

B. H. Whitley  
Director  
Regulatory Affairs

Southern Nuclear  
Operating Company, Inc.  
42 Inverness Center Parkway  
Birmingham, AL 35242

Tel 205.992.7079  
Fax 205.992.5296



August 30, 2016

Docket Nos.: 52-025  
52-026

ND-16-1432  
10 CFR 50.90  
10 CFR 52.63

U.S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555-0001

Southern Nuclear Operating Company  
Vogtle Electric Generating Plant Units 3 and 4  
Request for License Amendment and Exemption:  
Slab Thickness Changes between Column Lines I to J-1  
and 2 to 4 at Elevation 153'-0" (LAR-16-019)

Ladies and Gentlemen:

Pursuant to 10 CFR 52.98(c) and in accordance with 10 CFR 50.90, Southern Nuclear Operating Company (SNC), the licensee for Vogtle Electric Generating Plant (VEGP) Units 3 and 4, requests an amendment to Combined License Numbers NPF-91 and NPF-92, for VEGP Units 3 and 4, respectively. The requested amendment includes changes to the Updated Final Safety Analysis Report (UFSAR) in the form of departures from the incorporated plant-specific Design Control Document Tier 2\* information and involves related changes to the VEGP Units 3 and 4 COL Appendix C (and corresponding plant-specific DCD Tier 1) information. Pursuant to the provisions of 10 CFR 52.63(b)(1), an exemption from elements of the design as certified in the 10 CFR Part 52, Appendix D, design certification rule is also requested for the plant-specific Tier 1 material departures.

The proposed change is to the thickness of one floor in the auxiliary building located between Column Lines I to J-1 and Column Lines 2 to 4 at Elevation 153'-0".

Enclosure 1 provides the description, technical evaluation, regulatory evaluation (including the Significant Hazards Consideration Determination), and environmental considerations for the proposed changes in the License Amendment Request (LAR).

Enclosure 2 provides the background and supporting basis for the requested exemption.

Enclosure 3 provides the proposed changes to the publically available licensing basis documents.

**Enclosure 4 contains the markup depicting the proposed change to information identified as security-related, also referred to as sensitive unclassified non-safeguards**

The changes proposed in this LAR are consistent in technical content with LAR 16-05, submitted by South Carolina Electric & Gas Company (SCE&G) on July 5, 2016 [Accession No. ML16187A392].

This letter contains no regulatory commitments.

SNC requests staff approval of this license amendment by May 26, 2017, to support installation of structural steel beams at Elevation 153'-0". Approval by this date will allow sufficient time to implement the licensing basis changes prior to the associated construction activities. SNC expects to implement this proposed amendment (through incorporation into the licensing basis documents; e.g., the UFSAR) within 30 days of approval of the requested changes. SCE&G has indicated the requested approval date for the Virgil C. Summer Units 2 and 3 license amendment request for this topic is July 5, 2017.

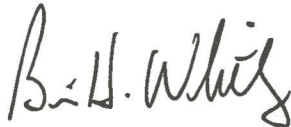
In accordance with 10 CFR 50.91, SNC is notifying the State of Georgia of this LAR by transmitting a copy of this letter and enclosures to the designated State Official.

Should you have any questions, please contact Ms. Paige Ridgway at (205) 992-7516.

Mr. Brian H. Whitley states that: he is the Regulatory Affairs Director of Southern Nuclear Operating Company; he is authorized to execute this oath on behalf of Southern Nuclear Operating Company; and to the best of his knowledge and belief, the facts set forth in this letter are true.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY



Brian H. Whitley



BHW/PTR/ljs

Sworn to and subscribed before me this 30<sup>th</sup> day of August, 2016

Notary Public: Lisa Myrick Spears

My commission expires: June 18, 2019

- Enclosures:
- 1) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Request for License Amendment: Slab Thickness Changes between Column Lines I to J-1 and 2 to 4 at Elevation 153'-0" (LAR-16-019)
  - 2) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Exemption Request: Slab Thickness Changes between Column Lines I to J-1 and 2 to 4 at Elevation 153'-0" (LAR-16-019)
  - 3) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Proposed Changes to the Licensing Basis Documents (Publicly Available Information) (LAR-16-019)
  - 4) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Proposed Changes to the Licensing Basis Documents (**Withheld Information**) (LAR-16-019)

cc:

Southern Nuclear Operating Company / Georgia Power Company

Mr. S. E. Kuczynski (w/o enclosures)  
Mr. M. D. Rauckhorst  
Mr. D. G. Bost (w/o enclosures)  
Mr. M. D. Meier (w/o enclosures)  
Mr. D. H. Jones (w/o enclosures)  
Ms. K. D. Fili (w/o enclosures)  
Mr. D. L. McKinney (w/o enclosures)  
Mr. T.W. Yelverton (w/o enclosures)  
Mr. B. H. Whitley  
Mr. C. R. Pierce  
Mr. D. L. Fulton  
Mr. M. J. Yox  
Mr. J. C. Haswell  
Mr. T. R. Takats  
Mr. W. A. Sparkman  
Mr. J. P. Redd  
Ms. A. C. Chamberlain  
Document Services RTYPE: VND.LI.L00  
File AR.01.02.06

Nuclear Regulatory Commission

Ms. C. Haney (w/o enclosures)  
Mr. S. Lee (w/o enclosures)  
Mr. L. Burkhart (w/o enclosures)  
Ms. J. Dixon-Herrity (w/o enclosures)  
Mr. P. Kallan  
Mr. C. Patel  
Mr. W. C. Gleaves  
Mr. B. M. Bavol  
Ms. R. Reyes  
Ms. M. A. Sutton  
Mr. M. E. Ernstes  
Mr. G. Khouri  
Mr. J. D. Fuller  
Ms. S. Temple  
Ms. J. Uhle  
Mr. T. E. Chandler  
Ms. P. Braxton  
Mr. T. Brimfield  
Mr. M. Kowal  
Mr. A. Lerch

State of Georgia

Mr. R. Dunn (w/o enclosure 4)

Oglethorpe Power Corporation

Mr. M. W. Price (w/o enclosure 4)

Mr. K. T. Haynes (w/o enclosure 4)

Ms. A. Whaley (w/o enclosure 4)

Municipal Electric Authority of Georgia

Mr. J. E. Fuller (w/o enclosure 4)

Mr. S. M. Jackson (w/o enclosure 4)

Dalton Utilities

Mr. T. Bundros (w/o enclosure 4)

WECTEC

Ms. K. Stoner (w/o enclosures)

Mr. C. A. Castell

Westinghouse Electric Company, LLC

Mr. R. Easterling (w/o enclosures)

Mr. J. W. Crenshaw (w/o enclosures)

Mr. C. D. Churchman (w/o enclosures)

Mr. L. Woodcock

Mr. P. A. Russ

Mr. A. F. Dohse

Mr. M. Y. Shaqqo

Other

Mr. J. E. Hesler, Bechtel Power Corporation

Ms. L. A. Matis, Tetra Tech NUS, Inc. (w/o enclosure 4)

Dr. W. R. Jacobs, Jr., Ph.D., GDS Associates, Inc. (w/o enclosure 4)

Mr. S. Roetger, Georgia Public Service Commission (w/o enclosure 4)

Ms. S. W. Kernizan, Georgia Public Service Commission (w/o enclosure 4)

Mr. K. C. Greene, Troutman Sanders (w/o enclosure 4)

Mr. S. Blanton, Balch Bingham

Mr. R. Grumbir, APOG

Mr. N. R. Kellenberger, South Carolina Electric & Gas Company

Mr. D. Kersey, South Carolina Electric & Gas Company

Mr. B. Kitchen, Duke Energy

Mr. S. Franzone, Florida Power & Light

**Southern Nuclear Operating Company**

**ND-16-1432**

**Enclosure 1**

**Vogtle Electric Generating Plant (VEGP) Units 3 and 4**

**Request for License Amendment:**

**Slab Thickness Changes between Column Lines I to J-1  
and 2 to 4 at Elevation 153'-0"**

**(LAR-16-019)**

(Enclosure 1 consists of 10 pages, including this cover page)

ND-16-1432

Enclosure 1

Request for License Amendment: Slab Thickness Changes between Column Lines I to J-1 and 2 to 4 at Elevation 153'-0" (LAR-16-019)

Table of Contents

1. SUMMARY DESCRIPTION
2. DETAILED DESCRIPTION
3. TECHNICAL EVALUATION
4. REGULATORY EVALUATION
  - 4.1. Applicable Regulatory Requirements/Criteria
  - 4.2. Precedent
  - 4.3. Significant Hazards Consideration Determination
  - 4.4. Conclusions
5. ENVIRONMENTAL CONSIDERATIONS
6. REFERENCES

ND-16-1432

Enclosure 1

Request for License Amendment: Slab Thickness Changes between Column Lines I to J-1 and 2 to 4 at Elevation 153'-0" (LAR-16-019)

Pursuant to 10 CFR 52.98(c) and in accordance with 10 CFR 50.90, Southern Nuclear Operating Company (SNC, or the "Licensee") hereby requests an amendment to Combined License (COL) Nos. NPF-91 and NPF-92 for Vogtle Electric Generating Plant (VEGP) Units 3 and 4, respectively.

## 1. SUMMARY DESCRIPTION

This activity changes the thickness of one floor in the auxiliary building located between Column Lines I to J-1 and Column Lines 2 to 4 at Elevation 153'-0". Information in COL Appendix C (and corresponding plant-specific DCD Tier 1) and Tier 2\* information in the Updated Final Safety Analysis Report (UFSAR) is revised to reflect the change in floor thickness. A review of the design drawings shows the floor thickness at this location is 1'-3" (15 inches). The thickness described in COL Appendix C (and corresponding plant-specific DCD Tier 1) Table 3.3-1, and UFSAR Figure 3.7.2-12, Sheet 10 is 0'-9". Consequently, the identified table and figure are proposed to be updated to revise the floor thickness from 0'-9" to 1'-3" and the floor slab thicknesses listed in UFSAR Subsection 3H.5.2 is updated to include the 15-inch thick floors.

## 2. DETAILED DESCRIPTION

The proposed change revises the thickness of the floor above a room that includes piping and valves for the Component Cooling Water System (CCS) in the auxiliary building from 0'-9" to 1'-3". The floor is located in the southeast corner of the auxiliary building between Column Lines I to J-1 and Column Lines 2 to 4 at Elevation 153'-0". A portion of the floor is above an elevator and stairs. The parked location for the cask handling crane is above the floor. The elevation of the top of the floor is unchanged. The floor is a composite structure constructed of concrete placed on corrugated metal decking. The metal deck rests on the top flange of the structural steel floor beam and support attached to a wall. The metal decking has 3-inch deep corrugations and functions as a left-in-place form. The ribs formed on the bottom of the floor by the corrugations in metal decking are not included in the thickness of the floor shown in COL Appendix C (and corresponding plant-specific DCD Tier 1) Table 3.3-1, and UFSAR Figure 3.7.2-12, Sheet 10. The floor beams have shear studs welded to the top flange to make the steel beam and concrete act as a composite beam. The requirements for seismic Category I structures and the description for this type of floor are included in UFSAR Subsection 3.8.4.4.1.

The proposed changes to the design of the subject floor, as described in the UFSAR, are needed because of a discrepancy between the detailed design and licensing basis that was identified after design finalization was reached. The proposed change to increase the floor thickness at the location indicated above does not change the design requirements and evaluation methods for composite floors in the auxiliary building incorporated in UFSAR Subsection 3.8.4, including conformance with American Institute of Steel Construction (AISC) N690 and American Concrete Institute (ACI) 349. The design of the floor remains in conformance with AISC N690 and ACI 349 criteria and requirements. The proposed changes do not change the design of the auxiliary building composite structures critical sections defined in UFSAR Appendix 3H.5.2. The 15-inch thick floor slab and the respective depth of its ribs are added to the list of floor and roof thicknesses included in UFSAR Subsection 3H.5.2.



The proposed change revises the concrete outline drawing in UFSAR Figure 3.7.2-12, Sheet 10 and an entry in COL Appendix C (and corresponding plant-specific DCD Tier 1) Table 3.3-1 to provide the revised thickness of the floor.

#### Licensing Basis Change Descriptions

#### **COL Appendix C (and corresponding plant-specific DCD Tier 1) Changes:**

Revise the information in COL Appendix C (and corresponding plant-specific DCD Tier 1) Table 3.3-1 for the auxiliary building floor between Column Lines I to J-1 and Column Lines 2 to 4 at Elevation 153'-0" to change the entry in the Concrete Thickness column from 0'-9" to 1'-3".

#### **UFSAR Tier 2\* Changes:**

Revise the information in UFSAR Figure 3.7.2-12 (Sheet 10 of 12) "[*Nuclear Island Key Structural Dimensions Sections C – C and H – H*]" as follows:

- In Section H-H, change the thickness of the floor at Elevation 153'-0" from 0'-9" to 1'-3".

Note: This "SUNSI" labeled figure contains sensitive unclassified non-safeguards information (SUNSI), is related to the physical protection of the plant, and thus should be withheld from public disclosure pursuant to 10 CFR 2.390(d).

Revise the description of the floors in UFSAR Subsection 3H.5.2 to include the 15-inch floor slabs and the respective 3-inch depth of the ribs.

### **3. TECHNICAL EVALUATION**

The floor above the CCS Valve Room is designed as a composite steel and concrete structure. The floor is a seismic Category I structure and is designed for dead, live, thermal, pressure, safe shutdown earthquake, and loads due to postulated pipe breaks. The design of the composite floor is in conformance with applicable criteria and requirements of AISC N690 and ACI 349.

The proposed changes do not change the design of the composite structures (floors and roof) critical sections discussed in UFSAR Subsection 3H.5.2.

The 15-inch thick floor above the CCS Valve Room is included in the overall structural design of the auxiliary building and the analysis of the seismic response.

The proposed changes do not change the function, design, or operation of the systems and components supported by and located under the subject floor. The proposed changes do not change the function, design, or operation of the cask handling crane. The proposed changes, including the increase in concrete thickness and small decrease in volume of the CCS Valve Room, do not adversely impact the 3-hour fire barrier function of the floor or fire analysis of the auxiliary building. The proposed changes do not affect the prevention or mitigation of abnormal events, e.g., accidents, anticipated operational occurrences, earthquakes, floods and turbine missiles, or their safety or design analyses. The proposed changes do not involve, nor interface with, any structure, system or component accident

initiator or initiating sequence of events, and thus, the probabilities of the accidents evaluated in the plant-specific DCD or UFSAR are not affected.

The proposed changes do not interface with or affect safety-related equipment or a fission product barrier. No system or design function or equipment qualification would be adversely affected by the proposed changes. The changes do not result in a new failure mode, malfunction or sequence of events that could adversely affect a radioactive material barrier or safety-related equipment. The proposed changes do not allow for a new fission product release path, result in a new fission product barrier failure mode, or create a new sequence of events that would result in significant fuel cladding failures.

The proposed changes do not adversely affect any safety-related system or component, equipment, design code, design code allowable value, function or design analysis, nor do they adversely affect any safety analysis input or result, or design/safety margin.

The proposed changes have no adverse effect on the ex-vessel severe accident. The design, geometry, and strength of the containment internal structures are not changed. The design and material selection of the concrete floor beneath the reactor vessel are not altered. The response of the containment to a postulated reactor vessel failure, including direct containment heating, ex-vessel steam explosions, and core concrete interactions is not altered by the proposed changes. The design of the reactor vessel and the response of the reactor vessel to a postulated severe accident are not altered by the proposed changes.

The proposed changes have no impact on the Aircraft Impact Assessment. The changes described do not change the overall design or construction of the auxiliary building or shield building. The changes described are located in the auxiliary building and do not impact the design or response of the containment vessel or shield building. There is no change to protection of plant structures, systems, and components against aircraft impact provided by the design of the shield building. The rating of the subject floor as a 3-hour fire barrier is not changed by the increase in thickness. The design and location of the other 3-hour fire barriers within the auxiliary building are not changed. There is no change to the design of the other key design features described in UFSAR Appendix 19F.

The proposed changes associated with this license amendment request include an increase in thickness of the concrete composite floors above the CCS Valve Room in the auxiliary building. The changes are to the floor in one location only and the configuration, thickness, and density of the other floors and walls in the auxiliary building are not changed. The proposed changes do not affect the radiological source terms (i.e., amounts and types of radioactive materials released, their release rates and release durations) used in the accident analyses, thus, the consequences of accidents are not affected. These changes do not affect the containment, control, channeling, monitoring, processing or releasing of radioactive and non-radioactive materials. The location and design of penetrations and the permeability of the concrete structures is not changed. No effluent release path is affected. The types and quantities of expected effluents are not changed. The functionality of the design and operational features that are credited with controlling the release of effluents during plant operation is not diminished. Therefore, neither radioactive nor non-radioactive material effluents are affected.

The floor is identified as providing shielding and the 15-inch thick floor is included in the shielding analysis. The thickness of the subject floor is increased and the thickness of the

walls and floors and the density of the concrete in other locations are not changed; therefore, there is no adverse change to the shielding provided by the floors and walls in the auxiliary building. There is no change to plant systems or the response of systems to postulated accident conditions. There is no change to the predicted radioactive releases due to normal operation or postulated accident conditions. Plant radiation zones, controls under 10 CFR Part 20, and expected amounts and types of radiologically controlled materials are not affected by the proposed changes. Therefore, individual and cumulative radiation exposures do not change.

The changes have no impact on the emergency plans or the physical security evaluation because there are no changes to the external configuration of walls, doors, or access to the nuclear island.

### Summary

The proposed changes would revise COL Appendix C (and corresponding plant-specific DCD Tier 1) information, as well as Tier 2\* information in the UFSAR in regard to the thickness of the floor above the CCS Valve Room in the auxiliary building. The proposed changes do not adversely affect the strength or response of the nuclear island seismic Category I structures. The proposed changes do not adversely affect any safety-related equipment or function, design function, radioactive material barrier or safety analysis.

## **4. REGULATORY EVALUATION**

### **4.1 Applicable Regulatory Requirements/Criteria**

10 CFR 52.98(f) requires NRC approval for any modification to, addition to, or deletion from the terms and conditions of a combined license (COL). This activity involves a departure from plant-specific Tier 1 information, and a corresponding change to COL Appendix C, Inspections, Tests, Analyses and Acceptance Criteria information; therefore, this activity requires an amendment to the COL. Accordingly, NRC approval is required prior to making the plant-specific changes in this license amendment request.

10 CFR Part 52, Appendix D, VIII.B.6, requires prior NRC approval for departure from Tier 2\* information. The proposed amendment includes a change to the thickness of the floor above the CCS Valve Room in the auxiliary building and to a figure depicting Category I structures that constitutes a change to Tier 2\* information. The CCS Valve Room contains components for the component cooling water system (CCS) and the floor above the CCS Valve Room is designed as a seismic Category I composite steel and concrete structure. Therefore, a license amendment request (LAR) (as supplied herein) is required.

10 CFR Part 50, Appendix A, General Design Criterion (GDC) 1 requires that structures be designed, fabricated, erected, constructed, tested, and inspected to quality standards commensurate with the importance of the safety functions to be performed. The proposed change does not change the criteria for the design,

analysis, and construction of the auxiliary building. These structures remain in conformance with the code requirements identified and supplemented in the UFSAR.

10 CFR Part 50, Appendix A, GDC 2 requires that structures withstand the effects of earthquakes and appropriate combinations of the effects of normal and accident conditions, including the effects of environmental loadings, such as earthquakes and other natural phenomena. The proposed changes have no impact on the seismic motions to which the nuclear island structures are subjected and no impact on the response of the nuclear island structures to seismic motions.

10 CFR Part 50, Appendix A, GDC 4 requires that systems, structures, and components can withstand the dynamic effects associated with missiles, pipe whipping, and discharging fluids, excluding dynamic effects associated with pipe ruptures, the probability of which is extremely low under conditions consistent with the design basis for the piping. The proposed changes do not adversely change the configuration of the walls and floors that provide separation between sources and potential targets. The proposed change has no adverse impact on the capability of the systems, structures, and components to withstand dynamic effects associated with missiles, pipe whipping, and discharging fluids as required by this criterion. The proposed change does not change the requirements for anchoring safety-related components and supports to seismic Category I structures.

#### **4.2 Precedent**

No precedent identified.

#### **4.3 Significant Hazards Consideration Determination**

The proposed amendment would revise the plant-specific Design Control Document (DCD) Tier 2\* material incorporated into the Updated Final Safety Analysis Report (UFSAR), by revising the thickness of the floor above the CCS Valve Room in the auxiliary building. The change also involves a change to COL Appendix C (and corresponding plant-specific DCD Tier 1) information.

An evaluation to determine whether or not a significant hazards consideration is involved with the proposed amendment was completed by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

Response: No

The design functions of the nuclear island structures are to provide support, protection, and separation for the seismic Category I mechanical and electrical equipment located in the nuclear island. The nuclear island structures are structurally designed to meet seismic Category I requirements as defined in Regulatory Guide 1.29.

The change of the thickness of the floor above the CCS Valve Room in the auxiliary building meets criteria and requirements of American Concrete Institute

(ACI) 349 and American Institute of Steel Construction (AISC) N690 and does not have an adverse impact on the response of the nuclear island structures to safe shutdown earthquake ground motions or loads due to anticipated transients or postulated accident conditions. The proposed changes do not impact the support, design, or operation of mechanical and fluid systems. There is no change to plant systems or the response of systems to postulated accident conditions. There is no change to the predicted radioactive releases due to normal operation or postulated accident conditions. The plant response to previously evaluated accidents or external events is not adversely affected, nor does the change described create any new accident precursors.

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

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

Response: No

The proposed change is to revise the thickness of the floor above the CCS Valve Room in the auxiliary building. The proposed changes do not change the design requirements of the nuclear island structures. The proposed changes do not change the design function, support, design, or operation of mechanical and fluid systems. The proposed changes do not result in a new failure mechanism for the nuclear island structures or new accident precursors. As a result, the design function of the nuclear island structures is not adversely affected by the proposed change.

Therefore, the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

**4.3.3 Does the proposed amendment involve a significant reduction in a margin of safety?**

Response: No

No safety analysis or design basis acceptance limit/criterion is challenged or exceeded by the proposed changes, thus, no margin of safety is reduced. Therefore, the proposed amendment does not involve a significant reduction in a margin of safety.

Based on the above, it is concluded that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

**4.4 Conclusions**

Based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's

regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public. The above evaluations demonstrate that the requested changes can be accommodated without an increase in the probability or consequences of an accident previously evaluated, without creating the possibility of a new or different kind of accident from any accident previously evaluated, and without a significant reduction in a margin of safety. Having arrived at negative declarations with regard to the criteria of 10 CFR 50.92, this assessment determined that the requested change does not involve a Significant Hazards Consideration.

## 5. ENVIRONMENTAL CONSIDERATIONS

The proposed amendment would revise the plant-specific Design Control Document (DCD) Tier 2\* material incorporated into the Updated Final Safety Analysis Report (UFSAR), by revising the thickness of the floor above the CCS Valve Room in the auxiliary building. The change also involves a change to COL Appendix C (and corresponding plant-specific DCD Tier 1) information.

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

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

As documented in Section 4.3, Significant Hazards Consideration Determination, of this license amendment request, an evaluation was completed to determine whether or not a significant hazards consideration is involved by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment." The Significant Hazards Consideration determined that (1) the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated; (2) the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated; and (3) the proposed amendment does not involve a significant reduction in a margin of safety. Therefore, it is concluded that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of "no significant hazards consideration" is justified.

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

The proposed amendment involves changes unrelated to any aspect of plant construction or operation that would introduce any change to effluent types (e.g., effluents containing chemicals or biocides, sanitary system effluents, and other effluents), or affect any plant radiological or non-radiological effluent release quantities.

Furthermore, the proposed changes do not affect any effluent release path or diminish the functionality of any design or operational features that are credited with controlling the release of effluents during plant operation. Therefore, it is concluded that the proposed amendment does not involve a significant change in the types or a significant increase in the amounts of any effluents that may be released offsite.

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

The proposed amendment involves an increase in thickness of the floor above the CCS Valve Room in the auxiliary building but, does not change other walls, floors, or other structures that provide shielding in the auxiliary building. Plant radiation zones are not affected, nor are there any changes to the controls required under 10 CFR Part 20 that preclude a significant increase in occupational radiation exposure. Consequently, these changes have no effect on individual or cumulative occupational radiation exposure during plant operation. Therefore, it is concluded that the proposed amendment does not involve a significant increase in individual or cumulative occupational radiation exposure.

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

## **6.0 REFERENCES**

None.

**Southern Nuclear Operating Company**

**ND-16-1432**

**Enclosure 2**

**Vogtle Electric Generating Plant (VEGP) Units 3 and 4**

**Exemption Request:**

**Slab Thickness Changes between Column Lines I to J-1 and  
2 to 4 at Elevation 153'-0"**

**(LAR-16-019)**

(Enclosure 2 consists of 6 pages, including this cover page)



## **1.0 PURPOSE**

Southern Nuclear Operating Company (the Licensee) requests a permanent exemption from the provisions of 10 CFR 52, Appendix D, Section III.B, Design Certification Rule for the AP1000 Design, Scope and Contents, to allow a departure from elements of the certification information in Tier 1 of the generic AP1000 Design Control Document (DCD). The regulation, 10 CFR 52, Appendix D, Section III.B, requires an applicant or licensee referencing Appendix D to 10 CFR Part 52 to incorporate by reference and comply with the requirements of Appendix D, including certified information in DCD Tier 1. The Tier 1 information for which a plant-specific departure and exemption is being requested includes a change to the thickness of one floor in the auxiliary building located between Column Lines I to J-1 and Column Lines 2 to 4 at Elevation 153'-0".

This request for exemption provides the technical and regulatory basis to demonstrate that 10 CFR 52.63, §52.7, and §50.12 requirements are met and will apply the requirements of 10 CFR 52, Appendix D, Section VIII.A.4 to allow departures from generic DCD Tier 1 information due to the increase of the auxiliary building floor thickness between Column lines I to J-1 and Column Lines 2 to 4 at Elevation 153'-0" described in Tier 1 Table 3.3-1.

## **2.0 BACKGROUND**

The Licensee is the holder of Combined License Nos. NPF-91 and NPF-92, which authorize construction and operation of two Westinghouse Electric Company AP1000 nuclear plants, named Vogtle Electric Generating Plant (VEGP) Units 3 and 4, respectively.

The proposed changes to the design of the subject floor, as described in the Updated Final Safety Analysis Report (UFSAR), are needed because of a discrepancy between the detailed design and licensing basis identified after design finalization was reached. The design drawings show a thickness of 1'-3" for the floor in the auxiliary building located between Column Lines I to J-1 and Column Lines 2 to 4 at Elevation 153'-0". Tier 1 Table 3.1-1 is proposed to be updated to increase the thickness from 0'-9" to 1'-3".

An exemption from elements of the AP1000 certified (Tier 1) design information to allow a departure from the design description is requested.

## **3.0 TECHNICAL JUSTIFICATION OF ACCEPTABILITY**

An exemption is requested to depart from AP1000 generic DCD Tier 1 material in regard to the AP1000 by changing the thickness of the floor in the auxiliary building located between Column Lines I to J-1 and Column Lines 2 to 4 at Elevation 153'-0".

The proposed changes affect the design details of the auxiliary building structural design, specifically, one floor thickness in the indicated location. The proposed change is needed in order to reconcile the design basis and licensing basis.

The proposed change is acceptable because the design functions of the auxiliary building, including the floor in question, as a seismic Category I structure complying with the regulatory acceptance criteria, codes, and industry standards specified in the UFSAR, and providing required fire protection and radiological protection features, continue to be met. The proposed changes do not adversely affect any safety-related equipment or function, design function, radioactive material barrier, or safety analysis.

ND-16-1432

Enclosure 2

Exemption Request: Slab Thickness Changes between Column Lines I to J-1 and 2 to 4 at Elevation 153'-0" (LAR-16-019)

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

#### **4.0 JUSTIFICATION OF EXEMPTION**

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

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

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

##### **1. This exemption is authorized by law**

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

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

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

The proposed exemption from the requirements of 10 CFR 52, Appendix D, Section III.B would allow changes to elements of the plant-specific Tier 1 DCD to depart from the AP1000 certified (Tier 1) design information. The plant-specific DCD Tier 1 will continue to reflect the approved licensing basis for VEGP Units 3 and 4, and will maintain a consistent level of detail with that which is currently provided elsewhere in Tier 1 of the DCD. Therefore, the affected plant-specific DCD Tier 1 ITAAC will continue to serve its required purpose.

Changing the thickness for the floor indicated above will not impact the ability of the components to perform their design functions. There is no change to plant systems or the response of systems to postulated accident conditions. There is no change to the predicted radioactive releases due to postulated accident conditions. The plant response to previously evaluated accidents or external events is not adversely affected, and the

change described does not create any new accident precursors. Therefore, no adverse safety impact that would present any additional risk to the health and safety is present. The affected Design Description in the plant-specific Tier 1 DCD will also continue to provide the detail necessary to support the performance of the associated ITAAC.

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

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

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

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

**4. Special circumstances are present**

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

The rule under consideration in this request for exemption is 10 CFR 52, Appendix D, Section III.B, which requires that a licensee referencing the AP1000 Design Certification Rule (10 CFR Part 52, Appendix D) shall incorporate by reference and comply with the requirements of Appendix D, including Tier 1 information. The VEGP Units 3 and 4 COLs reference the AP1000 Design Certification Rule and incorporate by reference the requirements of 10 CFR Part 52, Appendix D, including Tier 1 information. The underlying purpose of Appendix D, Section III.B is to describe and define the scope and contents of the AP1000 design certification, and to require compliance with the design certification information in Appendix D.

The proposed change is to increase the thickness for the floor in the auxiliary building located between Column Lines I to J-1 and Column Lines 2 to 4 at Elevation 153'-0". This change does not impact the ability of any structures, systems, or components to perform their functions or negatively impact safety. Accordingly, this exemption from the certification information will enable the Licensee to safely construct and operate the AP1000 facility consistent with the intent of the scope and contents of 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 is not necessary to achieve the underlying purpose of the rule.

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

Based on the non-standard nature of the changes to the plant-specific Tier 1 information in this limited area and the understanding that these changes are not related to system functions, these changes will not have a negative impact. Nevertheless, if other AP1000 licensees do not elect to request this exemption, the special circumstances continue to outweigh any decrease in safety from the reduction in standardization because the key design functions associated with this request will continue to be maintained. This exemption request and the associated marked-up table demonstrate that there is a minimal change from the generic AP1000 DCD, minimizing the reduction in standardization and consequently the safety impact from the reduction.

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

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

The requested exemption revises the plant-specific DCD Tier 1 information by increasing the thickness for the floor in the auxiliary building located between Column Lines I to J-1 and Column Lines 2 to 4 at Elevation 153'-0". Because the design changes associated with this exemption request will not adversely affect the ability of any systems or equipment to perform their design functions, there are no new failure modes introduced by these changes and the level of safety provided by the current systems and equipment is maintained. It is concluded that the design change associated with this proposed exemption will not result in a significant decrease in the level of safety.

**5.0 RISK ASSESSMENT**

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

**6.0 PRECEDENT**

None.

**7.0 ENVIRONMENTAL CONSIDERATION**

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

ND-16-1432

Enclosure 2

Exemption Request: Slab Thickness Changes between Column Lines I to J-1 and 2 to 4 at Elevation 153'-0" (LAR-16-019)

Based on the above review of the proposed exemption, the Licensee has determined that the proposed activity does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in the individual or cumulative occupational radiation exposure. Accordingly, the proposed exemption meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental impact statement or environmental assessment of the proposed exemption is not required.

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

## **8.0 CONCLUSION**

The proposed changes to Tier 1 information are necessary to increase the thickness of the auxiliary building floor located between Column Lines I to J-1 and Column Lines 2 to 4 at Elevation 153'-0". The exemption request meets the requirements of 10 CFR 52.63, "*Finality of Design Certifications*," 10 CFR 50.12, "*Specific Exemptions*," and 10 CFR 52 Appendix D, "*Design Certification Rule for the AP1000*." Specifically, the exemption request meets the criteria of 10 CFR 50.12(a)(1) in that the request is authorized by law, presents no undue risk to public health and safety, and is consistent with the common defense and security. Furthermore, approval of this request does not result in a significant decrease in the level of safety, presents special circumstances, does not present a significant decrease in safety as a result of a reduction in standardization, and meets the eligibility requirements for categorical exclusion.

## **9.0 REFERENCES**

None.

**Southern Nuclear Operating Company**

**ND-16-1432**

**Enclosure 3**

**Vogtle Electric Generating Plant (VEGP) Units 3 and 4**

**Proposed Changes to the Licensing Basis Documents  
(Publically Available Information)**

**(LAR-16-019)**

**Note:**

Added text is shown as bold **Blue Underline**  
Deleted text is shown as bold ~~**Red Strikethrough**~~

(Enclosure 3 consists of 2 pages, including this cover page)

**Tier 1 and corresponding COL Appendix C, Table 3.3-1, Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building - Revise the table values as shown below.**

(Excerpts from)Table 3.3-1 (cont.) Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building <sup>(1)</sup>				
Wall or Section Description	Column Lines <sup>(7)</sup>	Floor Elevation or Elevation Range <sup>(7)(8)</sup>	Concrete Thickness <sup>(2)(3)(4)(5)(9)</sup>	Applicable Radiation Shielding Wall (Yes/No)
***	***	***	***	***
Floor	From 2 to 4 and I to J-1	153'-0"	<del>0'-9"</del> <u>1'-3"</u>	Yes
***	***	***	***	***

**UFSAR Subsection 3H.5.2, Composite Structures (Floors and Roof) - Revise Tier 2\* information pertaining to the first paragraph of the “Structural Description” heading, in the location shown below.**

*[...The designs of these floors are in conformance with AISC N690 and ACI 349. The depth of the ribs for 9-inch concrete floor slabs, 9.5-inch concrete floor slabs, 15-inch concrete floor slabs, and 15-inch deep concrete roof slabs are 3 inches, 2.5 inches, 3 inches, and 4.5 inches respectively. ... ]\**

**Southern Nuclear Operating Company**

**ND-16-1432**

**Enclosure 4**

**Vogtle Electric Generating Plant (VEGP) Units 3 and 4**

**Proposed Changes to the Licensing Basis Documents  
(Withheld Information)**

**(LAR-16-019)**

**Note:**

Changed value is in a **Red Bubble**

(Enclosure 4 consists of 2 pages, including this cover page)