



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NEW REACTORS

RELATED TO EXEMPTION AND AMENDMENT NO. 35

TO THE COMBINED LICENSE NOS. NPF-93 AND NPF-94

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

SOUTH CAROLINA PUBLIC SERVICE AUTHORITY

VIRGIL C. SUMMER NUCLEAR STATION UNITS 2 AND 3

DOCKET NOS. 52-027 AND 52-028

1.0 INTRODUCTION

By letter dated December 4, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14339A637), South Carolina Electric and Gas (SCE&G/licensee) requested that the U.S. Nuclear Regulatory Commission (NRC) amend the combined licenses (COLs) for Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3, COL Numbers NPF-93 and NPF-94, respectively.

The license amendment request (LAR) consists of changes to the Updated Final Safety Analysis Report (UFSAR) in the form of departures from the incorporated plant-specific Design Control Document (DCD) Tier 2 information and involves changes to Tier 2* and Tier 1 information, with corresponding changes associated with COL Appendix C information. The proposed changes include:

- (a) Installation of an additional nonsafety-related battery;
- (b) Revision to the annex building internal configuration by converting a shift turnover room to a battery room, adding an additional battery equipment room, and moving a fire area wall;
- (c) Increase in the height of a room in the annex building; and
- (d) Increase in thicknesses of certain annex building floor slabs.

The licensee has also requested an exemption from the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 52, Appendix D, "Design Certification Rule for the AP1000 Design," Section III.B, "Scope and Contents," to allow a departure from Tier 1 of the generic DCD.

To modify UFSAR (the plant-specific DCD) Tier 1 information, the NRC must find the licensee's exemption request included in its submittal for the LAR acceptable. The staff's review of the exemption request as well as the license amendment request is included in this safety evaluation.

By letter dated September 23, 2014 (ADAMS Accession No. ML14266A655), Southern Nuclear Operating Company (SNC), the licensee for Vogtle Electric Generating Plant (VEGP) Units 3 and 4, submitted Revised LAR 13-038. VCSNS's LAR 13-22 is identical in technical content to that of the revised license amendment request submitted to the NRC by SNC for VEGP Units 3 and 4 with the exception of the site specific security evaluation. On December 23, 2014 the NRC issued License Amendment 27 for VEGP Units 3 and 4 (ADAMS Accession No. ML14323A609).

In letters dated July 23, 2015 and August 27, 2015 (ADAMS Accession Nos. ML15204A845 and ML15239A814, respectively), the licensee submitted additional information that supplemented the LAR. This additional information did not expand the scope of the LAR and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the Federal Register on March 31, 2015 (80 FR 17093).

2.0 REGULATORY EVALUATION

Tier 1 information is defined in 10 CFR Part 52, Appendix D, Section II.D, "Definitions." Requirements in 10 CFR Part 52, Appendix D, Section II.D.3 list inspections, tests, analyses, and acceptance criteria (ITAAC) as part of the definition for Tier 1 information. The information that the licensee is requesting to change is referenced in ITAAC Tables. Therefore, the information is considered Tier 1 information.

Regulations in 10 CFR Part 52, Appendix D, Section VIII.A.4 state that exemptions from Tier 1 information are governed by the requirements of 10 CFR 52.63(b)(1) and 10 CFR 52.98(f). It also states that the Commission will deny such a request if the design change causes a significant reduction in the level of plant safety otherwise provided by the design.

Regulations in 10 CFR 52.63(b)(1) allow the licensee to request NRC approval for an exemption from one or more elements of the certification information. The Commission may only grant such a request if it complies with the requirements of 10 CFR 52.7, which in turn points to the requirements listed in 10 CFR 50.12 for specific exemptions, and if the special circumstances present outweigh the potential decrease in safety due to reduced standardization. Therefore, any exemption from the Tier 1 information certified by Appendix D to 10 CFR Part 52 must meet the requirements of 10 CFR 50.12, 52.7 and 52.63(b)(1).

Regulations in 10 CFR 52.98(f) state that any modification to, addition to, or deletion from the terms and conditions of a COL including any modification to, addition to, or deletion from the ITAAC contained in the license is a proposed amendment to the license. Appendix C of COLs NPF-93 and NPF-94 contain information which the licensee is proposing to modify. Therefore, the proposed change requires a license amendment.

Regulations in 10 CFR Part 52, Appendix D, VIII.B.6.b(4), require prior NRC approval of Tier 2* information departure. The proposed changes to the annex building layout affect a fire area boundary, which constitutes UFSAR Tier 2* information. Therefore, a license amendment is required.

Regulations in 10 CFR Part 52, Appendix D, Section VIII.B.5.a, require prior NRC approval for Tier 2 departures that involve changes to Tier 1, Tier 2* information, or the Technical Specifications. The proposed changes affect Tier 1 and Tier 2* information and thus require NRC approval.

Regulations in 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," Appendix A, "General Design Criteria for Nuclear Power Plants," General Design Criterion (GDC) 1, "Quality Standards and Records," require that structures, systems, and components important to safety shall be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the safety functions to be performed.

Regulations in 10 CFR Part 50, Appendix A, GDC 2, "Design Bases for Protection against Natural Phenomena," require that structures, systems, and components important to safety shall be designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunamis, and seiches without loss of capability to perform their safety functions.

Regulations in 10 CFR Part 50, Appendix A, GDC 4, "Environmental and Dynamic Effects Design Bases," require that structures, systems, and components (SSCs) important to safety shall be designed to accommodate the effects of and to be compatible with the environmental conditions associated with normal operation, maintenance, testing, and postulated accidents, including loss-of-cooling accidents.

Regulations in 10 CFR Part 50, Appendix S, "Earthquake Engineering Criteria for Nuclear Power Plants," require nuclear power plants to be designed so that, if safe-shutdown earthquake (SSE) ground motion occurs, certain SSCs will remain functional and within applicable stress, strain, and deformation limits. The required safety functions of SSCs must be assured during and after the vibratory ground motion associated with the SSE ground motion through design, testing, or qualification methods.

The provisions of 10 CFR 73.55(b) require in part, that:

- (1) The licensee shall establish and maintain a physical protection program, to include a security organization, which will have as its objective to provide high assurance that activities involving special nuclear material are not inimical to the common defense and security and do not constitute an unreasonable risk to the public health and safety.
- (2) The physical protection program must protect against the design basis threat of radiological sabotage as stated in 10 CFR 73.1.
- (3) The physical protection program must be designed to prevent significant core damage and spent fuel sabotage. Specifically, the program must: (i) Ensure that the capabilities to detect, assess, interdict, and neutralize threats up to and including the design basis threat of radiological sabotage as stated in 10 CFR 73.1, are maintained at all times; (ii) Provide defense-in-depth through the integration of systems, technologies, programs, equipment, supporting processes, and implementing procedures as needed to ensure the effectiveness of the physical protection program.

Regulations in 10 CFR 50.48 require a fire protection plan that satisfies 10 CFR 50, Appendix A, GDC 3, Fire Protection. GDC 3 requires structures, systems and components important to safety be designed and located to minimize the probability and effect of fires and explosions.

Regulations in 10 CFR 50.150, Aircraft impact assessment: (a) Assessment requirements requires a design-specific assessment of the effects on the facility of the impact of a large commercial aircraft to identify design features and functional capabilities that demonstrate with reduced use of operator actions: (i) the reactor core remains cooled or the containment remains intact, and (ii) spent fuel cooling or spent fuel pool integrity is maintained.

3.0 TECHNICAL EVALUATION

3.1 EVALUATION OF EXEMPTION

INTRODUCTION

The regulations in Section III.B of Appendix D to 10 CFR Part 52 require a holder of a COL referencing Appendix D to 10 CFR Part 52 to incorporate by reference and comply with the requirements of Appendix D, including certified information in Tier 1 of the generic AP1000 DCD.

As defined in Section II of Appendix D to 10 CFR Part 52, Tier 1 information includes ITAAC. Therefore, a licensee referencing Appendix D incorporates by reference all the ITAAC contained in the generic DCD. These ITAAC, along with the plant-specific ITAAC, were enumerated in Appendix C of the COL at its issuance. The proposed changes would depart from the plant-specific DCD by revising Table 3.3-1, "Definition of Wall Thickness for Nuclear Island Buildings, Turbine Building, and Annex Building," and Figure 3.3-11A, "Annex Building Plan View at Elevation 100'-0" (sensitive unclassified non-safeguards information (SUNSI)). The proposed changes include non-system based design descriptions and other detailed information related to these design descriptions and associated ITAAC, such changes to concrete floor thicknesses, annex building wall location descriptions, and the interior configuration of the annex building. An exemption is needed because Section III.B of Appendix D to 10 CFR Part 52 requires a licensee to comply with the Tier 1 information of the generic AP1000 DCD.

In summary, the end result of this exemption would be that the licensee can implement modifications to Tier 1 information described and justified in the LAR if and only if the NRC approves the LAR. This is a permanent exemption limited in scope to the particular Tier 1 information specified.

As stated in Section VIII.A.4 of Appendix D to 10 CFR Part 52, an exemption from Tier 1 information is governed by the requirements of 10 CFR 52.63(b)(1) and 52.98(f). Additionally, the Commission will deny an exemption request if it finds that the requested change to Tier 1 information will result in a significant decrease in safety. Pursuant to 10 CFR 52.63(b)(1), the Commission may, upon application by an applicant or licensee referencing a certified design, grant exemptions from one or more elements of the certification information, so long as the criteria given in 10 CFR 52.7 are met, and that the special circumstances as defined by 10 CFR 50.12, "Specific exemptions," outweigh any potential decrease in safety due to reduced standardization.

Pursuant to 10 CFR 52.7, the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of 10 CFR Part 52. Regulations

in 10 CFR 52.7 further state that the Commission's consideration will be governed by 10 CFR 50.12, "Specific Exemptions," which states that an exemption may be granted when: (1) the exemptions are authorized by law, will not present an undue risk to public health or safety, and are consistent with the common defense and security; and (2) special circumstances are present. Regulations in 10 CFR 50.12(a)(2) list six special circumstances for which an exemption may be granted. It is necessary for one of these special circumstances to be present in order for the NRC to consider granting an exemption request. The licensee stated that 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 staff's analysis of each of these findings is presented below.

3.1.1 AUTHORIZED BY LAW

This exemption would allow the licensee to implement approved changes to Tier 1 Table 3.3-1 and Figure 3.3-11A. This is a permanent exemption limited in scope to particular Tier 1 information, and subsequent changes to Tier 1 Table 3.3-1, Figure 3.3-11A or any other Tier 1 information, would be subject to full compliance by the licensee as specified in Section III.B of Appendix D to 10 CFR Part 52. As stated above, 10 CFR 52.63.b(1) allows the NRC to grant exemptions from one or more elements of the certification information, namely, the requirements of Section III.B of Appendix D to 10 CFR Part 52. The NRC staff has determined that granting of the licensee's proposed exemption will not result in a violation of the Atomic Energy Act of 1954, as amended, or the Commission's regulations. Therefore, as required by 10 CFR 50.12(a)(1), the exemption is authorized by law.

3.1.2 NO UNDUE RISK TO PUBLIC HEALTH AND SAFETY

The underlying purpose of Section III.B of Appendix D to 10 CFR Part 52 is to ensure that the licensee will construct and operate the plant based on the approved information found in the DCD incorporated by reference into the licensee's licensing basis. The changes to annex building do not have an adverse impact to their design functions or the systems, SSCs therein and will continue to protect the health and safety of the public in same manner. These changes will not impact the ability of the structures to perform their design function. Because the changes will not alter the operation of any plant equipment or systems, these changes do not present an undue risk from existing equipment or systems. These changes do not add any new equipment or system interfaces to the current plant design. The changes do not introduce any new industrial, chemical, or radiological hazards that would represent a public health or safety risk, nor do they modify or remove any design or operational controls or safeguards intended to mitigate any existing on-site hazards. Furthermore, 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. Accordingly, these changes do not present an undue risk from any new equipment or systems. Therefore, as required by 10 CFR 50.12(a)(1), the staff finds that there is no undue risk to public health and safety.

3.1.3 CONSISTENT WITH COMMON DEFENSE AND SECURITY

This exemption would allow the licensee to implement approved changes to Tier 1 Table 3.3-1 and Figure 3.3-11A. This is a permanent exemption limited in scope to particular Tier 1 information. Subsequent changes to Table 3.3-1, Figure 3.3-11A, or any other Tier 1 information would be subject to full compliance by the licensee as specified in Section III.B of Appendix D to 10 CFR Part 52. The change does not alter or impede the design, function, or operation of any plant SSCs associated with the facility's physical or cyber security, and therefore does not affect any plant equipment that is necessary to maintain a safe and secure plant status. In addition, the change has no impact on plant security or safeguards. Therefore, as required by 10 CFR 50.12(a)(1), the staff finds that the common defense and security is not impacted by this exemption.

3.1.4 SPECIAL CIRCUMSTANCES

Special circumstances, in accordance with 10 CFR 50.12(a)(2)(ii), are present whenever 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 underlying purposes of Section III.B of Appendix D to 10 CFR Part 52 are to ensure that the licensee will construct and operate the plant based on the approved information found in the AP1000 DCD, which was incorporated by reference into the licensee's licensing basis.

The licensee proposes to reconfigure the annex building security area to add an additional nonsafety-related battery, a battery equipment room, and relocate a fire wall resulting in narrowing a corridor, increase a containment ventilation room ceiling height, increase certain floor slab thicknesses, and enhance the accuracy of details presented in a Tier 1 ITAAC table.

The licensee has evaluated these changes with regard to the structural design analyses, fire and electric load analyses, radiation shielding analyses, and security evaluations. These changes are necessary to enhance the ability of the licensee to construct the plant based on the information in the certified design by modifying the information found in Table 3.3-1 and Figure 3.3-11A. If this exemption is not granted, and the proposed changes in the LAR are not allowed to be implemented, then the Tier 1 would not conform to the UFSAR Tier 2 design descriptions, and the performance of the Tier 1 ITAAC would not accurately verify construction of the proposed design. Therefore, because the application of Section III.B of Appendix D to 10 CFR Part 52 in this circumstance does not serve the underlying purpose of the rule, the staff finds that the special circumstances required by 10 CFR 50.12(a)(2)(ii) for the granting of an exemption from Section III.B of Appendix D to 10 CFR Part 52 exist.

3.1.5 SPECIAL CIRCUMSTANCES OUTWEIGH REDUCED STANDARDIZATION

This exemption would allow the implementation of changes to Table 3.3-1 and Figure 3.3-11A proposed in the LAR. Based on the nature of the proposed changes to the generic Tier 1 information and the understanding that these changes were identified during the design finalization process for the AP1000, 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 annex building structure associated with this request will continue to be maintained. So while the information in the Table 3.3-1 and Figure 3.3-11A may be changed,

the changes have no effect on any SSCs meeting their design function. Based on this, as required by 10 CFR Part 52.63(b)(1), the staff finds that the special circumstances outweigh the effects the departure has on the standardization of the AP1000 design.

3.1.6 NO SIGNIFICANT REDUCTION IN SAFETY

This exemption would allow the implementation of changes to Table 3.3-1 and Figure 3.3-11A proposed in the LAR. With the proposed changes to the annex building structure and layout, no systems or equipment will be adversely impacted such that there are no new failure modes introduced by these changes and the level of safety provided by the current annex building and the systems and equipment contained therein will be maintained. The proposed changes to Table 3.3-1 and Figure 3.3-11A will not adversely affect the ability of the SSCs to perform their design functions and the level of safety provided by the SSCs is unchanged; therefore, as required by 10 CFR Part 52, Appendix D, Section VIII.A.4, the staff finds that granting the exemption would not result in a significant decrease in the level of safety otherwise provided by the design.

3.2 EVALUATION OF PROPOSED CHANGES

The NRC staff has evaluated various aspects of the proposed changes included in the LAR and those evaluations are contained in the following sections.

3.2.1 STRUCTURAL ENGINEERING EVALUATION

To perform the technical evaluation, the NRC staff considered UFSAR Section 3.7.2.8.1, "Annex Building," (ADAMS Accession No. ML14206B034), and "The Final Safety Evaluation Report for the Virgil C. Summer Nuclear Station Units 2 and 3 Combined License Application" (ADAMS Accession No. ML110450305) documenting the staff's technical evaluation of those aspects of the VCSNS COL application. The staff reviewed the LAR, considering the guidance in NUREG-0800, Section 3.7.2, to evaluate the impact of the requested UFSAR changes on the seismic Category II requirements for the annex building. That is, the portion of the annex building adjacent to the nuclear island is classified as seismic Category II. As such, this portion of the annex building is designed so that the safe shutdown earthquake (SSE) does not cause unacceptable structural failure of or interaction with adjacent seismic Category I structures. Further, this portion of the annex building is designed for the SSE and other design-basis loads and load combinations, using the same methods and design allowables as are used for seismic Category I structures. The annex building is a combination of reinforced concrete and steel framed structure with insulated metal siding. No safety-related equipment is located in the annex building.

In the LAR, the licensee proposed to depart from the plant-specific DCD Tier 2 information by revising UFSAR to (1) install an additional nonsafety-related battery; (2) revise the annex building internal configuration; (3) increase the height of Containment Filtration Room A (Room 40551) by 4 feet from elevation (EL.) 146'-3" to 150'-3"; and (4) increase concrete thicknesses from 6 inches to 8 inches in a number of floor slabs. Subsection 3.2.1.1 below discusses the staff's evaluation regarding (1) and (2). The staff's evaluation regarding Items (3) and (4) are discussed in Subsections 3.2.1.2 and 3.2.1.3, respectively. Additionally, the licensee proposed consistency and editorial changes to Tier 1 Table 3.3-1. The staff's evaluation regarding these changes is discussed on Subsection 3.2.1.4 below.

3.2.1.1 Structural Evaluation for the Installation of an Additional Battery and Equipment

In the LAR, the licensee proposed to install an additional nonsafety-related battery at EL 117'-6", Room 40412. As stated in the LAR, Room 40412, currently a shift turnover room, is to be converted to a battery room to house the new battery. Further, the LAR proposed changes to the layout in the annex building EL. 100'-0" to house battery equipment associated with the new battery. The licensee stated that the proposed changes do not affect any design code limit, safety-related function, safety-related design analysis, safety analysis input or result; nor adversely affect the safety margins associated with the seismic Category II structural capability of the annex building. Further, the LAR states that the design of the portions of the annex building affected by the proposed changes is in conformance with the code requirements specified in the UFSAR.

In regard to the layout changes to EL. 100'-0", the LAR indicates that these do not impact structural performance of the annex building as the internal walls relocated or added are not structural walls. In evaluating this change, the staff reviewed the features in Figures 3.7.2-19 and 9A-201 and found that these walls are internal walls that are local to the rooms being modified by this change and not part of the annex building's principal structural frame. Further, the staff reviewed the description in UFSAR Sections 9A.3.4.9 and 9A.3.4.10, which describe Fire Areas 4031 AF 05 and 4031 AF 06, respectively (including the rooms being modified) and confirmed that these walls were not identified as structural walls.

In evaluating the proposed addition of a new battery, the staff considered the potential effects of the mass associated with the battery and its associated equipment on the dynamic response of the annex building. Specifically, the staff's evaluation considered whether the effects on relative displacements would in any way adversely affect the minimum required seismic gaps of 4" above plant grade (per licensing basis commitments in UFSAR) which prevent seismic interactions between the nuclear island (NI) structures and adjacent annex building. In this regard, the LAR states that the relative displacements of the annex building are less than the minimum required seismic gaps, per the VCSNS site-specific 2D soil structure interaction analysis (SSI) which, the staff notes, is based on a lumped mass stick model for the annex building. Further, the LAR states that the proposed changes will not increase relative displacements of the annex building. Moreover, LAR 13-22S, Enclosure 1, Item No. 1 states that the lumped mass stick model analysis of the annex building considers the mass at each building level as the summation of equivalent loads addressing the concrete slab self-weight, the suspended or superimposed uniform dead load, and a factor for uniform live load. These equivalent loads, as stated in the LAR, bound specific equipment loads including battery and battery support equipment. Additionally, in response to staff's inquiry during the public meeting dated October 15, 2014, the licensee reemphasized that the equivalent load for the entire floor level where the battery room will be located (i.e., not that for just the battery room floor slab) bound the mass associated with the new battery. Further, the licensee indicated that the mass related to the new battery amount to less than 1 percent of the total mass of the entire annex building.

In evaluating the proposed addition of a new battery, the staff also performed independent calculations with the purpose of gaining insights regarding the relative impact of the mass changes on the dynamic behavior of the annex building, specifically on the fundamental frequency of vibration and relative displacements of the annex building. These calculations included both hand calculations and modal analysis of representative portions of the annex building with consideration of a baseline structural configuration and a structural configuration with the proposed mass changes. The results showed that the proposed mass changes would

have negligible effects on the fundamental frequency of vibration and relative displacements for the annex building. On this basis, the staff concluded that the proposed change in the LAR will not cause seismic interaction between the NI structures and adjacent annex building since the relative displacements are still within the minimum required gap of 4 inches above grade. Based on the above evaluations, the staff concludes that items involving the proposed licensing basis changes to the figures listed below are acceptable:

- COL Appendix C (and Tier 1) Figure 3.3-11A
- UFSAR Tier 2 Figure 1.2-19
- UFSAR Tier 2 Figure 1.2-201
- UFSAR Tier 2 Figure 3.7.2-19 (Sheet 1 of 10)
- UFSAR Tier 2 Figure 3.7.2-19 (Sheet 7 of 10); as included in supplemental letter dated October 30, 2014 (ADAMS Accession No. ML14303A660)

3.2.1.2 Structural Evaluation for the Increased Room Height of Room 40551

In the LAR, the licensee proposed to increase the ceiling height of Containment Filtration Room A (Room 40551) by 4 feet, from EL. 146'-3" to 150'-3". The licensee stated that the proposed Containment Filtration Room A (Room 40551) ceiling height increase, and the resulting Containment Filtration Room B (Room 40552) floor elevation increase are accounted for in the structural configuration model of the annex building that was updated in 2012 to analyze the structure for SSE and other design loads and load combinations, using the same commitments made in the UFSAR, and as such the structural analysis is not affected. The staff's review focused on the potential impact of the proposed change on the structural performance of the seismic Category II annex building. In this regard, the staff reviewed the structural features at Rooms 40551 and 40552 in UFSAR Tier 2 Figure 3.7.2-19 (Sheet 7 of 10) to assess whether the potential local stiffness reduction on the walls supporting the subject ceiling could affect the global dynamic response of the annex building. The staff's review found that the ceiling being modified spans over a small area in relation to the overall structure and is not part of the annex building's principal structural frame. Thus, the staff concludes that the proposed change will not adversely affect the global dynamic behavior of the annex building. Based on the above evaluations and the licensee's continued commitment to meet the same design methods and allowables for seismic Category I structures (committed to in the UFSAR), the staff concludes that the proposed licensing basis changes to the table and figures listed below are acceptable:

- COL Appendix C (and Tier 1) Table 3.3-1
- UFSAR Tier 2 Figure 1.2-20
- UFSAR Tier 2 Figure 3.7.2-19 (Sheet 4 of 10)
- UFSAR Tier 2 Figure 3.7.2-19 (Sheet 7 of 10); as included in supplemental letter dated October 30, 2014 (ADAMS Accession No. ML14303A660)

3.2.1.3 Structural Evaluation for Increasing Floor Thickness by 2 Inches

In the LAR, the licensee proposed to increase the floor concrete thickness from 6 inches to 8 inches at a number of floor slabs at three elevations: 117'-6", 135'-3", and 150'-3" (the new elevation for the room ceiling discussed in Section 3.2.1.2 of this SER) in the annex building. The licensee stated that the proposed changes do not affect any design code limit, safety-related function, safety-related design analysis, safety analysis input or result; nor does it

adversely affect the safety margins associated with the seismic Category II structural capability of the annex building. Further, the LAR stated that the design of the portions of the annex building affected by the proposed changes is in conformance with the code requirements specified in the UFSAR. Moreover, the LAR stated that the resulting floor thickness increases are accounted for in the structural configuration model of the annex building that was updated in 2012 to analyze the structure for SSE and other design loads and load combinations, and thus structural analysis is not affected. The staff's review focused on the potential impact of the proposed changes on the structural performance of the seismic Category II annex building. Specifically, the staff evaluated the potential effects of the mass associated with the additional 2-inch concrete thicknesses on the dynamic response of the annex building. These effects were also evaluated as part of the staff's independent calculations described in Subsection 3.2.1.1 of this SER. As discussed in Subsection 3.2.1.1, the staff found these mass changes to have negligible effects on the fundamental frequency of vibration and relative displacements of the annex building. As a result, the staff concluded that the proposed change in the LAR will not cause seismic interaction between the NI structures and adjacent annex building since the relative displacements are still within the minimum required gap of 4 inches above grade. In addition, the staff's review considered the structural capability of the 8-inch concrete slabs to withstand the dead and live loads under SSE and other design basis loads and load combinations. In this regard, the staff's review found that the licensee addressed the design of these slabs by the committed design methods and allowables in the UFSAR. Based on the above evaluations and the licensee's continued commitment to meet the same design methods and allowables for seismic Category I structures, the staff concludes that items involving the proposed licensing basis changes to the table and figures listed below are acceptable:

- COL Appendix C (and Tier 1) Table 3.3-1
- UFSAR Tier 2 Figure 3.7.2-19 (Sheet 7 of 10); as included in supplemental letter dated October 30, 2014 (ADAMS Accession No. ML14303A660)
- UFSAR Tier 2 Figure 3.7.2-19 (Sheet 8 of 10)
- UFSAR Tier 2 Figure 3.7.2-19 (Sheet 9 of 10; Sections D-D and E-E)
- UFSAR Tier 2 Figure 3.7.2-19 (Sheet 10 of 10; Section H-H)

3.2.1.4 Consistency and Editorial Changes to Tier 1 Table 3.3-1

Tier 1 Table 3.3-1 identifies the annex building corridor wall between G and H, as going from Column Line 9 to Column Line 13 between elevations 100'-0" and 135'-3". Further, the LAR states that UFSAR Figure 3.7.2-19 (Sheet 1), before and after the changes described in this LAR, shows that the wall does not completely extend to Column Line 13 between elevations 100'-0" and 117'-6" and that UFSAR Figure 3.7.2-19 (Sheet 2) shows that the wall completely extends to Column Line 13 between elevations 117'-6" and 135'-3". In this regard, the proposed changes to Tier 1 Table 3.3-1 include (1) revising the existing line item for the corridor wall between G and H to identify that it extends to near Column Line 13 between elevations 100'-0" and 117'-6", and (2) adding a new line for the corridor wall between G and H indicating that it completely extends to Column Line 13 between elevations 117'-6" and 135'-3". The staff reviewed UFSAR Figure 3.7.2-19 (Sheets 1 and 2) and confirmed that, before and after the changes described in this LAR, the corridor wall between G and H extends to near Column Line 13 between elevations 100'-0" and 117'-6" and completely extends to Column Line 13 between elevations 117'-6" and 135'-3". On this basis, the staff finds the proposed changes to Tier 1 Table 3.3-1 acceptable.

The licensee also proposed changes to clarify that the north and east walls for the Containment Filtration Room A also serve Containment Filtration Room B (directly above it), and to revise the column line description for the first Table 3.3-1 floor related entry so that it is consistent with the other floor entries in Table 3.3-1. In this regard, the staff reviewed Table 3.3-1 and confirmed that these changes enhance the consistency with other row entries in Table 3.3-1. On this basis the staff finds the proposed changes to Tier 1 Table 3.3-1 acceptable.

Conclusions:

The NRC staff evaluated the proposed changes in the LAR and found that these changes will not cause seismic interaction between the NI structures and adjacent annex building.

Consequently, the NRC staff concludes that there is reasonable assurance that the requirements of 1, 2 and 4 of Appendix A to 10 CFR Part 50, and Appendix S to 10 CFR Part 50 will continue to be met. Therefore, the staff finds the proposed changes are acceptable.

3.2.2 FIRE PROTECTION EVALUATION

The fire protection review of this LAR concerns changes to certain fire areas within the annex building. The primary purpose of these fire areas is to confine the effects of a fire to a single compartment, thereby minimizing the potential for adverse effects from fire on SSCs important to safety. The proposed changes revise the VCSNS Units 2 and 3 UFSAR in regard to Tier 2* information related to fire area boundaries. The proposed changes are:

- A. Annex Building Elevation 100'-0" New Battery Equipment Room Related Changes
- B. Annex Building Elevation 100'-0" Fire Area Wall Changes
- C. Annex Building Elevation 117'-6" Battery Room Related Changes
- D. Annex Building Elevation 135'-3" Filtration Room A, Room 40551, Ceiling Height Change.

3.2.2.1 Annex Building Elevation 100'-0" New Battery Equipment Room Related Changes

The first proposed change to the 100'-0" Elevation of the annex building would revise a portion of the annex building layout as it is currently depicted in Figure 9A-201 of the VCSNS Units 2 and 3 UFSAR. The changes include expanding Room 40305 to the north, west, and slightly to the south; creating a new battery equipment room (Room 40315) to be placed in approximately the same location as the existing Room 40305; and moving the restroom (Room 40304) to the south of the elevator and Stairway 01 in order to expand Room 40305 enough to support its intended function. The proposed changes are depicted in the LAR, Enclosure 4, Page 13 of 24. The licensee also provided a revised Appendix 9A Section 9A.3.4.9 (LAR Enclosure 3, page 9 of 13) to indicate the addition of Room 40315 to Fire Area 4031 AF 05 and a revised Table 9A-3, "Fire Protection Summary," (LAR Enclosure 3, page 11 of 13) that shows the revised floor areas, types and quantities of combustible materials, combustible loads and estimated fire durations.

In the LAR, the licensee stated that no safety-related structure, system, component, analysis, or function is involved, and no safe shutdown function is affected. Although the changes involve the relocation of the fire zone boundary that encompasses Rooms 40305 and 40315 and other related room changes, it does not affect the performance requirements for any fire barrier. These changes are confined within Fire Area 4031 AF 05 and do not involve any fire area boundary modifications.

The NRC staff reviewed the licensee's changes provided in the LAR and finds them acceptable because no safe shutdown function is affected and there is no fire area boundary fire barrier change.

3.2.2.2 Annex Building Elevation 100'-0" Fire Area Wall Changes

The second proposed change to the 100'-0" Elevation of the annex building would move the fire wall that separates Rooms 40300 and 40302 from Access Corridor 40301, and Room 40300 from Room 40306, approximately 2 feet to the west. The current configuration and proposed changes are depicted in Figure 9A-201 of the VCSNS Units 2 and 3 UFSAR and LAR Enclosure 9, page 12 of 23, respectively.

In the LAR, the licensee stated that currently the north-south portion of the annex building Access Corridor 40301 is 12 feet wide. The east west portion of Access Corridor 40301 is approximately 10 feet wide and is adequate for equipment and personnel movements, thus the north-south portion of Access Corridor 40301 is larger than needed. The licensee also indicated that a more effective use of the floor area would be achieved by providing a uniform approximately 10-foot wide corridor, by relocating the north-south oriented wall. This change would reduce the north-south portion of Access Corridor 40301 width to approximately 10 feet, thereby increasing the sizes of Rooms 40300 and 40302 and decreasing the size of Room 40306. The wall to be relocated is a non-structural wall, has a 2-hour fire rating, and forms part of the boundary between Fire Areas 4031 AF 05 and 4031 AF 06. The fire rating of the wall is maintained.

In the LAR, the licensee stated that no safety-related structure, system, component, analysis, or function is involved, and no safe shutdown function is affected. The fire rating of the wall that separates Fire Area 4031 AF 05 and 4031 AF 06 is maintained.

Relocating the north-south corridor wall changes the floor areas of Fire Areas 4031 AF 05 and 4031 AF 06. These floor area changes affect the fire load analysis. The licensee provided a revised Table 9A-3, "Fire Protection Summary," (LAR Enclosure 3, page 11 of 13) that shows the revised floor areas, types and quantities of combustibles materials, combustible loads and estimated fire durations for Fire Area 4031 AF 05 and Fire Area 4031 AF 06. The updated Table 9A-3 fire load analysis results show that the fire durations remain within the two-hour fire boundary rating.

The NRC staff reviewed the licensee's changes provided in the LAR and finds them acceptable because no safe shutdown function is affected and the fire rating of the barrier that separates the two fire areas is maintained.

3.2.2.3 Annex Building Elevation 117'-6" Battery Room Related Changes

As currently depicted in Figure 9A-3 (Sheet 2 of 3) of the VCSNS Units 2 and 3 UFSAR, Room 40412 is designated as a "Shift Turnover Room." Room 40412 is to be converted to a battery room. In doing this conversion, Room 40412 requires changes (e.g., ventilation, doors and walls) in order to be used as a battery room.

The following changes are proposed:

- a. The currently non-fire rated Room 40412 floor is to be changed to a 2-hour fire rated barrier.
- b. The currently non-fire rated partition wall between the new battery room and Computer Room B (Room 40411) is to be changed to a 2-hour fire rated wall.
- c. Room 40412 is to be designated as new Fire Zone 4031 AF 40412 within Fire Area 4031 AF 02.
- d. The door in the north wall of Room 40412 is deleted.
- e. The west wall door swing direction is to be changed to open outward from the room, in the direction of egress, and into Corridor 40400.

These proposed changes are shown in the LAR Enclosure 3, page 13 of 23.

In the LAR, the licensee states that due to potential hydrogen gas accumulations, battery rooms are serviced by separate dedicated ventilation subsystems. The heating, ventilation and air conditioning (HVAC) system servicing Room 40412 is to be changed from the Nuclear Island Nonradioactive Ventilation System (VBS) to the Annex/Auxiliary Building Nonradioactive Ventilation System (VXS). An exhaust fan is added to the VXS in order to service the new Battery Room 40412. The NRC staff finds that this meets the guidance of Regulatory Guide 1.189, "Fire Protection for Nuclear Power Plants," Revision 2 Section 6.1.7.

The licensee also provided a revised Appendix 9A, Section 9A.3.4.8 (LAR Enclosure 3, pages 8 and 9 of 13), to indicate the change of Room 40412 to a battery room in Fire Area 4031 AF 02 and a revised Table 9A-3, "Fire Protection Summary," (LAR Enclosure 3, page 11 of 13) that shows the revised floor areas, types and quantities of combustible materials, combustible loads and estimated fire durations.

The licensee stated that although this proposed change includes fire zone changes, the dimensions and fire barrier rating of Fire Area 4031 AF 02 are not affected. The proposed changes do not involve or indirectly affect safety-related equipment. The updated fire load analysis demonstrate that the fire loads remain within their two-hour fire boundary rating, no

nonsafety-related equipment that could be used to achieve safe shutdown in the event of a fire is affected. Therefore, the safe shutdown fire analysis is not affected.

The NRC staff reviewed the licensee's changes provided in the LAR and finds them acceptable because no safe shutdown function is affected and the fire barrier rating of Fire Area 4031 AF 02 is not affected.

3.2.2.4 Annex Building Elevation 135'-3" Filtration Room A, Room 40551, Ceiling Height Change

The licensee proposes to raise the ceiling of the annex building Containment Filtration Room A, Room 40551, by 4 feet to accommodate the as-designed size of equipment and provide adequate space for access and maintenance. This change results in the floor elevation of Containment Filtration Room B (Room 40552) increasing from Elevation 146'-3" to 150'-3". The current and revised figures are shown in Figure 9A-3 (Sheet 3 of 3) of the VCSNS UFSAR and LAR Enclosure 4, page 15 of 24. Fire Area 4052 AF 01 encompasses both Rooms 40551 and 40552.

In the LAR, the licensee stated that the volume of Room 40551 increases, and the volume of Room 40552 consequently decreases, but the floor areas of these rooms do not change and the total Fire Area 4052 AF 01 volume does not change. The fire load analysis is based on combustible loads per square foot of floor area, which are not changed by the proposed room height changes. Therefore, the fire load analysis is not affected.

The NRC staff reviewed the licensee's changes provided in the LAR and finds them acceptable because there is no change to the Fire Hazards Analysis.

Conclusion:

The NRC staff has reviewed the licensee's analysis provided in the LAR and finds that:

- The proposed changes to the annex building at Elevation 100'-0" "New battery Equipment Room" related changes and fire area wall changes are acceptable because no safe shutdown function is affected and there is no change to the fire area boundaries.
- The proposed changes to the annex building Elevation 117'-6" "Battery Room" related changes are acceptable because no safe shutdown function is affected and the fire barrier rating of Fire Area 4031 AF02 is not affected.
- The proposed change to the annex building Elevation 135'-3" "Filtration Room A", Room 40551, ceiling height change does not change the UFSAR Fire Hazard Analysis because the fire loads are based on combustible loads per square foot which does not change.

Based on these findings the NRC staff concludes that there is reasonable assurance that the requirements of 10 CFR 50.48 and 10 CFR 50, Appendix A, GDC 3, will continue to be met. Therefore, the NRC staff finds the proposed changes acceptable.

3.2.3 AIRCRAFT IMPACT ASSESSMENT-FIRE PROTECTION

As part of the AP1000 Design Certification, the staff reviewed Appendix 19F, "Malevolent Aircraft Impact," of the AP1000 DCD Revision 19. The results of this analysis are described in NUREG-1793 Supplement 2, "Final Safety Evaluation Report Related to Certification of the AP1000 Standard Plant Design Docket No. 52-006." The VCSNS UFSAR has incorporated by reference, with no departures or supplements, Appendix 19F of the AP1000 DCD Revision 19.

In the LAR, the licensee states that the proposed annex building changes do not affect the building's key design features credited in UFSAR Appendix 19F, "Malevolent Aircraft Impact."

The staff reviewed the licensee's analysis provided in the LAR and finds that the proposed changes do not affect the fire protection perspective of the aircraft impact assessment.

Based on these findings the NRC staff concludes that there is reasonable assurance that the requirements of 10 CFR 50.150 will continue to be met. Therefore, the NRC staff finds the proposed changes acceptable.

3.2.4 SECURITY PLAN EVALUATION

The LAR had the potential to affect the licensee's security plans, which are described in UFSAR, Revision 3, Section 13.6, "Physical Security," and Subsection 14.3.2.3.2 "Physical Security ITAAC," VCSNS Units 2 and 3 Security Plans, and TR 94, "AP1000 Safeguards Assessment Report," Revision 5, APP-GW-GLR-66. The licensee addressed security considerations in Section 3 of Enclosure 1 of the LAR to ensure that the licensee's security plans continue to meet the requirements of 10 CFR 73.55. The NRC staff's review confirmed that the information in the LAR, and material incorporated by reference provided the information required for reviewing any changes to the physical security.

3.2.4.1 Physical Barriers (Rooms 40304, 40305, 40315, and 40412 modifications and changes to increase the Annex Building floor thickness)

In the LAR, Enclosure 1, Section 3, the licensee describes the following changes:

- The proposed change revises a portion of the annex building layout on [elevation] El. 100'-0". The LAR describes how the current security room (40305) will be modified into two rooms, one to house battery equipment in a newly established battery equipment room (40305) and one smaller security room (40315). The LAR describes how by expanding Room 40305 to the north, west, and slightly to the south, would provide sufficient area to support dividing the room into two rooms. The restroom (40304) will be relocating to allow additional space for Room 40305 to be reconfigured.
- The proposed change describes how the shift turnover (room 40412), located within the protected security boundary in the annex building on elevation 117'-6" is to be converted into a battery room to support a new nonsafety-related battery related to the nonsafety-related uninterruptable power, supply.
- The proposed change describes the purpose for increasing the annex building floor thickness.

The NRC staff reviewed the proposed changes as described in LAR, Enclosure 1, Section 3, against the current physical barriers requirements as described in 10 CFR 73.55(e).

The NRC staff also reviewed the UFSAR Section 1.2, Figures 1.2-19 and 1.2-201, and the related figures in TR-94.

The NRC staff also reviewed Section 11 of the licensee's Physical Security Plan (PSP) which provides a description of all physical barriers (to include natural terrain) used in the Owner Controlled Area Barriers, Vehicle Control Measures, Waterborne Threat Measures, Protected Area Barriers, and Vital Area Barriers to implement the Licensee's physical protection program. This description includes the type of barriers used, a general description of the construction of each barrier, (e.g., buildings, topography, fences, walls, doors, etc.) and the specific function to be performed by each barrier used in accordance with 10 CFR 73.55(e) and the requirements for performance objectives in 10 CFR 73.55(b).

During the NRC staff's review of the VEGP Units 3 and 4 LAR 13-038, the NRC staff identified physical barriers in access corridor 40301—as described in Attachment 2 of TR-94—that were not addressed in the LAR, and which additional information was necessary to complete its review. On October 28, 2014, the NRC staff issued RAI (ADAMS Accession No. ML14301A327) to SNC. In a letter dated November 6, 2014 (ADAMS Accession No. ML14310A831), SNC provided the clarification and justification to remove the two delay barriers (i.e. physical barriers) on each end of the bypass corridor, north of room 40305. In a letter dated August 27, 2015 SCE&G stated that the responses provided by SNC are applicable to Virgil C. Summer Nuclear Station, Units 2 and 3 LAR 13-22.

The licensee's response also provided additional clarification on the status of the remaining physical barriers in access corridor 40301, as described in Attachment 2 of TR-94. The licensee's response indicated that the remaining physical barriers in access corridor 40301 are being evaluated under another review process (10 CFR Part 52, Appendix D, Section VIII.B "Processes for Changes and Departures"). However, the NRC staff would caution the licensee to be ever vigilant on the cumulative effects of all design changes (LARs and departures) to ensure that the physical protection program's high assurance evaluation provided during the initial review of the COL application is not inadvertently jeopardized.

The NRC staff concludes that the structure changes for rooms 40304, 40305, 40315, and 40412 modifications, changes to increase the annex building floor thickness, and removal of the two delay barriers (physical barriers) on each end bypass corridor north of Room 40305 do not adversely impact any physical security feature or function of the physical barriers requirements as described in 10 CFR 73.55(e)(1)(4).

The NRC staff concludes that the proposed changes described in the LAR, do not adversely impact the physical barriers credited by the PSP for:

- Adversary delay or impact on ingress pathways to vital areas requirements as described in 10 CFR 73.55(e)(3)(i)(C)(ii).
- Adversary interdiction as requirements as described in 10 CFR 73.55(e)(3)(i)(C)(iii).
- Pathways (or associated timelines) utilized by security force personnel to respond to security events or by operations personnel and emergency responders to respond to emergency events related to plant operation requirements as described in 10 CFR 73.55(e)(3)(i)(B).

The NRC staff concludes that the proposed changes described in the LAR, results in the addition, and deletion or relocation of security related equipment associated with detection,

assessment, or access control as described in TR-94, and the PSP. However, these changes do not adversely impact any physical security feature or function of the physical barriers requirements as described in 10 CFR 73.55(e)(3)(i)(C)(iii).

The NRC staff concludes that that the proposed changes described in the LAR, results in the addition, deletion or relocation of a security responder or response position as described in TR-94, and the PSP. However, these changes do not adversely impact any physical security feature or function of the physical barriers requirements as described in 10 CFR 73.55(e)(3)(i)(C)(iii).

The NRC staff concludes that the licensee's proposed changes do not adversely impact the physical barrier credited by the physical protection program for adversary delay as required in 10 CFR 73.55(e)(1)(4), and described in the licensee's PSP. Therefore, the NRC staff finds the changes for Rooms 40304, 40305, 40315, and 40412, the change to increase the Annex Building floor thickness, and the removal of the two delay barriers (physical barriers) on each end bypass corridor north of Room 40305 as described in the LAR are acceptable.

3.2.4.2 Response Requirements (Annex building floor thickness increases and modification of security room)

In the LAR, Enclosure 1, Section 3, the licensee describes a proposed change to increase the Annex Building floor thickness.

- "El. 117'-6" floor slab thickness between Column Lines 9 and 13 and Column Lines E and I.1, El. 135'-3" floor slab thickness between Column Lines 2 and 4 and Column Lines E and H, and Containment Filtration Room B (Room 40552) floor slab thickness are [to] be increased from 6" to 8"."
- The current security room (40305) will be modified into two rooms, one to house battery equipment in a newly established battery equipment room (40305) and one smaller security room (40315).

The NRC staff reviewed the proposed changes as described in the LAR, Enclosure 1, Section 3, against the current response requirements as described in 10 CFR 73.55(k).

The NRC staff also reviewed USFAR Section 1.2, Tier 2, Figures 1.2-20 and 1.2-201, and related figures in TR-94.

The NRC staff reviewed the licensee's PSP which provided a description of the armed response team, responsibilities, training and equipment, and staffing at a sufficient number of armed response force personnel immediately available at all times to effectively implement the site's protective strategy. The licensee's Training and Qualification discusses that properly trained, qualified, and equipped personnel are available at all times to interdict and neutralize threats, up to and including the design basis threat of radiological sabotage, as defined in 10 CFR 73.1 in accordance with the requirements of 10 CFR Part 73, Appendix B. The NRC staff also reviewed TR-94, which described predetermined timelines and the licensee's Safeguards Contingency Plan which described the duties and responsibilities of the security personnel used as armed responders and armed security officers for implementation of the site protective strategy in accordance with 10 CFR Part 73, Appendix C.

During the NRC staff's review of this aspect of the LAR's proposed changes, the various security scenarios, based on potentially affected TR-94 scenarios, were table-topped (a

standard practice in which a scenario is time-stepped using expected adversary tactics and expected response force reactions) using the proposed layouts for the effected rooms and personnel pathways. While the proposed changes affect some of the scenario descriptions and drawings in TR-94, the NRC staff determined they do not impact the outcomes of the scenarios described in TR-94.

The NRC staff concludes that proposed changes to increase the annex building floor thickness and modification of the security rooms will not adversely impact the PSP for ingress pathways to vital areas, armed responders timelines, personnel staffing or barriers credited by the TR-94 assessment for the related scenario or associated timelines with the Sandia Laboratories "Barrier Technology Handbook" (SAND77-0777).

The NRC staff concludes that the proposed changes described in the LAR, results in the addition, deletion or relocation of security related equipment associated with detection, assessment, or access control as described in TR-94, and the PSP. However, these changes do not adversely impact any physical security feature or function of the response requirements as described in 10 CFR 73.55(k)(1).

The NRC staff concludes that the proposed changes described in the LAR, results in the addition, deletion or relocation of a security responder or response position as described in TR-94, and the Physical Security Program. However, these changes do not adversely impact any physical security feature or function of the response requirements as described in 10 CFR 73.55(k)(8).

The NRC staff concludes that the licensee's proposed changes do not adversely impact the response requirements credited by the PSP as described in TR-94 assessment and meet the requirements as described in 10 CFR 73.55(k), and the licensee's PSP. Therefore, the NRC staff finds the changes to Room 40305, and increase the Annex Building floor thickness as described in the LAR are acceptable.

3.2.4.3 Physical Security – ITAAC (PS-IT AAC)

In Section 3 of Enclosure 1 of the LAR, the licensee addressed how the proposed changes, to the Annex Building El. 100'-0" layout to add Room 40315, related to the PS-IT AAC. The licensee stated that these changes do not directly or indirectly impact any security equipment or systems utilized for detection, assessment, or access control, there is no impact to the existing PS-IT AAC related to physical security.

The NRC staff confirmed that the proposed changes described in the LAR, to Annex Building El. 100'-0" (Rooms 40304, 40305, 40315, and 40412 modifications), Annex Building "El. 117'-6", and El.135'-3" (floor slab thickness) do not impact any of the existing PS-IT AAC and therefore, are acceptable.

Conclusion:

Based on the NRC staff review a revision to the Licensee's PSP will not be required. The NRC staff concludes that there is high assurance that the requirements of 10 CFR 73.55 will continue to be met. Therefore, the staff finds the proposed changes in the LAR acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations in 10 CFR 50.91(b)(2), the South Carolina State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20, "Standards for Protection against Radiation." The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (80 FR 17093; published on March 31, 2015). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

Because the exemption is necessary to allow the changes proposed in the license amendment, and because the exemption does not authorize any activities other than those proposed in the license amendment, the environmental consideration for the exemption is identical to that of the license amendment. Accordingly, the exemption meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with the issuance of the exemption.

6.0 CONCLUSION

The staff has determined that pursuant to Section VIII.A.4 of Appendix D to 10 CFR Part 52, the exemption (1) is authorized by law, (2) presents no undue risk to the public health and safety, (3) is consistent with the common defense and security, (4) is a special circumstance (5) that outweighs the reduction in standardization, and (6) does not significantly reduce the level of safety at the licensee's facility. Therefore, the staff grants the licensee an exemption from the requirements of 10 CFR Part 52, Appendix D, Section III.B.

The staff has concluded, based on the considerations discussed in Section 3.2 and confirming that these changes do not change an analysis methodology or assumptions, related to the design that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that 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, the staff finds the changes proposed in this license amendment acceptable.

7.0 REFERENCES

1. Letter from Ronald A. Jones, South Carolina Electric & Gas Company to U.S. Nuclear Regulatory Commission, "VCSNS Units 2 & 3 LAR 13-22: Request for License Amendment and Exemption: Annex Building Structure and Layout Changes," dated December 4, 2014 (ADAMS Accession No. ML14339A637).
2. Virgil C. Summer Units 2 and 3 LAR 13-22S1: Request for License Amendment and Exemption: Annex Building Structure and Layout Changes," dated July 23, 2015 (ADAMS Accession No. ML15204A845).
3. Virgil C. Summer, Units 2 and 3 LAR 13-22S2: Request for License Amendment and Exemption: Annex Building Structure and Layout Changes," dated August 27, 2015 (ADAMS Accession No. ML15239A814).
4. Virgil C. Summer Nuclear Station (VCSNS) Updated Final Safety Analysis Report (UFSAR), Revision 2, dated July 22, 2014 (ADAMS Accession No. ML14206A850).
5. AP1000 Design Control Document, Revision 19, DCD Tier 2, Section 3.7.2.8.4, "Seismic Modeling and Analysis of Seismic Category II Building Structures" (ADAMS Accession No. ML11171A430), dated June 13, 2011.
6. Virgil C. Summer Nuclear Station Final Safety Evaluation Report (FSER) dated August 17, 2011 (ADAMS Accession No. ML110450305).
7. Final Safety Evaluation Report Related to Certification of the AP1000 Standard Plant Design, NUREG-1793, Supplement 2, dated August 5, 2011 (ADAMS Accession No. ML112061231).

The following document contains security-related or safeguards information and is not publicly available:

6. Topical Report 94, "AP1000 Safeguards Assessment Report", Revision 5, APP-GW-GLR-66 Westinghouse Electric Company, "AP1000 Design Control Document," Revision 19.