

SAFETY EVALUATION BY THE OFFICE OF NEW REACTORS  
RELATED TO EXEMPTION AND AMENDMENT NO. 7  
TO THE COMBINED LICENSE NO. NPF-91  
AND LICENSE NO. NPF-92  
SOUTHERN NUCLEAR OPERATING COMPANY, INC.  
GEORGIA POWER COMPANY  
OGLETHORPE POWER COMPANY  
MUNICIPAL ELECTRIC AUTHORITY OF GEORGIA  
CITY OF DALTON, GEORGIA  
VOGTLE ELECTRIC GENERATING PLANT UNITS 3 AND 4  
DOCKET NOS.: 52-025 AND 52-026

1.0 INTRODUCTION

By letter dated October 17 2012, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML122960644), Southern Nuclear Operating Company (SNC/Licensee) requested that the U.S. Nuclear Regulatory Commission (NRC/Commission) amend the combined licenses (COLs) for Vogtle Electric Generating Plant Units 3 and 4 (VEGP), COL Numbers NPF-91 and NPF-92, respectively. The proposed license amendment request would depart from the updated Final Safety analysis report (UFSAR) Tier 1 and Tier 2 material by making changes to the Turbine Building (TB) structures and layout.

SNC has also requested an exemption from the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 52, Appendix D, Section III.B, "Design Certification Rule for the AP1000 Design, Scope and Contents," to allow a departure from the elements of the certification information in Tier 1 of the generic DCD. Specifically, the licensee requested departures from the generic DCD Tier 1 Table 3.3-1 and Figure 3.3-11B. The departure from the generic Design Control Document (DCD) Tier 1 information also involves similar changes to the VEGP Units 3 and 4 COLs, Appendix C, Table 3.3-1 and Figure 3.3-11B.

The proposed changes revise the TB structures and layout by: (1) changing the door location on the motor-driven fire pump room in the TB, (2) clarifying the column line designations for the southwest and southeast walls of the TB first bay, (3) changing the floor to ceiling heights at three different elevations in the TB main area, and (4) increasing elevations and wall thickness in certain walls of the TB first bay.

The supplements dated January 4, (ADAMS Accession No. ML13008A234), January 25 (ADAMS Accession No. ML13028A264), and February 7, 2013 (ADAMS Accession No. ML13039A329), provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on December 11, 2012 (77 FR 73690).

In order 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.

## 2.0 REGULATORY EVALUATION

Tier 1 Information is defined in 10 CFR 52, Appendix D Section II.D. 10 CFR 52, Appendix D Section II.D.3 lists inspections, tests, analyses, and acceptance criteria (ITAAC) as part of the definition for Tier 1 information. The information that SNC is requesting to change is referenced in ITAAC Table 3.3-1 and Figure 3.3-11B. Therefore the information is considered Tier 1 information.

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

10 CFR 52.63(b)(1) allows 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).

10 CFR 52.98(f) states that any modification to, addition to, or deletion from the terms and conditions of a combined license including any modification to, addition to, or deletion from the inspections, tests, analyses, and acceptance criteria contained in the license is a proposed amendment to the license. Appendix C of COLs NPF-91 and NPF-92 contain Table 3.3-1 and Figure 3.3-11B which the licensee is proposing to modify. Therefore, the proposed change is being presented as a license amendment.

10 CFR 52, Appendix D, VIII.B.5.a requires NRC pre-approval for departures from Tier 2\* information. The proposed amendment request does involve changes to Tier 2\* information. Therefore, NRC approval is required prior to making the Tier 2\* changes addressed in this departure.

10 CFR Part 50, Appendix A, “General Design Criteria for Nuclear Power Plants,” General Design Criterion (GDC) 2, *Design bases for protection against natural phenomena*, requires that structures, systems, and components (SSCs) important to safety shall be designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunami, and seiches without loss of capability to perform their safety functions.

The requirements of 10 CFR 50.48, “*Fire Protection*” states in part:

(a)(1) Each holder of an operating license issued under this part or a combined license issued under part 52 of this chapter must have a fire protection plan that satisfies Criterion 3 of appendix A to this part.

(2) The plan must also describe specific features necessary to implement the program described in paragraph (a)(1) of this section such as—

(iii) The means to limit fire damage to structures, systems, or components important to safety so that the capability to shut down the plant safely is ensured.

10 CFR Part 50, Appendix A, GDC 3, “*Fire Protection*” states in part, “ Structures, systems, and components important to safety shall be designed and located to minimize, consistent with other safety requirements, the probability and effect of fires and explosions. Noncombustible and heat resistant materials shall be used wherever practical throughout the unit, particularly in locations such as the containment and control room”.

10 CFR Part 50, Appendix A, GDC 4, *Environmental and dynamic effects design basis*, requires 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.

10 CFR Part 50, Appendix S, “*Earthquake Engineering Criteria for Nuclear Power Plants*,” requires 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 structures, systems, and components must be assured during and after the vibratory ground motion associated with the SSE ground motion through design, testing, or qualification methods.

10 CFR Part 50.150, “*Aircraft impact assessment*,” requires licensing applicants to perform a design-specific assessment of the effects on the facility of the impact of a large, commercial aircraft. The applicant shall identify and incorporate into the design those design features and functional capabilities to show that the reactor core remains cooled, or the containment remains intact; and that spent fuel cooling or spent fuel pool integrity is maintained.

10 CFR 73.55(a) requires that the licensee's security plans satisfy the requirements of 10 CFR 73.55.

10 CFR 73.55(b) requires 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 §73.1.

10 CFR 73.58 requires the licensee to assess and manage the potential for adverse effects on safety and security, including the site emergency plan, before implementing changes to plant configurations, facility conditions, or security.

### 3.0 TECHNICAL EVALUATION

#### 3.1 EVALUATION OF EXEMPTION

##### INTRODUCTION

The regulations in Section III.B of Appendix D to 10 CFR 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. During the detailed design finalization of the TB, the licensee determined that departures from plant-specific Tier 2 information were necessary to finalize the layout of space envelopes, orientations, locations and/or piping runs that comprise this structure or systems within this structure and that associated departures from the plant-specific DCD Tier 1 Table 3.3-1 and Figure 3.3-11B are also necessary. Therefore, the licensee requested an exemption from the generic DCD Tier 1 Table 3.3-1, Definition of Wall Thickness for Nuclear Island Building, Turbine Building and Annex building, and Figure 3.3-11B, Turbine Building General arrangement Plan at elevation 100'-0" that are involved with the plant-specific departures. An exemption is needed because Section III.B of Appendix D to 10 CFR 52 requires a licensee to comply with the Tier 1 information of the generic AP 1000 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 LAR 12-006 to Table 3.3-1, and Figure 3.3-11B if and only if the NRC approves LAR 12-006. This is a permanent exemption limited in scope to the particular Tier 1 information specified.

As stated in Section VII.A.4 of Appendix D to 10 CFR 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 52.7 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. 10 CFR 52.7 further states 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. 10 CFR 50.12(a)(2) lists 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 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 "[a]pplication 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- and Figure 3.3-11B. This is a permanent exemption limited in scope to particular Tier 1 information, and subsequent changes to Table 3.3-1 and Figure 3.3-11B 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 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 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 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 increase the TB first bay roof height and wall thicknesses, relocate a door to the Motor-Driven Fire Pump room and clarify column line designations affect the TB structure only, and do not add, delete, or modify systems or equipment as described in Tier 1 of the AP1000 DCD. These TB changes will not impact the ability of the TB to perform its design function of providing weather protection for the laydown and maintenance of major turbine-generator components. Because the TB changes will not adversely affect 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 TB structures and layout 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 public health and safety.

### 3.1.3 CONSISTENT WITH COMMON DEFENSE AND SECURITY

The proposed exemption would allow the licensee to implement modifications to Tier 1 Table 3.3-1 and Figure 3.3-11B requested in LAR 12-006. This is a permanent exemption limited in scope to particular Tier 1 information. Subsequent changes to Table 3.3-1 and Figure 3.3-11B 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 52. This change is not related to security issues. 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 52 is to ensure that the licensee will construct and operate the plant based on the approved information found in the referenced DCD. The licensee achieves this purpose in part when it provides ITAAC that accurately reflect the plant design, such that the ITAAC are adequate to verify that if the acceptance criteria are met, the facility has been constructed and will operate in conformity with the COL. The requested exemption asks for the licensee to be allowed to implement the changes proposed in LAR 12-006 to Tier 1 Table 3.3-1 and Figure 3.3-11B. Each of the requested changes will facilitate plant construction and maintain or enhance future safe plant operation and maintenance, while supporting the ability of the TB structure to perform its design functions. Accordingly, this change to the certified information will enable the licensee to safely construct, maintain, and operate the AP1000 facility consistent with the design certified by the NRC in 10 CFR Part 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 would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule. Therefore, because the application of Section III.B of Appendix D to 10 CFR 52 in this circumstance does not serve the underlying purpose of the rule, the staff finds 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 52 exist.

### 3.1.5 SPECIAL CIRCUMSTANCES OUTWEIGH REDUCED STANDARDIZATION

This exemption would allow a change to a non-system based design description and ITAAC figure and table. 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, it is expected that this exemption will 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 TB structure associated with this request will continue to be maintained. This exemption request and the associated marked-up table and figure demonstrate that there is a minimal change from the standard information provided in the generic AP1000 DCD, which is offset by the special circumstances identified above. The changes have no effect on any systems, structures or components meeting their design function. Based on this, as required by 10 CFR 52.63(b)(1), the staff finds that the special circumstances outweigh the potential decrease in safety due to reduced standardization of the AP1000 design.

### 3.1.6 NO SIGNIFICANT REDUCTION IN SAFETY

The proposed exemption would allow changes to the TB structure and layout as presented in a non-system based design description and ITAAC figure and table. The level of safety presented by plant structures is defined by the ability of the structures to protect the SSCs contained within these structures from hazards and to minimize the propagation of damage resulting from postulated events to the degree practical.

The proposed changes to the TB structure and layout will not adversely affect the ability of the TB to perform its design functions and the level of safety provided by the current TB and the systems and equipment contained therein 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 staff conducted multiple technical reviews to evaluate the proposed changes. The following sections provide technical safety evaluations related to the structural engineering, fire protection, and physical security aspects of the proposed changes. The staff's consideration of aircraft impact assessment is included in the structural engineering and fire protection evaluations.

### 3.2.1 STRUCTURAL EVALUATION

The AP1000 standard plant design is comprised of five principal building structures: the nuclear island (NI), the radwaste building, the annex building, and the TB. The TB is a nonsafety related structure that houses the main turbine-generator and the power conversion cycle equipment and auxiliaries. There is no safety-related equipment in the TB. The TB is located on a separate foundation from the NI and is adjacent to the auxiliary building in the plant north direction as shown in UFSAR Figure 1.1-202.

The TB consists of two separate superstructures: the TB first bay and the TB main area, both supported on a common reinforced concrete basemat. The TB first bay, next to the auxiliary building, consists of both reinforced concrete and steel framed walls. The first bay is classified as a seismic Category II structure due to its immediate proximity to the Seismic Category I auxiliary building. This bay is designed in accordance with American Concrete Institute (ACI) code, ACI-349, "Building Code Requirements for Nuclear Safety Related Structures," for concrete members and the American Institute of Steel Construction (AISC) code, AISC-N690, "Specification for the Design, Fabrication and Erection of Steel Safety Related Structures for Nuclear Facilities," for steel members. The TB main area, adjacent to the TB first bay, is

constructed with reinforced concrete and steel members, but is classified as a nonseismic structure. The nonseismic portion of the TB is designed in accordance with the Uniform Building Code (UBC-97).

The TB is isolated from the NI by a 2-inch gap below grade and a 4-inch gap above grade. These gaps permit relative displacements under seismic events to occur without interaction between the buildings. The AP1000 standard plant seismic analysis showed that the maximum relative seismic displacement between the roof of the NI and any adjoining buildings is less than 3 inches. This results in a clearance (gap) between buildings greater than 1 inch during a seismic event and, therefore, prevents interactions between adjacent buildings.

The TB first bay is designed for the AP1000 Certified Seismic Design Response Spectra (CSDRS) and the envelope of responses of the six soil profiles described in Subsection 3.7.1.4 of the UFSA). The Vogtle site-specific SSE design response spectra (DRS) are the site-specific ground motion response spectra (GMRS) determined in Early Site Permit SSAR Subsection 2.5.2.6. These response spectra are determined in the free-field on the ground surface. The seismic analysis of the TB first bay is described in Section 3.7.2.8.4 of the UFSAR. The seismic analysis is performed using SASSI, a soil-structure interaction analysis code. The NI is idealized as a 3D finite element model, and the seismic Category II buildings are modeled as simplified lumped-mass and beam models. The model used for the SSI analysis of the AP1000 standard plant structures is shown in Figure 1 below. Seismic Category II structures, like the TB first bay, are designed so that the SSE does not cause unacceptable structural failure or interaction with adjacent seismic Category I structures. In the case of AP1000, Seismic Category II structures are analyzed and evaluated in the same manner as seismic Category I structures. The same methodology is applicable to Vogtle since the Vogtle Combined Operating License Application incorporated by reference relevant portions of the AP1000 Design Certification Document (DCD) Section 3.7 and DCD Section 3.8 in its entirety.

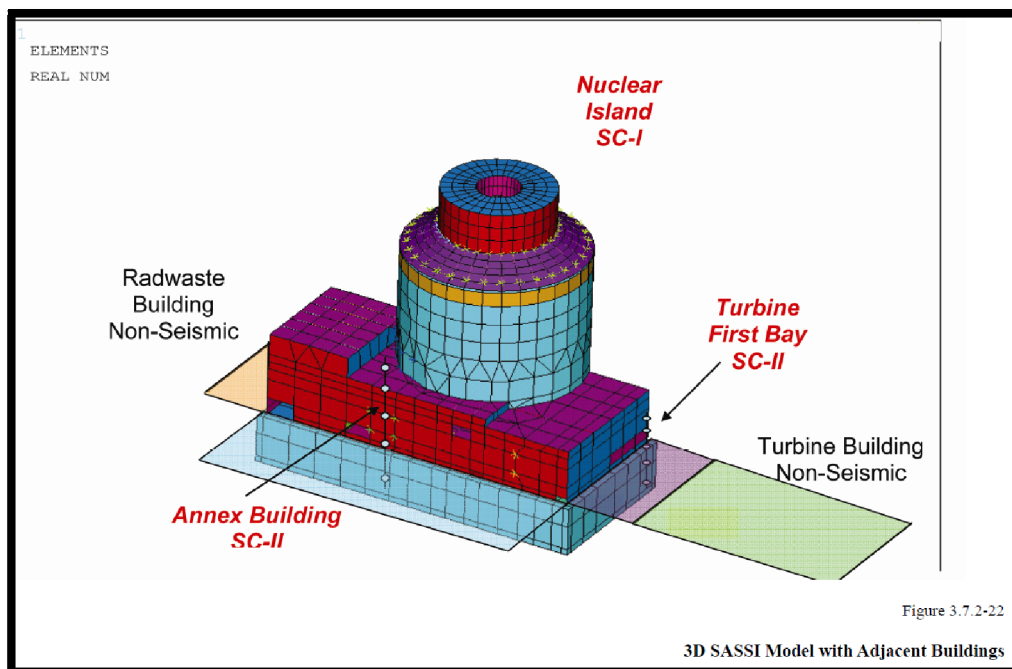


Figure 1: AP1000 DCD Figure 3.7.2-22, 3D SASSI Model with Adjacent Structures



While the more significant engineering design issue relates to the structure-soil-structure interaction (SSSI) effect of the AP1000 NI seismic response on adjacent building seismic response, the opposite effect was also analyzed. The dynamic effects of adjacent seismic Category II structures on the AP1000 NI were analyzed as part of the AP1000 seismic analysis described in UFSAR Section 3.7. These analyses were performed with and without adjacent structures and showed that the SSSI effects of adjacent structures on the NI were insignificant. The staff's review of these analyses is described in Section 3.7 of the AP1000 FSER (Reference 5).

### Proposed Design Changes

As described in the LAR, the licensee proposes changes that would revise the TB structure and layout by: (1) changing the door location on the motor-driven fire pump room in the TB main area, (2) clarifying the column line designations for the southwest and southeast walls of the TB first bay, (3) changing the floor to ceiling heights at three different elevations in the TB main area, and (4) increasing elevations and wall thickness in certain walls of the TB first bay.

The NRC staff reviewed these design changes considering their impact to the seismic analysis methods and design commitments described in UFSAR Sections 3.7 and 3.8. The staff also reviewed these design changes considering their impact to the aircraft impact assessment and the need for new blowout panels. The staff's evaluation of the TB changes is described below:

#### *Door Location Change*

In the LAR, Enclosure 1, page 3, the licensee states that the door location in the motor-driven fire pump room in the TB main area will be moved. The reason for this change is that an intermediate column currently located at the intersection of column lines P.2 and 19.1 on the TB plan view shown in DCD Figure 1.2-25 interferes with the layout and maintenance space of Switchgear Room #2 (room 20501 at El. 141'-3"). Since the column is proposed to be relocated to the intersection of column lines P.1 and 19.1, the doorway in the southeast corner of the Motor-Driven Fire Pump room (room 20303) at El. 100'-0" is to be relocated from the south wall to the east wall to clear the revised footprint of the intermediate column.

Staff performed a review of pages 2 and 3 of LAR Enclosure 4 and finds that the door will not be located in the Seismic Category II portion of the TB and will, therefore, have no impact on the seismic analysis results of safety significant structures. On this basis, staff finds the proposed change acceptable from a structural engineering perspective.

#### *Clarification of Column Lines*

In the LAR, Enclosure 1, page 3, the Licensee describes that the column line designations for the southwest and southeast walls of the TB first bay will be clarified to reflect that the walls are not in the same line designation.

The staff performed a review of pages 2 to 8 of 20 in Enclosure 4 for the LAR and finds that the new column line designation for the southwest and southeast walls of the TB main area are not physical changes to the structure, but are clarified to better reflect the actual layout of the first bay south walls. Accordingly, these column line changes do not impact the seismic analysis assumptions described in UFSAR Section 3.7. On this basis, the staff considers the proposed column line changes shown on pages 2 to 8 of 20 in Enclosure 4 for the LAR to be acceptable.

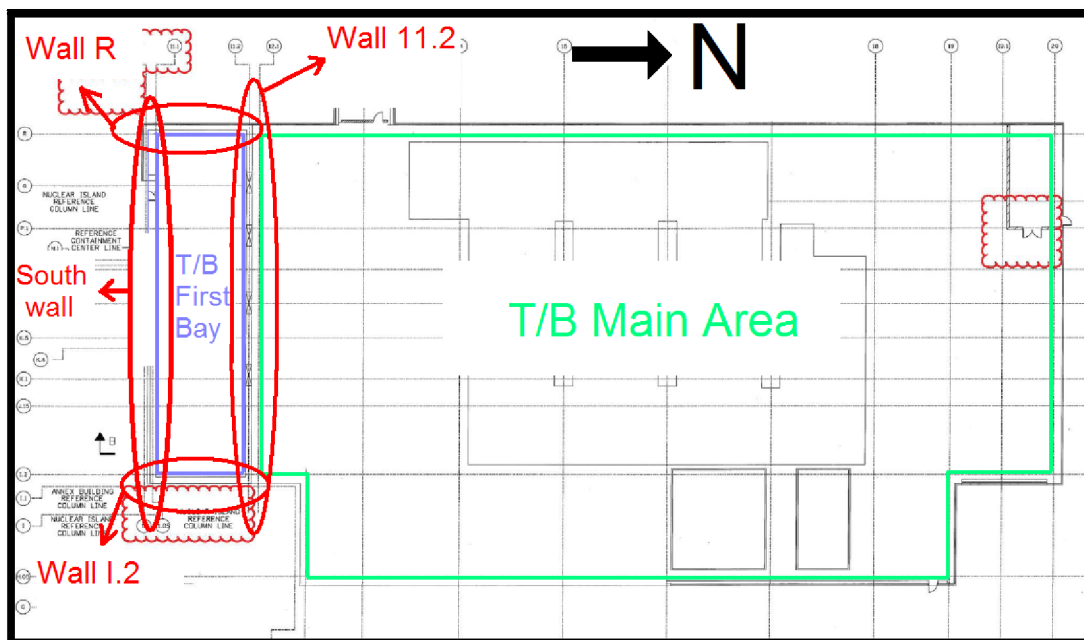
### *Changes to Floor and Ceiling Heights in Turbine Building main area*

In the LAR, Enclosure 1, page 6, Licensee states that the TB main area floors at elevations 117'-6", 135'-3", and 161'-0" will be increased in elevation by 3 feet, to 120'-6", 141'-3", and 170'-0", respectively, to provide additional space to facilitate installation of piping, pipe supports, supplemental steel, and other commodities and equipment. Enclosure 4, pages 9 and 10, indicate the changes to the effected UFSAR figures.

The staff performed a review of the structural changes to the TB main area and finds that the licensee remains committed to performing the design in accordance with the UBC-97 code provisions. The staff review also finds that the 3-ft increase in wall height in the main area will not impact the Seismic Category II portion of the TB as the main area floors and walls are not directly connected to the Seismic category II area (i.e. first bay). Based on the above, the staff finds the change to the floor and ceiling heights in the TB main area to be acceptable.

### *Changes to Floor and Ceiling Heights in Turbine Building first bay*

In the LAR, Enclosure 1, page 10, the licensee describes that as a consequence of changes to the TB main area, the height of the TB first bay will be increased from elevation 161'-0" to elevation 169'-0" to allow for installation of blowout panels. This TB first bay wall elevation change further involves increasing the thickness of the first bay walls adjacent to Column Line I.2 and adjacent to Column Line R, shown in red on Figure 2 below. Enclosure 1, page 10, states that the licensee's analysis demonstrates that increasing the thickness of walls R and I.2 from 2 feet to 3 feet, will structurally compensate for the increase in height.



**Figure 2: Turbine Building Layout**

To assess the impact of the design changes on the seismic response of the TB first bay, the licensee provided SSI analysis results comparing the site-specific response to the standard

plant design basis. LAR Enclosure 5 provides comparisons of TB first bay seismic analysis results. These results showed that the site-specific demands for the modified TB were enveloped by the AP1000 floor response spectra with the exception of a narrow frequency band. The site-specific spectra indicate a minor exceedance (<10%) in the low frequency range (0.5-0.6 Hz). To address this exceedance, the licensee stated that there will be no SSC's with resonant frequencies in that frequency range, so no equipment should be affected. The licensee also stated that displacements, soil pressures, and basemat stresses are still within approved design values.

The staff performed a review of Enclosure 5 results and found the seismic model and analysis methods to be consistent with UFSAR Section 3.7 and therefore acceptable. Staff's review of the response spectra comparisons in LAR Enclosure 5 finds that the AP1000 standard plant design response spectra envelope the site-specific analysis that included the TB design changes. The staff performed a review of the low-frequency exceedances and finds that there are no safety-significant components with resonant frequencies in this range. This conclusion is consistent with that described in staff's FSER (Section 3.7) for VEGP Units 3 and 4.

Staff's review of the TB first bay design changes finds that the changes will be performed in accordance with accepted code provisions ACI-349 and AISC/N690 and that the design remains enveloped by the AP1000 standard plant design response spectra in the frequency range significant to structural design (greater than 3 Hz). On this basis, the staff finds the changes to the TB first bay to be acceptable.

#### *Aircraft Impact Assessment*

In the LAR, Enclosure 1, page 9 of 19, the licensee states that the TB changes do not impact the aircraft impact assessment (AIA) because the changes do not affect any key design features credited in UFSAR Section 19F.4.2.

The licensee stated that, even when the height of the walls is increased, the number of barriers, and barrier thickness, are still adequate and does not negatively impact the AIA analysis performed in accordance with NEI 07-13. Staff review of UFSAR Section 19F.4.2 finds that the description of the TB first bay design feature remains valid because the proposed changes to the TB first bay do not alter the protective function of TB wall at Column Line 11.2. On this basis, staff finds that the design changes do not impact the licensee's AIA and the design continues to satisfy the NRC regulations, 10 CFR Part 50.150.

#### *New Blowout Panels*

In the LAR, Enclosure 1, page 10, the licensee describes that, as part of the proposed changes to the TB main area structure, interference will be created with respect to the existing vents on the TB first bay. The licensee proposes new blowout panels to compensate for the existing vent areas that may be obstructed as a result of the TB main area floor elevation changes. These panels will be installed in the south wall and wall 11.2 of the TB first bay. The blowout panels are designed to withstand tornado and seismic loading conditions. These design features prevent the south wall blowout panels from becoming a missile following a high energy line break (HELB), tornado, hurricane, or earthquake. The licensee described the blowout panels as a mechanism to relieve pressure in the TB first bay to mitigate sub-compartment pressurization. It was explained that blowout panels will be hinged at the bottom and will be tied

to the building by retaining cables. Thus, the licensee contends that the blowout panels will not become missiles that could damage the adjacent NI structures.

Staff's review of the LAR description of the blowout panels and restraining mechanisms finds that the panels will not likely pose a missile threat to adjacent Seismic Category I structures. On this basis, the staff concludes that the change in blow-out panel design is acceptable from a structural engineering perspective.

#### Conclusion:

The NRC staff reviewed the licensee's analysis provided in Section 3 of LAR 12-006, dated October 17, 2012. Based on the staff's technical evaluation, the staff found that:

1. The proposed design change involving a door location change in the TB main area was performed in accordance with relevant codes and standards and that the change will have no structural impact on Seismic Category I or Seismic Category II structures.
2. The proposed design change involving clarification of TB column lines in UFSAR figures are not physical design changes and do not impact the seismic analysis assumptions described in UFSAR Chapter 3.7.
3. The proposed 3-ft increase in wall height of the TB main area will not impact the Seismic Category II portion of the TB as the main area floors and walls are not directly connected to the Seismic Category II first bay.
4. The proposed design changes for the TB first bay will be performed in accordance with codes and standards committed to in the DCD, and the licensee's seismic analysis method does not depart from the standard plant method referenced in Vogtle's UFSAR Chapter 3.7.
5. Comparison of the site-specific TB first bay seismic analysis, which included the first bay design changes, and the AP1000 DCD TB seismic analysis, shows that the standard plant design demands continue to envelope the TB demands including the proposed design changes.
6. The proposed changes will not affect the AIA analyses and conclusions.
7. The proposed new blowout panel design will not pose a missile threat to adjacent Seismic Category I structures due to restraining mechanisms on the panel.

For the reasons specified above, the NRC staff finds that the proposed amendment and the supporting analysis provided in the LAR meet relevant design code provisions and do not alter relevant conclusions made for the AP1000 standard design. Based on these findings, the NRC staff concludes that there is reasonable assurance that the requirements of GDC 2 and GDC 4 for 10 CFR Part 50 Appendix A, 10 CFR Part 50, Appendix S, 10 CFR 50.150, and Appendix D to 10 CFR Part 52 will continue to be met. Therefore, the staff finds the proposed change to be acceptable.

### 3.2.2 FIRE PROTECTION EVALUATION

The fire protection review of this LAR concerns changes to certain fire areas within the TB. The primary purpose of these fire areas is to confine the effects of fires to a single compartment, thereby minimizing the potential for adverse effects from fires on redundant SSC's important to safety.

#### *Relocation of Fire Door to Room 20303*

The design function of room 20303 is to provide a separate fire area for the motor driven fire pump. The 3 hour fire rated double doorway in the southeast corner of the room 20303 allows for movement of equipment and material between the TB Elevation 100'- 0" and room 20303, and provides one of two egress pathways out of room 20303. The design function of the door is to form part of a 3 hour fire barrier between fire areas associated with the TB Elevation 100'-0" and room 20303. The relocation of the intermediate column requires this 3 hour fire rated double doorway to room 20303 to be relocated from the southeast corner of room 20303 to the east wall of room 20303 to clear the revised footprint of the intermediate column,

In the LAR, SNC stated that the change in location of this doorway does not adversely affect the room's fire protection adequacy evaluation, the ability to provide the necessary ingress and egress from room 20303, the structural design criteria or analyses for the room walls, or any of the fire pump's functions. SNC also stated that the change in location of the doorway does not adversely affect the room's fire protection adequacy because the 3-hour fire rating of the relocated door is not changed, so the walls that separate these two fire areas continue to provide the same 3-hour fire barrier. The staff reviewed the licensee's analysis provided in the LAR and finds that relocating the 3 hour fire rated door meet the guidance in Regulatory Guide 1.189, "Fire Protection for Nuclear Power Plants," because the relocated fire door will have the same fire rating as the original door. Therefore the fire barrier between room 20303 and the TB will have the same fire ratings as originally designed.

#### *Raising the Floor Elevations on Three Levels of the Turbine Building Main Area.*

The proposed changes to increase the floor-to-ceiling dimensions on three levels of the TB Main Area will also change the vertical component of the fire area boundary fire barrier locations for the rooms listed in Table 3.2.2 below.

Table 3.2.2 Fire Areas That Have Vertical Component Fire Area Boundary Changes

Figure 9A Sheet	Room	Fire Area	Affected Barrier
2 of 5	20401	2043 AF 01	FLOOR AND CEILING 3-HOUR RATED. This is a Tier 2* change because the fire area is changed by changing the location (i.e., elevation) of the floor and ceiling 3-hour rated fire barriers.
2 of 5	20407	2040 AF 01	FLOOR AND CEILING 3-HOUR RATED. This is a Tier 2* change because the fire area is changed by changing the location (i.e., elevation) of the floor and ceiling 3-hour rated fire barriers.

3 of 5	20501	2053 AF 02	FLOOR IS 3-HOUR RATED AND CEILING IS 2-HOUR RATED. This is a Tier 2* change because the fire area is changed by changing the location (i.e., elevation) of the floor 3-hour rated fire barrier, and the location (i.e., elevation) of the ceiling 2-hour rated fire barrier.
3 of 5	20502	2052 AF 02	FLOOR IS 3-HOUR RATED AND CEILING IS 2-HOUR RATED. This is a Tier 2* change because the fire area is changed by changing the location (i.e., elevation) of the floor 3-hour rated fire barrier, and the location (i.e., elevation) of the ceiling 2-hour rated fire barrier.
3 of 5	20503	2053 AF 01	FLOOR IS 3-HOUR RATED AND CEILING IS 2-HOUR RATED. This is a Tier 2* change because the fire area is changed by changing the location (i.e., elevation) of the floor 3-hour rated fire barrier, and the location (i.e., elevation) of the ceiling 2-hour rated fire barrier.
3 of 5	20504	2050 AF 01	FLOOR AND CEILING 3-HOUR RATED. This is a Tier 2* change because the fire area is changed by changing the location (i.e., elevation) of the floor and ceiling 3-hour rated fire barriers.
3 of 5	20510	2000 AF 01	FLOOR IS 2-HOUR RATED. This is a Tier 2* change because the fire area is changed by changing the location (i.e., elevation) of the floor 2-hour rated fire barrier.
3 of 5	20505 20506 20507 20508	2000 AF 01	FLOOR IS 2-HOUR RATED. This is a Tier 2* change because the fire area is changed by changing the location (i.e., elevation) of the floor 2-hour rated fire barrier.

In the LAR, SNC stated that because the fire barrier changes are only a result of changing the floor-to-ceiling dimensions of these rooms, these changes will not affect the design or rating of the fire barriers, the square footage of the rooms, the types or heat values of combustible materials in each room, or the combustible loading (BTU/ft<sup>2</sup>) of the fire areas. SNC also stated that the Tier 2\* changes that modify the heights of rooms with fire-rated ceilings or floors will not impact the UFSAR Appendix 9A Fire Protection Analysis.

The staff reviewed the licensee's analysis provided in the LAR and finds that increasing the floor to ceiling dimension of the fire barriers to the rooms listed in the above table meet the guidance of Regulatory Guide 1.189 because the fire barriers will continue to have the same fire rating as originally designed. The staff also finds that increasing the floor to ceiling dimension of the fire barriers will not impact the UFSAR Appendix 9A Fire Protection Analysis because the square footage of the rooms, the types or heat values of combustible material in the room or the combustible loading (BTU/ft<sup>2</sup>) of the rooms is not changed.

Conclusion:

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

- Relocating the 3 hour fire rated door to room 20303 and increasing the floor to ceiling dimensions of the fire barriers to the rooms listed in the above table meet the guidance in Regulatory Guide 1.189.
- Additionally, increasing the floor to ceiling dimensions of the fire barriers to the rooms listed in the above table will not impact the UFSAR Appendix 9A Fire Protection Analysis.

Based on these findings the NRC staff concludes that there is reasonable assurance that the requirements of 10 CFR 50.48(a) will continue to be met. Therefore, the staff finds the proposed changes acceptable.

### 3.2.3 AIRCRAFT IMPACT ASSESSMENT- FIRE PROTECTION

#### *Relocation of Fire Door to Room 20303*

The staff reviewed the licensee's analysis provided in the LAR and finds that relocating the 3-hour fire rated door meet the guidance of NEI 07-13, "Methodology for Performing Aircraft Impact Assessments for New Plants," Revision 8 because the relocated fire door will have the same fire rating as the original door. Therefore the fire barrier between room 20303 and the TB will be the same as originally designed.

Additionally SNC stated that the change in location of the doorway does not affect any key design features credited in the aircraft impact assessment, as described in UFSAR Subsection 19F.4.2, "Site Arrangement". The staff reviewed the AP1000 UFSAR Subsection 19F.4.2 "Site Arrangement" and finds that the relocation of this fire door does not affect any key design features credited in the aircraft impact assessment.

#### *Raising the Floor Elevations on Three Levels of the Turbine Building Main Area.*

The proposed changes to increase the floor-to-ceiling dimensions on three levels of the TB Main Area will also change the vertical component of the fire area boundary fire barrier locations for the rooms listed in Table 3.2.2 above.

In the LAR, SNC stated that because the fire barrier changes are only a result of changing the floor-to-ceiling dimensions of these rooms, these changes will not affect the design or rating of the fire barriers or the square footage of the rooms. The staff reviewed the licensee's analysis provided in its October 17, 2012 submittal and February 7, 2013 supplement and finds that increasing the floor to ceiling dimension of the fire barriers to the rooms listed in the above table meet the guidance of NEI 07-13 Revision 8 because the fire barriers will continue to have the same fire rating as the originally designed fire barriers.

## Conclusion

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

- Relocating the 3 hour fire rated door to room 20303 meet the guidance in NEI 07-13 Revision 8 since the relocated fire door will have the same fire rating as the original door.
- Also that increasing the floor to ceiling dimension of the fire barriers to the rooms listed in the above table meets the guidance in NEI 07-13 revision 8 since the fire barriers will continue to have the same fire rating as the originally designed fire barriers.

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 staff finds the proposed change acceptable.

### 3.2.4 SECURITY PLAN EVALUATION

#### 3.2.4.1 Introduction

In accordance with 10 CFR 73.55(c) the licensee must establish, maintain, and implement security plans to meet the requirements of 10 CFR 73.55 and 10 CFR Part 73, Appendices B and C. The licensee must demonstrate through these plans establishment and maintenance of a security organization, the use of security equipment and technology, the training and qualification of security personnel, the implementation of predetermined response plans and strategies, and the protection of digital computer and communication systems and networks. The licensee must have a management system for development, implementation, revision, and oversight of security implementing procedures. The approval process for implementing security procedures must be documented.

The security plans must describe how the licensee will implement Commission requirements and account for site-specific conditions that affect implementation of those Commission requirements as required by 10 CFR 73.55(c)(1)(i).

In UFSAR Section 13.6, the licensee describes its security plans which consist of the "Physical Security Plan" (PSP), "Training and Qualification Plan" (T&QP), and "Safeguards Contingency Plan" (SCP). The licensee also incorporates by reference the standard AP1000 design that includes design of physical protection systems within the design of the vital island and vital structures, as described in the Westinghouse Electric Company, AP1000 DCD, including Technical Report (TR) 49, "AP1000 Enhancement Report, (APP-GW-GLR-062)" TR 94, "AP1000 Safeguards Assessment Report, Revision 5, (APP-GW-GLR-66)" and TR 96, "Interim Compensatory Measures Report (APP-GW-GLR-067)." The documents incorporated by reference and the security plans are Safeguards Information and are withheld from public disclosure pursuant to 10 CFR 73.21.

Section 13.6 of the UFSAR describes the physical protection program and physical protection systems that are not addressed within the scope of the standard AP1000 design for meeting the NRC performance and prescriptive requirements for physical protection stated in 10 CFR Part 73, "Physical Protection of Plants and Materials." Section 13.6 of the licensee's UFSAR, incorporates by reference Section 13.6 of the AP1000 Design Control Document (DCD), Revision 19.



Physical Security Hardware- Inspection Testing, Analyses, and Acceptance Criteria (PS-ITAAC) specifically reviews equipment and/or features used for the physical security attributes of detection, assessment, delay, and response to protect against the design basis threat (DBT) of radiological sabotage as stated in 10 CFR 73.1(a). In UFSAR, Revision 1, Section 14.3.2.3.2 Physical Security ITAAC (PS-ITAAC), the licensee stated that “Generic PS-ITAAC have been developed in a coordinated effort between the NRC and the Nuclear Energy Institute (NEI). These generic ITAAC have been tailored to the AP1000 design and site-specific security requirements.”

The NRC staff reviewed Section 13.6 of the licensee’s UFSAR, and Units 3 and 4 security plans to ensure that the combination of the UFSAR and the security plans represents the complete scope of information relating to this review topic. The NRC staff’s review confirmed that the information in the LAR-12-006, and material incorporated by reference provided the information required reviewing physical security.

### 3.2.4.2 Physical Security Considerations

In LAR-12-006, Enclosure 1, Section 3 the licensee described eight items for security consideration and one PS-ITAAC comment, which the licensee considered as having no effect on the site’s physical protection program. The physical protection program includes the design of a physical protection system that ensures the capabilities to detect, assess, interdict, and neutralize threats up to and including the DBT of radiological sabotage are maintained at all times. The site’s physical protection program is intended to meet the NRC’s regulations for protection against the DBT of radiological sabotage as stated in 10 CFR 73.1, “Purpose and Scope,” and provide a 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.

In Section 3 of Enclosure 1 of LAR-12-006, the licensee stated that “reviews of APP-GW-GLR-066, ‘AP1000 Safeguards Threat Assessment,’ (TR-94), and the VEGP 3 and 4 Physical Security Plan (PSP) were completed regarding the TB configuration changes identified in this LAR.” The licensee stated that the proposed changes do not impact the conclusions of any of the scenarios in TR-94 or the licensee’s PSP. Staff’s evaluation of security-related impacts of the changes proposed in LAR-12-006 is discussed in the following sections. (Note that TR-94 and the PSP are SGI and are not available to the public.)

#### *AP1000 Safeguards Threat Assessment & Response Timelines*

The provisions of 10 CFR 73.55(b)(3)(i) require the licensee to “ensure that the capabilities to detect, assess, interdict, and neutralize threats up to and including the design basis threat of radiological sabotage as state in §73.1 are maintained at all times.”

In Section 3 of Enclosure 1 of LAR-12-006, Security Considerations, bullet 1 states “The proposed change has no impact on any pathways or barriers credited by the TR-94 assessment for any scenario...”

The AP1000 Safeguards Assessment Report, Revision 5, (APP-GW-GLR-66) (TR-94) describes the AP1000 physical protection system and analyzes the ability of the AP1000 security design to provide protection against malevolent attempts to commit radiological sabotage using elements of the DBT as described in 10 CFR 73.1(a)(1). The TR-94 report is

also intended to support the licensing of the portion of the AP1000 security system that is within the scope of the DC.

The target set identification process for the AP1000 used the standard methodology to determine those structures, systems, components (SSCs) or combination thereof that need protection in order to prevent radiological sabotage. TR-94 provided the methodology for the development of the target sets and the selection of the target set elements as part of the AP1000 physical design security features IAW guidance in Regulatory Guide 5.76, "Physical Protection Programs at Nuclear Power Reactors."

The NRC staff conducted a review of the scenarios provided in TR-94. TR-94 provides maps displaying the initial locations for armed responders and the deployment location for the ARs to identify and engage an adversarial force. The NRC staff analyzed the scenario timelines identified in TR-94 with consideration to the proposed changes in LAR-12-006. The NRC staff also reviewed the proposed changes with consideration of impacts to the pathways or barriers credited in the scenario timelines identified in TR-94.

The NRC staff finds that the proposed changes in LAR-12-006 do not impact the design features or assumptions identified in TR-94. The armed responder timelines used for movement and other action associated with adversary action or security response identified in TR-94 is not impacted by the proposed changes.

The licensee's description in Sections 11.5 and 14.5 of the PSP and Section 7 of the SCP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1. The NRC staff finds that the proposed changes in LAR-12-006 have no impact on any pathways or barriers, response timelines or estimated values based on scenario timelines and rates established by testing for similar tasks credited by the TR-94 assessment for any scenario. Since the changes described in LAR-12-006 do not impact the TR-94 assessment, the staff finds that there is reasonable assurance that the licensee will meet the requirement of 10 CFR 73.55(b)(3)(i). Therefore, the staff finds the proposed changes acceptable.

### *Security Organization*

The provisions of 10 CFR 73.55(d) establish requirements to describe a security organization, including the management system for oversight of the physical protection program. The security organization must be designed, staffed, trained, qualified, requalified, and equipped to implement the physical protection program as required by 10 CFR 73.55(b) and 10 CFR Part 73, Appendices B and C.

In Section 3 of Enclosure 1 of LAR-12-006, Security Considerations, bullet 2 states "No additions or deletions of security positions are proposed with this change; therefore, there is no impact on staffing of security response personnel as a result of this change."

The NRC staff finds that proposed changes in LAR-12-006 do not impact the staffing of security response personnel. Therefore, the staff finds that there is reasonable assurance that the licensee will meet the requirement of 10 CFR 73.55(d), and the proposed changes are acceptable.

### *Illumination*

The provisions of 10 CFR 73.55(i)(6) require, in part, that all areas of the facility are provided with illumination necessary to satisfy the design requirements of 10 CFR 73.55(b) and implement the protective strategy. Specific requirements include providing a minimum illumination level of 0.2 foot-candles, measured horizontally at ground level, in the isolation zones and appropriate exterior areas within the PA.

In Enclosure 6 of LAR-12-006, Security Considerations, bullet 3, states, “Protected area lighting required to meet regulatory commitments will be provided by high mast lighting and building-mounted lighting. The height at which building-mounted lighting is mounted is unchanged with the change in overall building height; therefore, the proposed changes to the turbine building height have no impact on meeting regulatory lighting commitments. The final lighting arrangement within the protected area will be designed to satisfy the regulatory required 0.2 foot-candles as a minimum.”

The NRC staff finds that the changes proposed in LAR-12-006 do not impact security exterior lighting. Therefore, the staff finds that there is reasonable assurance that the licensee will meet the requirement of 10 CFR 73.55(i)(6), and the proposed changes are acceptable.

### *Vital Areas and Vital Equipment*

The provisions of 10 CFR 73.55(e)(9)(i) require that “vital equipment must be located only within vital areas, which must be located within a protected area so that access to vital equipment requires passage through at least two physical barriers, except as otherwise approved by the Commission and identified in the security plans.”

In Section 3 of Enclosure 1 Security Considerations, bullet 4 states “the turbine building contains no vital equipment. Therefore, there is no impact on vital equipment as a result of these changes. Vital area access is unaffected.”

The NRC staff confirmed that the TB does not contain vital equipment. Therefore, the staff finds that there is reasonable assurance that the licensee will meet the requirement of 10 CFR 73.55(e)(9)(i), and the proposed changes are acceptable.

### *Training and Qualification*

The provisions of 10 CFR 73.55(k) require, in part, that the licensee establish and maintain a properly trained, qualified and equipped security force required to interdict and neutralize threats up to and including the DBT defined in 10 CFR 73.1, to prevent significant core damage and spent fuel sabotage. To meet this objective, the licensee must ensure that necessary equipment is in supply, working and readily available. The licensee must ensure training has been provided to all armed members of the security organization who will be available on site to implement the licensee’s protective strategy as described in the facility procedures and 10 CFR Part 73, Appendix C.

In Section 3 of Enclosure 1 of LAR-12-006, Security Considerations, bullet 8, states “the overall height of the fighting position increases by only 9 feet (increasing the floor from approximately 87 feet above ground level to approximately 96 feet above ground level).”

Because the proposed increase in height of the TB, and consequent increase in height of fighting positions located on the TB, is small relative to the overall building height, the training necessary to enable security force members to effectively engage threats is negligibly affected.

The NRC staff finds that this LAR-12-006 change does not impact the training of security response personnel. Therefore, the staff finds that there is reasonable assurance that the licensee will meet the requirement of 10 CFR 73.55(k), and the proposed changes are acceptable.

#### *Relocation of the door to Room 20303*

The provisions of 10 CFR 73.55(b)(4), require, in part, that, “the licensee shall analyze and identify site-specific conditions including target sets, that may affect the specific measures needed to implement the requirements of 10 CFR 73.55 and shall account for these conditions in the design of the physical protection program.”

The provisions of 10 CFR 73.55(k)(8)(ii) require, in part, that the licensee initiate response actions to interdict and neutralize threats in accordance with the requirements of Part 73, Appendix C, Section II, the SCP, and the licensee’s response strategy.

In Section 3 of Enclosure 1 of LAR-12-006, Security Considerations, bullet 7, the licensee stated, “The relocation of the door to Room 20303 has no impact on either response or adversary timelines.”

The NRC staff finds that the proposed change in LAR-12-006 to relocate the door to Room 20303 has no impact on either response or adversary timelines. The staff finds that there is reasonable assurance that the licensee will meet the requirement of 10 CFR 73.55(b)(4) and 10 CFR 73.55(k)(8)(ii); therefore, the staff finds the proposed changes acceptable.

#### *Lines of sight*

The provisions of 10 CFR 73.55(k)(8)(ii) require, in part, that the licensee initiate response actions to interdict and neutralize threats in accordance with the requirements of part 73, Appendix C, section II, the SCP, and the licensee’s response strategy.

In Section 3 of Enclosure 1 of LAR-12-006, Security Considerations, bullet 8, the licensee stated “The overall height of the fighting position increases by only 9 feet (increasing the floor from approximately 87 feet above ground level to approximately 96 feet above, ground level) and as such has no adverse impact on any lines of sight from these positions. Because the change does increase the height, the line of sight from the Turbine Building fighting positions is actually improved.”

The NRC staff confirmed that the increase in height described in LAR-12-006 has no adverse impact on the lines of sight from these positions. Therefore, the staff finds that there is reasonable assurance that the licensee will meet the requirement of 10 CFR 73.55(k)(8)(ii), and the proposed changes are acceptable.

## Conclusion:

Based on the above, the NRC staff determined that the changes described in Section 3 of Enclosure 1 of LAR 12-006 are acceptable because the changes do not affect the NRC staff's previous evaluations of the licensee's security plans. The NRC staff determined that the licensee properly concluded that the proposed changes do not result in a decrease in safeguards effectiveness.

Based on these findings the NRC staff concludes that there is reasonable assurance that the requirements of 10 CFR 73.55 will continue to be met. Therefore, the staff finds the proposed changes acceptable.

## 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Georgia 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. 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 (77 FR 77690; published on December 11, 2012). 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 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) has special circumstances present that outweigh the potential decrease in safety due to reduced standardization, and (5) 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 52, Appendix D, Section III.B.

The staff has concluded, based on the considerations discussed above, 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. Request for License Amendment and Exemption – Changes to the Structures and Layout of the Turbine Building (LAR-12-006), letter from Southern Nuclear Operating Company (SNC) dated October 17, 2012 (ADAMS Accession No. ML122960644) and January 4, 2013 (ADAMS Accession No. ML13008A234), January 25, 2013 (ADAMS Accession No. ML13028A264) and February 7, 2013 (ADAMS Accession No. ML13039A329)
2. Vogtle Electric Generating Plant (VEGP) Updated Final Safety Analysis Report (UFSAR), Revision 1, dated August 21 2012. (ADAMS Accession No. ML122490612)
3. AP1000 Design Control Document Revision 19, June 13, 2012 (ADAMS Accession No. ML11171A087)
4. VEGP Final Safety Evaluation Report (FSER) dated August 5, 2011 (ADAMS Accession No. ML111950510-letter, ADAMS Accession No. ML110450302—FSER package).
5. Final Safety Evaluation Report Related to Certification of the AP1000 Standard Plant Design, Supplement 2, NUREG 1793, August 5, 2011 ADAMS Accession No. (ML112061231).
6. American Concrete Institute (ACI), ACI-349-01, "Building Code Requirements for Nuclear Safety Related Structures."
7. American Institute of Steel Construction (AISC), AISC-N690-1994 "Specification for the Design, Fabrication and Erection of Steel Safety Related Structures for Nuclear Facilities."
8. NEI 03-12, "Template for the Security Plan, Training and Qualification Plan, Safeguards Contingency Plan, and Independent Spent Fuel Installation Security Program", Revision 6,
9. AP1000 DCD, including Technical Report (TR) 49, "AP1000 Enhancement Report," TR 94, "AP1000 Safeguards Assessment Report," and TR 96, "Interim Compensatory Measures Report."
10. SAND77-0777, Barrier Technology Handbook," Sandia National Laboratory, Albuquerque, NM,

11. NRC letter dated April 9, 2009, NRC Staff Review of Nuclear Energy Institute 03-12  
“Template for Security Plan, Training and Qualification, Safeguards Contingency Plan,  
[and Independent Spent Fuel Storage Installation Security Program]” (Revision 6)  
(ADAMS Accession No.: ML090920528)
12. Secy-05-0197, Review Of Operational Programs In A Combined License Application  
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Criteria