

SAFETY EVALUATION BY THE OFFICE OF NEW REACTORS
RELATED TO AN EXEMPTION AND AMENDMENT NO. 6
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 September 21, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12269A433), Southern Nuclear Operating Company (SNC/Licensee) requested that the U.S. Nuclear Regulatory Commission (NRC) amend the combined licenses (COLs) for Vogtle Electric Generating Plant (VEGP) Units 3 and 4, COL Numbers NPF-91 and NPF-92, respectively. The proposed amendment would depart from the Updated Final Safety Analysis Report (UFSAR) Tier 1 material, and would revise the associated material that has been included in Appendix C of each of the VEGP Units 3 and 4 COLs. Specifically the requested amendment will revise the Tier 1 Table 3.3-1 "Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Buildings, and Annex Building" (Table 3.3-1) to correctly translate information found in Tier 1 and Tier 2 drawings.

SNC also requested an exemption from the provisions of Title 10 of the *Code of Federal Regulation* (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.

This license amendment request revises UFSAR Tier 1 (and COL Appendix C) Table 3.3-1, "Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building," for consistency, clarity and completeness. The requested changes are to the wall,

roof and floor descriptions included in Table 3.3-1. The Licensee stated that the need for this change was identified during a consistency review of the entire Table 3.3-1, following a determination that some specific Table 3.3-1 entries were inconsistent with their related UFSAR Tier 2 technical information.

In letters dated October 29, 2012 (ADAMS Accession No. ML12307A195), and January 25, 2013 (ADAMS Accession No. ML13028A266), the Licensee 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 November 13, 2012 (77 FR 67685).

In order to modify the Tier 1 information, the NRC must find the Licensee's exemption request included in the license amendment request (LAR) acceptable. The staff review of the exemption request as well as the LAR 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 the licensee is requesting to change is referenced in ITAAC Table 3.3-6. 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)(1) 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 which the Licensee is proposing to modify. Therefore, the proposed change requires a license amendment.

3.0 TECHNICAL EVALUATION

3.1 EVALUATION OF EXEMPTION

3.1.1 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. ITAAC Table 3.3-6, ITAAC 2.a) Acceptance Criterion ii.a) states “A report exists that concludes that the containment internal structures as-built concrete thicknesses conform to the building sections defined in Table 3.3-1.” In addition, items in Table 3.3-6 Criteria 2.a) ii.b through ii.f also refers to Table 3.3-1. During the detailed design finalization of structures, the Licensee determined that departures from details identified in Tier 1 information are necessary to be consistent with the layout of structures as described in the UFSAR Tier 2 information. As a result, the Licensee proposes to modify the Tier 1 information in Table 3.3-1 to be consistent with the UFSAR Figures 1.2-23, 3.7.2-12, Figure 3.7.2-19 and Subsections 12.3.1.1.2 and 12.3.2.2.4. 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 AP1000 DCD. Therefore, the Licensee requested a permanent exemption from the provisions of 10 CFR 52, Appendix D, Section III.B limited in scope to the Tier 1 information described in the exemption request.

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.

3.1.2 AUTHORIZED BY LAW

This exemption would allow the Licensee to implement approved changes to Table 3.3-1. This is a permanent exemption limited in scope to particular Tier 1 information described in the exemption request, and subsequent changes to Table 3.3-1 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 staff has determined that granting of the Licensee proposed

exemption will not result in a violation of the Atomic Energy Act of 1954, as amended, or the Commissions regulations. Therefore, as required by 10 CFR 50.12(a)(1), the staff finds that the exemption is authorized by law.

3.1.3 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 which was incorporated by reference into the Licensee's licensing basis. The proposed exemption only allows the Licensee to improve the clarity and completeness of Table 3.3-1. The changes described in the Licensee's exemption request are identical to those requested in the associated LAR. These changes to the descriptions of the structures do not add, delete, or modify systems or equipment as described in Tier 1 of the AP1000 DCD. These changes will not impact the ability of the structures to perform their design functions, which include providing radiation shielding. Because the structure description changes will not affect the operation of any plant equipment or systems, these changes do not present an undue risk from existing plant equipment or systems. These design changes do not add any new equipment or system interfaces to the current plant design. The structures description changes do not introduce any new industrial, chemical, or radiological hazards that would represent a public health safety risk, nor do they modify or remove any design or operational controls or safeguards that are 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. Based on the above, no new accident precursors are created by allowing the Licensee to implement the changes described and justified in the LAR to Table 3.3-1. Thus, the probability of postulated accidents is not increased. Because the changes do not involve any physical changes to safety-related structures, systems, and components or functions used to mitigate an accident, the consequences of the accidents evaluated in the UFSAR are not affected. Therefore, as required by 10 CFR 50.12(a)(1), the staff finds that there is no undue risk to public health and safety.

3.1.4 CONSISTENT WITH COMMON DEFENSE AND SECURITY

The proposed exemption would allow the Licensee to implement modifications to Table 3.3-1 requested in the LAR. This is a permanent exemption limited in scope to the particular Tier 1 information described in the exemption request. Subsequent changes to Table 3.3-1 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 has no relation to security issues. Therefore, as required by 10 CFR 50.12(a)(1), the staff finds that common defense and security is not impacted by this exemption.

3.1.5 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 AP1000 DCD which was incorporated by reference into the Licensee's licensing basis. 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 the construction of the approved design. The

requested exemption asks for the Licensee to be allowed to implement the changes proposed in the LAR to Table 3.3-1. These changes are necessary to enhance the ability of the Licensee to construct the plant based on the information in the certified design, by clarifying the information found in the table. If this exemption is not granted, and the proposed changes in the LAR are not allowed to be implemented, then the ITAAC in 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 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 52 exist.

3.1.6 SPECIAL CIRCUMSTANCES OUTWEIGH ANY DECREASE IN SAFETY THAT MAY RESULT FROM THE REDUCTION IN STANDARDIZATION CAUSED BY THE EXEMPTION

This exemption would allow the implementation of changes to Table 3.3-1 proposed in the LAR. These changes have no effect on the information that was used to populate the table. So while the text in the table may be changed, the changes have no effect on any systems, structures or components meeting their design function. No design information is changed, simply the way it is being presented in Table 3.3-1. In fact, because these changes better align the text of the ITAAC table with the actual design standardization is improved because this change clarifies the ITAAC, ensuring that the ITAAC accurately test that the plant is built as designed. Based on this, as required by 10 CFR 52.63(b)(1), the staff finds that the special circumstances outweigh the effects the departure has on the standardization of the AP1000 design.

3.1.7 NO SIGNIFICANT REDUCTION IN SAFETY

This exemption would allow the implementation of changes to Table 3.3-1 proposed in the LAR. These changes only affect the presentation of the design information. Changing the presentation of this information in Table 3.3-1 does not change the information itself, and therefore has no effect on the described structures fulfilling their safety function. In the case of the structures described in Table 3.3-1, the function of those structures is to protect those systems, structures, and components within the described structures from external hazards and to minimize the propagation of internal hazards. This function is not affected by the changes proposed by the LAR; 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 information presented by the Licensee in this LAR was evaluated by NRC staff for its completeness, quality, and clarity. No new technical review of the designated changes in thickness, applicability as radiation shielding walls, height, length, or any other qualities that are proposed to be modified by this LAR was required or performed. This is because the changes to Table 3.3-1 are derived from Tier 2 information, and this Tier 2 information was reviewed during the evaluation of the AP1000 DCD and then incorporated by reference into SNC's Combined License Application for Vogtle Units 3 and 4. As part of this license amendment, SNC did not request any changes to design information, it merely requested changes to how the design information was described in Table 3.3-1. The following paragraphs describe the staff's approach to review the LAR.

The staff reviewed the proposed changes and determined that they do not affect any of the information used or cited in the NRC's safety findings as documented in either the AP1000 DCD FSER or the Vogtle Units 3 and 4 COL FSER. All of the proposed changes involved UFSAR Table 3.3-1 (identical changes are also proposed for Appendix C of the COL). The proposed changes fall into one of the following three areas: 1) clarifying or more completely describing the walls in Table 3.3-1 as they are portrayed in the associated Tier 2 Figures; 2) accurately indicating a wall's use as a radiation shielding wall; and 3) adding applicable notes to the table. There are no changes to the design, functional capabilities, method for performing a function, design analysis, safety analysis or to UFSAR Tier 2 information involved, and thus, the requested Tier 1 changes do not affect any design functions. The departures do not involve a change to the method of evaluation for establishing design bases or safety analyses. Tests, experiments and procedures described in the licensing basis were not changed by these departures. The departures do not represent a change to a design feature credited in the ex-vessel severe accident assessment.

- *Clarify or Completely Describe Information in Tier 1 Table 3.3-1*

The NRC staff verified that the changes to Table 3.3-1 accurately reflect the Tier 2 information depicted in UFSAR Figure 3.7.2-12 sheets 1 through 12, Figure 3.7.2-19 sheets 1 through 3, and Figure 1.2-23. Note that these figures are all withheld from public disclosure because they are security-related. In cases where a new table item was added, the staff verified that the additional item matched the information in the appropriate figure and more accurately described the walls. The staff also verified that the removal of the redundant wall descriptions from the table, to prevent future confusion, was in fact accurate. As part of this amendment, the Licensee proposed changes to the column in the table labeled "Column Lines." The staff reviewed the updated information, and confirmed that it improved the Licensee's ability to ensure the walls and floors are built as they were designed. Previously, Table 3.3-1 described some walls or floors that had protrusions or other variances in size or shape in generic terms. The revised table more accurately describes the actual layout of the wall, by segmenting the walls or floors at these protrusions or variances, rather than simply ignoring these small changes. This caused the applicant to add new, more specific, items to the table, and the previous generic descriptions of walls were deleted as they were redundant to the newly proposed specific descriptions. Similarly, the staff confirmed the accuracy of changes made to the columns titled "Floor elevation or Elevation Range" and "Concrete Thickness" by comparing the revised table to the previously cited security-related figures associated with each particular change.

- *Wall's Use as a Radiation Shield Wall*

The staff verified that the proposed changes to the column titled "Applicable Radiation Shielding Wall (Yes/No)" were accurate. Four of the changes proposed to Table 3.3-1 included revising this column as it described portions of Column Line N from "No" to "Yes" because Column Line N is an external wall in those locations, and as such is credited in the shielding design. It was merely an administrative error that the table originally displayed "No." The other changes made to this column were acceptable because the information was either added as part of a newly described segmented section of wall or floor, or removed as part of the removal of redundant items from the table after these newly described segments were inserted into the table, as described above.

- *Adding Applicable Notes to Tier 1 Table 3.3-1*

The staff reviewed the proposed notes as well as the proposed edits to existing notes. These notes (original and proposed) provide extra information that is useful to a reader of the table. The Licensee proposed new notes that more accurately describe the floor and wall layouts in Table 3.3-1. These notes add a layer of detail to the figures that allows the reader to more readily recognize the proper location, dimension, and thickness of the wall at various locations where confusion could arise and are given on the first page of the table as it appears in Appendix C. The first added note (note 7), makes it clear to a reader of Table 3.3-1 that both the floors and walls have thicknesses and so the locations and intersections described in Table 3.3-1 should not be interpreted as exact (or centerline to centerline) but rather the area between intersections. The staff agreed that this note would help to clarify interpretation of the Tier 2 drawings and the information in the Table 3.3-1. A proposed note (note 8) also attempted to address “transition areas.” In these areas one section of wall or floor is slowly transitioning between sections of varying thicknesses, so the portion of the wall or floor that is a transition area may be of a slightly different thickness than described in Table 3.3-1. The staff agreed that including this note helps to clarify the wall descriptions so that the reader or inspector does not think that the thickness given is necessarily constant. The last proposed note (note 9) addressed the fact that the roof of the building is sloped in certain areas, so that a wall may intersect it at a varying elevation. This note was proposed along with changing some of the maximum elevations given in the “Elevation or Elevation Range” column of Table 3.3-1 to “roof” as opposed to specific elevations. The staff finds that this newly added note improves the clarity of the table and ability to inspect the completion of the ITAAC and are therefore acceptable. The Licensee also proposed an addition to a note (note 2) that dealt with the allowable construction tolerances for floor or wall thicknesses that stipulated that these tolerances are not applicable to the basemat. The staff found this note to be acceptable because the tolerance of the basemat is designated as Tier 2* information and addressed in Section 3.8 of the UFSAR.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations (10 CFR 50.91(b)), 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, “Standards for Protection Against Radiation.” The NRC staff has determined that the amendment involves no significant change in the types or significant increase in the amounts 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 67685; published on November 13, 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 needs to 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) 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 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, assumptions, or the design itself, 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- Nuclear Island Basemat Thickness Tolerance, letters from Southern Nuclear Operating Company (SNC) dated September 21 (ADAMS Accession No. ML12269A433) and October 29, 2012 (ADAMS Accession No. ML12307A195) and January 25, 2013 (ADAMS Accession No. ML13028A266).
2. Vogtle Electric Generating Plant (VEGP) Updated Final Safety Analysis Report (UFSAR), Revision 1, dated August 31, 2012 (ADAMS Accession No. ML122490612).
3. AP1000 Design Control Document, Revision 19, June 13, 2012 (ADAMS Accession No. ML11171A500).
4. Vogtle Electric Generating Plant Final Safety Evaluation Report (FSER) dated August 5, 2011 (ADAMS Accession No ML111950510).
5. Final Safety Evaluation Report Related to Certification of the AP1000 Standard Plant Design, NUREG 1793, August 5, 2011 (ADAMS Accession No. ML112061231).