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10 CFR 52.63

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: VCSNS Units 2 & 3 LAR 17-18: Request for License Amendment and
Exemption: Containment Air Filtration Exhaust Rooms West Walls
Removal

Reference: 1. ND-17-0796, Southern Nuclear Operating Company, Vogtle Electric
Generating Plant Units 3 and 4, Request for License Amendment and
Exemption: Containment Air Filtration Exhaust Rooms West Walls
Removal (LAR-17-017), dated May 24, 2017

Pursuant to 10 CFR 52.98(c) and in accordance with 10 CFR 50.90, South Carolina Electric & Gas Company (SCE&G), acting on behalf of itself and the South Carolina Public Service Authority (Santee Cooper), requests an amendment to the Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3 combined license (COL) numbers NPF-93 and NPF-94, respectively. The requested amendment proposes changes to COL Appendix C, with corresponding changes to the associated plant-specific Tier 1 information, and involves associated Tier 2 information incorporated into the Updated Final Safety Analysis Report (UFSAR) (which includes the plant-specific DCD Tier 2 information). Pursuant to the provisions of 10 CFR 52.63(b)(1), an exemption from elements of the design as certified in the 10 CFR Part 52, Appendix D, design certification rule is also requested for the plant-specific DCD Tier 1 material departures.

The requested amendment proposes changes to COL Appendix C (and to plant-specific Tier 1 information) and associated Tier 2 information to remove the west walls of containment air filtration exhaust rooms A and B in the annex building to facilitate ease of access to equipment in the room during installation and maintenance.

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) are contained in Enclosure 1 to this letter. Enclosure 2 includes an exemption request to support the proposed departures from Tier 1 material, which includes the background and supporting basis for this requested exemption. Enclosure 3 identifies the requested

changes and provides markups depicting the requested changes to the publicly available information in the VCSNS Units 2 and 3 licensing basis documents.

Enclosure 4 provides markups of figures determined to be impacted by the proposed changes. **The revised figures in Enclosure 4 contain information identified as security related, also referred to as sensitive unclassified non-safeguards information (SUNSI). Therefore, Enclosure 4 is requested to be withheld from public disclosure under the provisions of 10 CFR 2.390.**

This LAR is identical in technical content with Reference 1. SCE&G requests NRC staff review and approval of the license amendment and exemption no later than November 6, 2017. SCE&G expects to implement the proposed amendment within thirty days of approval. In Reference 1, SNC has stated their requested approval date is November 1, 2017.

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 publicly-available enclosures to the designated State Official.

Should you have any questions, please contact Mr. Nick R. Kellenberger by telephone at (803) 941-9834, or by email at nicholas.r.kellenberger@scana.com.

This letter contains no regulatory commitments.

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

Executed on this 19th day of June, 2017.

Sincerely,



April R. Rice
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New Nuclear Licensing

MHK/ARR/mhk

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

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Enclosure 1

Request for License Amendment:
Containment Air Filtration Exhaust Rooms West Walls Removal
(LAR 17-18)

(This Enclosure consists of 14 pages, including this cover page)

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Enclosure 1

Request for License Amendment: Containment Air Filtration Exhaust Rooms West Walls
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Pursuant to 10 CFR 52.98(c) and in accordance with 10 CFR 50.90, South Carolina Electric and Gas Company (SCE&G), on behalf of itself and the South Carolina Public Service Authority (Santee Cooper), 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.

1. Summary Description

The proposed changes revise the COLs to remove the design details of the radiation shield walls at the west end of the containment air filtration exhaust room A (room 40551, between annex building column lines G to H, and between elevations 135'-3" to 150'-3"), and at the west end of the containment air filtration exhaust room B (room 40552, between annex building column lines G to H, and between elevations 150'-3" to 158'-0"). These annex building interior walls are proposed to be removed to facilitate more efficient installation, access, and maintenance of filtration equipment located in annex building rooms 40551 and 40552.

The requested amendment proposes changes to the UFSAR in the form of departures as detailed in Section 2, and involves changes to related plant-specific Tier 1 information, with corresponding changes to the associated COL Appendix C information. This enclosure requests approval of the license amendment necessary to implement the Tier 2 and COL Appendix C changes. Enclosure 2 requests the exemption necessary to implement the involved changes to the plant-specific Tier 1 information.

2. Detailed Description

Changes are required to facilitate more efficient installation, access, and maintenance of filtration equipment located in annex building area 3, Rooms 40551 and 40552. Due to sizing constraints, industry standard equipment used for maintenance cannot navigate through the narrow corridor that is formed by the current west wall configurations. The radiation shield walls at the west end of the containment air filtration exhaust room A (Room 40551, between annex building column lines G to H, and between elevations 135'-3" to 150'-3"), and at the west end of the containment air filtration exhaust room B (Room 40552, between annex building column lines G to H, and between elevations 150'-3" to 158'-0"), are proposed to be removed. COL Appendix C (and plant-specific Tier 1) Table 3.3-1 is revised to remove containment filtration rooms A and B west walls from the list of defined wall thicknesses in the nuclear island, turbine and annex buildings. COL Appendix C (and plant-specific Tier 1) Figure 3.3-13 is revised to remove the walls. UFSAR Figures 1.2-20, 9A-3 (Sheet 3), 12.3-1 (Sheet 13), 12.3-2 (Sheet 13), and 12.3-3 (Sheet 13) are also revised to remove the west walls in the containment air filtration exhaust rooms A and B.

It is noted that the figures being revised contain Sensitive Unclassified Non-Safeguards Information (SUNSI) and are requested to be appropriately withheld from public disclosure.

Proposed Licensing Basis Changes

The following changes are proposed to address the removal of the radiation shield walls at the west end of the containment air filtration exhaust rooms.

1. COL Appendix C (and plant-specific Tier 1) is revised to remove the west walls as described in the following:
 - a. Table 3.3-1
 - b. (SUNSI) Figure 3.3-13
2. The UFSAR is revised to remove the west walls as described in the following:
 - a. (SUNSI) Figure 1.2-20
 - b. (SUNSI) Figure 9A-3, Sheet 3
 - c. (SUNSI) Figure 12.3-1, Sheet 13
 - d. (SUNSI) Figure 12.3-2, Sheet 13
 - e. (SUNSI) Figure 12.3-3, Sheet 13

3. Technical Evaluation

As described in COL Appendix C (and plant-specific Tier 1) Section 3.3, the nuclear island structures include the containment (the steel containment vessel and the containment internal structure) and the shield and auxiliary buildings. The portion of the annex building adjacent to the nuclear island is a structural steel and reinforced concrete seismic Category II structure and houses the control support area, non-1E electrical equipment and hot machine shop.

The containment air filtration system (VFS) provides the safety-related functions of containment isolation and containment vacuum relief as described in UFSAR Subsection 9.4.7. The VFS provides intermittent flow of outdoor air to purge the containment atmosphere of radioactivity during normal plant operation. The system also conditions and filters outside air supplied to the containment for compatibility with personnel access during maintenance and refueling operations. As described in UFSAR Subsection 9.4.7.2.3, if high airborne radioactivity or high pressure differential is detected in the fuel handling area, the auxiliary and/or annex buildings, the radiologically controlled area ventilation system isolates the affected area from the outside environment and starts the containment air filtration exhaust subsystem to maintain a slight negative pressure differential in the isolated zone(s). The VFS is not required to mitigate the consequences of a design basis fuel handling accident or a loss of coolant accident. If the air filtration units are operational and ac power is available, they may be used to support post-event recovery operations. The radiation monitors measure the concentration of radioactive airborne contamination being released through the plant vent.

As described in UFSAR Subsection 12.1.2.3, facility design considerations directed toward minimizing radiation levels in plant access areas and in the vicinity of equipment requiring personnel attention generally include the following:

- Separating radiation sources and occupied areas, where practicable (for example, pipes or ducts containing potentially highly radioactive fluids do not pass through occupied areas). Redundant components requiring periodic maintenance that are a source of radiation are located in separate compartments to allow maintenance of one component while the other component is in operation.

- Providing shielding to separate equipment such as demineralizers and filters from nonradioactive equipment to provide unrestricted maintenance on the nonradioactive equipment.
- Providing shielding between radiation sources and access and service areas.
- Providing labyrinth entrances to radioactive pump, equipment, and valve rooms. Adequate space is provided in labyrinth entrances for easy access. Highly radioactive passive components with minimal maintenance requirements are located in completely enclosed compartments and are provided with access via a shielded hatch or removable blocks.
- Separating equipment or components in service areas with permanent shielding, where appropriate.
- Providing means and adequate space for using movable shielding for sources within the service area, when required.
- Incorporating, within the plant layout, restrictions and control of access to the various radiation zones. Access to a given radiation zone generally does not require passing through a higher radiation zone. In the case of an abnormal occurrence or accident, the zone restrictions may change due to increased dose rates. Special access controls would be implemented at that time as discussed in Appendix 12AA.

As described in UFSAR Subsection 12.3.1.1.2, major components such as tanks, demineralizers, and filters in radioactive systems are located in shielded compartments insofar as practical. Labyrinth shields or shielding doors are provided for compartments where radiation could stream or scatter to access areas and exceed the radiation zone dose limits for those areas.

As described in UFSAR Subsection 12.3.2.1, the objective of the plant radiation shielding is to minimize personnel and population exposures, while maintaining a program of controlled personnel access to and occupancy of radiation areas. Radiation levels are within the requirements of 10 CFR 50 during design basis accidents and as-low-as-reasonably-achievable (ALARA) within the requirements of 10 CFR 20 during normal operation. Shielding and equipment layout and design are considered in providing confidence that exposures are kept ALARA during anticipated personnel activities in areas of the plant containing radioactive materials. Design recommendations given in Regulatory Guide 8.8 are utilized where practicable.

Shielding is provided to attenuate direct radiation through walls and penetrations and scattered radiation to less than the upper limit of the radiation zone for each area shown in UFSAR Figure 12.3-1. Design criteria for shield penetrations are consistent with the recommendations of Regulatory Guide 8.8, Revision 3, and are described in UFSAR Subsection 12.3.1.1.2. As described in UFSAR Subsection 12.3.2.2.3, shielding is provided consistent with the postulated maximum activity and with the access and zoning requirements of adjacent areas as shown on UFSAR Figure 12.3-1. Where necessary, labyrinth entrances with provisions for adequate ingress and egress for equipment maintenance and inspection are provided and are designed to be consistent with the access and zoning requirements of adjacent areas.

COL Appendix C (and plant-specific Tier 1) Table 3.3-1 defines concrete wall thicknesses for the nuclear island buildings, turbine building, and annex building, and identifies the walls that provide radiation shielding. These design characteristics are required to be verified by Inspection, Tests, Analyses, and Acceptance Criteria (ITAAC) during construction. COL Appendix C (and plant-specific Tier 1) Table 3.3-1, and Figure 3.3-13, include the radiation shield walls at the west end of the containment air filtration exhaust room A (Room 40551, between annex building column lines G to H, and between elevations 135'-3" to 150'-3"), and at the west end of the containment air filtration exhaust room B (Room 40552, between annex building column lines G to H, and between elevations 150'-3" to 158'-0"). These annex building internal walls are required to be: 1) designed and constructed in accordance with UFSAR Subsection 1.2.5 and Subsection 3.7.2.8.1 structural and seismic requirements, and 2) designed to provide appropriate radiation shielding to meet UFSAR Subsection 1.2.5 and Subsection 12.3.2.2.3, requirements.

The removal of the walls to permit installation, access, and maintenance of filtration equipment results in an increased level of radiation in the area west of Rooms 40551 and 40552. However, licensing basis commitments are met without consideration of the shield walls. The staging and storage area, Room 40550, is classified as maintaining Zone 2 radiation limits of ≤ 2.5 mRem/hr during normal/shutdown operations per UFSAR Figure 12.3-1 (Sheet 1). Dose levels with radiation shield walls removed are calculated to be 0.419 mRem/hr, which is within the required Zone 2 limits. The source of radiation is the containment air exhaust filter. No change is made to the filtration units. The projected change in dose levels does not warrant a change to the radiation level designation as dose levels remain within the required Zone 2 limits. Therefore, Zone 2 radiation levels are maintained with the removal of the shield walls. Personnel are not typically stationed in this area and are not exposed to these dose rates on a normal or routine basis.

Operator attention and access to Rooms 40551 and 40552 is required to change out the filters in the rooms in accordance with ALARA practices, system requirements, radwaste management practices and before Zone 3 radiation levels are exceeded in the rooms in order to keep the dose rate below the Zone level limits (≤ 15 mRem/hr). The use of industry standard equipment, such as a carbon loading/unloading skid, is necessary to fill and remove the carbon within the VFS filtration units inside Rooms 40551 and 40552. If the west walls are not removed, the physical clearances provided by the walls do not allow for the required equipment to be expeditiously brought into the rooms for use. Should the shield walls remain, the industry standard equipment, such as the skid mentioned previously, would need to be disassembled and brought into the room piece-by-piece, and then reassembled for use. The duration of time required to perform this activity would result in longer exposure to radiation levels than if the walls are removed for better access to the room for maintenance. Other alternatives (such as using first-of-a-kind, custom-designed piece of equipment) or relying on more manual means were reviewed and concluded as similarly inefficient. It is also expected that by removing the walls, doses are reduced through a reduction in expected occupancy time when personnel are required to access the filtration units. From an ALARA perspective, the benefits of removing the labyrinth walls between Rooms 40550 and 40551/40552 are justified by the reasoning described above.

Room 40551 and 40552 radiation zone classifications of Zone 3 are not changed as there is no change to the equipment in the areas and access to the room is facilitated and duration of occupancy is reduced. Therefore, there are no changes to dose rate in the rooms and there is an improvement in stay time. There are no adverse impacts to compliance with radiation shielding requirements for normal operation. Surface dose rates for the filtration equipment are not changed by this activity. Removal of the walls does not change the radiation zones in the annex building; therefore, the contribution of the change to the dose rates in auxiliary building is very small considering the distance between the filtration units and the annex building exterior wall. Therefore, there are no identified ALARA concerns. For the post-accident case, the design bases (spectra, sources, shielding, zoning and occupancies) are different. Post-accident shielding is not adversely affected as the west walls do not serve a post-accident shielding function.

Surface dose rates for the filtration equipment are not changed by this activity. The containment air filtration exhaust units in Rooms 40551 and 40552 are not adversely impacted by this activity as the units are not changed. Compliance with requirements identified in UFSAR Subsection 1.9.1 for Regulatory Guide 1.140 for design, inspection and testing for air filtration units is not changed by this activity. The function of the VFS to purge the containment atmosphere to an acceptable contamination level for personnel during normal operation is not adversely impacted.

Potential changes in dose levels to nearby security room, Room 40505 were reviewed. The geometry of the containment air filtration exhaust room is configured in a way that radiation cannot be easily scattered to the security room. Direct paths of radiation from the filtration units to the security room do not result in significant dose rates due to attenuation provided by the plant structures. The west walls from Rooms 40551 and 40552 do not provide direct line of sight shielding between the filtration units and the security room. No change is being made to the filtration units, which is the source of radiation. Consequently, there is no change to the plant radiation zones; therefore, there are no adverse impacts to dose rates in the security room as a result of this activity to remove the west walls from Rooms 40551 and 40552.

Potential changes in dose levels to the lower south air handling equipment room (Room 40503) and upper south air handling equipment room (Room 40601) were reviewed. Rooms 40503 and 40601 are south of the filtration unit rooms. The activity does not adversely impact the dose rates of Rooms 40503 and 40601 as the geometry of the room, distance from the filtration unit, and existing shielding between Rooms 40503/40601 and 40551/40552 are not changed. Additional shielding by the doorway between Rooms 40550 and 40503 provides limited attenuation of scattered radiation. The door between Room 40550 and 40503 represents the boundary between the radiological control area (RCA) and non-RCA portion of the annex building and is not likely to be used as a significant personnel thoroughfare. The door is normally locked and access is restricted. No further ALARA concerns are identified in regards to this change as removal of the west walls in the containment air filtration exhaust rooms does not change the radiation zones depicted in UFSAR Figures 12.3-1 and 12.3-2. No change is made to the filtration units, which is the source of radiation. There are no changes to remaining walls that may provide shielding in the area, including the common wall between Rooms 40551/40552 and 40503/40601.

COL Appendix C (and plant-specific Tier 1) ITAAC No. 3.3.00.02.a.ii requires an inspection of the as-built concrete thickness and a report to conclude that thicknesses conform to the building sections defined in COL Appendix C (and plant-specific Tier 1) Table 3.3-1. Similarly, ITAAC No. 3.3.00.04a requires inspection of shield walls in the annex building. These ITAAC are not adversely impacted by the removal of the west walls in the containment air filtration exhaust rooms as remaining walls in the area meet acceptance criteria according to concrete thicknesses identified in COL Appendix C (and plant-specific Tier 1) Table 3.3-1. COL Appendix C (and plant-specific Tier 1) ITAAC No. 3.3.00.03 also requires inspection of the as-built nuclear island structures, wall and floor thicknesses which require shielding and a report to conclude that shield walls are consistent with Appendix C (and plant-specific Tier 1) Table 3.3-1. This ITAAC is not adversely impacted as the remaining walls and floors in the area are not changed by this activity and are consistent with concrete thicknesses identified in COL Appendix C (and plant-specific Tier 1) Table 3.3-1.

Fire area 4052 AF 01 and fire protection functions are not adversely impacted as smoke control features and fire detection and suppression features are not changed. The west walls being removed are not fire barriers. Combustible loading is not changed as equipment and cabling in the area is not changed.

Structural design and layout are not adversely impacted as the removed walls were not previously considered in structural design calculations. Aircraft impact assessments (AIA) are not adversely impacted as the west walls of Rooms 40551 and 40552 are not credited with providing mitigation of aircraft impact. These annex building walls are not adjacent to any safety-related SSC; therefore, physical protection of safety-related SSCs is not considered necessary due to this change.

The radiation protection program is not adversely impacted as the proposed change does not adversely affect occupational and public doses which are in accordance with regulatory limits and are as low as reasonably achievable. The proposed change to remove the identified walls does not change program requirements or implementation of the requirements.

The changes to COL Appendix C (and plant-specific Tier 1) and UFSAR design information do not adversely impact safety-related equipment or a fission product barrier. No system or equipment qualification is adversely affected by the proposed changes. The changes do not result in a new failure mode, malfunction or sequence of events that could adversely affect a radioactive material barrier or safety-related equipment. The proposed changes do not allow for a new fission product release path, result in a new fission product barrier failure mode, or create new sequence of events that would result in significant fuel cladding failures.

The proposed changes do not adversely affect the containment, control, channeling, monitoring, processing or releasing of radioactive and non-radioactive materials. No effluent release path is affected. The types and quantities of expected effluents are not changed. Therefore, radioactive or non-radioactive material effluents are not affected.

The changes to the COL Appendix C (and plant-specific Tier 1) and UFSAR design information to remove the radiation shield walls in the containment air filtration exhaust rooms do not change the radiologically controlled zone designations. Radiation levels west of the walls are slightly increased, but dose rates in this area are not major contributors to personnel dose as

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Enclosure 1

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operators are not typically stationed in the staging and storage area and will only access the containment air filtration exhaust rooms as needed for equipment installation and maintenance. The different zones have varying level of access control that function to limit worker exposure. Because of the radiation protection controls, a potential increase in the dose rates in an area does not necessarily lead to a corresponding increase in worker exposure and can still be consistent with the ALARA principle. The change continues to comply with the applicable ALARA design considerations discussed in UFSAR Subsection 12.1.2.3. Plant radiation zones, radiation controls established to satisfy 10 CFR 20 requirements, and expected amounts and types of radioactive materials are not affected by the proposed changes. Therefore, individual and cumulative radiation exposures are not significantly affected by this change.

Summary

The proposed changes to COL Appendix C (and plant-specific Tier 1) and associated UFSAR design information to remove the radiation shield walls in Rooms 40551 and 40552 will not adversely affect safety-related equipment or function, design function, radioactive material barrier or safety analysis. ALARA objective related to occupational doses continues to be met.

4. Regulatory Evaluation

4.1 Applicable Regulatory Requirements/Criteria

10 CFR 52.98(c) requires NRC approval for any modification to, addition to, or deletion from the terms and conditions of a Combined License (COL). This activity involves a departure from COL Appendix C (and plant-specific Tier 1). Therefore, NRC approval is required prior to making the plant-specific proposed changes in this license amendment request.

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 the section. The proposed changes to UFSAR (Tier 2) design information including UFSAR Figures 1.2-20, 9A-3, 12.3-1, 12.3-2 and 12.3-3, involve a change to plant-specific Tier 1 (and corresponding changes to COL Appendix C) Table 3.3-1 and Figure 3.3-13. Therefore, NRC approval is required for the Tier 2 and involved Tier 1 departures.

10 CFR 50, Appendix A, "General Design Criteria for Nuclear Power Plants" General Design Criteria (GDC) 61 – *Fuel storage and handling and radioactivity control*. The fuel storage and handling, radioactive waste, and other systems which may contain radioactivity shall be designed to assure adequate safety under normal and postulated accident conditions. These systems shall be designed (1) with a capability to permit appropriate inspection and testing of components important to safety, (2) with suitable shielding for radiation protection, (3) with appropriate containment, confinement, and filtering systems, (4) with a residual heat removal capability having reliability and testability that reflects the importance to safety of decay heat and other residual heat removal, and (5) to prevent significant reduction in fuel storage coolant inventory under accident conditions.

The proposed changes to remove the radiation shield walls in the containment air filtration exhaust rooms do not significantly impact radiation shielding as the projected change in dose levels remains within the limits of the radiation zone designation for the area. Overall personnel exposure time is reduced as access to the affected rooms is facilitated, reducing staying time. Therefore, compliance with GDC-61 is not changed.

4.2 Precedent

No precedent is identified.

4.3 Significant Hazards Consideration Determination

The review supports a request to amend the licensing basis documents to allow departure from the Updated Final Safety Analysis Report (UFSAR) and Combined Licenses (COLs) with regard to COL Appendix C information (and associated plant-specific Tier 1 information), and Tier 2 information related to proposed changes. The requested changes revise the Combined License (COL) Appendix C (and plant-

specific Tier 1) information to remove the radiation shield walls from the west end of the containment air filtration exhaust rooms A and B (Rooms 40551 and 40552) to facilitate installation, access and maintenance of filtration equipment located in these rooms. UFSAR Figures are also revised to remove the radiation shield walls.

An evaluation to determine whether a significant hazards consideration is involved with the requested amendment was completed by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of Amendment," as discussed below:

4.3.1 Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed activity removes radiation shield walls from the west end of the containment air filtration exhaust rooms A and B (Rooms 40551 and 40552) to facilitate installation, access and maintenance of filtration equipment. The removal of the walls results in increased levels of radiation; however, the increase does not change the radiation level classification of the area including the Zone 2 designation for the staging and storage area or the Zone 3 designation of Rooms 40551 and 40552. It is expected that by removing the walls, occupational doses are reduced through a reduction in expected occupancy time when personnel are required to access the filtration units. Radiation licensing commitments are met without consideration of the shield walls. The radiation levels associated with the equipment are not changed. No specific accident sequences for the containment air filtration units are analyzed or described in the licensing bases, apart from the information in UFSAR Subsection 12.3.3.5, which remains valid and is not adversely affected. The removed walls are not relied upon to mitigate evaluated accidents described in UFSAR Ch. 6 or 15 and are not credited for aircraft impact assessment. There are no changes to remaining walls that provide shielding in the area.

No safety-related structure, system, component (SSC) or function is adversely affected by this change. The change does not involve an interface with any SSC accident initiator or initiating sequence of events, and thus, the probabilities of the accidents evaluated in the plant-specific UFSAR are not affected. The proposed changes do not involve a change to the predicted radiological releases due to postulated accident conditions, thus, the consequences of the accidents evaluated in the UFSAR are not affected.

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

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

Response: No.

The proposed activity to remove the radiation shield walls from the west end of the containment air filtration exhaust rooms A and B (Rooms 40551 and 40552) does not create a new or different kind of accident previously evaluated as the removal of the walls does not change equipment in the affected room or functions of SSCs. Radiation levels are maintained for each designated zone in the affected Rooms 40551 and 40552 and the nearby areas including the security room, the storage and staging area, and the auxiliary building. Surface dose rates for the filtration equipment are not changed by this activity.

The proposed activity does not adversely affect any safety-related equipment, and do not add any new interfaces to safety-related SSCs that adversely affect safety functions. No system or design function or equipment qualification is adversely affected by these changes as the change does not modify any SSCs that prevent safety functions from being performed. The changes do not introduce a new failure mode, malfunction or sequence of events that could adversely affect safety or safety-related equipment.

Therefore, the requested 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.

Designated radiation level identified for the containment air filtration exhaust rooms A and B (Rooms 40551 and 40552) in UFSAR Figure 12.3-1 (Sheet 13) are unchanged. Radiation levels are determined for Room 40550 with removal of the walls and are calculated to be approximately 0.42 mRem/hr. This radiation dose is within the radiation levels of ≤ 2.5 mRem/hr designated for the Zone 2 designation of these rooms. The different zones have varying level of access control that function to limit worker exposure. Because of the radiation protection controls, a potential increase in the dose rates in an area does not necessarily lead to a corresponding increase in worker exposure and can still be consistent with the ALARA principle. The change continues to comply with the applicable ALARA design considerations discussed in UFSAR Subsection 12.1.2.3. Removal of the walls support reduced duration of radiation exposure due to the improved access to Rooms 40551 and 40552 to perform maintenance activities to the filtration units. Therefore, the overall impact to occupational doses is not adverse. Radiation sources are not changed by the proposed activity. No safety analysis or design basis acceptance limit/criterion is challenged or exceeded by the proposed changes.

Therefore, the requested 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

Based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public. Therefore, it is concluded that the requested amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

5. Environmental Considerations

This review supports a request to amend the licensing basis documents to allow departure from Updated Final Safety Analysis Report (UFSAR) and Combined Licenses (COLs) with regard to COL Appendix C information (and associated plant-specific Tier 1 information), and Tier 2 information related to proposed changes to remove the radiation shield walls at the west end of the containment air filtration exhaust rooms A and B (Rooms 40551 and 40552). The change does not change the radiation zones in the area or structural design considerations for the rooms. Removal of the walls support reduced duration of occupancy and radiation exposure due to the facilitated access to Rooms 40551 and 40552 to perform maintenance activities to the filtration units.

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

- (i) *There is no significant hazards consideration.*

As documented in Section 4.3, Significant Hazards Consideration Determination, of this license amendment request, an evaluation was completed to determine whether or not a significant hazards consideration is involved by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment." The Significant Hazards Consideration Determination determined that (1) the requested amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated; (2) the requested amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated; and (3) the requested amendment does not involve a significant reduction in a margin of safety. Therefore, it is concluded that the requested amendment does not involve a significant hazards

consideration under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of “no significant hazards consideration” is justified.

- (ii) *There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite.*

The proposed changes are unrelated to any aspect of plant construction or operation that would introduce any change to effluent types (e.g., effluents containing chemicals or biocides, sanitary system effluents, and other effluents), or affect any plant radiological or non-radiological effluent release quantities. Furthermore, the proposed changes do not adversely affect any effluent release path or diminish the design functions or operational features that are credited with controlling the release of effluents during plant operation. Designated radiation zones shown in UFSAR Figure 12.3-1 (Sheet 13) are unchanged. Therefore, it is concluded that the requested amendment does not involve a significant change in the types or a significant increase in the amounts of any effluents that may be released offsite.

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

While the proposed changes result in slightly increased dose rates in the area west of the affected rooms, the plant radiation zones are not impacted and the slight dose rate increase is offset by the reduced duration of occupancy and radiation exposure due to the facilitated access to the rooms, reducing staying time. The proposed changes do not adversely affect the remaining walls, floors, or other structures that provide shielding in the affected area. Plant radiation zones are not affected, and controls under 10 CFR 20 preclude a significant increase in occupational radiation exposure. The different zones have varying level of access control that function to limit worker exposure. Because of the radiation protection controls, a potential increase in the dose rates in an area does not necessarily lead to a corresponding increase in worker exposure and can still be consistent with the ALARA principle. Therefore, the requested amendment does not involve a significant increase in individual or cumulative occupational radiation exposure.

Based on the above review of the requested amendment, it has been determined that anticipated construction and operational impacts of the requested amendment do not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in the individual or cumulative occupational radiation exposure. Accordingly, the requested amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the requested amendment and proposed exemption.

6. References

None

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

NND-17-0344

Enclosure 2

Exemption Request:
Containment Air Filtration Exhaust Rooms West Walls Removal
(LAR 17-18)

(This Enclosure consists of 7 pages, including this cover page)

1.0 Purpose

South Carolina Electric and Gas Company (the Licensee) requests a permanent exemption from the provisions of 10 CFR 52, Appendix D, *Design Certification Rule for the AP1000 Design*, Section III.B, *Scope and Contents*, to allow a plant-specific departure from elements of the certification information in Tier 1 of the generic AP1000 Design Control Document (DCD). The regulation, 10 CFR 52, Appendix D, Section III.B, requires an applicant or licensee referencing Appendix D to 10 CFR Part 52 to incorporate by reference and comply with the requirements of Appendix D, including certified information in DCD Tier 1. The Tier 1 information for which a plant-specific departure and exemption is being requested includes the removal of the west walls of containment air filtration exhaust rooms A and B.

This request for exemption provides the technical and regulatory basis to demonstrate that 10 CFR 52.63, §52.7, and §50.12 requirements are met and will apply the requirements of 10 CFR 52, Appendix D, Section VIII.A.4 to allow departures from generic Tier 1 information due to proposed deletion of plant-specific Tier 1 Table 3.3-1 line items defining the containment air filtration exhaust rooms A and B west walls thicknesses (referred to in Tier 1 Table 3.3-1 as "Containment Filtration Rm A" and "Containment Filtration Rm B") and the deletion of the walls in plant-specific Tier 1 (SUNSI) Figure 3.3-13.

It is noted that the figure being revised contains Sensitive Unclassified Non-Safeguards Information (SUNSI) and is requested to be appropriately withheld from public disclosure.

2.0 Background

The Licensee is the holder of Combined License Nos. NPF-93 and NPF-94, which authorize construction and operation of two Westinghouse Electric Company AP1000 nuclear plants, named Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3, respectively.

As described in UFSAR (plant-specific DCD) Section 12.3, "Radiation Protection Design Features," the facility is equipped with specific design features for maintaining personnel exposure as low as reasonably achievable (ALARA). One of the design features provided for the containment air filtration exhaust rooms A and B was a labyrinth entrance. It was discovered that the labyrinth entrance did not facilitate easy access for installation and maintenance of the equipment located in the rooms with standard industry equipment. This access difficulty would result in more radiation exposure to personnel than if the walls were removed. To maintain personnel exposure ALARA, the walls are removed from the design to reduce staying time.

The walls are currently described in plant-specific DCD Tier 1 Table 3.3-1 as shield walls and provide a required thickness for the walls. Plant-specific DCD Tier 1 Figure 3.3-13 also depicts the walls. The table and figure are changed to remove the walls.

3.0 Technical Justification of Acceptability

The proposed change to remove the west walls of containment air filtration exhaust Rooms A and B is required to facilitate more efficient installation, access, and maintenance of filtration exhaust equipment located within the rooms and maintain personnel exposure ALARA.

Removal of the walls does not change the radiation zones in the annex and auxiliary buildings. The proposed changes neither adversely impact the ability to meet the design functions of the containment air filtration exhaust components, nor involve a significant decrease in the level of safety provided by the components. Structural design and layout are not adversely impacted as the removed walls were not previously considered in structural design calculations.

Detailed technical justification supporting this request for exemption is provided in Section 3 of the associated License Amendment Request in Enclosure 1 of this letter.

4.0 Justification of Exemption

10 CFR Part 52, Appendix D, Section VIII.A.4 and 10 CFR 52.63(b)(1) govern the issuance of exemptions from elements of the certified design information for AP1000 nuclear power plants. Since SCE&G has identified changes to the Tier 1 information as discussed in Enclosure 1 of the accompanying License Amendment Request, an exemption from the certified design information in Tier 1 is needed.

10 CFR Part 52, Appendix D, and 10 CFR 50.12, §52.7, and §52.63 state that the NRC may grant exemptions from the requirements of the regulations provided six conditions are met: 1) the exemption is authorized by law [§50.12(a)(1)]; 2) the exemption will not present an undue risk to the health and safety of the public [§50.12(a)(1)]; 3) the exemption is consistent with the common defense and security [§50.12(a)(1)]; 4) special circumstances are present [§50.12(a)(2)]; 5) the special circumstances outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption [§52.63(b)(1)]; and 6) the design change will not result in a significant decrease in the level of safety [Part 52, App. D, VIII.A.4].

The requested exemption satisfies the criteria for granting specific exemptions, as described below.

1. This exemption is authorized by law

The NRC has authority under 10 CFR 52.63, §52.7, and §50.12 to grant exemptions from the requirements of NRC regulations. Specifically, 10 CFR 50.12 and §52.7 state that the NRC may grant exemptions from the requirements of 10 CFR Part 52 upon a proper showing. No law exists that would preclude the changes covered by this exemption request. Additionally, granting of the proposed exemption does not result in a violation of the Atomic Energy Act of 1954, as amended, or the Commission's regulations.

Accordingly, this requested exemption is "authorized by law," as required by 10 CFR 50.12(a)(1).

2. This exemption will not present an undue risk to the health and safety of the public

The proposed exemption from the requirements of 10 CFR 52, Appendix D, Section III.B would allow changes to elements of the plant-specific Tier 1 DCD to depart from the AP1000 certified (Tier 1) design information. The plant-specific DCD Tier 1 will continue to reflect the approved licensing basis for VCSNS Units 2 & 3, and will maintain a consistent level of detail with that which is currently provided elsewhere in Tier 1 of the DCD. Therefore, the affected plant-specific DCD Tier 1 ITAAC will continue to serve its required purpose.

The deletion of the west walls of containment air filtration exhaust rooms A and B does not represent any adverse impact to the design function of annex building or the systems, structures and components contained in the rooms and will continue to protect the health and safety of the public in the same manner. The deletion of the walls facilitates access to the room, reducing stay time, which ensures that the radiation exposure of personnel is maintained ALARA.

Therefore, the requested exemption from 10 CFR 52, Appendix D, Section III.B would not present an undue risk to the health and safety of the public.

3. The exemption is consistent with the common defense and security

The requested exemption from the requirements of 10 CFR 52, Appendix D, Section III.B would allow the licensee to depart from elements of the plant-specific DCD Tier 1 design information. The proposed exemption does not alter the design, function, or operation of any structures or plant equipment that is necessary to maintain a safe and secure status of the plant. The proposed exemption has no impact on plant security or safeguards procedures.

Therefore, the requested exemption is consistent with the common defense and security.

4. Special circumstances are present

10 CFR 50.12(a)(2) lists six "special circumstances" for which an exemption may be granted. Pursuant to the regulation, it is necessary for one of these special circumstances to be present in order for the NRC to consider granting an exemption request. The requested exemption meets the special circumstances of 10 CFR 50.12(a)(2)(ii). That subsection defines special circumstances as when "Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule."

The rule under consideration in this request for exemption is 10 CFR 52, Appendix D, Section III.B, which requires that a licensee referencing the AP1000 Design Certification Rule (10 CFR Part 52, Appendix D) shall incorporate by reference and comply with the requirements of Appendix D, including Tier 1 information. The VCSNS Units 2 & 3 COLs reference the AP1000 Design Certification Rule and incorporate by reference the requirements of 10 CFR Part 52, Appendix D, including Tier 1 information. The underlying purpose of Appendix D, Section III.B is to describe and define the scope and

contents of the AP1000 design certification, and to require compliance with the design certification information in Appendix D.

The proposed exemption would delete the west walls of containment air filtration exhaust rooms A and B.

The proposed deletions of the walls, discussed in Section 2.0, maintain the required design functions of the annex building and keeps radiation exposure to workers ALARA by improving accessibility to the room and reducing staying time. The proposed changes do not affect any function or feature used for the prevention and mitigation of accidents or their safety analyses. No safety-related structure, system, component (SSC) or function is involved. The proposed changes do not involve nor interface with any SSC accident initiator or initiating sequence of events related to the accidents evaluated and therefore do not have an adverse effect on any SSC's design function. Accordingly, this exemption from the certification information will enable the Licensee to safely construct and operate the AP1000 facility consistent with the design certified by the NRC in 10 CFR 52, Appendix D.

Therefore, special circumstances are present, because application of the current generic certified design information in Tier 1 as required by 10 CFR Part 52, Appendix D, Section III.B, in the particular circumstances discussed in this request is not necessary to achieve the underlying purpose of the rule.

5. The special circumstances outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption.

Based on the nature of the changes to the plant-specific Tier 1 information and the understanding that these changes support the design function of the annex building, it is expected that this exemption may be requested by other AP1000 licensees and applicants. However, a review of the reduction in standardization resulting from the departure from the standard DCD determined that even if other AP1000 licensees and applicants do not request this same departure, the special circumstances will continue to outweigh any decrease in safety from the reduction in standardization because the key design functions of the structures associated with this request will continue to be maintained. Furthermore, the justification provided in the license amendment request and this exemption request and the associated mark-ups demonstrate that there is a limited change from the standard information provided in the generic AP1000 DCD, which is offset by the special circumstances identified above.

Therefore, the special circumstances associated with the requested exemption outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption.

6. The design change will not result in a significant decrease in the level of safety.

The exemption revises the plant-specific DCD Tier 1 information by deleting the west walls of containment air filtration exhaust rooms A and B as discussed in Section 2.0. The walls do not perform any safety-related function. The deletion of the walls improve accessibility to the rooms in order to keep personnel exposure ALARA in accordance

with the design features of the facility. Because these features continue to be implemented as designed, there is no reduction in the level of safety.

5.0 Risk Assessment

A risk assessment was not determined to be applicable to address the acceptability of this proposal.

6.0 Precedent Exemptions

None

7.0 Environmental Consideration

The Licensee requests a departure from elements of the certified information in Tier 1 of the generic AP1000 DCD. The Licensee has determined that the proposed departure would require a permanent exemption from the requirements of 10 CFR 52, Appendix D, *Design Certification Rule for the AP1000 Design*, Section III.B, *Scope and Contents*, with respect to installation or use of facility components located within the restricted area, as defined in 10 CFR Part 20, or which changes an inspection or a surveillance requirement; however, the Licensee evaluation of the proposed exemption has determined that the proposed exemption meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9).

Based on the above review of the proposed exemption, the Licensee has determined that the proposed activity does 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 exemption 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 exemption is not required.

Specific details of the environmental considerations supporting this request for exemption are provided in Section 5 of the associated License Amendment Request provided in Enclosure 1 of this letter.

8.0 Conclusion

The proposed changes to DCD Tier 1 are necessary to delete the west walls of containment air filtration exhaust rooms A and B. The exemption request meets the requirements of 10 CFR 52.63, *Finality of design certifications*, 10 CFR 52.7, *Specific exemptions*, 10 CFR 50.12, *Specific exemptions*, and 10 CFR 52 Appendix D, *Design Certification Rule for the AP1000*. Specifically, the exemption request meets the criteria of 10 CFR 50.12(a)(1) in that the request is authorized by law, presents no undue risk to public health and safety, and is consistent with the common defense and security. Furthermore, approval of this request does not result in a significant decrease in the level of safety, presents special circumstances, meets the eligibility requirements for categorical exclusion, satisfies the underlying purpose of the AP1000 Design Certification Rule, and does not present a significant decrease in safety as a result of a reduction in standardization.

NND-17-0344

Enclosure 2

Exemption Request: Containment Air Filtration Exhaust Rooms West Walls Removal
(LAR 17-18)

9.0 References

None

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

NND-17-0344

Enclosure 3

Proposed Changes to Licensing Basis Documents

(Publicly Available Information)

(LAR 17-18)

**Insertions Denoted by Blue Underline and Deletions by ~~Red~~ Strikethrough
Omitted text is identified by three asterisks (* * *)**

(This Enclosure consists of 2 pages, including this cover page)

Tier 1 (and COL Appendix C) Table 3.3-1, Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building

Table 3.3-1 – Revise the information in the locations shown below.

Table 3.3-1 (cont.) Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building⁽¹⁾				
Wall or Section Description	Column Lines ⁽⁷⁾	Floor Elevation or Elevation Range ⁽⁷⁾⁽⁸⁾	Concrete Thickness ⁽²⁾⁽³⁾⁽⁴⁾⁽⁵⁾⁽⁹⁾	Applicable Radiation Shielding Wall (Yes/No)
* * *				
Annex Building				
* * *				
Containment Filtration Rms A and B (North Wall)	Between column line E to H	From 135'-3" to 158'-0"	1'-0"	Yes
Containment Filtration Rms A and B (East wall)	Between column line E to F	From 135'-3" to 158'-0"	1'-0"	Yes
Containment Filtration Rm A (West wall)	Between column line G to H	From 135'-3" to 150'-3"	1'-0"	Yes
Containment Filtration Rm A (Floor)	Between column line E to H	135'-3"	1'-0"	Yes
Containment Filtration Rm B (Floor)	Between column line E to H	150'-3"	0'-8"	Yes
Containment Filtration Rm B (West wall)	Between column line G to H	From 150'-3" to 158'-0"	1'-0"	Yes
* * *				