

B. H. Whitley
Director
Regulatory Affairs
Birmingham, AL 35242

Southern Nuclear
Operating Company, Inc.
42 Inverness Center Parkway
Post Office Box 1295



May 17, 2016

Docket Nos.: 52-025
52-026

ND-16-0650
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:
Column Line N Wall ITAAC Dimension Change (LAR-16-003)

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 (COL) Numbers NPF-91 and NPF-92, for VEGP Units 3 and 4, respectively. The requested amendment requires changes to plant-specific Tier 1 information, with corresponding changes to the associated COL Appendix C information, and involves associated Tier 2 information in the Updated Final Safety Analysis Report (UFSAR). Pursuant to the provisions of 10 CFR 52.63(b)(1), an exemption from elements of the design as certified in the 10 CFR Part 52, Appendix D, design certification rule is also requested for the plant-specific DCD Tier 1 material departures.

The requested amendment proposes changes to a plant-specific Tier 1 (and COL Appendix C) table and UFSAR text related to changes to the concrete wall thickness tolerance for the column line N wall from column lines 2 to 4 from elevation 100'-0" to 135'-3".

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 identifies the requested changes and provides markups depicting the requested changes to COL Appendix C (and plant-specific Tier 1) and the UFSAR. This letter contains no regulatory commitments.

SNC requests staff approval of the license amendment by December 9, 2016 to support concrete placement of the Column Line N wall in the auxiliary building from Elevation 100'-0" to Elevation 135'-3". Approval by this date will allow sufficient time to implement licensing basis

changes prior to affected construction activities. SNC expects to implement the proposed amendment (through incorporation into the licensing basis documents; e.g., the UFSAR) within 30 days of the approval of the requested changes.

SNC also expects to seek a No Objection letter from the NRC Staff by submittal of a Preliminary Amendment Request (PAR) following this LAR submittal. The No Objection letter is necessary to allow continued construction activities related to concrete placement of the Column Line N wall in the auxiliary building from Elevation 82'-6" to Elevation 100'-0" .


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. B. H. Whitley states that he is the Regulatory Affairs Director of Southern Nuclear Operating Company, 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



B. H. Whitley

BHW/PTR/ljs



Sworn to and subscribed before me this 17th day of May, 2016

Notary Public: Lisa Myrick Spears

My commission expires: June 18, 2019

- Enclosures: 1) Request for License Amendment: Column Line N Wall ITAAC Dimension Change (LAR-16-003)
- 2) Exemption Request: Column Line N Wall ITAAC Dimension Change (LAR-16-003)
- 3) Proposed Changes to the Licensing Basis Documents (LAR-16-003)

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. K. A. Roberts

Document Services RTYPE: VND.LI.L00

File AR.01.02.06

Nuclear Regulatory Commission

Ms. C. Haney (w/o enclosures)

Mr. M. Delligatti (w/o enclosures)

Mr. L. Burkhardt (w/o enclosures)

Mr. J. McKirgan (w/o enclosures)

Mr. P. Kallan

Mr. C. Patel

Mr. W. C. Gleaves

Mr. B. M. Baval

Ms. R. Reyes

Ms. M. A. Sutton

Mr. M. E. Ernestes

Mr. G. Khouri

Mr. J. D. Fuller

Ms. S. Temple

Ms. J. Uhle

Mr. T.E. Chandler

Ms. P. Braxton

State of Georgia

Mr. J. H. Turner

Oglethorpe Power Corporation

Mr. M. W. Price
Mr. K. T. Haynes
Ms. A. Whaley

Municipal Electric Authority of Georgia

Mr. J. E. Fuller
Mr. S. M. Jackson

Dalton Utilities

Mr. T. Bundros

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. G. F. Couture
Mr. M. Y. Shaqqo

Other

Mr. J. E. Hesler, Bechtel Power Corporation
Ms. L. A. Matis, Tetra Tech NUS, Inc.
Dr. W. R. Jacobs, Jr., Ph.D., GDS Associates, Inc.
Mr. S. Roetger, Georgia Public Service Commission
Ms. S. W. Kernizan, Georgia Public Service Commission
Mr. K. C. Greene, Troutman Sanders
Mr. S. Blanton, Balch Bingham
Mr. R. Grumbir, APOG
Mr. J. R. Bouknight, 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-16-0650

Enclosure 1

Vogtle Electric Generating Plant Units 3 and 4

Request for License Amendment:

Column Line N Wall ITAAC Dimension Change

(LAR-16-003)

(This enclosure contains twelve pages, including this cover sheet.)

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

Pursuant to 10 CFR 52.98(c) and in accordance with 10 CFR 50.90, Southern Nuclear Operating Company (SNC) 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

The proposed changes would revise the licensing basis documents to allow a specific exception to American Concrete Institute (ACI) 349-01 for wall thickness tolerances for single panel module walls of CA20 on the exterior of the nuclear island above grade. The proposed changes are reflected in a proposed revision of the Updated Final Safety Analysis Report (UFSAR) in the form of a departure from the incorporated plant specific Design Control Document (PS-DCD) Tier 2 information in Subsection 3.8.4.4.1 "Seismic Category 1 Structures." The proposed changes also involve a revision to COL Appendix C and associated PS-DCD Tier 1 information in Table 3.3-1, "Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building."

This enclosure requests approval of the license amendment necessary to implement these changes.

2. DETAILED DESCRIPTION

The need for this proposed change was identified during a survey performed of the CA20 module fuel transfer canal where it was identified that the tolerance specified in COL Appendix C was not met in a portion of the column line N wall from column lines 2 to 4 from the 100'-0" to 135'-3" elevation. This license amendment request (LAR) proposes to revise COL Appendix C and associated PS-DCD Tier 1 Table 3.3-1 for the concrete thickness tolerance for the column line N wall between column lines 2 to 4 from elevation 100'-0" to 135'-3" from $\pm 1"$ to $-1"$, $+4"$. The tolerance is being changed above grade so as not to conflict with Note 2 of PS-DCD Tier 1 Table 3.3-1 which states that for exterior walls below grade, the tolerance is $+12$ inches, -1 inch. In addition, this LAR provides the associated Tier 2 changes to identify the departure from the concrete thickness tolerance specified in the American Concrete Institute (ACI) 349-01 code for the column line N Wall from column lines 2 to 4 from elevation 100'-0" to 135'-3".

The nuclear island structures, consisting of the containment vessel, containment internal structures, shield building, and auxiliary building are founded on the 6-foot-thick cast-in-place, reinforced concrete basemat foundation. The primary 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 nuclear island structures provide protection for the safety-related equipment from the consequences of either a postulated internal or external event. The nuclear island structures are designed to withstand the effects of natural phenomena such as hurricanes, floods, tornados, tsunamis, and earthquakes without loss of capability to perform safety functions. The nuclear island structures are designed to withstand the effects of postulated internal events, such as fires and flooding, without loss of capability to perform safety functions.

The design and construction of the shield building are not affected by this activity. The design of the shield building structural wall modules is described in UFSAR Subsection 3.8.4.5.5

As discussed in UFSAR Subsection 3.8.4.1.2, the auxiliary building is a C-shaped section of the nuclear island that wraps around approximately 50 percent of the circumference of the shield building. Structural modules are used in the south end of the auxiliary building and concrete is utilized where required for shielding. These modules include the spent fuel pool, the fuel transfer canal, and the cask loading and cask washdown pits. The configuration of the auxiliary building structural modules is similar to the modular construction described in UFSAR Subsection 3.8.3.1 for the containment internal structures. The structural wall modules consist of a similar configuration of steel faceplates connected by steel trusses with shear studs welded to the inside faces of the faceplates. The subject structural module is the CA20 module in the south end of the auxiliary building. The module is in the radiation controlled area portion of the nuclear island and contains associated spent fuel systems. UFSAR Figure 3.8.4-4 shows the location of the structural modules in the auxiliary building. This proposed change refers to the tolerance for the concrete wall thickness for the column line N wall between column lines 2 to 4, from 100'-0" to 135'-3" elevation of the auxiliary building. The module faceplate is the east side of the exterior wall, as part of the CA20 module. Verification of the wall thickness definitions provided in COL Appendix C Table 3.3-1 provides assurance that the final plant construction complies with the design presented in the UFSAR. Note 2 of COL Appendix C Table 3.3-1 currently specifies that the concrete thicknesses for this wall has a tolerance below grade of +12 inches, -1 inch and of ± 1 " above grade. Grade is defined as 100'-0" elevation in COL Appendix C.

After placement of the CA20 module inside of the nuclear island, the west wall of the fuel transfer canal is utilized as the formwork for a portion of the column line N exterior wall of the auxiliary building between column lines 2 and 4 from elevation 98'-1" to 135'-3". The column line N wall is a continuous exterior shear wall, and it is a reinforced concrete wall extending from 66'-6" to the roof line at 180'-0". The wall is designed in accordance with UFSAR Subsection 3.8.4.4.1 to withstand dead, live, and other normal operating conditions, as well as seismic, accidental pressure, and tornado loads. The concrete wall also acts as a shielding component for the fuel being transferred in the fuel transfer canal, in addition to its structural functions.

The west wall of the fuel transfer canal is one of the unique designs of the single panel structures in the module. The west wall is the exterior wall against the mechanically stabilized earth below 100'-0" and will be constructed with formwork on the exterior above the 100'-0" elevation. A portion of the column line N west wall from column lines 2 to 4 from the 100'-0" to 135'-3" elevation uses the single panel of the CA20 module as the formwork of the column line N wall; however, the CA20 panel is not credited as a structural component of the column line N wall. The column line N wall is a reinforced concrete wall built in accordance with ACI 349-01. The wall from column lines 2 to 4, from the 100'-0" to 135'-3" elevation has a nominal thickness of 5'-6". The wall is shown on UFSAR Figure 3.8.4-4. No changes are proposed for this figure.

As noted in UFSAR Subsection 3.8.3.6.1, structural module tolerances conform to the requirements of Section 4 of ACI 117, applicable sections of American Welding Society (AWS) D1.1, and sections Q1.23 and Q1.25 of American Institute of Steel Construction (AISC N690). For reinforced concrete walls, UFSAR Subsection 3.8.4.4.1 requires the design and analysis procedures are in accordance with ACI 349-01, ACI 318-11, AISC N690, and AWS D1.1. For the purposes of this evaluation, the structural module comprises the formwork of the reinforced concrete wall of column line N, thus ACI 117 is not applicable to this evaluation. For reinforced concrete walls, seismic Category I structures are designed for loads in accordance with ACI 349-01.

A review was performed of the total wall tolerances, and it was identified that the total concrete thickness tolerance after fabrication and module placement will exceed the concrete thickness tolerance specified in COL Appendix C and plant-specific Tier 1 Table 3.3-1 and ACI 349-01 due to fabrication issues of the CA20 module. Survey information was taken of the wall prior to pouring concrete for the column line N wall and indicated that a portion of the wall will be over the +1" concrete thickness tolerance. Section 7.5.2.1 of ACI 349-01 indicates the maximum tolerance for the depth "d" the distance from the compression fiber to the tension reinforcement. Weld shrinkage along the single panel walls of the north end of the fuel transfer canal has resulted in portions of the wall being over the +1" tolerance by almost +3". The majority of the wall that is over the design tolerance is located in the north corner of the fuel transfer canal. This is the portion of the wall that connects with the shield building.

A portion of the column line N wall from column lines 2 to 4 will not meet the concrete thickness requirements specified in COL Appendix C above the 100'-0" elevation. Note 2 on Tier 1 Table 3.3-1 allows for a +12" tolerance below the 100'-0" elevation so the portion of the wall below the 100'-0" elevation will not be impacted. Due to the location of the wall and the current progress of construction, the design conditions cannot be restored. In order to resolve this deviation, this LAR proposes to increase the positive concrete thickness tolerance of column line N wall from column line 2 to 4 to +4" over the nominal design. The conventionally-reinforced concrete column line N wall will have a different thickness than specified, which is in contrast to the allowable member depth tolerances of ± 1 " specified in ACI 349-01 paragraph 7.5.2.1. The increase in thickness will amount to +4" above of the nominal design, or approximately 6.1% of the total wall thickness.

Licensing Basis Change Descriptions

It is proposed that the concrete thickness tolerance specified in COL Appendix C and associated plant-specific DCD Tier 1 Table 3.3-1 for the auxiliary building column line N wall from column line 2 to 4 from elevation 100'-0" to 135'-3" tolerance be increased to +4" to accommodate the structural deviation of the fuel transfer canal. A new note (Note 11) will be added to COL Appendix C and associated plant-specific DCD Tier 1 Table 3.3-1 for this region and will state, "This wall thickness has a tolerance of +4 inches, -1 inch above grade."

In order to address the departure from the requirements of ACI 349-01 for the column line N wall, a change to UFSAR Tier 2 Subsection 3.8.4.4.1 is proposed to identify that for the column line N wall between column line 2 to 4 from elevation 100'-0" to 135'-3" the tolerance for the wall thickness is increased over those found in ACI 349-01. Furthermore, text is added to state that these walls have been evaluated against the ACI 349-01 reinforcement requirements.

3. TECHNICAL EVALUATION

The assurance that AP1000 structures and associated modules will perform their safety function is found in their conformance to industry codes and standards that are appropriate for their intended function. Specifically, the codes listed in UFSAR Subsection 3.8.4.2 detail the key requirements of the auxiliary building, including CA20 and wall structures. As stated above, UFSAR Subsection 3.8.4.4.1 specifies that the design, materials, fabrication, construction, inspection, or testing for seismic Category I structures conforms to the requirements of ACI 349-01 and AISC N690-94, and UFSAR Subsection 3.8.4.4.1 requires that the design and analysis procedures are in accordance with ACI 349-01.

The proposed installation tolerance of +4", -1" for the column line N wall is greater than the ± 1 " specified in ACI 349-01 Section 7.5.2.1. To determine the impact and the margin, an assessment was performed of the affected areas in accordance with ACI 349-01 Section 1.4 for approval of a special system of construction with an accompanying analysis.

The conventionally-reinforced concrete column line N wall will have a different thickness than specified (insofar as the other side of the wall is formed correctly), which is in contrast to the allowable member depth tolerances of ± 1 " specified in ACI 349-01 paragraph 7.5.2.1. The increase in thickness will amount to +4", or approximately 6.1% of the total wall thickness. The resulting thickness will not change the rebar installation pattern; however, it will increase clear cover and apparent rebar depth from the east side by up to three inches. The column line N wall is designed with 10" of clear cover between the reinforcement and the single panel wall of CA20. The addition of 3" of clear cover over the nominal design will not affect the analysis for clear cover, but this will increase the wall's stiffness, shear strength, and moment capacity slightly where it joins the shield building. The increase in cover has two additional impacts that were analyzed, the first being the impact on the steel liner on a wall assumed to be 5'-10" uniformly (new allowable tolerance), and the second being the evaluation for horizontal shear failure for this same uniform wall thickness. The findings of the analysis are that the stress in the faceplate is well below the buckling stress when the module is under direct compression, and that there is not an increase in the likelihood of horizontal-shear failure at the steel liner of the column line N wall.

Single panel walls are not structurally credited. Excluding structural contributions, the liner must still remain in place during thermal transients, such as spent fuel pool boiling. This change does not affect the shear transfer capacity of the single-panel wall, and scan data of the as-built walls shows that the change in thickness is gradual enough to prevent a sudden transition where buckling could occur. Therefore, the wall deviations have no effect on the structural performance of the CA20 module as a whole, nor its liner integrity.

Therefore, including consideration of the increased concrete thickness tolerance for the column line N wall, the functions of the wall are shown to be maintained and the wall continues to meet the design functions. Consequently, the deviations from the ACI 349-01 code are acceptable.

Because the increased concrete thickness tolerance either maintains conformance with the applicable construction codes or sufficient margin exists to justify the deviation, the wall, while increased in thickness tolerance from what is shown in COL Appendix C, continues to perform its design basis function in accordance with the underlying safety analyses. Column line N wall design criteria and requirements are unchanged by this activity.

The nuclear island finite element models are based on the as-designed condition, with various modeling simplifications and assumptions. The overall percent change in thickness of the nominal 5'-6" thick section is relatively minor resulting in only a 6% increase in mass for this local area relative to the column line N wall. Locally, the increase in mass is proportional to the increase in shear stiffness and axial stiffness. The increase in wall thickness will increase the out-of-plane bending natural frequency (but not by more than 10%); however, the affected wall is a rigid member (natural frequency 33 Hz or higher). Therefore, a slight increase in stiffness will not result in an appreciable change in structural response in this local area or adjacent areas. The seismic response spectra generated as input to structures, systems, and components is broadened by +/-15% to account for variations in structural frequencies due to

uncertainties in parameters such as material and mass properties of the structures and the soil, damping values, seismic analysis technique, and the seismic modeling technique.

The deviation from the tolerance in the column line N wall is in a localized area, not affecting the overall wall design. Accordingly, there is no impact on the physical layout of other internal structures or system components. The deviation in this wall will not affect fuel handling operations in the fuel transfer canal. There is sufficient clearance to allow the Fuel Handling Machine, New Fuel Elevator Winch, Fuel Transfer Canal tracks, and Fuel Transfer Canal Fuel Uppender to function correctly.

The COL Appendix C and the UFSAR were reviewed for impacts to the available inventory of water for the Spent Fuel System (SFS) and for the fuel transfer canal. COL Appendix C has a volume requirement in ITAAC 2.3.07.07b.i of 129,500 gallons for SFS cooling. After a volumetric survey was completed, the current configuration of the fuel transfer canal and the associated volume continue to meet the ITAAC acceptance criteria and the volume is in excess of the calculated requirements to maintain fuel coverage if normal forced flow cooling capability is lost. Additionally, UFSAR Table 9.1-2 specifies a volume of 63,500 gallons for the fuel transfer canal. Survey data taken of the fuel transfer canal verify that surplus is still available over the UFSAR requirement. The volume requirements for the SFS and fuel transfer canal are not adversely affected by this design change.

The impact to the wall's effectiveness in providing radiation shielding was also examined, and there are no adverse effects because the radiation source terms were conservatively selected to envelope plant operating conditions. Specifically, the radiation analysis assumes a wall thickness of 5'-6" for the column line N wall, and the change adds 3" of concrete shielding. Consequently, this method accounts for tolerances and small perturbations in the as-built configuration of the plant are not expected to impact the bounding conclusions of the radiation analysis.

The activity does not alter the fire loads found in any adjacent fire zones and areas as no equipment is added or removed by the activity. The proposed changes do not affect any function or feature used for the prevention and mitigation of accidents or their safety analyses. The proposed changes do not involve nor interface with any structure, system or component (SSC) accident initiator or initiating sequence of events related to the accidents evaluated in the plant-specific DCD or UFSAR. 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. The thickness of the concrete west wall of the fuel transfer canal (column line N wall from column line 2 to 4) is also not used as an input to the PRA, and therefore, there is no PRA impact as a result of the tolerance change.

No system or design function or equipment qualification is affected by the proposed changes. The changes do not result in a new failure mode, malfunction or sequence of events that could 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 associated with this LAR do not affect the containment, control, channeling, monitoring, processing or releasing of radioactive and non-radioactive materials. The types and quantities of expected effluents are not changed, and no effluent release path is

affected by the proposed changes. Therefore, radioactive or non-radioactive material effluents are not affected by the proposed changes.

Plant radiation zones (as described in UFSAR Section 12.3), controls under 10 CFR Part 20, and expected amounts and types of radioactive materials are not affected by the proposed changes. The increased wall tolerance was also examined with respect to the wall's effectiveness in providing radiation shielding, and no adverse impacts were identified. Therefore, individual and cumulative radiation exposures do not change.

Summary

Ultimately, the proposed change increases the concrete wall thickness tolerance above grade for the column line N wall from column line 2 to 4 from elevation 100'-0" to 135'-3", identified in COL Appendix C Table 3.3-1, from $\pm 1"$ to $-1"$, $+4"$. Because conformance is either maintained with the applicable codes and standards identified in the underlying Tier 2 information or sufficient margin exists to justify the deviation, there are no adverse impacts from the expected responses of the west wall of the fuel transfer canal (column line N wall from column line 2 to 4). Therefore, the above proposed changes would 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 COL. This activity involves a departure from COL Appendix C Inspections, Tests, Analyses and Acceptance Criteria information, and a corresponding change to plant-specific DCD Tier 1; therefore, this activity requires a proposed amendment to the COL as well as Tier 2 information. Accordingly, NRC approval is required prior to making the plant-specific changes in this license amendment request.

10 CFR 52, Appendix D, Section VIII.B.5.a allows an applicant or licensee who references this appendix to depart from Tier 2 information, without prior NRC approval, unless the proposed departure involves a change to or departure from Tier 1 information, Tier 2* information, or the Technical Specifications, or requires a license amendment under paragraphs B.5.b or B.5.c of the section. This change involves a revision to plant-specific Tier 1 information (and corresponding COL Appendix C information), and thus requires NRC approval for the Tier 1 and involved Tier 2 departures.

10 CFR 50, Appendix A, General Design Criterion (GDC) 1, *Quality standards and records*, requires that structures, systems, and components important to safety shall be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the safety functions to be performed. By continuing to follow the guidelines of the NRC Regulatory Guides and industry standards, the requirements of GDC 1 have been maintained.

10 CFR 50, Appendix A, GDC 2, *Design bases for protection against natural phenomena*, requires that structures, systems, and components 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. Because there is no change to the expected responses to natural phenomena, and the wall, even with the increased tolerance, continues to be able to respond to the same design basis earthquake, there are no changes to the conformance with GDC 2.

10 CFR 50, Appendix A, GDC 4, *Environmental and dynamic effects design bases*, requires that structures, systems, and components 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-coolant accidents. The increased tolerance does not alter the environmental conditions associated with normal operation, and because the same design criteria are used before and after the change, the radiologically controlled portion of the auxiliary building continues to be able to withstand similar conditions.

4.2 Precedent

None

4.3 Significant Hazards Consideration Determination

The proposed changes would revise the Combined Licenses (COLs) by increasing the concrete thickness tolerances above grade for the column line N wall from column line 2 to 4 from elevation 100'-0" to 135'-3" in COL Appendix C Table 3.3-1, "Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building," from $\pm 1"$ to $-1"$, $+4"$. In addition, the changes include an update to UFSAR Subsection 3.8.4.4.1 to address the exceeded American Concrete Institute (ACI) 349-01 tolerance for the affected wall.

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

As indicated in the Updated Final Safety Analysis Report (UFSAR) Subsection 3.8.4.1.2, the auxiliary building contains structural modules in the south side of the building that include the spent fuel pool, fuel transfer canal, and cask loading and washdown pits. The increase in tolerance associated with the concrete thickness of the concrete wall for the column line N from column line 2 to 4 and the deviation from ACI 349-01 does not involve any accident initiating components or events, thus leaving the probabilities of an accident unaltered. The increased tolerance does not adversely affect any safety-related structures or equipment nor does the increased tolerance reduce the effectiveness of a radioactive material barrier. Thus, the proposed changes would not affect any safety-related accident mitigating function served by the containment internal structures.

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 tolerance increase and code deviation from ACI 349-01 does not change the performance of the affected radiologically controlled portion of the auxiliary building. As demonstrated by the continued conformance to the other applicable codes and standards governing the design of the structures, and in conjunction with the analysis of a special system of construction in accordance with ACI 349-01 Section 1.4, the wall with an increased concrete thickness tolerance continues to withstand the same effects as previously evaluated. There is no change to the design function of the affected module and wall, and no new failure mechanisms are identified as the same types of accidents are presented to the wall before and after the 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

The proposed change to increase the concrete thickness tolerance for the column line N wall from column line 2 to 4 identified in COL Appendix C Table 3.3-1 does not alter any design function, design analysis, or safety analysis input or result, and sufficient margin exists to justify departure from the ACI 349-01 requirements for the wall. As such, because the system continues to respond to design basis accidents in the same manner as before without any changes to the expected response of the structure, no safety analysis or design basis acceptance limit/criterion is challenged or exceeded by the proposed changes. Accordingly, no safety margin is reduced by the increase of the wall concrete thickness tolerance.

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

In conclusion, 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. Pursuant to 10 CFR 50.92, the requested change does not involve a Significant Hazards Consideration.

5. ENVIRONMENTAL CONSIDERATIONS

The details of the proposed changes are provided in Sections 2 and 3 of this license amendment request.

The proposed changes would revise the Combined Licenses (COLs) by increasing the concrete thickness tolerance for the column line N wall from column line 2 to 4 from elevation 100'-0" to 135'-3" described in COL Appendix C Table 3.3-1 and corresponding plant-specific DCD Tier 1 Table 3.3-1. In addition, the changes include a revision to UFSAR Subsection 3.8.4.4.1 to address the exceeded ACI 349-01 tolerance for the affected wall.

This review has determined that the proposed change requires an amendment to the COL. However, a review of the anticipated construction and operational effects of the requested amendment has determined that the requested amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9), in that:

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

As documented in Section 4.3, Significant Hazards Consideration Determination, of this license amendment request, an evaluation was completed to determine whether or not a significant hazards consideration is involved by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment." The Significant Hazards Consideration 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 changes in the requested amendment increase the concrete wall thickness tolerance found in the column line N wall from column line 2 to 4. The proposed changes are unrelated to any aspect of plant construction or operation that would introduce any change to effluent types (e.g., effluents containing chemicals or biocides, sanitary system effluents, and other effluents), or affect any plant radiological or non-radiological effluent release quantities. Furthermore, the proposed changes do not 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 changes increase the tolerances for the column line N wall for column line 2 to 4 from elevation 100'-0" to 135'-3". Plant radiation zones (addressed in UFSAR Section 12.3) are not affected, and controls under 10 CFR Part 20 preclude a significant increase in occupational radiation exposure. The increased wall tolerance was also examined with respect to the wall's effectiveness in providing radiation shielding, and no adverse impacts were identified. Therefore, the proposed amendment does not involve a significant increase in individual or cumulative occupational radiation exposure.

Based on the above review of the requested amendment, it has been determined that anticipated construction and operational effects 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 requested amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental impact statement or environmental assessment of the proposed amendment and exemption is not required.

6. REFERENCES

None

Southern Nuclear Operating Company

ND-16-0650

Enclosure 2

Vogtle Electric Generating Plant Units 3 and 4

Exemption Request:

Column Line N Wall ITAAC Dimension Change

(LAR-16-003)

(This enclosure contains seven pages, including this cover sheet.)

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 changes related to the design details of auxiliary building structural modules.

This request for exemption provides the technical and regulatory basis to demonstrate that 10 CFR 52.63, §52.7, and §50.12 requirements are met and will apply the requirements of 10 CFR 52, Appendix D, Section VIII.A.4 to allow departures from generic Tier 1 information due to the proposed additions to the non-system based design descriptions and Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) as identified in new Note 11 in Table 3.3-1, "Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building."

Structural modules are used in the south end of the auxiliary building and concrete is utilized where required for shielding. These modules include the spent fuel pool, the fuel transfer canal, and the cask loading and cask washdown pits. A review of the CA20 module after fabrication and placement and the comparison of text and figures presented in the Updated Final Safety Analysis Report (UFSAR) have identified the need for proposed design changes to the concrete thickness tolerance of the column line N wall from column lines 2 to 4 from elevation 100'-0" to 135'-3" identified in plant-specific DCD 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.

Plant-specific DCD Tier 1 Table 3.3-1 identifies the general tolerance of $\pm 1"$ as a tolerance acceptable to each module above grade. However, a review was performed of the concrete wall thickness tolerance of the column line N wall, and it was identified that the total concrete thickness tolerance after fabrication and module placement will exceed the concrete thickness tolerance specified in Tier 1 Table 3.3-1 and ACI 349-01 due to fabrication issues of the CA20 module. The tolerance is being changed above grade so as not to conflict with Note 2 of Tier 1 Table 3.3-1 which states that for exterior walls below grade, the tolerance is +12 inches, -1 inch. Grade is defined as 100'-0" elevation in Tier 1.

The change activity is to add Note 11 to Tier 1 Table 3.3-1 that provides revised tolerances for the concrete wall thicknesses for the column line N wall from column lines 2 to 4 from elevation 100'-0" to 135'-3". The concrete wall thickness tolerance is proposed to be increased from $\pm 1"$ to +4", -1" (i.e., Note 11) for the wall.

3.0 TECHNICAL JUSTIFICATION OF ACCEPTABILITY

UFSAR Subsection 3.8.4.1.2 states that structural modules are used for construction in the south side of the auxiliary building. In accordance with UFSAR Section 3.8.4.6.3, the structural wall modules in the auxiliary building are designed using the same procedures as the structural modules in the containment internal structures described in Subsection 3.8.3.5.3. The CA20 structural module is fabricated in accordance with UFSAR Subsection 3.8.3.6.1. The modules in the south end of the auxiliary building include the spent fuel pool, fuel transfer canal, and cask loading and cask washdown pits. Concrete is used where required for shielding. The south end of the auxiliary building is a Seismic Category I structure which contains CA20 and is considered to be the radiologically controlled portion of the auxiliary building. As described in UFSAR Subsection 3.8.3.6.1, modular construction techniques are used extensively in the containment internal structures. Subassemblies, sized for commercial rail transport, are assembled offsite and transported to the site or are assembled onsite. Tolerances for fabrication, assembly and erection of the structural modules used in containment internal structures conform to the requirements of section 4 of ACI 117, applicable sections of AWS D1.1, and sections Q1.23 and Q1.25 of AISC-N690. Therefore, module tolerances for fabrication, assembly, and erection of the structural modules used in the auxiliary building conform to these same requirements. Because conformance is either maintained with the applicable codes and standards identified in the underlying Tier 2 information or sufficient margin exists to justify the deviation, the increase in the concrete wall thickness tolerance for the column line N wall from column lines 2 to 4 is found to be acceptable.

Despite increasing the positive concrete thickness tolerance of column line N wall from column lines 2 to 4 from elevation 100'-0" to 135'-3", the function of the wall is maintained and the wall is able to perform adequately. The wall therefore continues to perform its design basis functions in accordance with the underlying analyses.

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

4.0 JUSTIFICATION OF EXEMPTION

10 CFR Part 52, Appendix D, Section VIII.A.4 and 10 CFR 52.63(b)(1) govern the issuance of exemptions from elements of the certified design information for AP1000 nuclear power plants. Since 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.

The revised tolerance for the column line N wall from column lines 2 to 4 from elevation 100'-0" to 135'-3", does not represent any adverse impact to the design function of the wall or the systems, structures and components therein and will continue to protect the health and safety of the public in the same manner. The revised tolerance does 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 change 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 fuel cladding failures. Accordingly, this change does not present an undue risk from any existing or proposed equipment or systems.

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

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

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

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

4. Special circumstances are present

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

The rule under consideration in this request for exemption is 10 CFR 52, Appendix D, Section III.B, which requires that a licensee referencing the AP1000 Design Certification Rule (10 CFR Part 52, Appendix D) shall incorporate by reference and comply with the requirements of Appendix D, including Tier 1 information. The 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 exemption would revise the concrete wall thickness tolerances for column line N wall from column lines 2 to 4 from elevation 100'-0" to 135'-3".

The proposed revised tolerance for the column line N wall, discussed in Section 2, maintains the design margins of the seismic Category 1 structures. 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 design certified by the NRC in 10 CFR 52, Appendix D.

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

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

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

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

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

The exemption revises the plant-specific DCD Tier 1 information by revising a concrete thickness tolerance for the column line N wall as discussed in Section 2. The change to the tolerance does not change the design requirements of the nuclear island structures. Because these functions continue to be met, there is no reduction in the level of safety.

5.0 RISK ASSESSMENT

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

6.0 PRECEDENT EXEMPTIONS

None

7.0 ENVIRONMENTAL CONSIDERATION

The Licensee requests a departure from elements of the certified information in Tier 1 of the generic AP1000 DCD. The Licensee has determined that the proposed departure would require a permanent exemption from the requirements of 10 CFR 52, Appendix D, 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).

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 are necessary to add new Note 11 in plant-specific Tier 1 Table 3.3-1 to reflect the discussed tolerance revision for the column line N wall concrete wall thickness. The exemption request meets the requirements of 10 CFR 52.63, *Finality of design certifications*, 10 CFR 52.7, *Specific exemptions*, 10 CFR 50.12,

ND-16-0650

Enclosure 2

Exemption Request: Column Line N Wall ITAAC Dimension Change (LAR-16-003)

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, satisfies the underlying purpose of the AP1000 Design Certification Rule, and does not present a significant decrease in safety as a result of a reduction in standardization.

9.0 REFERENCES

None

Southern Nuclear Operating Company

ND-16-0650

Enclosure 3

Vogtle Electric Generating Plant Units 3 and 4

Proposed Changes to the Licensing Basis Documents

(LAR-16-003)

(This enclosure contains four pages, including this cover sheet.)

Revise COL Appendix C Table 3.3-1 and corresponding Plant-Specific Tier 1 Table 3.3-1 as shown below:

| Table 3.3-1 (cont.) Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building⁽¹⁾ | | | | |
|--|--|--|---|---|
| Wall or Section Description | Column Lines⁽⁷⁾ | Floor Elevation or Elevation Range⁽⁷⁾⁽⁸⁾ | Concrete Thickness⁽²⁾⁽³⁾⁽⁴⁾⁽⁵⁾⁽⁹⁾ | Applicable Radiation Shielding Wall (Yes/No) |
| Column Line I wall | From 3 to 4 | From 107'-2" to roof | 2'-0" | Yes |
| Column Line I wall | From 4 to 16'-0" south of 5 | From 107'-2" to roof | 2'-0" | No |
| Column Line I wall | From 16'-0" south of 5 to 5 | From 105'-0" to roof | 2'-0" | No |
| Column Line J-1 wall | From 1 to 2 | From 82'-6" to 100'-0" | 2'-0" | Yes |
| Column Line J-1 wall | From 2 to 4 | From 66'-6" to 135'-3" | 2'-6" | Yes |
| Column Line J-1 wall | From 2 to 4 | From 135'-3" to 153'-0" | 2'-0" | Yes |
| Column Line J-1 wall | From 4 to shield building | From 66'-6" to 107'-2" | 2'-0" | Yes |
| Column Line J-2 wall | From 2 to 4 | From 66'-6" to 135'-3" | 2'-6" | Yes |
| Column Line J-2 wall | From 4 to intersection with shield building wall | From 66'-6" to 135'-3" | 2'-0" | Yes |
| Column Line K-2 wall | From 2 to 4 | From 66'-6" to 135'-3" | 4'-9" | Yes |
| Column Line L-2 wall | From 2 to 4 | From 66'-6" to 135'-3" | 4'-0" | Yes |
| Column Line N wall | From 1 to 2 | From 66'-6" to 100'-0" | 3'-0" | No |
| Column Line N wall | From 1 to 12'-9" north of 1 | From 100'-0" to 125'-0" | 3'-9" | Yes |
| Column Line N wall | From 1 to 12'-9" north of 1 | From 125'-0" to 135'-3" | 2'-0" | Yes |
| Column Line N wall | From 12'-9" north of 1 to 2 | From 100'-0" to 118'-2 1/2" | 3'-0" | Yes |
| Column Line N wall | From 12'-9" north of 1 to 2 | From 118'-2 1/2" to 135'-3" | 2'-0" | Yes |
| Column Line N wall | From 2 to 4 (or to shield building) | From 66'-6" to 98'-1" | 5'-6" | No |
| Column Line N wall | From 2 to 4 (or to shield building) | From 98'-1" to 135'-3" | 5'-6" <u>add</u> | Yes |
| Column Line N wall | From 1 to 4 (or to shield building) | From 135'-3" to 180'-0" | 2'-0" | Yes |
| Labyrinth Wall between Col. Line 3 and 4 and J-1 to 7'-3" from J-2 | Not Applicable | From 82'-6" to 92'-6" | 2'-6" | Yes |

Revise Notes for COL Appendix C Table 3.3-1 and corresponding Plant-Specific Tier 1 Table 3.3-1 as shown below:

Notes:

1. The column lines and floor elevations are identified and included on Figures 3.3-1 through 3.3-13.
2. These wall (and floor) thicknesses have a construction tolerance of ± 1 inch, except as noted and for exterior walls below grade where the tolerance is +12 inches, -1 inch. These tolerances are not applicable to the nuclear island basemat.
3. For walls that are part of structural modules, the concrete thickness also includes the steel face plates. Where faceplates with a nominal thickness of 0.5 inches are used in the construction of the wall modules, the wall thicknesses in this column apply. Where faceplates thicker than the nominal 0.5 inches are used in the construction of the structural wall modules, the wall thicknesses in the area of the thicker faceplates are greater than indicated in this column by the amount of faceplate thickness increase over the nominal 0.5 inches. Overlay plates are not considered part of the faceplates, and thus are not considered in the wall thicknesses identified in this column.
4. For floors with steel surface plates, the concrete thickness also includes the plate thickness.
5. Where a wall (or a floor) has openings, the concrete thickness does not apply at the opening.
6. The elevation ranges for the shield building items are rounded to the nearest inch.
7. The Wall or Section Description, Column Line information, and Floor Elevation or Elevation Ranges are provided as reference points to define the general location. The concrete thickness of an item intersecting other walls, roofs or floors at a designated location (e.g., column line) is not intended to be measured to the stated column line, but only to the point where the intersection occurs.
8. Where applicable, the upper wall portions extend to their associated roofs, which may vary in elevation, e.g., sloped roofs.
9. From one wall/floor section to another, the concrete thickness transitions from one thickness to another, consistent with the configurations in Figures 3.3-1 through 3.3-14.
10. This wall thickness has a tolerance of $\pm 1-5/8$ inch.
11. This wall thickness has a tolerance of +4 inches, -1 inch above grade.

UFSAR Subsection 3.8.4.4.1 “Seismic Category 1 Structures” First Paragraph is revised as shown below:

*[The design and analysis procedures for the seismic Category I structures (other than the containment vessel, containment internal structures, and other structures constructed using concrete-filled steel plate construction), including assumptions on boundary conditions and expected behavior under loads, are in accordance with ACI-349 with clarification as provided below for concrete structures, with AISC-N690 for steel structures, and AISI for cold formed steel structures.]** For the column line N Wall from 2 to 4 from 100'-0" to 135'-3", the tolerance for the wall thickness is increased over those in ACI 349-01. These walls were evaluated against ACI 349-01 reinforcement design requirements and demonstrated sufficient margin to accommodate the increased tolerance. The structural wall modules in the auxiliary building are designed using the same procedures as the structural modules in the containment internal structures described in Subsection 3.8.3.5.3. The shield building is designed using the procedures and requirements described in Subsection 3.8.4.5.5.