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

Subject: LAR 13-12 Request for License Amendment: Fire Area Boundaries

- Reference:
1. Southern Nuclear Operating Company, Vogtle Electric Generating Plant Units 3 and 4 Request for License Amendment: Fire Area Boundaries (LAR-13-008) (Adams Accession Number ML13116A021)
 2. Acceptance Review of Southern Nuclear Operating Company's Request for License Amendment (LAR-13-008) for the Vogtle Electric Generating Plant Units 3 and 4: Fire Area Boundaries (TAC No. RP9449) (Adams Accession Number ML13165A184)

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 license numbers NPF-93 and NPF-94, respectively. The proposed amendment would depart from VCSNS Units 2 and 3 plant-specific Design Control Document (DCD) Tier 2 and Tier 2* material contained within the Updated Final Safety Analysis Report (UFSAR) by making, 1) various Annex Building and Turbine Building layout changes, 2) Turbine Building Stairwell S08 changes to support egress functions, and 3) an Annex Building HVAC shaft UFSAR figure clarification. The departures from information provided in the Tier 2* and associated Tier 2 material are addressed in the enclosed License Amendment Request (LAR).

Enclosure 1 provides the description, technical evaluation, and regulatory evaluation (including the Significant Hazards Consideration determination) for the proposed changes.

Enclosure 2 provides markups depicting the requested changes to UFSAR text and tables that are available for disclosure to the public.

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

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The changes proposed in this License Amendment Request are consistent and identical in technical content with License Amendment Request LAR-13-008, submitted by Southern Nuclear Operating Company, identified as Reference 1 of this letter and accepted by the NRC for review as stated in Reference 2 of this letter.

In order to support the VCSNS Unit 2 construction schedule, SCE&G requests NRC staff review and approval of the license amendment by March 31, 2014. Approval by this date will allow sufficient time to implement the licensing basis changes. This license amendment will be implemented by SCE&G within 30 days of approval.

This letter contains no regulatory commitments.

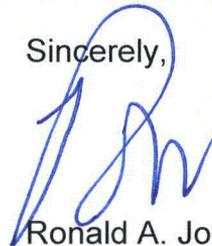
In accordance with 10 CFR 50.91, SCE&G is notifying the State of South Carolina of this LAR by transmitting a copy of this letter and enclosures to the designated State Official.

Should you have any questions, please contact Mr. Alfred M. Paglia by telephone at (803) 941-9876, or by email at apaglia@scana.com.

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

Executed on this 17th day of July, 2013.

Sincerely,



Ronald A. Jones
Vice President
New Nuclear Operations

BB/RAJ/bb

Enclosures:

1. Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3 – Request for License Amendment Regarding Fire Area Boundaries (LAR 13-12)
2. Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3 – Proposed Changes to Licensing Basis Documents (LAR 13-12) (Publicly Available Information)
3. Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3 – Proposed Changes to Licensing Basis Documents (LAR 13-12) (Withhold Under 10 CFR 2.390(d))

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NND-13-0380

Enclosure 1

Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3

**Request for License Amendment Regarding
Fire Area Boundaries**

(LAR 13-12)

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1. Summary Description

In accordance with 10 CFR 50.90, South Carolina Electric & Gas Company (SCE&G), the licensee for Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3, requests an amendment to the Combined Licenses (COLs) for VCSNS Units 2 and 3, Numbers NPF-93 and NPF-94, respectively. The proposed changes would revise the COLs with regard to Tier 2 and Tier 2* information related to fire area boundaries. The changes would make, 1) various Annex Building and Turbine Building layout changes, 2) Turbine Building Stairwell S08 changes to support egress functions, and 3) an Annex Building heating, ventilation, and air conditioning (HVAC) shaft Updated Final Safety Analysis Report (UFSAR) figure clarification.

The proposed changes require changes to UFSAR information (see Section 2 for details), which include changes to the plant-specific Tier 2* information. This enclosure requests approval of the license amendment necessary to implement the proposed changes to the Tier 2* and involved Tier 2 material.

2. Detailed Description and Technical Evaluation

The primary objectives of the fire protection program are to prevent fires and to minimize the consequences should a fire occur. The fire protection program provides protection so that the plant can 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.

2.1 Annex Building and Turbine Building Layout Changes

The proposed changes would revise the COL regarding the plant structures and layouts by (a) relocating the 2-hour fire barrier in the Annex Building between Computer Rooms A and B to the east, (b) changing the shape of the Turbine Building Lube Oil Storage (LOS) Room's 3-hour fire barrier, and (c) improving the Turbine Building's egress by adding a new stairway (S15) to the northwest corner of the Turbine Building.

(a.1) Detailed Description – Annex Building Computer Room Wall Change

The current design provides for equipment separation, with redundant computer equipment being divided between the two computer rooms. In the current design, as depicted in UFSAR Figure 9A-3, Sheet 2, Annex Building Computer Room A is larger than Computer Room B. The unequal sizing of the two computer rooms makes the installation of redundant equipment more difficult, consequently, it is necessary to more evenly size the rooms (i.e., enlarge Computer Room B) to accommodate the equal amounts of equipment. The proposed changes maintain the fire and equipment separation with redundant equipment divided between each room. As part of the proposed change, one entrance from the corridor to Computer Room A is removed.

The function of the fire wall between the two computer rooms is to provide protection against common mode failures from fire or adverse environmental conditions. The rooms provide locations for computer equipment external to the Main Control Room (MCR) in order to reduce MCR heat load, provide ease of maintenance, and render space available in the MCR. The proposed changes would move the wall between Annex Building Computer Rooms A and B to the east to resize the rooms to be approximately equal for housing redundant equipment. This wall is a 2-hour fire area boundary. Moving the wall would change the fire area boundary between Fire Areas 4041 AF 01 and 4031 AF 02, and consequently, constitutes a change to Tier 2* information.

The table below details the licensing basis changes sought with regard to the Annex Building computer room fire barrier change:

Note: Figures identified below 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).

Enclosure 1 Table 2.1-1

<u>Plant-Specific Changes</u>	<u>Description of Proposed Change</u>
UFSAR Figure 1.2-19 (SUNSI)	Equivalent changes to the changes to Figure 9A-3 (Sh. 2).
UFSAR Table 9A-3 (Sh. 17 and 21)	Fire areas 4041 AF 01 and 4031 AF 02 are revised to reflect the room size changes.
UFSAR Figure 9A-3 (Sh. 2) (SUNSI)	The 2-hour fire barrier (wall) in the Annex Building between Computer Rooms A and B is shifted to the east, which would move the fire area boundary between Fire Areas 4041 AF 01 and 4031 AF 02, one entrance from the corridor to Computer Room A is removed.
UFSAR Figure 12.3-1 (Sh. 12) (SUNSI)	Equivalent changes to the changes to Figure 9A-3. The radiation zone levels and designations are not affected.
UFSAR Figure 12.3-2 (Sh. 12) (SUNSI)	Equivalent changes to the changes to Figure 9A-3. The radiation zone levels and designations are not affected.
UFSAR Figure 12.3-3 (Sh. 12) (SUNSI)	Equivalent changes to the changes to Figure 9A-3. The radiation zone levels and designations are not affected.

(a.2) **Technical Evaluation – Annex Building Computer Room Wall Change**

The design function of the wall between Computer Rooms A and B (Fire Areas 4041 AF 01 and 4031 AF 02) is to separate computer equipment into different fire areas. The rooms design functions would not be adversely affected by the modified design, because the change would maintain the separation, fire protection, and equipment housing functions of the (redundant) equipment in the two rooms. The design function (i.e., to provide a 2-hour fire barrier) of the affected fire wall is not changed by relocating the wall to increase the size of Computer Room B. The combustible material loads in the affected fire areas and zones would change as a result of this activity. Fire area 4031 AF 02 area increases from 2,135 sq ft to 2,375 sq ft. Fire area 4041 AF 01 area decreases from 4,975 sq ft to 4,770 sq ft. The amount of combustible material in each area is unchanged. Consequently, the combustible loading for 4031 AF 02 decreases from 36,000 Btu/sq ft to 32,000 Btu/sq ft, and the combustible loading for 4041 AF 01 increases slightly, but with rounding, the combustible loading remains at 16,000 Btu/sq ft. Therefore the calculated equivalent fire duration times remain within the 2-hour fire rating limit. The fire areas within the Annex Building are separated from the safety-related areas of the nuclear island by 3-hour fire barrier walls. The proposed change does not affect any fire wall that separates a safety-related area from a nonsafety-related area, or any safe shutdown equipment. Therefore, there is no increase in fire hazard risk, or effect on the capability of the plant to achieve and maintain safe shutdown following a fire.

Moving the wall, which reduces the size of Computer Room A, eliminates a door. (See Figure 9A-3, sheet 2.) Computer Room A still has redundant access pathways (two doorways) from the room.

Fire areas 4041 AF 01 and 4031 AF 02 have fire detection, hose station and portable fire extinguisher features. None of those features is being changed. The features are qualitatively described in UFSAR subsections 9A.3.4.16 and 9A.3.4.8, respectively. This proposed amendment does not change the descriptions in UFSAR subsections 9A.3.4.16 and 9A.3.4.8.

The UFSAR Table 9A-3 Fire Protection Summary (sheets 17 and 21) for fire zones 4041 AF 40410 and 4031 AF 40411, and fire areas 4041 AF 01 and 4031 AF 02 is to be modified to reflect the room size changes. The calculated total equivalent fire duration value for fire area 4031 AF 02 decreases from 27 minutes to 25 minutes, and fire area 4041 AF 01 is not changed (i.e., 12 minutes), thus their calculated equivalent fire durations remain within their two-hour fire boundary limit. Combustible material (i.e., fire) loadings remain within their design allowable values. The performance of the fire area fire barriers is not affected, and no safety-related or other equipment that is relied upon to achieve and maintain safe shutdown is affected, therefore the safe shutdown fire analysis is not affected.

The proposed computer room fire boundary (wall location) change and associated 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 affect to the Appendix 19F Malevolent Aircraft Impact assessments.

The proposed computer room fire boundary (wall location) change and associated changes in fire areas do not affect a feature used for the prevention or mitigation of an accident. No safety-related design analysis or accident safety analysis is affected. No safety-related structure, system, or component (SSC) or function is affected. The proposed changes do not affect nor interface with any SSC accident initiator or initiating sequence of events. Therefore, the proposed changes do not affect any safety-related SSC or function used to mitigate an accident.

The proposed computer room fire boundary (wall location) change and associated changes in fire areas do not constitute a change to a fission product barrier. The combustible material loadings in the affected fire areas remain within their equivalent fire duration times, thus no fire loads analysis is adversely affected. No other system or design function or equipment qualification is affected by the changes. The proposed changes do not result in a new failure mode, malfunction, or sequence of events that could affect safety. The proposed changes would 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 computer room fire boundary (wall location) change and associated changes in fire areas do not affect any safety-related equipment, design code limit, safety-related function, safety-related design analysis, safety analysis input or result, or design or safety margin. Therefore, no safety analysis or design basis acceptance limit or criterion would be challenged or exceeded.

(b.1) Detailed Description – Turbine Building Lube Oil Storage Room Changes

The proposed changes would reconfigure the Lube Oil Storage (LOS) room (20407) in the southwest corner of the Turbine Building on El. 117'-6" to allow room for a main steam pipe configuration change. The shape of Room 20407 is to be modified to accommodate a change in a

main steam pipe run and to maintain a personnel pathway around the room. Room 20407 is required to have 3-hour rated walls, floor and ceiling. The 3-hour fire barrier requirement is retained, no safety-related equipment is affected, and no room design function (to house equipment) is adversely affected. Stairway S12 is to be relocated from the north side of Room 20407 to the east side. These changes affect the Room 20407 (Fire Area 2040 AF 01) fire area boundary shown in UFSAR Figure 9A-2 (Sh. 2), thus constituting a change to Tier 2* information.

The table below details the licensing basis changes sought with regard to the Turbine Building Lube Oil Storage room changes:

Note: Figures identified below 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).

Enclosure 1 Table 2.1-2

<u>Plant-Specific Changes</u>	<u>Description of Proposed Change</u>
UFSAR Figure 1.2-24 (SUNSI)	Equivalent changes to the changes to Figure 9A-2 (Sh. 2).
UFSAR Table 9A-3 (Sh. 14)	Fire Protection Summary for fire area 2040 AF 01 is to be modified to reflect the room 20407 change.
UFSAR Figure 9A-2 (Sh. 2) (SUNSI)	The Turbine Building LOS room (20407, Fire Area 2040 AF 01) is to be modified to relocate stairway S12 from the north side of Room 20407 to the east side, which would result in the change in the fire area boundary of Room 20407.
UFSAR Figure 12.3-1 (Sh. 16) (SUNSI)	Equivalent changes to the changes to Figure 9A-2 (Sh. 2). The radiation zone levels and designations are not affected.
UFSAR Figure 12.3-3 (Sh. 16) (SUNSI)	Equivalent changes to the changes to Figure 9A-2 (Sh. 2). The radiation zone levels and designations are not affected.

(b.2) **Technical Evaluation – Turbine Building Lube Oil Storage Room Changes**

The proposed LOS Room 20407 (Fire Area 2040 AF 01) fire boundary change would continue to provide a 3-hour fire barrier for lube oil system components including the Oil Storage Tanks. Stairway S12 would continue to provide access to Room 20407. Reconfiguring Room 20407 and relocating stairway S12 do not affect the operation or function of any SSC contained inside the room or within the vicinity of the room, and do not affect the fire loading analysis. Therefore, the Room 20407 change does not result in an increase in fire hazard risk, or have an effect on the capability of the plant to achieve and maintain safe shutdown following a fire.

The UFSAR Table 9A-3 Fire Protection Summary for fire area 2040 AF 01 is to be modified to reflect the Room 20407 change. Fire area 2040 AF 01 area increases from 791 sq ft to 891 sq ft. The amount of combustible material is unchanged. Consequently, the combustible loading for 2040 AF 01 decreases from 5,550,000 Btu/sq ft to 4,927,000 Btu/sq ft. Therefore, the fire loads

analysis is not adversely affected, and the performance of the associated fire area fire barriers is not affected.

The LOS Room 20407 fire boundary change does 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 affect to the Appendix 19F Malevolent Aircraft Impact assessments.

The LOS Room 20407 fire boundary change does not affect design features used for the prevention or mitigation of an accident. No safety-related design analysis or accident safety analysis is affected. No safety-related SSC or function is impacted by this change. The proposed change does not affect any SSC accident initiator or initiating sequence of events. Therefore, the proposed change does not affect any safety-related SSC or function used to mitigate an accident.

The proposed change to the LOS room does not constitute a change to a fission product barrier. The total amount of combustible material loading decreases, thus no fire analysis is adversely affected. No system or design function or equipment qualification would be affected by the changes. The proposed change does not result in a new failure mode, malfunction or sequence of events that could affect safety. The proposed change would 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 LOS Room 20407 fire boundary change does not affect any safety-related equipment, design code limit, safety-related function, safety-related design analysis, safety analysis input or result, or design or safety margin. Therefore, no safety analysis or design basis acceptance limit or criterion would be challenged or exceeded.

(c.1) Detailed Description – Turbine Building Egress Changes

In order to meet other federal and state requirements to comply with National Fire Protection Association (NFPA) Life Safety Code 101 (NFPA 101) egress requirements, the proposed changes would add a new stairwell (S15) to provide access between El. 100'-0", 141'-3", and 158'-7". The walls of this stairwell that are exposed to the Turbine Building interior would be constructed with a concrete/steel composite material having a minimum fire rating of 2 hours. The walls of the enclosures that face the yard area would not be exposed to the Turbine Building interior; these outside walls are constructed with an exterior siding common to the overall siding used for the Turbine Building. There is no safety-related component or component containing radioactive material in this area. No design function would be adversely affected. Consistent with the treatment of other stairwells, the quantity of combustible materials in the stairwell is negligible. The addition of stairwell S15 creates new Fire Area 2000 AF 15, and thus constitutes a change to Tier 2* information.

The table below details the licensing basis changes sought with regard to the Turbine Building egress changes:

Note: Figures identified below 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).

Enclosure 1 Table 2.1-3

<u>Plant-Specific Changes</u>	<u>Description of Proposed Change</u>
UFSAR Figure 1.2-23 (SUNSI)	Equivalent changes to the changes to Figure 9A-2 (Sh. 1).
UFSAR Figure 1.2-24 (SUNSI)	Equivalent changes to the changes to Figure 9A-2 (Sh. 2).
UFSAR Figure 1.2-25 (SUNSI)	Equivalent changes to the changes to Figure 9A-2 (Sh. 3).
UFSAR Figure 1.2-26 (SUNSI)	Equivalent changes to the changes to Figure 9A-2 (Sh. 4).
UFSAR Figure 1.2-27 (SUNSI)	Equivalent changes to the changes to Figure 9A-2 (Sh. 4).
UFSAR Figure 1.2-28 (SUNSI)	Equivalent changes to the changes to Figure 9A-2 (Sh. 5).
UFSAR Subsection 9A.3.2.17	Proposed description of Fire Area 2000 AF 15.
UFSAR Table 9A-3 (Sh. 15)	New Fire Area 2000 AF 15 is to be added to UFSAR Table 9A-3, Fire Protection Summary; however, the added combustible material loading (for a stairwell) is determined to be negligible.
UFSAR Figure 9A-2 (Sh. 1) (SUNSI)	Proposed new stairwell (S15), to be added to the Turbine Building, would create new Fire Area 2000 AF 15.
UFSAR Figure 9A-2 (Sh. 2) (SUNSI)	Proposed new stairwell (S15), to be added to the Turbine Building, would create new Fire Area 2000 AF 15.
UFSAR Figure 9A-2 (Sh. 3) (SUNSI)	Proposed new stairwell (S15), to be added to the Turbine Building, would create new Fire Area 2000 AF 15.
UFSAR Figure 9A-2 (Sh. 4) (SUNSI)	Proposed new stairwell (S15), to be added to the Turbine Building, would create new Fire Area 2000 AF 15.
UFSAR Figure 9A-2 (Sh. 5) (SUNSI)	Proposed new stairwell (S15), to be added to the Turbine Building, would create new Fire Area 2000 AF 15.
UFSAR Figure 12.3-1 (Sh. 2) (SUNSI)	Proposed depiction of Stairwell S15. The radiation zone levels and designations are not affected.
UFSAR Figure 12.3-1 (Sh. 15) (SUNSI)	Equivalent changes to the changes to Figure 9A-2 (Sh. 1). The radiation zone levels and designations are not affected.
UFSAR Figure 12.3-1 (Sh. 16) (SUNSI)	Equivalent changes to the changes to Figure 9A-2 (Sh. 2). The radiation zone levels and designations are not affected.

<u>Plant-Specific Changes</u>	<u>Description of Proposed Change</u>
UFSAR Figure 12.3-2 (Sh. 2) (SUNSI)	Proposed depiction of Stairwell S15 The radiation zone levels and designations are not affected.
UFSAR Figure 12.3-2 (Sh. 15) (SUNSI)	Equivalent changes to the changes to Figure 9A-2 (Sh. 1). The radiation zone levels and designations are not affected.
UFSAR Figure 12.3-3 (Sh. 2) (SUNSI)	Proposed depiction of Stairwell S15 The radiation zone levels and designations are not affected.
UFSAR Figure 12.3-3 (Sh. 15) (SUNSI)	Equivalent changes to the changes to Figure 9A-2 (Sh. 1). The radiation zone levels and designations are not affected.
UFSAR Figure 12.3-3 (Sh. 16) (SUNSI)	Equivalent changes to the changes to Figure 9A-2 (Sh. 2). The radiation zone levels and designations are not affected.

Note: Plant-specific Tier 1 Figure 3.3-11B is a simplified plan view of El. 100'-0" of the Turbine Building. Note 1 to Figure 3.3-11B 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."* Stairwells are not shown in Figure 3.3-11B, although the shape of the exterior wall shown in Figure 3.3-11B does depict the exterior wall of stairwell S02. Neither the particular shape and dimensions of the exterior wall or depiction of S02's shape in the exterior wall is used to satisfy design description criteria; therefore, these features are not considered Tier 1 information. The addition of S15 alters the shape and dimensions of the exterior wall, similar to the depiction of S02, and therefore similarly does not change any Tier 1 information. In addition to not being shown in Figure 3.3-11B, the Turbine Building stairwells are not addressed in the Tier 1 Section 3.3 Design Description or the Tier 1 Section 3.3 tables. Turbine Building stairwell related change (i.e., S15) does not affect the contents of the Tier 1 Section 3.3 Design Description or the Tier 1 Section 3.3 tables. Therefore, the Turbine Building stairwell related change meets the Figure 3.3-11B Note 1 criterion for not being a Tier 1 information change.

(c.2) Technical Evaluation – Turbine Building Egress Changes

The proposed addition of stairwell S15 (creating new fire area 2000 AF 15) would improve the overall egress capability of the Turbine Building by providing access between El. 100'-0", 141'-3", and 158'-7". The addition of stairwell S15 supports egress functions. Adding stairwell S15 results in a negligible combustible material loading, maintains the accepted fire area barrier performance with its interfacing fire area, and does not affect any safe shutdown equipment or function.

Therefore, the addition of stairwell S15 does not result in an increase in fire hazard risk, or have any effect on the capability of the plant to achieve and maintain safe shutdown following a fire.

The addition of stairwell S15 adds negligible combustible material, because stairwells are not allowed to be used for storage, thus the existing combustible material loadings or their analyses are not adversely affected. The performance of the associated fire area fire barriers is not affected. Therefore, the fire protection analysis is not affected.

The proposed fire area change (addition of stairwell S15) does not affect any feature used for the prevention or mitigation of an accident. No safety-related design analysis or accident is affected. No safety-related SSC or function is affected. The proposed change does not affect any SSC accident initiator or initiating sequence of events. Therefore, the proposed change does not affect any safety-related SSC or function used to mitigate an accident.

The proposed addition of stairwell S15 does 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 affect to the Appendix 19F Malevolent Aircraft Impact assessments.

The proposed addition of stairwell S15 does not involve a fission product barrier. The amounts of combustible material loading is negligible, thus no fire analysis is adversely affected. No system, design function or equipment qualification would be affected by the changes. The proposed change does not result in a new failure mode, malfunction or sequence of events that could affect safety. The proposed change would 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 addition of stairwell S15 does not affect any safety-related equipment, design code limit, safety-related function, safety-related design analysis, safety analysis input or result, or design or safety margin. Therefore, no safety analysis or design basis acceptance limit or criterion would be challenged or exceeded.

2.2 Turbine Building Stairwell S08 Changes to Support Egress Functions

Detailed Description

In order to address layout constraints within the Turbine Building, stairwell S08 is proposed to be relocated and added to Fire Area 2000 AF 02 with a 2-hour fire-rated enclosure and two new fire doors to comply with NFPA 101 egress requirements. While not specifically stated in the UFSAR, the turbine building is expected to comply with NFPA 101. Per NFPA 101, the turbine building is a special purpose industrial occupancy. NFPA 101 defines egress paths as consisting of an exit access, exit, and exit discharge. Unenclosed stairwell S08 is considered part of the exit access in the current design. NFPA 101 Section 40.2.4.1.1 states that "not less than one exit shall be reached without traversing another story." An "exit" is a separated component from a means of egress. The current design plan utilizes an unenclosed stairway that does not qualify as an "exit," and is simply a portion of the "means of egress" to reach an "exit." By enclosing stairwell S08, compliance to have one qualified "exit" from the basement Elevation (El.) 82'-9" per NFPA 101 is met.

The proposed changes reconfigure and relocate stairwell S08 to the southwest corner of turbine building El. 82'-9", and add S08 to Fire Area 2000 AF 02. The walls of stairwell S08 that are exposed to the turbine building interior would be constructed with a concrete/steel composite material having a minimum fire rating of 2 hours. There is no safety-related component or system in this fire area. There is no component in this fire area that contains radioactive material. The quantity of combustible materials in the stairwell is negligible, and no fire is postulated in this fire area. The change to add stairwell S08 to Fire Area 2000 AF 02 would change the fire area boundary to Fire Area 2000 AF 02, and thus constitutes a change to Tier 2* information.

The table below details the licensing basis changes sought with regard to the Turbine Building stairwell S08 changes to support egress functions:

Note: Figures identified below 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).

Enclosure 1 Table 2.2-1

<u>Plant-Specific Changes</u>	<u>Description of Proposed Change</u>
UFSAR Figure 1.2-23 (SUNSI)	Equivalent changes to the changes to Figure 9A-2 (Sh. 1).
UFSAR Figure 1.2-29 (SUNSI)	Proposed depiction of Stairwell S08.
UFSAR Subsection 9A.3.2.2	Stairwell S08 is added as a room number in Fire Area 2000 AF 02. Additionally, there are various editorial text changes to account for the fire area now including more than one stairwell.
UFSAR Table 9A-3 (Sh. 14)	Stairwell S08 is added under Fire Area 2000 AF 02. However, the square footage lost as a result of moving S08 to Fire Area 2000 AF 02 has a negligible effect on the square footage and fire loading the fire area.
UFSAR Figure 9A-2 (Sh. 1) (SUNSI)	Turbine building stairwell S08 is to be reconfigured and relocated to the Southwest corner of the turbine building at El. 82'-9". Stairwell S08 is be added to Fire Area 2000 AF 02.
UFSAR Figure 12.3-1 (Sh. 15) (SUNSI)	Equivalent changes to the changes to Figure 9A-2 (Sh. 1). The radiation zone levels and designations are not affected.
UFSAR Figure 12.3-2 (Sh. 15) (SUNSI)	Equivalent changes to the changes to Figure 9A-2 (sh. 1). The radiation zone levels and designations are not affected.
UFSAR Figure 12.3-3 (Sh. 15) (SUNSI)	Equivalent changes to the changes to Figure 9A-2 (sh. 1). The radiation zone levels and designations are not affected.

Note: Plant-specific Tier 1 Figure 3.3-11B is a simplified plan view of El. 100'-0" of the Turbine Building. Note 1 to Figure 3.3-11B 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 Turbine Building stairwells 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 3.3-11B. The Turbine Building stairwell related change (i.e., S08) does not affect the contents of the Tier 1 Section 3.3 Design Description or the Tier 1 Section 3.3 tables. Therefore, the Turbine Building stairwell related change meets the Figure 3.3-11B Note 1 criterion for not being a Tier 1 information change.

Technical Evaluation

The design function of Turbine Building stairwell S08 would be to connect El. 100'-0" with El. 82'-9". It is intended that the stairwell function as an egress path. The proposed change would add stairwell S08 to Fire Area 2000 AF 02, which would change the fire area boundary. The stairwell would also be reconfigured to support the turbine building equipment layout. The proposed changes would support existing design functions.

In UFSAR (Tier 2) Table 9A-3 (Sheet 14), stairwell S08 is added under Fire Area 2000 AF 02. However, the square footage lost as a result of moving S08 to Fire Area 2000 AF 02 has a negligible effect on the square footage and fire loading of the fire area. The performance of the involved fire area fire barriers is not affected. Therefore, the safe shutdown fire analysis is not affected.

The UFSAR Table 9A-3 Fire Protection Summary for fire area 2000 AF 02 is to be modified to reflect the addition of stairwell S08. Consistent with the treatment of other stairwells, the amount combustible material in stairwell S08 is negligible, because anything that does not serve the stairwell's access/egress function (e.g., the placement of combustible materials) is not allowed. Performance of the associated fire area fire barriers is not affected, and no safety-related or other equipment that is relied upon to achieve and maintain safe shutdown is affected, thus the safe shutdown fire analysis is not affected.

The stairwell S08 changes 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 affect to the Appendix 19F Malevolent Aircraft Impact assessments.

The stairwell S08 changes do not involve a feature used for the prevention and mitigation of accidents, or their safety / design analyses. No safety-related SSC or function is involved. The proposed stairwell S08 changes do not involve any SSC accident initiator or initiating sequence of events. The proposed stairwell S08 changes do not involve any safety-related SSC or function used to mitigate an accident.

The stairwell S08 changes do not involve a fission product barrier. The combustible material loading is negligible, thus no fire analysis is adversely affected. No system or design function or equipment qualification would be affected by the changes. The proposed changes do not result in a new failure mode, malfunction or sequence of events that could affect safety. The proposed changes would 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 to stairwell S08 do not involve any safety-related equipment, design code limit, safety-related function, safety-related design analysis, safety analysis input or result, or design or safety margin. Therefore, no safety analysis or design basis acceptance limit or criterion would be challenged or exceeded.

2.3 Annex Building HVAC Shaft Clarification

Detailed Description

This change is an editorial change to maintain consistency with other UFSAR figures; there is no physical change being proposed. In UFSAR Figure 9A-3 (Sh. 2), the HVAC (air intake) shaft is to be relocated within Annex Building, Room 40412 to be off the wall, consistent with UFSAR Figures 1.2-19, 12.3-1 (Sh. 12), 12.3-2 (Sh. 12) and 12.3-3 (Sh. 12). There is no related design or functional change. The HVAC shaft is part of Fire Area 4051 AF 01. Moving the HVAC shaft within UFSAR Figure 9A-3 (Sh. 2) would be a fire area boundary change, and thus constitutes a Tier 2* information change. (Note that this change is difficult to see on the figures due to the scale.)

The table below details the licensing basis changes sought with regard to the Annex Building HVAC shaft clarification:

Note: Figures identified below 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).

Enclosure 1 Table 2.3-1

<u>Plant-Specific Changes</u>	<u>Description of Proposed Change</u>
UFSAR Figure 9A-3 (Sh. 2) (SUNSI)	The HVAC (air intake) shaft is to be relocated within Annex Building, Room 40412 to be off the wall, consistent with UFSAR Figures 1.2-19, 12.3-1 (Sh. 12), 12.3-2 (Sh. 12) and 12.3-3 (Sh. 12) (SUNSI).

Technical Evaluation

The relocation of the HVAC (air intake) shaft in UFSAR Figure 9A-3 (Sh. 2) is an editorial change to be consistent with UFSAR Figures 1.2-19, 12.3-1 (Sh. 12), 12.3-2 (Sh. 12) and 12.3-3 (Sh. 12). There is no related design or functional change. The HVAC shaft would maintain its two hour fire barrier rating and would continue to be part of fire area 4051 AF 01. There is no combustible material load change. Moving the HVAC shaft in a UFSAR figure does not affect the fire area barrier performance with its interfacing fire area, and does not affect any safe shutdown equipment or function. Therefore, moving the HVAC shaft in a UFSAR figure does not result in an increase in fire hazard risk, or have any effect on the capability of the plant to achieve and maintain safe shutdown following a fire.

No design, design function, design/safety fire analysis, abnormal event prevention design or safety analysis is affected by this editorial change. Combustible material (i.e., fire) loadings are not affected. The

performance of the involved fire area fire barrier is not affected. Therefore, the fire protection analysis is not affected.

The relocation of the HVAC (air intake) shaft in UFSAR Figure 9A-3 (Sh. 2) is a non-technical change. Therefore, no design code limit, design margin, safety analysis or design basis acceptance limit or criterion would be challenged or exceeded.

Environmental Review

None of the affected SSCs associated with this license amendment request is used to contain, control, channel, monitor, process or release radioactive and non-radioactive materials. The non-combustible, rated fire barriers, which are affected by the changes, provide separation between fire areas to isolate a fire within a given fire area, and are not associated with control of effluents. No effluent release path is affected. The types and quantities of expected effluents are not changed. Therefore, radioactive or non-radioactive material effluents are not affected.

Plant radiation zones, 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 do not change.

Physical Security Evaluation

A review of Physical Security Plan and the Physical Security ITAAC was completed regarding the changes identified in this amendment request. (Note that the Physical Security Plan is classified as Safeguards Information (SGI) and is not available to the public.) The review confirmed that the proposed changes do not adversely affect the Physical Security Plan, because:

- The proposed changes have no effect on any physical barrier credited by the Physical Security Plan for adversary delay.
- The proposed changes have no effect on ingress pathways to vital areas as described in the Physical Security Plan.
- The proposed changes do not result in the addition, deletion, or relocation of a security response position as described in the Physical Security Plan.
- The proposed changes have no effect on the pathways, and associated timelines, utilized by security force personnel to respond to external security response positions as described in the Physical Security Plan.
- The proposed changes do not result in any adverse change to security lighting required to meet regulation.

Therefore, the proposed changes to fire area boundaries and turbine building layout as described in this amendment request have no impact on the defensive strategy associated with equipment important to safety 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.

3. Technical Evaluation (included in Section 2, above)

4. Regulatory Evaluation

4.1 Applicable Regulatory Requirements/Criteria

10 CFR 52, Appendix D, VIII.B.5.a, requires prior NRC approval for Tier 2 information departures if the departure involves Tier 1 information, Tier 2* information or the Technical Specifications (TS). Because this departure involves Tier 2* information, the associated Tier 2 departures require prior NRC approval.

10 CFR 52, Appendix D, VIII.B.6.b(4), requires prior NRC approval for Tier 2* information departures. The departure involves fire boundary location changes, and thus constitutes a Tier 2* information change. Therefore, an LAR 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. Combustible material (i.e., fire) loadings remain within their design allowable values. The performance of the involved fire area fire barriers is not affected. 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 73.55 requires a security 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 do not affect the security program and therefore maintain compliance with 10 CFR 73.55.

4.2 Precedent

This proposed change is consistent and identical in technical content with License Amendment Request, LAR-13-008 (Adams Accession Number ML13116A021), requested by Southern Nuclear Operating Company, and accepted for review by the Nuclear Regulatory Commission on June 17, 2013 (Adams Accession Number ML13165A184).

4.3 No Significant Hazards Consideration Determination

The proposed changes would revise the Combined Licenses (COLs) with regard to Tier 2* information and Tier 2 information involving Tier 2* information. The changes would make various Annex Building and Turbine Building layout changes, Turbine Building stairwell changes to support egress functions, and an Annex Building ventilation shaft Updated Final Safety Analysis Report (UFSAR) figure clarification.

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 Annex Building and Turbine Building layout changes, Turbine Building stairwell changes to support egress functions, and an Annex Building ventilation shaft Updated Final Safety Analysis Report (UFSAR) figure clarification would not affect any safety-related equipment or function. The modified configurations would continue to maintain the associated fire protection (i.e., barrier) functions. The safe shutdown fire analysis is not affected, and the fire protection analysis results remain acceptable. The affected rooms and equipment do not contain or interface with safety-related equipment. The proposed changes do not involve any accident initiating event, thus the probabilities of the accidents previously evaluated are not affected. The affected rooms do not represent a radioactive material barrier, and this activity does not involve the containment of radioactive material. The radioactive material source terms and release paths used in the safety analyses are unchanged, thus the radiological releases in the accident analyses are not affected. Therefore, the consequences of an accident previously evaluated 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 Annex Building and Turbine Building layout changes, Turbine Building stairwell changes to support egress functions, and an Annex Building ventilation shaft UFSAR figure clarification would not change the performance of the fire barriers. Fire zone loadings and associated fire analyses remain within their acceptance limits. The affected rooms do not contain equipment whose failure could initiate an accident. The fire boundary changes do not create a new failure or sequence of events that could initiate a new or different kind of accident.

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 proposed Annex Building and Turbine Building layout changes, Turbine Building stairwell changes to support egress functions, and an Annex Building ventilation shaft UFSAR figure clarification would not change the fire protection performance of any fire barrier. No safety or fire requirement acceptance criterion would be exceeded or challenged. The safe shutdown fire analysis is not affected. No safety-related equipment, area or function is involved. The amounts of combustible material loadings in the affected fire zones remain within their applicable limits. The proposed fire boundary changes comply with 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.

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

In conclusion, 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. Pursuant to 10 CFR 50.92, the requested change does not involve a Significant Hazards Consideration.

5. Environmental Considerations

As discussed in Section 2 above, the proposed amendment: (1a) relocates the 2-hour fire barrier in the Annex Building between Computer Rooms A and B to the east, (1b) changes the shape of the Turbine Building Lube Oil Storage (LOS) Room’s 3-hour fire barrier, and (1c) improves the Turbine Building’s egress by adding a new stairway to the northwest corner of the Turbine Building; (2) changes Turbine Building Stairwell S08 to support egress functions; and (3) clarifies the depiction of an Annex Building heating, ventilation, and air conditioning (HVAC) shaft in a UFSAR figure.

A review of these changes 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 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 Licensee evaluation of the proposed amendment has determined that the proposal 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, 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 would make changes to Annex Building and Turbine Building fire boundaries. 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. The non-combustible, rated fire barriers, which are affected by this change, provide separation between fire areas to isolate a fire within a given fire area, and are not associated with the control of effluents. 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 amendment would make changes to Annex and Turbine Building fire boundaries in areas of the plant that do not contain radioactive material. Plant radiation zones (as described in UFSAR Section 12.3) are not affected, and controls under 10 CFR 20 preclude a significant increase in occupational 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.

NND-13-0380

Enclosure 1

License Amendment Request (LAR 13-12): Fire Area Boundaries

6. References

None

South Carolina Electric & Gas Company

NND-13-0380

Enclosure 2

Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3

Proposed Changes to Licensing Basis Documents

(LAR 13-12)

(Publicly Available Information)

(Note that the sheet numbers and the total number of sheets for the marked-up Tables provided in this Enclosure may be changed by the incorporation of this and other departures. These changes are considered editorial and do not require evaluation in this submittal.)

UFSAR Section 9A.3.2.2, Fire Area 2000 AF 02

(Page 9A-74)

9A.3.2.2 Fire Area 2000 AF 02

This fire area is comprised of the following room(s):

Room Nos.

S02	Stairwell
<u>S08</u>	<u>Stairwell</u>

~~This~~ These stairwells serves the southwest portion of the turbine building. The walls of ~~this~~ these enclosures that are exposed to the turbine building interior are constructed with a concrete/steel composite material having a minimum fire rating of 2 hours. The walls of the enclosures that face the yard area would not be exposed to the turbine building interior. Therefore, these outside walls are constructed with an exterior siding common to the overall siding used for the turbine building. There are no safety-related components and no radioactive systems in this fire area. The quantity of combustible materials in the stairwells is negligible and no fire is postulated in this fire area. A fire protection hose riser is located in ~~the~~ stairwell S02 with NFPA Class I hose connections at intermediate stair landings.

~~This~~ These stairwells ~~is~~ are not served by a ventilation system.

New UFSAR Section 9A.3.2.17, Fire Area 2000 AF 15

(Page 9A-82)

Fire Protection Adequacy Evaluation

A fire in this fire area is detected by a fire detector which produces an audible alarm locally, and both visual and audible alarms in the main control room and the security central alarm station. The fire is extinguished manually using hose streams or portable extinguishers.

Combustible materials in this fire area are listed in [Table 9A-3](#), and they primarily consist of electrical cable insulation. The combustible materials are relatively uniformly distributed throughout the fire area. This is a light hazard fire area, and the rate of fire growth is expected to be slow. Minimum 2-hour fire barriers are provided.

The ventilation system does not contribute to the spread of the fire or smoke as described in the Smoke Control Features section above.

9A.3.2.17 Fire Area 2000 AF 15

Room No.

S15

Stairwell

This stairwell serves the northwest portion of the turbine building from 158'-7" to 100'-0". The walls of this enclosure that are exposed to the turbine building interior are constructed with a concrete/steel composite material having a minimum fire rating of 2 hours. The walls of the enclosure that face the yard area would not be exposed to the turbine building interior; therefore, these outside walls are constructed with an exterior siding used for the turbine building. There are no safety-related components or systems in this fire area that contain radioactive material. There are no systems in this fire area that contain radioactive material. The quantity of combustible materials in the stairwell is negligible and no fire is postulated in this fire area.

This stairwell is not served by a ventilation system.

**Table 9A-3 (Sheet 14 of 24)
Fire Protection Summary**

Fire Area/Zone ⁽¹⁾	Safety Area? ⁽²⁾	Floor Area Sq Ft	Combust. Material ⁽³⁾	Fire Sev. Cat.	Heat Value (Btu)	Comb. Load, Btu/Sq Ft	Equiv. Dur. (Min)	Boundary Fire Res. ⁽⁴⁾ (Hours)	Detect. Cap.	Fixed Suppression Capability ⁽⁵⁾
2151 AF 21581 SOUTH BAY 147'-6" UPPER VFD EQUIPMENT ROOM		2880	CABLE INS PLASTIC TRASH NET CAT.	C 150 D 250 B 25 D TOTAL:	1.6E+06 3.3E+06 2.0E+05 5.1E+06	1770	2		SMOKE	HOSE STATION
FIRE AREA TOTAL:		186,240	NET CAT.	E TOTAL:	5.8E+09	31,140	23			
2000 AF 02	NO							2	NONE	NONE
STAIRWELL S02 AND S08			NEGLIGIBLE							
2009 AF 01	NO							2	NONE	NONE
STAIRWELL S01			NEGLIGIBLE							
2000 AF 03	NO							2	NONE	NONE
STAIRWELL S03			NEGLIGIBLE							
2009 AF 02	NO							2	SMOKE	HOSE STATION
ELEVATOR			CABLE INS LUBRICANT	C 300 E 5	3.1E+06 9.9E+04					
FIRE AREA TOTAL:		88	NET CAT.	E TOTAL:	3.2E+06	36000	27			
2033 AF 02	NO							3/0	SMOKE	HOSE STATION
FPS MOTOR DRIVEN PUMP ROOM			CABLE INS LUBE OIL PLASTIC TRASH VOLATILES	C 1000 E 25 D 100 B 75 E 10	1.0E+07 3.8E+06 1.3E+06 5.8E+05 1.4E+06					
FIRE AREA TOTAL:		672	NET CAT.	E TOTAL:	1.7E+07	26000	33			
2040 AF 01	NO							3	HEAT	WET PIPE SPRINKLER HOSE STATION
CLEAN & DIRTY LUBE OIL STORAGE ROOM			CABLE INS LUBE OIL TRASH	C 1000 E 29000 B 100	1.0E+07 4.4E+09 7.7E+05					
FIRE AREA TOTAL:		794 891	NET CAT.	E TOTAL:	4.4E+09	6550000 4927000	4163 3695			
2043 AF 01	NO							3/0	HEAT	WET PIPE SPRINKLER HOSE STATION
SECONDARY SAMPLING LABORATORY			CABLE INS LUBE OIL PLASTIC TRASH VOLATILES	C 500 E 110 D 1000 B 1000 E 250	5.1E+06 1.7E+07 1.3E+07 7.7E+06 3.4E+07					
FIRE AREA TOTAL:		1285	NET CAT.	E TOTAL:	7.7E+07	60000	45			

**Table 9A-3 (Sheet 15 of 24)
Fire Protection Summary**

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⁾
2050 AF 01	NO								3	HEAT	WATER SPRAY HOSE STATION
LUBE OIL RESERVOIR ROOM			CABLE INS LUBE OIL PLASTIC TRASH VOLATILES	C E D B E	500 17000 100 500 100	5.1E+06 2.6E+09 1.3E+06 3.9E+06 1.4E+07					
FIRE AREA TOTAL:		1169	NET CAT.	E	TOTAL:	2.6E+09	2216000	1662			
2052 AF 01	NO								2/0	SMOKE	HOSE STATION
TURBINE BUILDING SWITCHGEAR ROOM #1			CABLE INS PLASTIC TRASH VOLATILES	C D B E	11000 600 100 5	1.1E+08 7.9E+06 7.7E+05 6.8E+05					
FIRE AREA TOTAL:		1854	NET CAT.	C	TOTAL:	1.2E+08	66000	55			
2053 AF 01	NO								2/0	SMOKE	HOSE STATION
ELECTRICAL EQUIPMENT ROOM			CABLE INS LUBE OIL PLASTIC TRASH VOLATILES	C E D B E	700 10 1300 100 5	7.1E+06 1.5E+06 1.7E+07 7.7E+05 6.8E+05					
FIRE AREA TOTAL:		1722	NET CAT.	D	TOTAL:	2.7E+07	16000	11			
2053 AF 02	NO								2/0	SMOKE	HOSE STATION
TURBINE BUILDING SWITCHGEAR ROOM #2			CABLE INS PLASTIC TRASH VOLATILES	C D B E	11000 600 100 5	1.1E+08 7.9E+06 7.7E+05 6.8E+05					
FIRE AREA TOTAL:		2039	NET CAT.	C	TOTAL:	1.2E+08	60000	49			
2000 AF 15	<u>NO</u>								<u>2</u>	<u>NONE</u>	<u>NONE</u>
<u>STAIRWELL S15</u>			<u>NEGLIGIBLE</u>								
2141 AF 01	NO								2	SMOKE	HOSE STATION
2141 AF 21481 BATTERY ROOM			BATTERIES CABLE INS	A C	120 1000	2.4E+07 1.0E+07					
FIRE AREA TOTAL:		529	NET CAT.	C	TOTAL:	3.4E+07	64000	56			
2142 AF 01	NO								2	SMOKE	HOSE STATION
2142 AF 21482 BATTERY CHARGER ROOM			CABLE INS PAPER PLASTIC	C C D	1000 200 250	1.0E+07 1.5E+06 3.3E+06					
FIRE AREA TOTAL:		228	NET CAT.	C	TOTAL:	1.5E+07	66000	60			
4001 AF 01	NO								2	NONE	NONE
STAIRWELL S01			NEGLIGIBLE								

**Table 9A-3 (Sheet 17 of 24)
Fire Protection Summary**

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⁾
4003 AF 40601 UPPER SOUTH AIR HANDLING EQUIPMENT ROOM		3070	CABLE INS PAPER RUBBER PLASTIC TRASH LUBE OIL VOLATILES NET CAT.	C C D D B E E D	6200 10 100 300 5 15 10 TOTAL:	6.3E+07 7.7E+04 1.2E+06 4.0E+06 3.9E+04 2.3E+06 1.4E+06 7.2E+07	24000	17			
FIRE AREA TOTAL:		7370	NET CAT.	D	TOTAL:	1.8E+08	24900	23			
4003 AF 02	NO								2	NONE	NONE
STAIRWELL S03			NEGLIGIBLE								
4031 AF 01	NO								2	SMOKE	HOSE STATION
4031 AF 40307 BATTERY ROOM #1		770	BATTERIES CABLE INS NET CAT.	A C C	120 1000 TOTAL:	2.4E+07 1.0E+07 3.4E+07	44000				
4031 AF 40308 BATTERY CHARGER ROOM #1		740	CABLE INS PAPER PLASTIC NET CAT.	C C D C	2000 200 500 TOTAL:	2.0E+07 1.5E+06 6.6E+06 2.9E+07	39000				
FIRE AREA TOTAL:		1510	NET CAT.	D	TOTAL:	6.3E+07	42000	31			
4031 AF 02	NO								2	SMOKE	HOSE STATION
4031 AF 40309 BATTERY ROOM #2		740	BATTERIES CABLE INS NET CAT.	A C C	120 1000 TOTAL:	2.4E+07 1.0E+07 3.4E+07	46000	<u>34</u>			
4031 AF 40310 BATTERY CHARGER ROOM #2		720	CABLE INS PAPER PLASTIC NET CAT.	C C D C	2000 200 500 TOTAL:	2.0E+07 1.5E+06 6.6E+06 2.9E+07	40000	<u>31</u>			
4031 AF 40411 COMPUTER ROOM B, SHIFT TURNOVER ROOM		1345 <u>915</u>	CABLE INS PLASTIC WOOD CLOTH NET CAT.	C D C B C	1000 100 250 50 TOTAL:	1.0E+07 1.3E+06 2.1E+06 4.0E+05 1.4E+07	11000 <u>15000</u>	81 <u>811</u>			
FIRE AREA TOTAL:		2436 <u>2375</u>	NET CAT.	D	TOTAL:	7.7E+07	36000 <u>32000</u>	2725 <u>2725</u>			

**Table 9A-3 (Sheet 21 of 24)
Fire Protection Summary**

Fire Area/Zone ⁽¹⁾	Safety Area? ⁽²⁾	Floor Area Sq Ft	Combust. Material ⁽³⁾	Fire Sev. Cat.	Heat Value Amount (Btu)	Comb. Load, Btu/Sq Ft	Equip. Dur. (Min)	Boundary Fire Res. ⁽⁴⁾ (Hours)	Detect. Cap.	Fixed Suppression Capability ⁽⁵⁾
4041 AF 01	NO							2/0	SMOKE	HOSE STATION
4041 AF 40403 CONTROL SUPPORT AREA			CABLE INS PAPER PLASTIC WOOD CLOTH TRASH NET CAT.	C C D C B B C	4000 1500 200 1000 50 20 TOTAL: 6.4E+07	4.1E+07 1.2E+07 2.6E+06 8.4E+06 4.0E+05 1.5E+05 17000				13
4041 AF 40410 COMPUTER ROOM A, CORRIDOR		3660	CABLE INS PLASTIC WOOD CLOTH NET CAT.	C D C B C	1000 100 250 50 TOTAL: 1.4E+07	1.0E+07 1.3E+06 2.1E+06 4.0E+05 14000				810
FIRE AREA TOTAL:		49754770	NET CAT.	C	TOTAL: 7.8E+07	16000				12
4041 AF 02	NO							2	SMOKE	HOSE STATION
CORRIDOR AND RESTROOM			CABLE INS PLASTIC TRASH NET CAT.	C D B C	3000 20 20 TOTAL: 3.1E+07	3.1E+07 2.6E+05 1.5E+05 24000				18
FIRE AREA TOTAL:		1280	NET CAT.	C	TOTAL: 3.1E+07	24000				18
4042 AF 01	NO							2/0	SMOKE	HOSE STATION
ELECTRICAL SWITCHGEAR ROOM #1			CABLE INS PLASTIC NET CAT.	C D D	10000 1100 TOTAL: 1.2E+08	1.0E+08 1.5E+07 36000				27
FIRE AREA TOTAL		3260	NET CAT.	D	TOTAL: 1.2E+08	36000				27
4042 AF 02	NO							2/0	SMOKE	HOSE STATION
ELECTRICAL SWITCHGEAR ROOM #2			CABLE INS PLASTIC NET CAT.	C D D	10000 1300 TOTAL: 1.2E+08	1.0E+08 1.7E+07 37000				28
FIRE AREA TOTAL:		3230	NET CAT.	D	TOTAL: 1.2E+08	37000				28
4051 AF 01	NO							2/0	SMOKE	HOSE STATION WET PIPE SPRINKLERS ROOM 40500 ONLY
NORTH AIR HANDLING EQUIPMENT ROOM			CABLE INS PAPER LUBE OIL PLASTIC RUBBER TRASH VOLATILES NET CAT.	C C E D D B E D	12300 10 20 350 100 5 10 TOTAL: 1.4E+08	1.3E+08 7.7E+04 3.0E+06 4.6E+06 1.2E+06 3.9E+04 1.4E+06 19000				14
FIRE AREA TOTAL:		7310	NET CAT.	D	TOTAL: 1.4E+08	19000				14