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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:
Enclosures for Class 1E Electrical Penetrations in Middle Annulus (LAR-13-023)

Ladies and Gentlemen:

In accordance with 10 CFR 50.90, Southern Nuclear Operating Company (SNC), the licensee for Vogtle Electrical Generating Plant (VEGP) Units 3 and 4, requests an amendment to Combined License (COL) Numbers NPF-91 and NPF-92, for VEGP Units 3 and 4, respectively. The proposed amendment would depart from VEGP Units 3 and 4 plant-specific Design Control Document (DCD) Tier 2* material contained within the Updated Final Safety Analysis Report (UFSAR) by eliminating the Division A fire zone enclosure and adding three new fire zones for Divisions B, C, and D Class 1E electrical penetration rooms.

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 UFSAR text and tables that are available for disclosure to the public.

Enclosure 3 provides markups depicting the requested changes to the UFSAR figures which are withheld from public disclosure as Security-Related Information, in accordance with 10 CFR 2.390(d).

This letter contains no regulatory commitments.

SNC requests staff approval of the license amendment within one year of submittal (i.e., April 2015); however, construction of the electrical containment penetrations and the associated middle annulus enclosures is not currently scheduled to take place until February 2016. SNC expects to implement the proposed amendment (through incorporation into the licensing basis documents) within 30 days of the 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. Brian Meadors at (205) 992-7331.

Mr. Brian H. Whitley states that: he is the Regulatory Affairs Director of Southern Nuclear Operating Company; he is authorized to execute this oath on behalf of Southern Nuclear Operating Company; and to the best of his knowledge and belief, the facts set forth in this letter are true.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY



B. H. Whitley

BHW/SSS/kms

Sworn to and subscribed before me this 18th day of April, 2014

Notary Public: Kristin Marie Seibert

My commission expires: August 16, 2016



- Enclosures: 1) Request for License Amendment, Enclosures for Class 1E Electrical Penetrations in Middle Annulus (LAR-13-023)
- 2) Proposed Changes to the Licensing Basis Documents (LAR-13-023) (Publicly Available Information)
- 3) Proposed Changes to the Licensing Basis Documents (LAR-13-023) **(Withheld Information)**

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Southern Nuclear Operating Company
Vogtle Electric Generating Plant Units 3 and 4

ND-14-0365

Enclosure 1

Request for License Amendment
Enclosures for Class 1E Electrical Penetrations in Middle Annulus
(LAR-13-023)

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Pursuant to 10 CFR 50.90, Southern Nuclear Operating Company (SNC) 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.

SNC requests staff approval of the license amendment within one year of submittal (i.e., April 2015); however, construction of the electrical containment penetrations and the associated middle annulus enclosures is not currently scheduled to take place until February 2016.

1. Summary Description

The proposed changes revise the Updated Final Safety Analysis Report (UFSAR) in regard to Tier 2* information related to fire area boundaries. These changes add three new fire zones in the middle annulus to provide enclosures for the Class 1E electrical containment penetrations in accordance with UFSAR Appendix 9A, Subsection 9A.3.1.1.15. The addition of the three new fire zones extended the fire area boundaries for three existing fire areas and therefore constitutes a change to Tier 2* information.

Additionally, the proposed changes require revisions to UFSAR Tier 2 information involving changes to plant-specific Tier 2* information. This enclosure requests approval of the license amendment necessary to implement these changes.

2. Detailed Description

The primary objectives of the fire protection program are to prevent fires and to minimize the consequences if a fire occurs. The fire protection program provides protection so that the plant can be shut down safely following a fire.

The plant is subdivided into fire areas to isolate potential fires and minimize the risk of the spread of fire and the resultant consequential damage from corrosive gases, fire suppression agents, smoke, and radioactive contamination. Fire barriers are provided in accordance with Branch Technical Position (BTP) CMEB 9.5-1.

In the UFSAR, enclosures through the middle annulus for the Class 1E electrical penetrations are described for Divisions A, B, C, and D. These enclosures are considered extensions of the fire areas for the associated electrical penetration rooms in the Auxiliary Building, on the other side of the shield building wall. These enclosures are not depicted in the general arrangement drawings.

As currently described in UFSAR subsections 9A.3.1.1.15, 9A.3.1.2.1.2, 9A.3.1.2.2.1, 9A.3.1.2.3.1 and 9A.3.1.2.4.1, Class 1E electrical penetration assemblies pass through the middle annulus fire zone, 1200 AF 12341, and are enclosed by three-hour fire barriers, which are considered a part of fire areas, 1201 AF 02, 1201 AF 03, 1202 AF 03 and 1242 AF 02. The extension of these fire areas into the middle annulus is not currently reflected on UFSAR Figure 9A-1 (Sheets 5, 6 of 16). UFSAR Subsections 9A.3.1.1.15, 9A.3.1.2.1.2, 9A.3.1.2.2.1, 9A.3.1.2.3.1 and 9A.3.1.2.4.1 are revised to show three new rooms (or enclosures) in the middle annulus. The three new rooms result in three new fire zones, 1231 AF 12344, 1232 AF 12343, and 1231 AF 12345. These new fire zones would be within the existing Class 1E fire areas 1201 AF 02, 1202 AF 03, and 1201 AF 03.

Because of space limitations in the middle annulus, a separate enclosure for the Division A penetrations cannot be constructed. To maintain divisional separation between the four Class 1E electrical divisions, the Division A electrical penetration assemblies become part of the existing middle annulus fire zone, 1200 AF 12341, which is contained within the Containment/Shield Building Fire Area, 1000 AF 01. The Division A Class 1E electrical containment penetrations are physically separated from the Division B, C, and D Class 1E electrical containment penetrations by three-hour fire barriers. The electrical penetrations and the associated new fire zone designations are identified in the table below.

Electrical Penetration Division	Fire Area	Electrical Penetration Fire Zone	UFSAR Sections
Division A	1000 AF 01	1200 AF 12341	9A.3.1.1.15, 9A.3.1.2.1.2
Division B	1201 AF 02	1231 AF 12344	9A.3.1.1.15, 9A.3.1.2.2.1
Division C	1202 AF 03	1232 AF 12343	9A.3.1.1.15, 9A.3.1.2.3.1
Division D	1201 AF 03	1231 AF 12345	9A.3.1.1.15, 9A.3.1.2.4.1

The addition of the three new fire zones extend three existing fire area boundaries for fire areas 1201 AF 02, 1202 AF 03, and 1201 AF 03. The change in location of these fire area boundaries constitutes a change to Tier 2* information. This electrical penetration room related change activity does not add any new containment electrical penetrations.

Related Licensing Basis Changes:

Note: A "SUNSI" labeled figure contains sensitive unclassified non-safeguards information (SUNSI), is related to the physical protection of the plant, and thus, should be withheld from public disclosure pursuant to 10 CFR 2.390(d).

- UFSAR Appendix 9A, Figure 9.A-1 (sheet 5 of 16) (SUNSI) Tier 2* information is modified to show the three new fire zones in the middle annulus for Divisions B, C, and D Class 1E electrical containment penetrations. The proposed changes maintain the divisional fire barriers between the Divisions A, B, C, and D electrical containment penetrations.

The UFSAR (Tier 2) changes that involve the proposed Tier 2* change are provided below:

- UFSAR Figure 1.2-7 (SUNSI), Nuclear Island General Arrangement Plan at Elevation 107'-2" & 111'-0", is revised to show the Division B, C, and D middle annulus penetration rooms.
- UFSAR Table 3.7.3-1, Seismic Category I Equipment Outside Containment by Room Number, is revised to include the Division B, C, and D Class 1E electrical penetrations room numbers.
- UFSAR Appendix 3D, Table 3D.5-1, Normal Operating Environments, is revised to include the Division B, C, and D Class 1E electrical containment penetration rooms (Rooms 12343, 12344, and 12345) in the Zone 7 listing for accessible radiological areas.
- UFSAR Appendix 9A, Subsection 9A.3.1.1, Containment/Shield Building, is revised to indicate the Division B, C, and D middle annulus penetration rooms are not part of the Containment/Shield Building fire area, but are part of the adjacent auxiliary building rooms' fire areas. The remainder of the middle annulus, including the Division A containment penetration area, is part of the Containment/Shield Building fire area.
- UFSAR Appendix 9A, Subsection 9A.3.1.1.15, Fire Zone 1200 AF 12341, is revised to note that the Divisions B, C and D Class 1E containment penetration assemblies are enclosed by three-hour barriers in this fire zone, whereas the Division A penetration assemblies are a part of the middle annulus fire zone.
- UFSAR Appendix 9A, Subsection 9A.3.1.1.15, Fire Zone 1200 AF 12341, is revised to clarify a reference to fire area 1200 AF 01.
- UFSAR Appendix 9A, Subsection 9A.3.1.1.15 is revised to note that the Division A Class 1 E electrical penetration assemblies in the middle annulus fire zone are not associated with the redundant cables for the passive containment cooling system (PCS) safe shutdown components in Fire Area 1200 AF 01.
- UFSAR Appendix 9A, Subsection 9A.3.1.2.1.2, Fire Area 1242 AF 02, is revised to delete the statement in the Fire Protection Adequacy Evaluation regarding the Division A Class 1E electrical penetration assemblies being enclosed by three-hour fire barriers.
- UFSAR Appendix 9A, Subsection 9A.3.1.2.2.1, Fire Area 1201 AF 02, is revised to add Fire Zone 1231 AF 12344 Room No. 12344, Division B middle annulus penetration room, to the listing of fire zones in this fire area. The smoke control features section is revised to indicate and discuss that no ventilation system serves the Division B middle annulus penetration room.
- UFSAR Appendix 9A, Subsection 9A.3.1.2.3.1, Fire Area 1202 AF 03, is revised to add Fire Zone 1232 AF 12343 Room No. 12343, Division C middle annulus penetration room, to the listing of fire zones in this fire area. The smoke control features section is revised to indicate and discuss that no ventilation system serves the Division C middle annulus penetration room.
- UFSAR Appendix 9A, Subsection 9A.3.1.2.4.1, Fire Area 1201 AF 03, is revised to add Fire Zone 1231 AF 12345 Room No. 12345, Division D middle annulus penetration

room, to the listing of fire zones in this fire area. The smoke control features section is revised to indicate and discuss that no ventilation system serves the Division D middle annulus penetration room.

- UFSAR Appendix 9A, Table 9A-2, Safe Shutdown Components, is revised to include information for Division A Class 1E electrical penetrations in the general middle annulus fire area/fire zone.
- UFSAR Appendix 9A, Table 9A-3, Fire Protection Summary, is revised to include summary information for the Division B, C, and D Class 1E middle annulus penetration room.
- UFSAR Figure 12.3-1 (sheet 6 of 16) (SUNSI), Radiation Zones, Normal Operations/Shutdown Nuclear Island, Elevation 100'-0" & 107'-2", is revised to show the Division B, C, and D Class 1E electrical containment penetration rooms in the middle annulus.
- UFSAR Figure 12.3-2 (sheet 6 of 15) (SUNSI), Radiation Zones, Post-Accident, Nuclear Island, Elevation 100'-0" & 107'-2", is revised to show the Division B, C, and D Class 1E electrical containment penetration fire areas in the middle annulus.
- UFSAR Figure 12.3-3 (sheet 6 of 16) (SUNSI), Radiological Access Controls, Normal Operations/Shutdown, Nuclear Island, Elevation 100'-0" & 107'-2", is revised to show the Class 1E Division B, C, and D electrical containment penetration rooms in the middle annulus.

Note: Plant-specific Tier 1 Figure 3.3-6 is a simplified plan view of EI. 100'-0" of the Nuclear Island. Note 2 to Figure 3.3-6 states "The as-built attributes of structures, systems, and components may vary from the attributes depicted on this figure, provided that those features and functions of the structures, systems, and components are in accordance with the tables and text in the Tier 1 design description. Those features and functions of the structures, systems, and components in the figure which are not included in the Tier 1 Tables and text are not Tier 1." The Class 1E electrical penetration rooms are not addressed in the Tier 1 Section 3.3 Design Description or the Tier 1 Section 3.3 tables, and are not shown in Figure 3.3-6. The electrical penetration room related change does not affect the contents of the Tier 1 Section 3.3 Design Description or the Tier 1 Section 3.3 tables. Therefore, the electrical penetration room change meets the Figure 3.3-6 Note 2 criterion for not being a Tier 1 information change.

3. Technical Evaluation

UFSAR Appendix 9A provides the Fire Protection Analysis. The fire protection analysis is performed for each fire area using the methodology that follows the guidance of NRC Branch Technical Position (BTP) CMEB 9.5-1. The fire protection analysis is performed for areas of the plant containing safety-related components and for areas containing systems important to the generation of electricity. It is performed on an area-by-area basis outside containment and a

zone-by-zone basis inside containment. This approach provides confidence that plant safety is preserved.

The addition of the three new fire zones for the Division B, C, and D Class 1E electrical penetration rooms support the Fire Protection Analysis as described in UFSAR Appendix 9A. The Division B, C, and D Class 1E electrical containment penetrations have three-hour rated fire barriers constructed between the containment steel shell and the shield building concrete structure. The new fire zones are considered extensions of the associated Class 1E divisional fire areas in the Auxiliary Building on the other side of the shield building wall. The change in location of the fire area boundaries for the existing divisional fire areas constitutes a change to Tier 2* information. The new fire zones are assigned fire zone number designations and this information is indicated on Appendix 9A, Figure 9A-1 (sheet 5 of 16).

Due to the lack of space for a Division A enclosure, it has been eliminated from the design and the Division A Class 1E electrical penetration assemblies within the annulus are considered part of the middle annulus fire zone. Elimination of the Division A individual fire zone is acceptable from a fire protection perspective because overall divisional separation is maintained. The result of this change would be four separate fire zones/areas for four divisions within the middle annulus.

Table 9A-2, Safe Shutdown Components, identifies safe shutdown components and the fire area and fire zones in which they are located. The change to Table 9A-2 to identify the three Division A Class 1E electrical penetrations (EY-P11Z, EY-P12Y and EY-P13Y) in the general middle annulus fire area/fire zone is necessary to reflect the elimination of the Division A electrical penetration enclosure. With this proposed change, the location of the Division A electrical penetrations will be appropriately identified as Room 12412 (Division A Electrical Penetration Room), Room 12341 (middle annulus), and Fire Area 1000 AF 01 (containment/shield building). No change is needed to Table 9A-2 for the Division B, C or D Class 1E electrical penetrations, as the fire areas in which these safe shutdown components are located (i.e., containment/shield building and their respective division electrical rooms in the auxiliary building, which include the middle annulus enclosures) are unchanged from those currently identified in this table.

Two PCS containment pressure instruments (Divisions B and D) are located in the middle annulus fire zone (1200 AF 12341). The redundant Division A and C PCS containment pressure instruments are located in a different fire area (1200 AF 01). The Division A Class 1E electrical penetration assemblies that are a part of fire zone 1200 AF 12341 are not associated with the cables necessary to support the redundant Division A PCS containment pressure instrument. Therefore, in the event of a fire, instrumentation necessary to provide the logic for PCS actuation is maintained. Thus, the acceptability of the Division A Class 1E electrical penetration assemblies remaining a part of the overall middle annulus fire zone is assured.

The three new fire zones and the addition of the Division A penetration assemblies to the middle annulus add a negligible amount of combustible material. There is no increase in combustible loading for these areas. Therefore, the fire protection analysis is not adversely affected (i.e., analysis results remain acceptable). The proposed changes do not affect the prevention and mitigation of abnormal events; e.g., accidents, anticipated operational occurrences, earthquakes, floods and turbine missiles, or their safety or design analyses. No safety-related structure, system, component (SSC) or function is adversely affected. The proposed changes

do not involve, nor interface with, any SSC accident initiator or initiating sequence of events. The maximum allowable leakage rate specified in the Technical Specifications is unchanged, and the proposed changes do not affect the radiological source terms (i.e., amounts and types of radioactive materials released, their release rates and release durations) used in the accident analyses.

The three-hour rated fire barriers between the Division B, C, and D Class 1E electrical penetration rooms do not interface with/affect safety-related equipment or a fission product barrier. The Division A Class 1E electrical penetration room, which is part of the middle annulus Fire Zone 1200 AF 12341, does not affect any other cable or component not associated with the electrical penetration assemblies. No system or design function or equipment qualification would be affected by the proposed changes. The proposed changes do not result in a new failure mode, malfunction or sequence of events that could affect a radioactive material barrier or safety-related equipment. The proposed changes do 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 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 affected. The types and quantities of expected effluents are not changed. Therefore, radioactive or non-radioactive material effluents should not be affected.

Plant radiation zones (as described in UFSAR Section 12.3), controls 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 should not change.

The activity has no effect on emergency plans or physical security plans. There is no change to any perimeter walls acting as a security barrier or other aspects of the structures that could affect physical security. This activity does not affect the shield building structure, and there is no impact to the Aircraft Impact Assessment.

4. Regulatory Evaluation

4.1 Applicable Regulatory Requirements/Criteria

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 this section. This license amendment request proposes a change to the UFSAR Tier 2 information that involves a change to UFSAR Figure 9A-3 Tier 2* information. Thus, prior NRC approval of these Tier 2 changes is required.

10 CFR 52, Appendix D, VIII.B., requires prior NRC approval for a departure from Tier 2* information. The proposed amendment involves changes to fire area boundary locations as depicted on UFSAR Appendix 9.A figures, which constitutes

plant-specific Tier 2* information changes. Therefore, a LAR (as supplied herein) is required.

10 CFR 50, Appendix A, Criterion 3, Fire protection, requires structures, systems, and components important to safety to be designed and located to minimize, consistent with other safety requirements, the probability and effect of fires and explosions. The addition of the three-hour rated fire barriers for the separate enclosures for the Division B, C, and D, Class 1E electrical penetration assemblies is consistent with the design as certified in the generic DCD and presented in the COL, and assures compliance with this criterion.

4.2 Precedent

No precedent is identified.

4.3 Significant Hazards Consideration Determination

The proposed changes would revise the Combined Licenses (COLs) with regard to Tier 2* information and Tier 2 information involving the changes to this Tier 2* information. The proposed changes are related to reconfiguration of enclosures consisting of three-hour rated fire barriers in the middle annulus to separate the redundant Divisions B, C, and D Class 1E electrical containment penetrations. Division A Class 1E electrical containment penetrations remain a part of the middle annulus and are separated from the other divisions by three-hour fire barriers.

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 middle annulus fire barrier reconfiguration for the electrical penetrations would not adversely affect any safety-related equipment or function. The modified configuration for the Class 1E electrical containment penetration enclosures will maintain the fire protection function (i.e., barrier) as evaluated in Updated Final Safety Analysis Report (UFSAR), thus, the probability of a Class 1E electrical containment penetration failure is not significantly increased. The safe shutdown fire analysis is not affected, and the fire protection analysis results are not adversely affected. The proposed changes do not involve any accident, initiating event or component failure; thus, the probabilities of previously evaluated accidents are not affected. The maximum allowable leakage rate specified in the Technical Specifications is unchanged, and radiological material release source terms are not affected; 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 addition of enclosures constructed of three-hour rated fire barriers to separate the fire zones in the middle annulus for the Class 1E electrical penetration assemblies will maintain the fire protection function as evaluated in the UFSAR. The addition of the fire barriers does not affect the function of the Class 1E electrical containment penetrations or electrical penetration assemblies, and thus, does not introduce a new failure mode. The addition of the fire barriers does not create a new fault or sequence of events that could result in a radioactive material release.

Therefore, the proposed amendment does not create the possibility of a new or different kind of accident.

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

Response: No

The use of enclosures constructed of three-hour rated fire barriers to separate the fire zones in the middle annulus for the Class 1E electrical penetration assemblies will maintain the fire protection function as evaluated in the UFSAR. The use of the fire barriers does not affect the ability of the Class 1E electrical containment penetrations, electrical penetration assemblies, or the containment to perform their design function. The Class 1E electrical containment penetrations and electrical penetration assemblies within the enclosures continue to comply with the existing design codes and regulatory criteria, and do not affect any safety limit. The use of fire barriers and enclosures to separate the Class 1E electrical penetration assemblies does not adversely affect any margin of safety.

Therefore, the proposed amendment does not involve a significant reduction in the margin of safety.

Based on the above, it is concluded that the proposed amendment does not involve a significant hazards 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. The above evaluations demonstrate that the requested changes can be accommodated without an increase in the probability or consequences of an accident previously evaluated, without creating the

possibility of a new or different kind of accident from any accident previously evaluated, and without a significant reduction in a margin of safety. Having arrived at negative declarations with regard to the criteria of 10 CFR 50.92, this assessment determined that the requested change does not involve a Significant Hazards Consideration.

5. Environmental Considerations

This review supports a request to amend the Combined License (COL) to allow departure from various elements of plant-specific Tier 2 and Tier 2* information in the UFSAR. The changed information relates to construction of enclosures consisting of three-hour rated fire barriers in the middle annulus to separate the redundant Divisions B, C, and D Class 1E electrical containment penetrations. Division A Class 1E electrical penetration assemblies remain a part of the middle annulus and are separated from the other divisions by three-hour fire barriers.

This review has determined the proposed departure requires an amendment to the COL; however, a review of the anticipated construction and operational effects of the proposed amendment has determined the proposed 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 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 amendment is for construction of enclosures consisting of three-hour rated fire barriers to provide separation of the redundant Divisions B, C, and D Class 1E electrical containment penetrations. Division A Class 1E electrical penetration assemblies remain a part of the middle annulus and are separated from the other divisions by three-hour fire barriers, and from other components by sufficient distance to preclude a propagation of a fire. The proposed change is consistent with the UFSAR Appendix 9A evaluation of the AP1000 fire protection. These changes are unrelated to any aspects of plant construction or operation that would introduce any changes 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 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 amendment would provide individual enclosures protected by three-hour rated fire barriers for the redundant Division B, C and D Class 1E electrical containment penetrations. This would only affect the middle annulus area where the enclosures are constructed and would not affect any radioactive waste system or path for radioactive release. Plant radiation zones are not affected, and controls in accordance with 10 CFR 20 preclude a significant increase in operational 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 the 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), an environmental impact statement or environmental assessment of the proposed amendment is not required.

6. References

None

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Units 3 and 4

ND-14-0365

Enclosure 2

Proposed Changes to the Licensing Basis Documents (Publicly Available Information)
(LAR-13-023)

(8 pages)

UFSAR Section 1.2, Figure 1.2-7, (Withheld from Public Disclosure – See Enclosure 3)

UFSAR Section 3.7, Table 3.7.3-1, Seismic Category I Equipment Outside Containment by Room Number:

Revise Tier 2 information to include Rooms 12343, 12344, and 12345, and related information, as shown below:

Room No.	Room Name	Equipment Description
* * *		
12341	Middle annulus	Class 1E electrical penetrations Various mechanical piping penetrations
12343	Division C middle annulus penetration room	Class 1E electrical penetrations
12344	Division B middle annulus penetration room	Class 1E electrical penetrations
12345	Division D middle annulus penetration room	Class 1E electrical penetrations
12351	Maintenance floor staging area	Divisional cabling (ceiling)
* * *		

UFSAR Appendix 3D, Table 3D.5-1, Normal Operating Environments:

Revise Tier 2 information by adding rooms 12343, 12344, and 12345 to Zone 7, as shown below:

Location/Parameter	Normal Range	Notes
* * *		
Zone 7 - Auxiliary Building - Radiological - Accessible (Room numbers: 12151, 12152, 12153, 12155, 12156, 12161, 12169, 12241, 12242, 12244, 12251, 12252, 12261, 12268, 12271, 12272, 12273, 12274, 12275, 12341, 12343 , 12344 , 12345 , 12351, 12352, 12361, 12451, 12452, 12461, 12553, 12554, 12555, 12561)		
Temperature	50 - 104°F (All rooms except 12555) 60 - 80°F (Room 12555)	
Pressure	Atmospheric	
Humidity	10 - 100%	
Radiation	See Table 3D.5-2	
Chemistry	None	
* * *		

UFSAR Appendix 9A, Subsection 9A.3.1.1, Containment/Shield Building:

Revise Tier 2 information in the first paragraph, as shown below:

This building comprises one fire area - 1000 AF 01. This fire area is separated into fire zones and includes the spaces inside containment as well as the valve room for the passive containment cooling system (PCS), the middle annulus, the upper annulus, and the operating deck staging area outside containment. This fire area excludes the middle annulus penetration room division B, C, and D (rooms 12343, 12344, and 12345) because these are treated as extensions of the adjacent auxiliary building rooms' fire areas. This fire area includes the remainder of the middle annulus including the division A containment penetration area.

UFSAR Appendix 9A, Subsection 9A.3.1.1.15, Fire Zone 1200 AF 12341:

Revise Tier 2 information in the second paragraph, as shown below:

The quantity of combustible materials in this fire zone is low, consisting primarily of cable insulation in the non-Class 1E electrical penetration assemblies, located in the northeast quadrant of the fire zone. The Class 1E electrical penetration assemblies also pass through this fire zone, but are enclosed by 3-hour fire barriers and are considered extensions of the associated Class 1E divisional fire areas on the other side of the shield building wall except for the division A penetration assemblies, which are a part of this fire zone. This fire zone is physically separated from other fire zones by the steel wall of containment and by the steel and concrete vessel stiffener and flexible ventilation seal above, and it is separated from adjacent fire areas by the walls and floor of the shield building, which have concrete thicknesses of more than one foot, and the 3-hour fire barriers enclosing the Class 1E electrical penetrations. The access doorway to the middle annulus fire zone is closed by a door.

Revise Tier 2 information in the fourth paragraph, as shown below:

Table 9A-2 lists the safe shutdown components located in this fire zone. The redundant passive containment cooling system safe shutdown components located in fire ~~zone~~area 1200 AF 01 are sufficient to perform applicable functions to achieve and maintain safe shutdown. The Class 1E electrical penetrations for division B, C, and D are separated from this fire zone by 3-hour fire barriers and are part of the associated divisional fire areas outside the shield building. The division A Class 1E electrical penetration assemblies that are part of this fire zone are not associated with the cables necessary to support the function of the redundant PCS components in fire area 1200 AF 01.

UFSAR Appendix 9A, Subsection 9A.3.1.2.1.2, Fire Area 1242 AF 02:

Revise Tier 2 information in the second paragraph under Fire Protection Adequacy Evaluation, as shown below:

Combustible materials in this fire area are listed in [Table 9A-3](#), and primarily consist of cable insulation for cables associated with the containment electrical penetrations. There are small concentrations of cable at the electrical penetrations and in the overhead cable trays. This is a light hazard fire area and the rate of fire growth is expected to be slow. ~~The boundary of this fire area extends to include the electrical penetration assemblies within the containment annulus, which are enclosed by 3-hour fire barriers.~~ Three-hour fire barriers provide adequate separation from adjacent fire areas and the fire is contained within the fire area.

UFSAR Appendix 9A, Subsection 9A.3.1.2.2.1, Fire Area 1201 AF 02:

Revise Tier 2 information in the first paragraph by adding fire zone 1231 AF 12344 to Fire Area 1201 AF 02, as shown below:

This fire area contains division B electrical rooms. The fire area is subdivided into the following fire zones:

<u>Fire Zone</u>	<u>Room No.</u>	
• 1211 AF 12104	12104	Division B battery room 1
• 1221 AF 12204	12204	Division B battery room 2
• 1222 AF 12207	12207	Division B dc equipment room
• 1231 AF 12304	12304	Division B instrumentation and control/penetration room
• 1231 AF 12344	12344	Division B middle annulus penetration room

There are no systems in this fire area which normally contain radioactive material.

Revise Tier 2 information by adding the following text to the first paragraph under Smoke Control Features, as shown below:

... Smoke from a fire in this fire area does not affect safe shutdown components in fire areas that are served by other ventilation systems, subsystems, or air distribution headers. [The middle annulus penetration room division B is treated as an extension of this fire area. No ventilation system serves this fire zone, and smoke and hot gases are confined with no propagation of the fire beyond the fire zone. After the fire, smoke is removed by opening the personnel doors and using portable exhaust fans and flexible ductwork.](#) Safe shutdown components in these fire areas, identified in [Table 9A-4](#), are sufficient to achieve and maintain safe shutdown.

UFSAR Appendix 9A, Subsection 9A.3.1.2.3.1, Fire Area 1202 AF 03:

Revise Tier 2 information in the first paragraph by adding fire zone 1232 AF 12343 to Fire Area 1202 AF 03, as shown below:

This fire area contains division C electrical rooms. The fire area is subdivided into the following fire zones:

<u>Fire Zone</u>	<u>Room No.</u>	
• 1212 AF 12102	12102	Division C battery room 1
• 1222 AF 12202	12202	Division C battery room 2
• 1222 AF 12203	12203	Division C dc equipment room
• 1232 AF 12302	12302	Division C instrumentation and control room
• 1232 AF 12312	12312	Division C reactor coolant pump trip switchgear room
• 1232 AF 12313	12313	Instrumentation and control/division C penetration room
• 1232 AF 12343	12343	Division C middle annulus penetration room

There are no systems in this fire area which normally contain radioactive material.

Revise Tier 2 information by adding the following text to the first paragraph under Smoke Control Features, as shown below:

...Smoke from a fire in this fire area does not affect safe shutdown components in fire areas that are served by other ventilation systems, subsystems, or air distribution headers. [The middle annulus penetration room division C is treated as an extension of this fire area. No ventilation system serves this fire zone, and smoke and hot gases are confined with no propagation of the fire beyond the fire zone. After the fire, smoke is removed by opening the personnel doors and using portable exhaust fans and flexible ductwork.](#) Safe shutdown components in these fire areas, identified in [Table 9A-4](#), are sufficient to achieve and maintain safe shutdown.

UFSAR Appendix 9A, Subsection 9A.3.1.2.4.1, Fire Area 1201 AF 03:

Revise Tier 2 information in the first paragraph by adding fire zone 1231 AF 12345 to Fire Area 1201 AF 03, as shown below:

The fire area is subdivided into the following fire zones:

<u>Fire Zone</u>	<u>Room No.</u>	
• 1211 AF 12105	12105	Division D battery room
• 1221 AF 12205	12205	Division D dc equipment room
• 1231 AF 12305	12305	Division D instrumentation and control/penetration room
• 1231 AF 12345	12345	Division D middle annulus penetration room

There are no systems in this fire area which normally contain radioactive material.

Revise Tier 2 information by adding the following text to the first paragraph under Smoke Control Features, as shown below:

...Smoke from a fire in this fire area does not affect safe shutdown components in fire areas that are served by other ventilation systems, subsystems, or air distribution headers. [The middle annulus penetration room division D is treated as an extension of this fire area. No ventilation system serves this fire zone, and smoke and hot gases are confined with no propagation of the fire beyond the fire zone. After the fire, smoke is removed by opening the personnel doors and using portable exhaust fans and flexible ductwork.](#) Safe shutdown components in these fire areas, identified in [Table 9A-4](#), are sufficient to achieve and maintain safe shutdown.

UFSAR Appendix 9A, Table 9A-2, Safe Shutdown Components:

Revise Tier 2 information by adding the following information to Fire Area/Fire Zone 1000 AF 01/1200 AF 12341, as shown below:

Fire Area/ Fire Zone	System	Description	Class 1E Division			
			A	C	B	D
1000 AF 01/ 1200 AF 12341	PCS	Containment Pressure			PT-006	PT-008
	IDSA	Class 1E Electrical Penetration	EY-P11Z			
		Class 1E Electrical Penetration	EY-P12Y			
		Class 1E Electrical Penetration	EY-P13Y			

UFSAR Appendix 9A, Table 9A-3, Fire Protection Summary:

Revise Tier 2 information by adding Fire Zone 1231 AF 12344 to Fire Area 1201 AF 02, as shown below:

Fire Area/Zone ⁽¹⁾	Safety Area? ⁽²⁾	Floor Area Sq Ft	Combust. Material ⁽³⁾	Fire Sev. Cat.	Amount	Heat Value (Btu)	Comb. Load, Btu/Sq Ft	Equiv. Dur. (Min)	Boundary Fire Res. ⁽⁴⁾ (Hours)	Detect. Cap.	Fixed Suppression Capability ⁽⁵⁾
1201 AF 02	YES								3	SMOKE	HOSE STATION
* * *											
1231 AF 12344 DIVISION B MIDDLE ANNULUS PENETRATION ROOM		85	NEGLIGIBLE	I	TOTAL:	0.0 0.0	0.0 0.0	0			
FIRE AREA TOTAL:		2400 2185	NET CAT.	C	TOTAL:	1.3E+08	62000 59000	54 47			

Revise Tier 2 information by adding Fire Zone 1231 AF 12345 to Fire Area 1201 AF 03, as shown below:

Fire Area/Zone ⁽¹⁾	Safety Area? ⁽²⁾	Floor Area Sq Ft	Combust. Material ⁽³⁾	Fire Sev. Cat.	Amount	Heat Value (Btu)	Comb. Load, Btu/Sq Ft	Equiv. Dur. (Min)	Boundary Fire Res. ⁽⁴⁾ (Hours)	Detect. Cap.	Fixed Suppression Capability ⁽⁵⁾
1201 AF 03	YES								3	SMOKE	HOSE STATION
* * *											
1231 AF 12345 DIVISION D MIDDLE ANNULUS PENETRATION ROOM		60	NEGLIGIBLE	0	TOTAL:	0.0 0.0	0 0	0			
FIRE AREA TOTAL:		4670 1730	NET CAT.	C	TOTAL:	1.1E+08	63000 61000	53 49			

Revise Tier 2 information by adding Fire Zone 1232 AF 12343 to Fire Area 1202 AF 03, as shown below:

Fire Area/Zone ⁽¹⁾	Safety Area? ⁽²⁾	Floor Area Sq Ft	Combust. Material ⁽³⁾	Fire Sev. Cat.	Amount	Heat Value (Btu)	Comb. Load, Btu/Sq Ft	Equiv. Dur. (Min)	Boundary Fire Res. ⁽⁴⁾ (Hours)	Detect. Cap.	Fixed Suppression Capability ⁽⁵⁾
1202 AF 03	YES								3	SMOKE	HOSE STATION
* * *											
1232 AF 12343 DIVISION C MIDDLE ANNULUS PENETRATION ROOM		85	NEGLIGIBLE	0.0 0.0	TOTAL:	0.0 0.0	0 0	0			
FIRE AREA TOTAL:		3050 3100	NET CAT.	C	TOTAL:	1.7E+08	67000 55000	45 42			

ND-14-0365,
Enclosure 2
Proposed Changes to the Licensing Basis Documents (LAR-13-023) (Publicly Available
Information)

UFSAR Appendix 9A. Figure 9A-1, (Withheld from Public Disclosure – See Enclosure 3)

**UFSAR Section 12.3, Figure 12.3-1, Sheet 6 of 16, (Withheld from Public Disclosure – See
Enclosure 3)**

**UFSAR Section 12.3, Figure 12.3-2, Sheet 6 of 15, (Withheld from Public Disclosure – See
Enclosure 3)**

**UFSAR Section 12.3, Figure 12.3-3, Sheet 6 of 16, (Withheld from Public Disclosure – See
Enclosure 3)**