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ND-13-1504
10 CFR 50.90

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:
Module CA03 Details (LAR-13-018)

Ladies and Gentlemen:

In accordance with 10 CFR 50.90, Southern Nuclear Operating Company (SNC), the licensee for Vogtle Electrical 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.

This amendment request proposes to depart from approved AP1000 Design Control Document (DCD) Tier 2* information as incorporated into the Updated Final Safety Analysis Report (UFSAR) to revise various details related to the construction of Module CA03. Enclosure 1 provides the description, technical evaluation, regulatory evaluation (including the Significant Hazards Consideration determination) and environmental considerations for the proposed changes. Enclosure 2 provides markups depicting the requested changes to the VEGP Units 3 and 4 UFSAR.

This license amendment is requested to be issued by June 2, 2014. Delayed approval of this license amendment could result in a delay of this construction activity, i.e., setting of the walls for CA03, and subsequent dependent construction activities. SNC expects to implement the proposed amendment (through incorporation into the licensing basis documents, e.g., the UFSAR) within 30 days of approval of the requested changes.

This letter contains no regulatory commitments.

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 Mr. Wesley A. Sparkman at (205) 992-5061.

Ms. Amy G. Aughtman states that she is a Licensing Manager of Southern Nuclear Operating Company, is authorized to execute this oath on behalf of Southern Nuclear Operating Company and to the best of her knowledge and belief, the facts set forth in this letter are true.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY



A. G. Aughtman

AGA/ERG/kms

Sworn to and subscribed before me this 15th day of July, 2013

Notary Public: Kristin Marie Seibert

My commission expires: August 16, 2016



- Enclosures: 1) Request for License Amendment, Module CA03 Details (LAR-13-018)
2) Proposed Changes to the Licensing Basis Documents (LAR-13-018)

cc:

Southern Nuclear Operating Company/ Georgia Power Company

Mr. S. E. Kuczynski (w/o enclosures)

Mr. J. A. Miller

Mr. D. A. Bost (w/o enclosures)

Mr. B. L. Ivey

Mr. M. D. Rauckhorst (w/o enclosures)

Mr. J. T. Gasser (w/o enclosures)

Mr. D. H. Jones (w/o enclosures)

Mr. J. R. Johnson (w/o enclosures)

Mr. T. E. Tynan

Mr. D. M. Lloyd

Mr. B.H. Whitley

Mr. C. R. Pierce

Mr. D. L. Fulton

Mr. C. H. Mahan

Ms. A. G. Aughtman

Mr. M. C. Medlock

Mr. W. A. Sparkman

Document Services RTYPE: VND.RA.L06

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Nuclear Regulatory Commission

Mr. V. M. McCree (w/o enclosures)

Mr. F. M. Akstulewicz (w/o enclosures)

Mr. L. Burkhardt (w/o enclosures)

Mr. B. C. Anderson

Mr. R. G. Joshi

Ms. D. L. McGovern

Mr. B. M. Bovol

Ms. M. A. Sutton

Mr. M. E. Ernstes

Mr. G. Khouri

Mr. L. M. Cain

Mr. J. D. Fuller

Mr. C. B. Abbott

Mr. C. Huffman

State of Georgia

Mr. J. H. Turner

Oglethorpe Power Corporation

Mr. M. W. Price

Mr. K. T. Haynes

Municipal Electric Authority of Georgia

Mr. J. E. Fuller

Mr. S. M. Jackson

Dalton Utilities

Mr. D. Cope

CB&I

Mr. J. Simmons (w/o enclosures)

Mr. G. Grant (w/o enclosures)

Ms. K. Stoner (w/o enclosures)

Mr. C. A. Castell

Westinghouse Electric Company, LLC

Mr. T. C. Geer (w/o enclosures)

Mr. S. W. Gray (w/o enclosures)

Mr. F. G. Gill

Mr. P. A. Russ

Mr. G. F. Couture

Mr. M. Y. Shaqqo

Other

Mr. R. W. Prunty, Bechtel Power Corporation

Ms. K. K. Patterson, 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

Ms. J. G. Ezell, South Carolina Electric & Gas Company

Mr. B. Kitchen, Duke Energy

Mr. S. Franzzone, Florida Power & Light

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Units 3 and 4

ND-13-1504

Enclosure 1

Request for License Amendment

Module CA03 Details

(LAR-13-018)

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1. Summary Description

In accordance with 10 CFR 50.90, Southern Nuclear Operating Company (SNC), the licensee for Vogtle Electrical 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 purpose of this document is to address inconsistencies within the licensing basis and to propose design changes related to the west wall structural module (CA03) of the in-containment refueling water storage tank (IRWST).

The proposed changes to Tier 2* information in the UFSAR include:

- removing the material designation for the horizontal stiffeners on the wall of the IRWST;
- adding a stiffener to the configuration shown;
- increasing the number and changing the distribution of shear studs on module support legs that anchor the module into the concrete;
- increasing the number of rows of anchoring bars on the submodule legs; and
- adding a note permitting anchor bars with hooks.

2. Detailed Description

The proposed revisions to the UFSAR address inconsistencies within the UFSAR and propose design changes related to the CA03 structural module, which is the IRWST west wall. These proposed changes are described below. The changes identified in this document are primarily to information identified as Tier 2* on Figure 3.8.3-8, Sheet 3. The design details included as Tier 2* information on the figure are designated as Tier 2* in Subsection 3.8.3.1.3. This is consistent with the provision in 10 CFR Part 52, Appendix D, Section VIII.B, that Tier 2* information is designated with italicized text or brackets and an asterisk.

Horizontal Stiffener Material

In UFSAR Subsection 3.8.3.5.8.2, the external hoop (horizontal) angle stiffeners for the CA03 structural module are specified as carbon steel. However, in Figure 3.8.3-8, Sheet 3, these stiffeners (identified as L4x4x½) are designated as stainless steel (“SST” and “SS”). These stiffeners are located on the exterior of the tank and are not exposed to the reactor coolant stored in the IRWST. The proposed changes remove the SST and SS designations for the horizontal stiffeners from the figure in the section showing a vertical slice of the module wall and from the detail showing the design of the horizontal and vertical T stiffeners, and remove the designation of carbon steel in UFSAR Subsection 3.8.3.5.8.2.

Horizontal Stiffener Design

The proposed design changes increase the number of external horizontal stiffeners and increase the size and thickness of some of the stiffeners. A revision to UFSAR Figure 3.8.3-8, Sheet 3, is proposed to increase the number of the angles. Also, a note is proposed to be added to the size designation to identify that the size is the design minimum.

Number and Location of Headed Studs

Headed shear studs attached to the bottom portion of the CA03 structural module are used to anchor the module into the concrete in the bottom of the containment. The note on UFSAR Figure 3.8.3-8, Sheet 3, describing the number and location of the studs indicates 4 vertical rows, one row per face, and 9 studs per row. The wording of this note is not clear as to what faces are being identified or how many times this pattern is repeated. The design includes vertical T stiffeners that extend into the concrete below. These extensions form legs on which the CA03 structural module rests prior to placement of concrete. The legs have a shape similar to a wide flange beam. The faces refer to the outer surface of the web and flanges of each leg. There are two of these legs for each submodule. Design finalization revealed that the lower studs facing the containment vessel cause a potential interference with the containment vessel. A row of nine studs on the face of the leg facing the containment vessel does not provide proper clearance to the vessel.

The proposed changes to UFSAR Figure 3.8.3-8, Sheet 3, revise the number and change the arrangement of studs for each leg. A total of 42 studs are proposed to be provided instead of 36. The figure is changed to show 7 studs on the side of the leg facing the containment vessel (the flange of a leg), retaining 9 studs on the side of the leg facing away from the containment vessel, and 13 studs on each side of the leg perpendicular (the web of the leg) to the containment vessel. The proposed increase in number of studs on each side of the leg perpendicular to the containment vessel is achieved by using a double row of studs near the bottom of the leg. The note is proposed to be clarified to specify that the number of studs applies to each leg of the module.

Anchor Bars on Module Legs

Deformed bars are connected to legs at the bottom of the module below the bottom of the tank to anchor CA03 into the concrete. A proposed change to UFSAR Figure 3.8.3-8, Sheet 3, adds a third layer of bars to the top set of bars. The straight number of bars per row, size, vertical spacing, and development length of the deformed bars remains the same. The other parameters important to anchoring the bars in the concrete, including nominal size and spacing, are not changed.

The proposed changes to the figure also add a note describing the use of bars with hooks. The figure shows a representative configuration for a submodule away from the ends of the wall. This representative figure is meant to show the configuration for most, but not all of the submodules that form the completed module. Due to interferences with the adjacent walls of the IRWST, this representative configuration cannot be used on the ends of the CA03 module. The use of bars with hooks provides sufficient anchoring capability. The proposed note also permits these rows of hooked bars to have three bars instead of four to minimize interferences. The proposed note addressing hooked bars supplements, but does not change, Tier 2* information because it does not change the design of the representative submodule shown in the figure, since the figure is for submodules away from the ends of the CA03 module.

Licensing Basis Change Descriptions

The affected UFSAR Tier 2* subsection and figure are proposed to be modified as discussed below and shown in Enclosure 2.

1. UFSAR Subsection 3.8.3.5.8.2 is revised to remove the carbon steel designation for the external horizontal stiffeners.
2. UFSAR Figure 3.8.3-8, Sheet 3, is revised to remove the stainless steel designation of the external horizontal stiffeners in two locations.
3. UFSAR Figure 3.8.3-8, Sheet 3, is revised to increase the number of horizontal stiffeners on the exterior of the IRWST wall and to change the spacing information and elevation for the top stiffener.
4. UFSAR Figure 3.8.3-8, Sheet 3, is revised to add a note that the size of the horizontal stiffeners on the exterior of the IRWST wall is the design minimum.
5. UFSAR Figure 3.8.3-8, Sheet 3, is revised to change the number and revise the arrangement of shear studs on the legs of the module and to revise the note describing the placement of the shear studs that anchor the module into the concrete.
6. UFSAR Figure 3.8.3-8, Sheet 3, is revised to add a row of anchoring bars to the set of bars at the top of the legs of the module below the tank floor.
7. UFSAR Figure 3.8.3-8, Sheet 3, is revised to add a note permitting the use of hooked bars as anchor bars and permitting the rows of hooked bars to have three bars in a row.

3. Technical Evaluation

Structure, System, Component and/or Analysis Descriptions

The nuclear island structures consist of the containment, containment internal structures, shield building, and auxiliary building. 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 containment internal structures are those concrete and steel structures inside (not part of) the containment pressure boundary that support the reactor coolant system components and related piping systems and equipment. The walls that form the IRWST are part of the containment internal structures. The structural wall module CA03, which forms the west wall of the IRWST, is designed and constructed as a steel structure. The wall is curved and adjacent to the containment vessel. The CA03 structural module forms the boundary for a portion of the IRWST and provides support for floors and other steel structures, component and piping supports, and other attachments.

The CA03 module 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 IRWST wall is also subject to hydrodynamic loads due to actuation of the automatic depressurization system.

Supporting Technical Details

The horizontal stiffeners (identified as L4x4x½) on UFSAR Figure 3.8.3-8, Sheet 3, are exterior to the IRWST and are exposed to containment atmosphere. The horizontal stiffeners stiffen and strengthen the IRWST wall and provide resistance to buckling or other deformations of the wall. The structural evaluation of the CA03 module includes the strength of the stiffeners but does not require that carbon steel be used. Where carbon steel is used inside containment, paint or other coatings are required for corrosion protection. The material of the horizontal stiffeners does not impact the function or operation of the IRWST. The horizontal stiffeners are not in contact with the fluid stored in the IRWST. Therefore, there is no functional, operational, or structural reason to designate the material of the horizontal stiffeners in the UFSAR. The material to be used is determined during design finalization. The material designation for these stiffeners is not a key design element. The designation of the material is excessive descriptive information that is not necessary in the licensing basis. The module design continues to satisfy Code and design requirements specified in the UFSAR Subsection 3.8.3 regardless of the material of the stiffeners. The plates that make up the tank wall and the interior vertical T stiffeners are exposed to the refueling water and continue to be designated as being constructed of stainless steel. The material requirements for structural steel modules in UFSAR Subsection 3.8.3.6 continue to apply.

The number of angles used as horizontal stiffeners is increased over the number shown in the licensing basis figures and the spacing is the same. The angle cross section size is increased for some of the stiffeners on some submodules. The horizontal stiffeners stiffen and strengthen the IRWST wall and provide resistance to buckling or other deformations of the wall. The number of angles is increased and the design analysis confirms that the wall module continues to meet the AISC N690 code requirements.

The bottom portion of the module support legs are at an elevation corresponding with the containment vessel lower head. The legs are similar in shape to a wide flange beam and the faces (as identified in a note on UFSAR Figure 3.8.3-8, Sheet 3) refer to the outer surfaces of the flange and web of each leg. The distance between the vessel and the support legs decreases at lower elevations and is less than the total of the length of the stud plus the necessary clearance between the stud head and containment vessel. To resolve this potential interference, the lowest two studs on the face of the leg facing the containment vessel are removed. To provide anchorage to compensate for the removed studs, studs are added to two other faces. The end result is a pattern of 42 studs per leg which provides increased anchorage over the 36 studs per leg currently identified in the UFSAR figure. This clarification of the placement of the shear studs on the legs represents an equal or better design for the anchorage of the module in the concrete. This conclusion is based on the increase in the number of studs per leg and that the design continues to satisfy the AISC N690 and ACI 349 code requirements for shear stud design and anchorage in the concrete.

The proposed change in the anchoring bars shown on the figure is an increase in the number of bars. The number of straight bars per row, size, vertical spacing, and development length of the deformed bars remains the same. The other parameters important to anchoring the bars in the concrete, including size and spacing, are not changed. The design of these anchoring bars is in conformance with the applicable codes and standards and supplemental requirements identified in UFSAR Subsection 3.8.3.

The use of anchor bars with hooks on submodules adjacent to other IRWST walls provides an alternative way of satisfying the applicable requirements of the ACI 349 Code. This proposed change to add a note identifying the use of hooked bars and permitting three bars in a row provides additional information about the design of the anchoring bars for these submodules. This note clarifies that the submodules on the ends of CA03 adjacent to other IRWST walls are different than the representative submodule shown in the figure. The design of the anchoring bars on the submodules adjacent to other IRWST walls remains in conformance with the applicable codes and standards and supplemental requirements identified in UFSAR Subsection 3.8.3.

The proposed change of the design details of the CA03 module does not change the support, design, or operation of mechanical and fluid systems. The change of the detail design of the CA03 module does not change the capacity, function, or response to anticipated transients or postulated accident conditions of the IRWST. There is no change to plant systems or the response of systems to postulated accident conditions. The proposed changes do not change the function, design, or operation of the containment vessel or the passive containment cooling system. 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. 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.

The proposed changes do not adversely affect any safety-related equipment, design code, design code allowable value, function or design analysis, nor do the proposed changes adversely affect any safety analysis input or result, or design/safety margin. 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 associated with this license amendment request include changes to detailed design of containment internal structures. 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. The changes do not change the thickness or configuration of the walls, floors, roofs or other structures in the nuclear island. These changes do not affect the containment, control, channeling, monitoring, processing or releasing of radioactive or non-radioactive materials. The location and design of penetrations and the permeability and waterproofing of the concrete in the exterior walls are not changed. The interface between the nuclear island and the external surrounding environment is not impacted by the proposed change. The types and quantities of expected effluents are 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, radioactive or non-radioactive material effluents are not affected. Plant radiation zones, controls required under 10 CFR

Part 20, and expected amounts and types of radioactive materials are not affected by the proposed changes. Therefore, individual and cumulative radiation exposures do not change.

The results and insights of the probabilistic risk assessment (PRA), as discussed in UFSAR Chapter 19 are not affected. 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 UFSAR are not affected.

The proposed activity has no adverse effect on the ex-vessel severe accident. The overall 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 changes to the detail design of the CA03 module. 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 activity has no impact on the Aircraft Impact Assessment. The changes described are internal to the structures and do not impact the design or response of the containment vessel and 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. There is no change to the design of any of the key design features described in UFSAR Appendix 19F. The activity described does not change the overall design or construction of the shield building.

The change activity has no impact on the emergency plans or physical security evaluation because there are no changes to the configuration of walls, doors, or access to the Nuclear Island.

Summary

The proposed changes would revise Tier 2* information in the UFSAR in regard to detailed design of containment internal structures. The proposed changes do not adversely affect the strength or response of the nuclear island structures.

The above 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 Part 52, Appendix D, VIII.B, requires prior NRC approval for a departure from Tier 2* information. The proposed amendment includes changes to design details for construction of the in-containment refueling water storage tank (IRWST) west wall description and figures depicting seismic Category I structures which constitute UFSAR Tier 2* information changes. 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 IRWST wall. The IRWST remains 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 change the configuration of the walls and floors that provide separation between sources and potential targets. The proposed change has no 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 is 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 design details for the IRWST west wall, part of the containment internal structures.

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 to the design details for the in-containment refueling water storage tank (IRWST) west wall 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, nor does it change the seismic Category I classification. The change to the design details for the IRWST west wall does 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 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 design details for the IRWST west wall. The change of the design details for the IRWST west wall does not change the design requirements of the nuclear island structures, nor the seismic Category I classification. The change of the design details for the IRWST west wall does not change the design function, support, design, or operation of mechanical and fluid systems. The change of the design details for the IRWST west wall does not result in a new failure mechanism for the nuclear island structures or introduce any 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.

5. Environmental Considerations

The proposed amendment revises the plant-specific Design Control Document (DCD) Tier 2* material incorporated into the Updated Final Safety Analysis Report (UFSAR), by revising the design details for the IRWST west wall.

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 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 to the design details for the IRWST west wall do not change walls, floors, or other structures which provide shielding. Plant radiation zones are not affected, and there are no changes to the controls required under 10 CFR Part 20 that preclude a significant increase in occupational radiation exposure. Therefore, 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.

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Units 3 and 4

ND-13-1504

Enclosure 2

Proposed Changes to the Licensing Basis Documents
(LAR-13-018)

UFSAR Subsection 3.8.3.5.8.2, In-Containment Refueling Water Storage Tank Steel Wall - Revise Tier 2* information in the first paragraph to remove the carbon steel designation for the external horizontal stiffeners as shown below.

It has internal vertical stainless steel T-section columns spaced 4'-8" apart and external hoop ~~carbon steel~~ (L-section) angles spaced 18" to 24" apart.

UFSAR Section 3.8, Figure 3.8.3-8 (Sheet 3 of 3), [Structural Modules – Typical Design Details]* - Revise Tier 2* information in the IRWST details as described below and shown in the revised figure on the next page and the details of the changes on the pages following the full revised figure:

- Revise to remove the callout designation of horizontal stiffeners as “(SST)” and “(SS)” (Left side of Section showing vertical cut of module and in detail showing welding and configuration of horizontal and vertical stiffeners.) The horizontal stiffeners are identified with L4x4x½.
- Revise to include a horizontal angle stiffener external to the pool and revised the elevation information for the top stiffener.
- Revise to add Note 1 to identify that the horizontal stiffener angle size shown is the design minimum.
- Revise the number and arrangement of the shear studs shown on the leg of the module. Revise the note in the lower left of the figure in the portion of the drawing labeled “typical section” identifying stud size and spacing from:

4 VERTICAL ROWS OF ⅞"Φx8"
HEADED STUDS. ONE ROW PER
FACE. 9 STUDS PER ROW (TOT. 36)

To read:

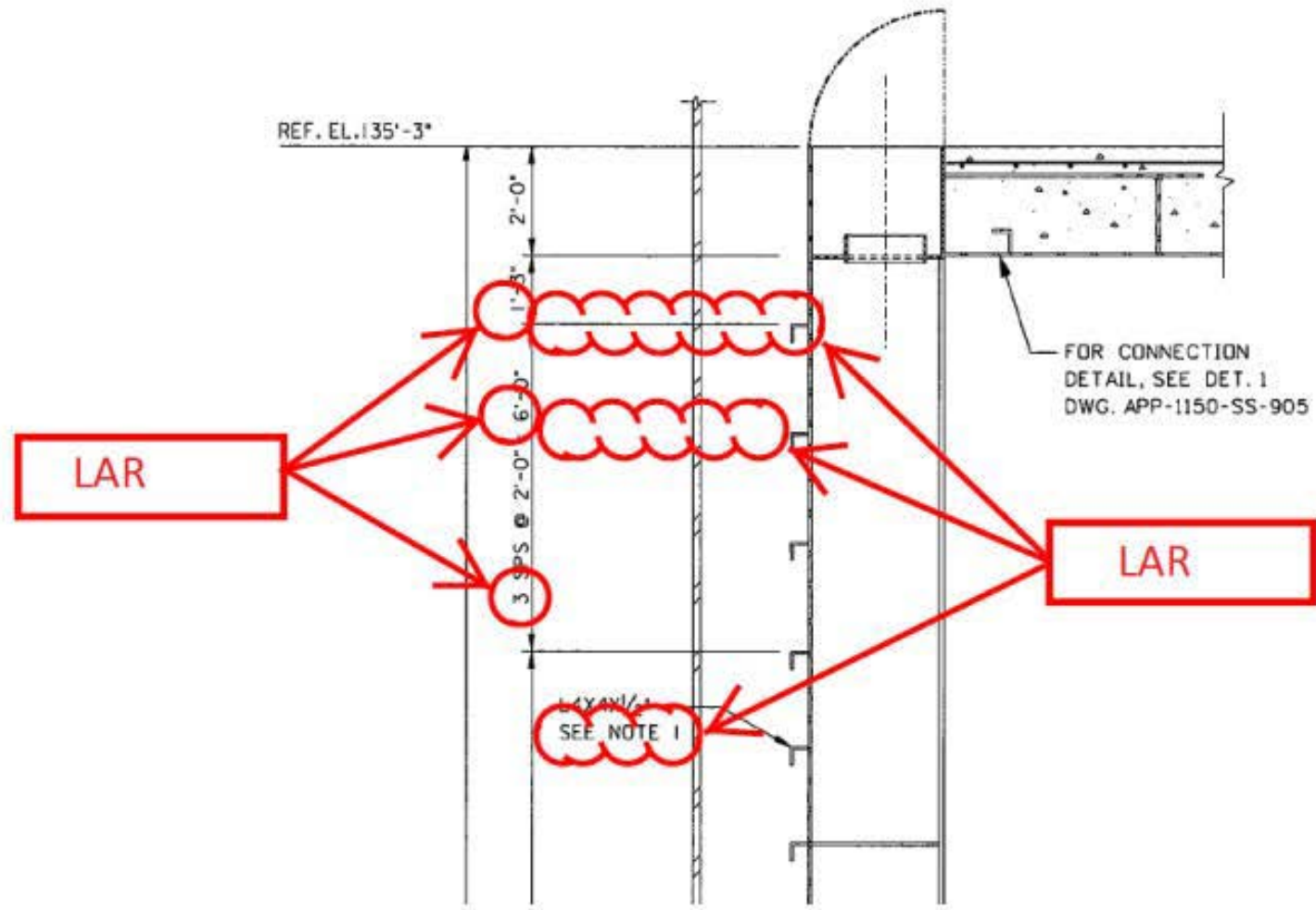
(42) ⅞"Φx8" HEADED STUDS
ON EACH MODULE SUPPORT
LEG DISTRIBUTED ON THE
FOUR FACES OF EACH LEG

- Revise the number of deformed bars anchoring the module in the concrete below the tank by adding a third row of bars to the set of bars near the top of the leg below the tanks floor.
- Revise to add a Note to permit hooks on bars on submodules adjacent to other walls and to permit three bars in the rows of hooked bars.

Complete revised figure – details shown on following pages.

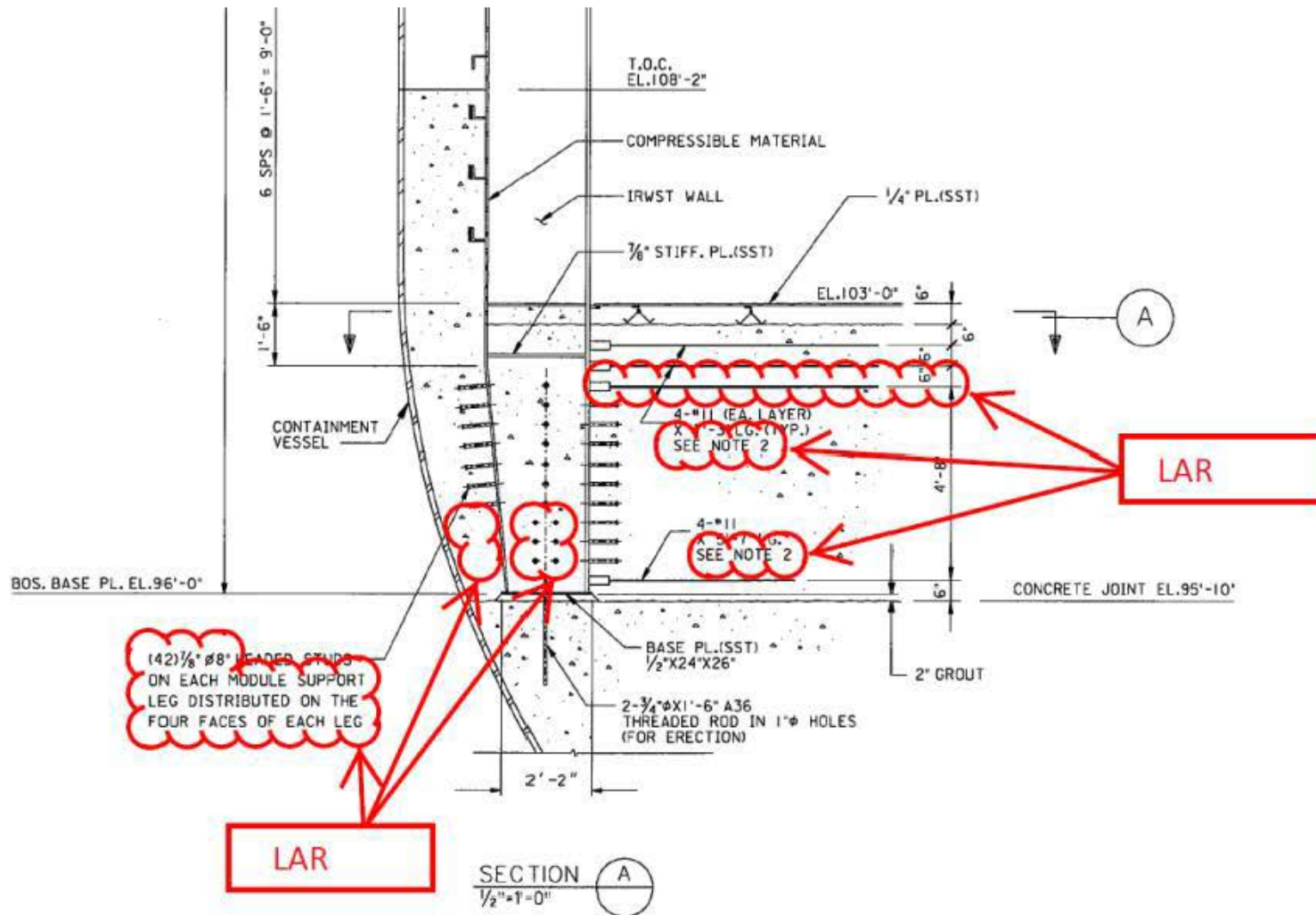


Upper left detail



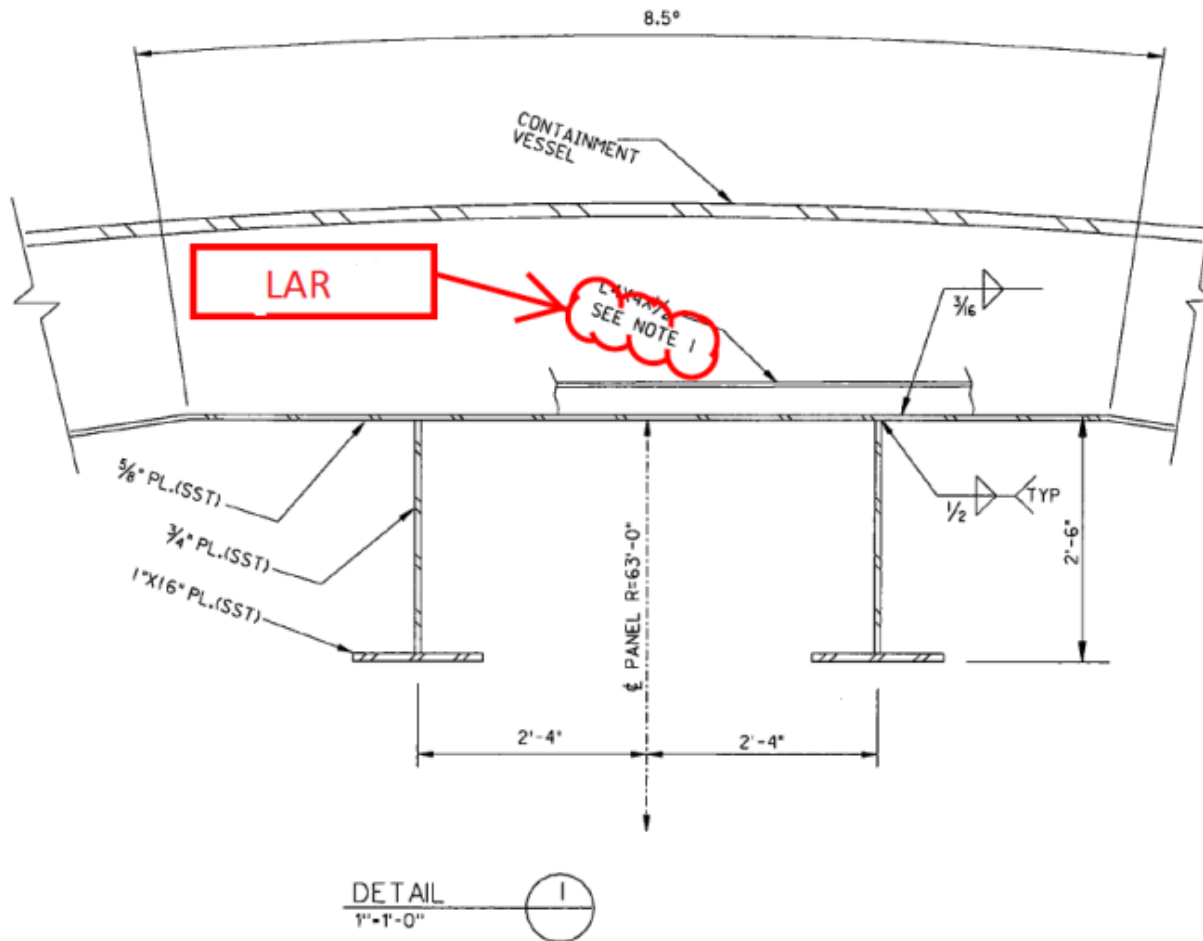
ND-13-1504
Enclosure 2
Proposed Changes to the Licensing Basis Documents (LAR-13-018)

Lower left detail



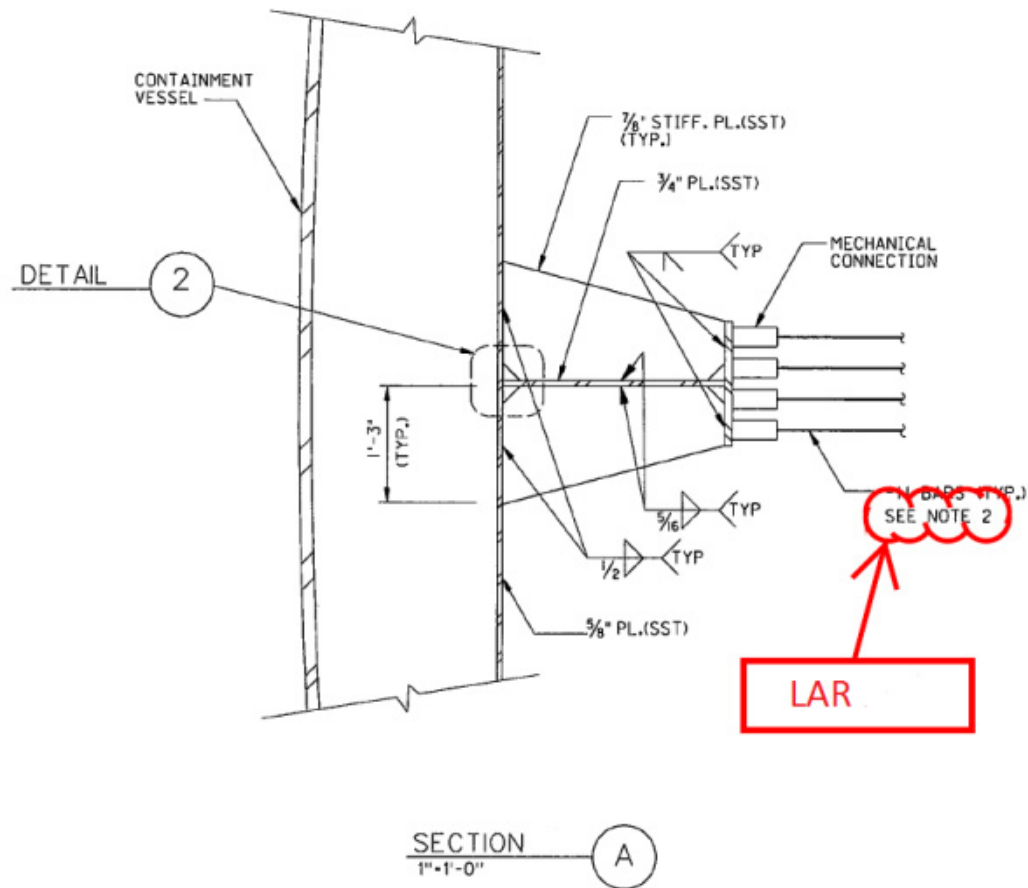
ND-13-1504
Enclosure 2
Proposed Changes to the Licensing Basis Documents (LAR-13-018)

Upper center detail



ND-13-1504
Enclosure 2
Proposed Changes to the Licensing Basis Documents (LAR-13-018)

Upper right detail



Lower right detail

NOTES:

THE TYPICAL DETAILS SHOWN REPRESENT THE FUNDAMENTAL APPROACH FOR THE COMPOSITE WALL MODULES. THE FINAL DESIGN DETAILS MAY DIFFER FROM THOSE SHOWN FOR THE FOLLOWING REASONS.

- ACCESSIBILITY FOR INSPECTION DURING FABRICATION AND CONSTRUCTION
 - LESSONS LEARNED FROM IMPLEMENTATION OF THE DESIGN
 - EASE OF FABRICATION AND CONSTRUCTION
 - RESOLUTION OF CONSTRUCTABILITY ISSUES AND SEQUENCES
 - VARIATION IN MODULE SIZE AND CONFIGURATION
- CHANGES MADE DURING DETAILED DESIGN ARE IN ACCORDANCE WITH THE SPECIFIC CODES AND STANDARDS INVOKED.

LAR

NOTES:

1. SIZE SHOWN FOR ANGLES USED AS STIFFENERS IS DESIGN MINIMUM.
2. ANCHOR BARS FOR SUBMODULES ADJACENT TO OTHER IRWST WALLS ARE FORMED INTO HOOKS AND 1 OR 2 ROWS MAY HAVE 3 BARS TO MINIMIZE INTERFERENCES. OVERALL LENGTH FOR HOOKED BARS VARIES FROM THAT SHOWN.