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NND-14-0409  
10 CFR 50.90

ATTN: Document Control Desk  
U.S. Nuclear Regulatory Commission  
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Washington, DC 20555

Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3  
Combined License Nos. NPF-93 and NPF-94  
Docket Nos. 52-027 & 52-028

Subject: LAR 14-09 License Amendment Request: Turbine Building Switchgear Rooms  
and Office Area Layout Changes

- Reference:
1. Southern Nuclear Operating Company, ND-14-0878, Vogtle Electric Generating Plant Units 3 and 4 LAR-14-005 R0 License Amendment Request: Turbine Building Switchgear Rooms and Office Area Layout Changes
  2. NRC Issuance of License Amendment No. 17 (LAR 13-12) For Summer Units 2 and 3 (ML14218A687)

In accordance with the provisions of 10 CFR 50.90, South Carolina Electric & Gas Company (SCE&G) requests an amendment to the Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3 combined licenses (COLs) numbers NPF-93 and NPF-94, respectively.

The requested amendment would depart from VCSNS Units 2 and 3 plant-specific Design Control Document (DCD) Tier 2\* material contained within the Updated Final Safety Analysis Report (UFSAR) by relocating fire area rated fire barriers due to changes to the layout of the switchgear rooms and office area in the turbine building. The requested amendment would also depart from plant-specific DCD Tier 2 material that involves the proposed Tier 2\* departures.

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).**

Note that Reference 1 discusses an editorial change to a fire area number which is not portrayed in this LAR because the change was already incorporated through Reference 2. The specifics on the editorial change in question can be found in Reference 1 Enclosure 1 page 6.

Also the UFSAR Figure 1.2-25 does not portray a wall adjacent to Staircase S03 in the top right corner of the figure as shown in Reference 1. This is not a change requested by this LAR but the detail in question was found to be incorrect, and inconsistent with UFSAR Figure 9A-2 Sheet 3 of 5.

Finally, the Fire Area Total (Floor Area Sq Ft) presented in this LAR Enclosure 2 page 3, is different than the corresponding value shown in Reference 1 due to a non-LAR departure which is currently in the approval process. Once the Departure is approved and incorporated, the value will be consistent with Reference 1.

In order to support the VCSNS Unit 2 construction schedule, SCE&G requests NRC staff review and approval of the license amendment by May 15, 2015. Approval by this date will allow sufficient time to implement the licensing basis changes prior to affected construction activities. SCE&G expects to implement the proposed amendment within 30 days of approval.

This letter contains no regulatory commitments.

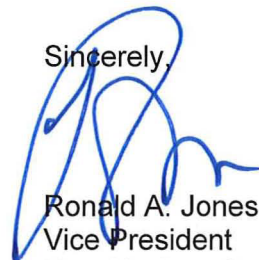
In accordance with 10 CFR 50.91, SCE&G is notifying the State of South Carolina of this LAR by transmitting a copy of this letter and enclosures to the designated State Official.

Should you have any questions, please contact Mrs. April R. Rice by telephone at (803) 941-9858, or by email at arice@scana.com.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on this 18<sup>th</sup> day of September, 2014.

Sincerely,



Ronald A. Jones  
Vice President  
New Nuclear Operations

MMD/RAJ/mmd

- Enclosure 1: Virgil C. Summer Nuclear Station Units 2 and 3 – License Amendment Request: Turbine Building Switchgear Rooms and Office Area Layout Changes (LAR 14-09)
- Enclosure 2: Virgil C. Summer Nuclear Station Units 2 and 3 – Proposed Changes to the Licensing Basis Documents (LAR 14-09) (Publicly Available Information)
- Enclosure 3: Virgil C. Summer Nuclear Station Units 2 and 3 – Proposed Changes to the Licensing Basis Documents (LAR 14-09) **(Withheld Information)**

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NND-14-0409

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**South Carolina Electric and Gas Company  
Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3**

**NND 14-0409**

**Enclosure 1**

**License Amendment Request  
Turbine Building Switchgear Rooms and Office Area Layout Changes  
(LAR 14-09)**

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## **1. Summary Description**

In accordance with 10 CFR 50.90, South Carolina Electric and Gas Company (SCE&G), the licensee for Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3, requests an amendment to Combined License (COL) Numbers NPF-93 and NPF-94, for VCSNS Units 2 and 3, respectively.

The proposed changes will revise the Combined Licenses (COLs) to modify the fire area fire barriers of the turbine building switchgear rooms on Elevations 141'-3" and 158'-7" of the turbine building to accommodate the revised layout of the low and medium voltage switchgear and associated equipment.

The requested amendment requires changes to Updated Final Safety Analysis Report (UFSAR) information, which include changes to plant-specific Tier 2\* information and changes to Tier 2 information that involve changes to this 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 to allow the plant to be shut down safely following a fire.

To satisfy fire protection objectives, the plant is designed to:

- Prevent fire initiation by controlling, separating, and limiting the quantities of combustibles and sources of ignition
- Isolate combustible materials and limit the spread of fire by subdividing plant buildings into fire areas separated by fire barriers
- Separate redundant safe shutdown components and associated electrical divisions to preserve the capability to safely shut down the plant following a fire
- Provide the capability to safely shut down the plant using controls external to the main control room, should a fire require evacuation of the control room or damage the control room circuitry for safe shutdown systems
- Separate redundant trains of safety-related equipment used to mitigate the consequences of a design basis accident (but not required for safe shutdown following a fire) so that a fire within one train will not damage the redundant train
- Prevent smoke, hot gases, or fire suppressants from migrating from one fire area to another to the extent that they could adversely affect safe shutdown capabilities, including operator actions
- Provide confidence that failure or inadvertent operation of the fire protection system cannot prevent plant safety functions from being performed

- Preclude the loss of structural support, due to warping or distortion of building structural members caused by the heat from a fire, to the extent that such a failure could adversely affect safe shutdown capabilities
- Provide floor drains sized to remove expected firefighting water flow without flooding safety-related equipment
- Provide firefighting personnel access and life safety escape routes for each fire area
- Provide emergency lighting and communications to facilitate safe shutdown following a fire
- Minimize exposure to personnel and releases to the environment of radioactivity or hazardous chemicals as a result of 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.

The turbine building houses the main turbine, generator, and associated fluid and electrical systems. It provides weather protection for the laydown and maintenance of major turbine/generator components. The turbine building also houses the makeup water purification system. No safety-related equipment is located in the turbine building.

Incoming power supplied from the unit auxiliary transformers feeds the four medium voltage (MV) and low voltage (LV) switchgear located in the Turbine Building Switchgear Rooms (Rooms 20501 and 20502) at Elevation 141'-3" and the switchgear at Elevation 100'-0" in the turbine building. The MV and LV switchgear in Rooms 20501 and 20502 will be reoriented to the north/south direction to accommodate a load capacity change. The switchgear redesign and reorientation is being evaluated by the Licensee, in accordance with the 10 CFR Part 52, Appendix D, Section VIII departure evaluation requirements.

The fire-rated barriers for Turbine Building Switchgear Rooms (Rooms 20501 and 20502) at Elevation 141'-3" are proposed to be revised to accommodate reorientation of the redesigned MV and LV switchgear and to meet the National Electrical Code (NEC) (National Fire Protection Association (NFPA) 70) Article 110 Working Space Minimum Clear Distances.

Reorienting the MV and LV switchgear to the north-south direction necessitates relocating the partition wall between the two switchgear rooms to a position midway between columns 18 and 19 and moving the doors on the east end of each of the rooms closer to the partition wall. Reorientation of the MV and LV switchgear will also necessitate moving the fire-rated walls along the north, east, and west exterior walls outward so that their interior face will be flush with the major vertical columns to allow installation of the vertical cable trays inside the west wall and still maintain adequate working space per NEC Article 110. These changes will also redefine Fire Areas 2052 AF 01 and 2053 AF 02 for Rooms 20502 and 20501, respectively.

To meet egress requirements for large electrical rooms, two exits are required at opposite ends of the room. Exits are currently provided on the east ends of the switchgear rooms as discussed above. Another door is added to the south wall of Room 20502 in a location near the interior stairs from Elevation 141'-3" to Elevation 158'-7".

Control System Cabinet Room 4 (Room 20503), which will house the Plant Control System (PLS) cabinets, will be added to Fire Zone 2050 AF 20500 in Fire Area 2000 AF 01. The electrical equipment in Room 20503 will be relocated to Electrical Equipment Room (Room 20513) and other areas in the turbine building.

Redesignation of Fire Area 2053 AF 01 is proposed for the Electrical Equipment Room 20513, which will be an extension to the platform above the switchgear rooms and will accommodate the low voltage electrical equipment relocated from Room 20503. The new section of the platform is added at elevation 156'-0" between Column Lines L.5 and K.5 and Column Lines 19 and 20 as shown on the proposed revision to UFSAR Tier 2\* Figure 9A-2 (sheet 3 of 5) and is designated as Fire Area 2053 AF 01.

The elevation of the existing platform at elevation 158'-7" above the switchgear rooms impacts the air handling units and ductwork such that they would no longer be accommodated in the existing designated area in Room 20510. The fire-rated boundaries and fire zones at the existing platform at elevation 158'-7" are proposed to be reconfigured to accommodate the air handling units and ductwork. This is accomplished by:

- Removing the dividing wall between Fire Zones 2052 AF 20504 and 2053 AF 20506,
- Deleting Fire Zone 2053 AF 20506, consisting of a conference room (Room 20506) and an office area (Room 20505),
- Deleting Fire Zones 2053 AF 20507 and 2053 AF 20508, consisting of women's and men's restrooms (Rooms 20507 and 20508, respectively), and
- Expanding Fire Zone 2052 AF 20504 for Room 20510 to include the entire platform area above Switchgear Rooms 1 and 2 (Rooms 20502 and 20501, respectively) and Control System Cabinet Room 4 (Room 20503).

This combined area will constitute one fire zone designated as 2052 AF 20504 in Fire Area 2000 AF 01.

With this change the fire areas for Rooms 20501, 20502 and 20503 at elevation 141'-3" are proposed to be expanded. (The overall combined square footage for fire areas 2052 AF 01 (Room 20502) and 2053 AF 02 (Room 20501) has been adjusted to account for more precise measurement of the area within the fire area boundaries.) At elevation 158'-7", the fire zone for expanded Room 20510 is revised to a single fire zone, 2052 AF 20504, and the exterior fire-rated walls are proposed to be moved to include the entire platform area over Rooms 20501, 20502, and 20503. The proposed change adds a new Room 20513 on the platform area at elevation 156'-0" and redesignates Fire Area 2053 AF 01 to this room.



Licensing Basis Change Descriptions

The table below details the licensing basis changes sought with regard to the turbine building switchgear rooms and office area layout changes in the requested amendment.

<b><u>Proposed UFSAR Changes</u></b>	<b><u>Description of Proposed Change</u></b>
Figure 1.2-25 (SUNSI)	Revise to show the room boundary changes to accommodate the switchgear room layout changes on Elevation 141'-3", the heating, ventilation, and air conditioning (HVAC) room layout changes on Elevation 158'-7", and the electrical equipment room on the new platform at Elevation 156'-0".
Subsection 9A.3.2.1	<ul style="list-style-type: none"> <li>Revise to delete the fire zones and room numbers for the office area, conference room and restrooms from turbine building Elevation 158'-7" Fire Area 2000 AF 01 (room area are to be part of Fire Zone 2052 AF 20504)</li> <li>Revise to add Fire Zone 2050 AF 20500 (Room 20503) as Control System Cabinet Room 4</li> </ul>
Subsection 9A.3.2.13	Revise to reflect the revised room number, name, and function for Fire Zone 2053 AF 01 (Room 20513) for low voltage electrical equipment
Tier 2* Figure 9A-2 (Sheet 3 of 5) (SUNSI)	Revise to show the switchgear room layout and exterior wall changes on Elevation 141'-3", the room layout and exterior wall changes on the platform at Elevation 158'-7", and the new platform extension at Elevation 156'-0" for Fire Zone 2053 AF 01 (Room 20513).
Tier 2* Figure 9A-2 (Sheets 1, 2, 3, and 4 of 5) (SUNSI)	Update the note listing the fire zones in fire area 2000 AF 01 by deleting fire zones 2053 AF 20505 and 2053 AF 20506.
Table 9A-3	<p>Revise the Floor Area Sq Ft, Combustible Loading and Equivalent Duration for Area/Zone 2050 AF 20500 (Elevation 141'-3" General Floor Area), 2052 AF 20504 (HVAC Equipment Area), 2053 AF 01, and 2000 AF 01. Delete Area/Zone 2053 AF 20506 (Offices at 158'-7") which becomes part of Fire Zone 2052 AF 20504.</p> <p>Revise the Combustible Material Amount (CABLE INS), Heat Value, and Fire Area Total Floor Area, Combustible Load, and Equivalent Duration for Fire Areas 2052 AF 01 (Turbine Building Switchgear Rm #1), 2053 AF 01 (Electrical Equipment Room), and 2053 AF 02 (Turbine Building Switchgear Rm #2).</p>

**Note: Figures identified above as Sensitive Unclassified Non-Safeguards Information (SUNSI) contain security-related information and are withheld from public disclosure in accordance with 10 CFR 2.390(d).**

### 3. Technical Evaluation

UFSAR Appendix 9A provides the Fire Protection Analysis. The fire protection analysis is performed for each fire area using 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 proposed changes to the fire protection analysis requested by this license amendment request are for nonsafety-related areas and components of the plant.

The proposed changes to fire-rated barriers are requested to accommodate the revised layout of the medium voltage and low voltage nonsafety-related switchgear at Elevations 141'-3" and 158'-7". Relocation of walls within the rooms redefines or deletes the rooms so that individual fire zones and areas are changed. The changes maintain the necessary isolation of the rooms from one another for design isolation and protection of the nonsafety-related circuits in the rooms.

The fire area/zones affected by this activity are shown in the tables below:

Table 1 – Existing Configuration

Fire Area/Zone	Room Number	Elevation	Room Description
2052 AF 01	20502	141'-3"	Turbine Building Switchgear Room 1
2053 AF 02	20501	141'-3"	Turbine Building Switchgear Room 2
2053 AF 01	20503	141'-3"	Control System Cabinet Room 4
2052 AF 20504	20510	158'-7"	HVAC Equipment Area
2053 AF 20506	20505, 20506	158'-7"	Office Areas
2053 AF 20507	20507	158'-7"	Women's Restroom
2053 AF 20508	20508	158'-7"	Men's Restroom

Table 2 – Proposed Configuration

<b>Fire Area/Zone</b>	<b>Room Number</b>	<b>Elevation</b>	<b>Room Description</b>
2052 AF 01	20502	141'-3"	Turbine Building Switchgear Room 1
2053 AF 02	20501	141'-3"	Turbine Building Switchgear Room 2
2050 AF 20500	20503	141'-3"	Control System Cabinet Room 4
2052 AF 20504	20510	158'-7"	HVAC Equipment Area
2053 AF 01	20513	156'-0"	Electrical Equipment Room

The redefined fire areas will maintain the necessary protection for the switchgear and associated equipment. The two-hour rated floor and ceilings are maintained within the affected room. As shown in the proposed changes to Table 9A-3, there is no appreciable increase in the combustibile loading for the switchgear rooms (Fire Areas 2052 AF 01 and 2053 AF 02) because the redesigned switchgear has been reoriented to accommodate station nonsafety-related loads such that cabling can be decreased. Fire Zone 2052 AF 20504 (HVAC Equipment Area) has been enlarged, which results in a reduction to the combustibile loading (BTU/square feet). Fire Area 2053 AF 01 for the new Electrical Equipment Room is smaller than the room that previously housed the electrical equipment that is to be located in Room 20513. While Fire Area 2053 AF 01 contains much of the same equipment in a smaller area, such that the combustibile loading (Btu/square foot) is increased, the fire severity category in the new room has not increased over that of the room that previously housed the equipment. The change to house the PLS cabinets in Control System Cabinet Room 4 (Room 20503) does not create a fire hazard, because fires are not assumed to pass from one enclosed cabinet to another and cabling in this area is minimal. The existing and new doors provide the necessary fire protection within the fire-rated barriers in which they are installed, and provide the necessary life safety function for exit from the areas. Therefore, the fire protection analysis is not adversely affected (i.e., analysis results remain acceptable).

The proposed changes are made to fire-rated barriers to accommodate nonsafety-related electrical switchgear, which 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. The turbine building medium and low voltage switchgear and associated equipment are housed in the nonsafety-related turbine building and do not perform or affect the performance of any safety-related function. This equipment provides power to the balance of plant functions related to power production. The new door on the south side of the HVAC area is a 2-hour fire-rated door that is provided for life safety reasons and does not perform any safety-related function. No safety-related structure, system, or component (SSC) or function is adversely affected. The existing fire rating for barriers (wall, floors and ceilings) for the fire zones/areas are maintained. The proposed

changes do not involve, nor interface with, any SSC accident initiator or initiating sequence of events. 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 proposed turbine building switchgear rooms, the control system cabinet room, the associated HVAC area, and the electrical equipment area changes in fire areas do not affect the descriptions and analyses presented in UFSAR Section 3.7, Seismic Design and UFSAR Section 3.8, Design of Category I Structures. Additionally, because these changes do not affect any key design features identified in UFSAR Subsection 19F.4.2, there is no effect to the Appendix 19F Malevolent Aircraft Impact assessments.

The turbine building switchgear rooms, the control system cabinet room, the associated HVAC area, and the electrical equipment area are separated by 2-hour fire barriers to prevent the spread of a fire. The affected areas and equipment are nonsafety-related and do not interface with/affect safety-related equipment or fission product barriers. No system 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 affect equipment associated with the reactor or spent fuel systems and 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 do not interface or affect any system containing radioactivity, and therefore, do not affect the containment, channeling, monitoring, processing or releasing of radioactive materials. The proposed changes do not interface or affect any system affecting non-radioactive materials and therefore do not affect the containment, control, channeling, monitoring, processing or releasing of non-radioactive materials. No effluent release path is affected. The types and quantities of expected effluents are not changed. Therefore, neither radioactive nor non-radioactive material effluents are affected.

Turbine building shielding is addressed in UFSAR subsection 12.3.2.2.6, which states, "The steam generator blowdown demineralizers and the resin columns associated with the secondary sampling system (SSS) steam generator blowdown sample panel are shielded when required to meet the radiation zone and access requirements. Radiation shielding is not required for other process equipment located in the turbine building. Space has been provided so that shielding may be added around the steam generator blowdown system (BDS) filter, the electrodeionization (EDI) unit, and the condensate polishing demineralizers if they become radioactive." The proposed changes do not affect the steam generator blowdown demineralizers or the condensate polishing demineralizers or equipment that interface with these demineralizers. None of the other plant radiation zones as described in UFSAR Section 12.3, controls under 10 CFR 20, or expected amounts and types of radioactive materials are affected by the proposed changes. Therefore, individual and cumulative radiation exposures are not changed as a result of the changes proposed.

### Summary

The proposed changes will modify the fire barriers of the turbine building switchgear rooms on elevations 141'-3" and 158'-7" of the turbine building to accommodate the revised layout of the low and medium voltage switchgear and associated equipment.

The above proposed changes would not affect any safety-related equipment or function, design function, radioactive material barrier or safety analysis.

### Physical Security Evaluation

A review of the Physical Security Program and the Physical Security inspections, tests, analyses, and acceptance criteria (ITAAC) was completed regarding the changes identified in this license amendment request. (Note that the Physical Security Program review included a review of the Physical Security Plan and other documents that are classified as Safeguards Information (SGI) and are not available to the public.) This review was accomplished by the reactor vendor and licensee through a multi-stepped design and licensing change process that considered: a) impact reviews of the design changes proposed on various program areas; b) licensing reviews and engineering reviews of the licensing change package incorporating the design changes; and c) additional focused program area reviews of design and licensing changes that are considered to have a potential impact on any licensee program area, such as physical security. The review confirmed that the proposed changes do not adversely affect the Physical Security Program or Physical Security ITAAC, because:

- The proposed changes have no effect on any physical barriers credited by the Physical Security Program for adversary delay.
- The proposed changes have no impact on ingress pathways to vital areas as described in the Physical Security Program.
- The proposed changes do not result in the addition, deletion or relocation of a security response position as described in Physical Security Program.
- The proposed changes have no impact on the pathways or associated timelines of security force personnel responding to security events.
- The changes do not impact any security equipment or systems and therefore there is no impact on security ITAAC.

Therefore, the proposed changes to the turbine building switchgear rooms and office area layout as described in this license amendment request have no adverse impact on the physical protection system required to protect against acts of radiological sabotage as described in the Physical Security Plan. Furthermore, the review confirmed that the proposed changes do not affect any of the existing ITAAC related to physical security.

#### 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 Updated Final Safety Analysis Report (UFSAR) Tier 2 information that involves a change to UFSAR Figure 9A-3 Tier 2\* information. Thus, NRC approval of these Tier 2 changes is required.

10 CFR 52, Appendix D, Section VIII.B.6.b(4) requires prior NRC approval for departures from Tier 2\* information regarding fire areas. The requested license amendment involves changes to fire area boundary locations as depicted on a UFSAR Appendix 9A figure which constitutes plant-specific Tier 2\* information changes. Thus, NRC approval of these Tier 2\* changes is required.

10 CFR 50.48 requires a fire protection plan that satisfies 10 CFR 50, Appendix A, General Design Criterion (GDC) 3, *Fire protection*. GDC 3 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 performance of the involved fire area fire barriers is not affected by the changes proposed in this license amendment request. The fire protection analysis is not adversely affected. Therefore, the proposed changes maintain compliance with GDC 3 and 10 CFR 50.48. The fire area boundary modifications would continue to satisfy applicable regulatory criteria.

10 CFR 50.150, 'Aircraft impact assessment,' requires applicants to perform a design-specific assessment of the effects on the facility of the impact of a large, commercial aircraft. Using realistic analyses, the applicant identifies and incorporates into the design those design features and functional capabilities to show that, with reduced use of operator actions: (i) the reactor core remains cooled, or the containment remains intact; and (ii) spent fuel cooling or spent fuel pool integrity is maintained. Because these changes do not affect any key design features identified in UFSAR Subsection 19F.4.2, there is no effect on the Appendix 19F, 'Malevolent Aircraft Impact Assessments.'

10 CFR 73.55(b) requires a licensee to establish and maintain a physical protection program which implements the Commission regulations including protection against the design basis threat of radiological sabotage as stated in 10 CFR 73.1. The proposed changes will be factored into the facility's physical protection program, as applicable. Because the proposed changes do not adversely affect the Licensee's ongoing efforts to establish and maintain a physical protection program for this facility, compliance with 10 CFR 73.55 is maintained.

## **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 change to Tier 2\* information. The changes would make various changes related to the reconfiguration of the turbine building switchgear rooms, the control system cabinet room, a new electrical equipment room, and the associated heating, ventilation, and air conditioning (HVAC) room.

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 reconfiguration of the turbine building switchgear rooms, the control system cabinet room, the new electrical equipment room, and the associated heating, ventilation and air conditioning (HVAC) room would not adversely affect any safety-related equipment or function. The modified configuration will maintain the fire protection function (i.e., barrier) as evaluated in Updated Final Safety Analysis Report (UFSAR) Appendix 9A, thus, the probability of a spread of a fire from these areas 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 affect nonsafety-related electrical switchgear and do not involve any accident, initiating event, or component failure; thus, the probabilities of the accidents previously evaluated are not affected. The proposed changes do not interface with or affect any system containing radioactivity or affect any radiological material release source terms; thus, the radiological releases in the accident analyses are not affected.

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

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

Response: No

The proposed changes to the fire zones in the turbine building related to the turbine building switchgear rooms, the control system cabinet room, the new electrical equipment room, the associated HVAC room, and stairway will maintain the fire barrier fire protection function as evaluated in the UFSAR

Appendix 9A. The changes to the fire areas and fire zones do not affect the function of any safety-related structure, system, or component, and thus, do not introduce a new failure mode. The affected turbine building areas and equipment do not interface with any safety-related equipment or any equipment associated with radioactive material and, thus, do not create a new fault or sequence of events that could result in a new or different kind of accident.

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 reconfiguration of the fire zones associated with the turbine building switchgear rooms, the electrical equipment room, and the associated HVAC room will maintain the fire barrier fire protection function as evaluated in the UFSAR Appendix 9A. The fire barriers and equipment in the turbine building do not interface with any safety-related equipment or affect any safety-related function. The changes to the area barriers associated with the turbine building switchgear and associated HVAC continue to comply with the existing design codes and regulatory criteria, and do not affect any safety analysis. Therefore, the proposed amendment does not involve a significant reduction in a 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 consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

**4.4 Conclusions**

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

**5. Environmental Considerations**

This review supports a request to amend the licensing basis documents to allow departure from the plant-specific Design Control Document (DCD) as incorporated into the Updated Final Safety Analysis Report (UFSAR) related to the change to the turbine building switchgear rooms, the control system cabinet room, the new electrical equipment room, and associated heating, ventilation and air conditioning (HVAC) areas and fire zones.



A review has determined that the proposed 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 proposed 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 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 changes in the requested amendment reconfigure the turbine building switchgear rooms, the control system cabinet room, the new electrical equipment room, and associated HVAC rooms. The proposed changes are unrelated to any aspect of plant construction or operation that would introduce any change to effluent types (e.g., effluents containing chemicals or biocides, sanitary system effluents, and other effluents), or affect any plant radiological or non-radiological effluent release quantities. Furthermore, the proposed changes do not affect any effluent release path or diminish the functionality of any design or operational features that are credited with controlling the release of effluents during plant operation. Therefore, it is concluded that the proposed amendment does not involve a significant change in the types or a significant increase in the amounts of any effluents that may be released offsite.

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

The proposed changes in the requested amendment reconfigure the turbine building switchgear rooms, the control system cabinet room, the new electrical equipment room, and associated HVAC rooms. Plant radiation zones (addressed in UFSAR Section 12.3) are not affected and controls under 10 CFR 20 preclude a significant increase in occupational radiation exposure. Therefore, it is concluded that 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), no environmental impact statement or environmental assessment need be prepared in connection with the requested amendment.

## **6. References**

None

**South Carolina Electric and Gas Company  
Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3**

**NND-14-0409**

**Enclosure 2**

**Proposed Changes to the Licensing Basis Documents (Publicly Available Information)**

**(LAR 14-09)**

**UFSAR Section 1.2, Figure 1.2-25, Turbine Building General Arrangement Plan at Elevation 141'-3"**  
(Withheld from Public Disclosure – See Enclosure 3)**UFSAR Appendix 9A, Subsection 9A.3.2.1, Fire Area 2000 AF 01:**

Revise Tier 2 information by:

- Adding a bulleted item for Fire Zone 2050 AF 20500 (Room 20503, Control System Cabinet Room 4), and
- Deleting the four bulleted items for Fire Zones:
  - 2053 AF 20506 (Room 20505, Office area at 158'-7"),
  - 2053 AF 20506 (Room 20506, Conference Room),
  - 2053 AF 20507 (Room 20507, Women's restroom), and
  - 2053 AF 20508 (Room 20508, Men's restroom), as shown in the excerpt below:

<u>Fire Zone</u>	<u>Room No.</u>	
***	***	***
• 2050 AF 20500	20500	Elevation 141'-3" general floor area
• <a href="#">2050 AF 20500</a>	<a href="#">20503</a>	<a href="#">Control System Cabinet Room 4</a>
• 2050 AF 20500	20518	Control System Cabinet Room 3
***	***	***
• 2052 AF 20504	20510	HVAC equipment area
• <del>2053 AF 20506</del>	<del>20505</del>	<del>Office Area at 158'-7"</del>
• <del>2053 AF 20506</del>	<del>20506</del>	<del>Conference room</del>
• <del>2053 AF 20507</del>	<del>20507</del>	<del>Women's restroom</del>
• <del>2053 AF 20508</del>	<del>20508</del>	<del>Men's restroom</del>
• 2057 AF 20503	20511	Generator seal oil unit
***	***	***

**UFSAR Appendix 9A, Subsection 9A.3.2.13, Fire Area 2053 AF 01:**

Revise Tier 2 information to reflect the renumbered Room 20513 for low voltage electrical equipment, as shown in the excerpt below:

Room No.~~20503~~ ~~Control system cabinet room 4~~[20513](#) [Electrical equipment room](#)

This fire area is the ~~control system cabinet room 4~~ [electrical equipment room](#) and contains ~~high~~ [low](#) voltage electrical equipment. There are no systems in this fire area which contain radioactive material.

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

Revise Tier 2 information by:

➤ **Revising the Floor Area Sq Ft, Combustible Loading and Equivalent Duration for:**

- **Fire Zone 2050 AF 20500 (Elevation 141'-3" General Floor Area), and**
- **Fire Zone 2052 AF 20504 (HVAC Equipment Area)**

➤ **Deleting Fire Zone 2053 AF 20506 (Offices at 158'-7")**➤ **Revising the Floor Area Sq Ft. for:****Fire Area 2000 AF 01 as shown in the excerpt below:**

Fire Area/Zone <sup>(1)</sup>	Safety Area <sup>(2)</sup>	Floor Area Sq Ft	Combust. Material <sup>(3)</sup>	Fire Sev. Cat.	Amount	Heat Value (Btu)	Comb. Load, Btu/Sq Ft	Equiv. Dur. (Min)	Boundary Fire Res. <sup>(4)</sup> (Hours)	Detect. Cap.	Fixed Suppression Capability <sup>(5)</sup>
2000 AF 01	NO			0	SEE ZONE	SEE ZONE			3	SMOKE	HOSE STATION
* * *											
2050 AF 20500 ELEVATION 141'-3" GENERAL FLOOR AREA			CABLE INS	C	87000	8.9E+08				HEAT	WET PIPE
			LUBE OIL	E	5400	8.2E+08					SPRINKLERS
			PLASTIC	D	6000	7.9E+07					HOSE STATION
			VOLATILES	E	100	1.4E+07					
			HYDROGEN	E	50	7.6E+06					
			TRASH	B	50	3.9E+06					
		38178	NET CAT.	E	TOTAL::	1.8E+09	47000	35			
		39900					45,000	34			
* * *											
2052 AF 20504 HVAC EQUIPMENT AREA			CABLE INS	C	150	3.1E+06				SMOKE	HOSE STATION
			PAPER	C	250	3.9E+06					
			PLASTIC	D	125	3.3E+06					
			RUBBER	D	13	3.1E+05					
			TRASH	B	13	2.0E+05					
		1234	NET CAT.	D	TOTAL::	1.1E+07	8700	7			
		4005					1300	1			
2053 AF 20506 OFFICES AT 158'-7"			CABLE INS	C	720					SMOKE	HOSE STATION
			PLASTIC	D	900						
			TRASH	B	50						
			CLOTH	B	720						
			PAPER	C	14000						
			WOOD	C	1800						
		3634	NET CAT.	D	TOTAL::	1.3E+08	41400	39			
* * *											
<b>FIRE AREA TOTAL:</b>		200,333	NET CAT.	E	TOTAL:	5.7E+09	29,000	22			
		196,963					28,000	21			

**Revise Tier 2 information by revising the Floor Area Sq Ft, Heat Value (Btu), Combustible Loading, and Equivalent Duration of Fire Areas 2052 AF 01, 2053 AF 01, and 2053 AF 02, as shown in the excerpts below:**

Fire Area/Zone <sup>(1)</sup>	Safety Area <sup>(2)</sup>	Floor Area Sq Ft	Combust. Material <sup>(3)</sup>	Fire Sev. Cat.	Heat Value Amount (Btu)	Comb. Load, Btu/Sq Ft	Equiv. Dur. (Min)	Boundary Fire Res. <sup>(4)</sup> (Hours)	Detect. Cap.	Fixed Suppression Capability <sup>(5)</sup>
* * *										
2052 AF 01	NO							2/0	SMOKE	HOSE STATION
TURBINE BUILDING			CABLE INS	C	<del>11000</del> 9000	<del>1.1E+08</del> 9.2E+07				
SWITCHGEAR ROOM #1			PLASTIC	D	600	7.9E+06				
			TRASH	B	100	7.7E+05				
			VOLATILES	E	5	6.8E+05				
FIRE AREA TOTAL:		<del>1854</del> 1700	NET CAT.	C	TOTAL: <del>1.2E+08</del> 1.0E+08	<del>66000</del> 60000	<del>55</del> 48			
2053 AF 01	NO							2/0	SMOKE	HOSE STATION
<del>CONTROL SYSTEM</del>			CABLE INS	C	700	7.1E+06				
<del>GABINET ROOM 4</del>			LUBE OIL	E	10	1.5E+06				
			PLASTIC	D	1300	1.7E+07				
<del>ELECTRICAL</del>			TRASH	B	100	7.7E+05				
<del>EQUIPMENT ROOM</del>			VOLATILES	E	5	6.8E+05				
FIRE AREA TOTAL:		<del>1722</del> 865	NET CAT.	D	TOTAL: 2.7E+07	<del>16000</del> 32000	<del>11</del> 25			
2053 AF 02	NO							2/0	SMOKE	HOSE STATION
TURBINE BUILDING			CABLE INS	C	<del>11000</del> 9000	<del>1.1E+08</del> 9.2E+07				
SWITCHGEAR ROOM #2			PLASTIC	D	600	7.9E+06				
			TRASH	B	100	7.7E+05				
			VOLATILES	E	5	6.8E+05				
FIRE AREA TOTAL:		<del>2039</del> 1700	NET CAT.	C	TOTAL: <del>1.2E+08</del> 1.0E+08	60000	<del>49</del> 48			
* * *										

**(The following UFSAR figures are Withheld from Public Disclosure – See Enclosure 3)**

**UFSAR Appendix 9A, Tier 2\* Figure 9A-2 (Sheet 1 of 5), [Turbine Building Fire Area Plan at Elevation 100'-0"]\***

**UFSAR Appendix 9A, Tier 2\* Figure 9A-2 (Sheet 2 of 5), [Turbine Building Fire Area Plan at Elevation 120'-6"]\***

**UFSAR Appendix 9A, Tier 2\* Figure 9A-2 (Sheet 3 of 5), [Turbine Building Fire Area Plan at Elevation 141'-3"]\***

**UFSAR Appendix 9A, Tier 2\* Figure 9A-2 (Sheet 4 of 5), [Turbine Building Fire Area Plan at Elevation 170'-0"]\***