structures that provide shielding. Plant radiation zones are not affected, and there are no changes to the controls required under 10 CFR Part 20 that preclude a significant increase in occupational radiation exposure. Therefore, the requested amendment does not involve a significant increase in individual or cumulative occupational radiation exposure.

Based on the above review of the requested amendment, it has been determined that anticipated construction and operational impacts of the requested 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 requested amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to

ND-18-0025

Enclosure 1

Request for License Amendment Regarding 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 (LAR-18-003)

10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the requested amendment.

## **6. REFERENCES**

1. NRC Information Notice 2013-05, ML122130601, March 19, 2013.
2. NRC Inspection Report No. 99901467/2016-201, ML17013A658, February 2, 2017.

**Southern Nuclear Operating Company**

**ND-18-0025**

**Enclosure 2**

**Vogtle Electric Generating Plant (VEGP) Units 3 and 4**

**Proposed Changes to the Licensing Basis Documents**

**(LAR-18-003)**

**Note:**

Added text is shown as Blue Underline.

Deleted text is shown as ~~Red Strikethrough~~.

\* \* \* indicates omitted existing text that is not shown.

(This Enclosure consists of 3 pages, including this cover page.)



**COL Appendix A, Technical Specifications - 3.8.1**

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE		FREQUENCY
* * *		* * *
SR 3.8.1.2	<p>Verify each battery charger supplies <math>\geq</math> <del>200</del><u>150</u> amps at greater than or equal to the minimum established float voltage for <math>\geq</math> 8 hours.</p> <p><u>OR</u></p> <p>Verify each battery charger can recharge the battery to the fully charged state within 24 hours while supplying the largest combined demands of the various continuous steady state loads, after a battery discharge to the bounding design basis event discharge state.</p>	24 Months
* * *		* * *

**COL Appendix A, Technical Specifications - 3.8.7**

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
* * *		* * *
SR 3.8.7.6	Verify battery capacity is $\geq 80\%$ of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.	<p>60 months <u>or 25% of expected life, whichever is less</u></p> <p><u>AND</u></p> <p>12 months when battery shows <u>degradation</u>, or has reached 85% of the expected life with capacity <math>&lt; 100\%</math> of manufacturer's rating</p> <p><u>AND</u></p> <p>24 months when battery has reached 85% of the expected life with capacity <math>\geq 100\%</math> of manufacturer's rating</p>

**Southern Nuclear Operating Company**

**ND-18-0025**

**Enclosure 3**

**Vogtle Electric Generating Plant (VEGP) Units 3 and 4**

**Conforming Technical Specification Bases Changes**

**(For Information Only)**

**(LAR-18-003)**

**Note:**

Added text is shown as Blue Underline.

Deleted text is shown as ~~Red Strikethrough~~.

\* \* \* indicates omitted existing text that is not shown.

(This Enclosure consists of 3 pages, including this cover page.)

### **Technical Specification Bases - B 3.8.1**

\* \* \*

#### **SR 3.8.1.2**

This SR verifies the design capacity of the battery chargers. According to Regulatory Guide 1.32 (Ref. 9), the battery charger supply is recommended to 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, irrespective of the status of the unit during these demand occurrences. The minimum required amperes and duration ensure that these requirements can be satisfied.

This SR provides two options. One option requires that each battery charger be capable of supplying ~~200~~150 amps at the minimum established float voltage for 8 hours. The ampere requirements are based on the ~~output-rating~~ design minimum charger size of the chargers. The voltage requirements are based on the charger voltage level after a response to a loss of AC power. The time period is sufficient for the charger temperature to have stabilized and to have been maintained for at least 2 hours.

\* \* \*

**Technical Specification Bases - B 3.8.7****SR 3.8.7.6**

\* \* \*

The Surveillance Frequency for this test is normally ~~60 months~~ 60 months, or 25% of the expected life, whichever is less. If the battery shows degradation, or if the battery has reached 85% of its expected life and capacity is < 100% of the manufacturer's rating, the Surveillance Frequency is reduced to 12 months. However, if the battery shows no degradation but has reached 85% of its expected life, the Surveillance Frequency is only reduced to 24 months for batteries that retain capacity ≥ 100% of the manufacturer's ratings. Degradation is indicated, according to IEEE-450 (Ref. 3), when the battery capacity drops by more than 10% relative to its capacity on the previous performance test or when it is below 90% of the manufacturer's rating. These Frequencies are consistent with the recommendations in IEEE-450 (Ref. 3) and Information Notice 2013-05 (Ref. 5).

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**REFERENCES**

1. FSAR Chapter 6, "Engineered Safety Features."
  2. FSAR Chapter 15, "Accident Analyses."
  3. IEEE-450 1995, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications."
  4. IEEE-485-1983, June 1983.
  5. [NRC Information Notice 2013-05, March 19, 2013.](#)
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