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Docket Nos.: 52-025  
52-026

ND-14-1338  
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  
Supplement to Revised Request for License Amendment Regarding  
Reinforced Concrete (RC) to Steel Plate Composite Construction (SC) Connections  
(LAR-13-014R2S)

Ladies and Gentlemen:

In accordance with 10 CFR 50.90, Southern Nuclear Operating Company (SNC), the licensee for Vogtle Electric Generating Plant (VEGP) Units 3 and 4, requested an amendment to Combined License (COL) Numbers NPF-91 and NPF-92, for VEGP Units 3 and 4, respectively, on July 2, 2013, and revised the request on February 14, 2014 and June 20, 2014.

The proposed amendment would revise Tier 2\* and associated Tier 2 material related to the design details of connections in several locations between the steel plate composite construction (SC) used for the shield building and the standard reinforced concrete (RC) walls, floors, and roofs of the auxiliary building and lower walls of the shield building. These connections are also referred to as "RC to SC connections."

On July 28, 2014, the Nuclear Regulatory Commission (NRC) issued "Request for Additional Information Letter No. 01 Related to License Amendment Request (LAR) 13-014, "Reinforced Concrete (RC) to Steel Plate Composite Constructions (SC), for the Vogtle Electric Generating Plant Units 3 and 4: Combined Licenses (RP9457)," ADAMS Accession No. ML14209A072.

Responses to the requested additional information are provided in Enclosure 22. (Enclosures 1 through 21 have been provided in the previous referenced submittals.) The proposed revisions to the LAR material identified in these responses will be incorporated into another revision of the LAR within 45 days of the date of this letter. This will allow time to process the proposed changes to the topical report included in the LAR (i.e., APP-GW-GLR-602). This commitment is included in a separate enclosure. This letter contains no other regulatory commitments.

A draft version of these responses was discussed with the NRC Staff during a public telephone conference call on August 14, 2014, and the results of that discussion are incorporated. Additionally, during that call, the NRC Staff noted that some material noted as proprietary also

appears in other locations in the submittal as public language. As such, the proprietary designation of some material from the LAR-13-014S2 submittal will be removed as identified at the end of Enclosure 22. This letter contains no withheld information.

The SNC responses provided in the enclosure do not impact the original LAR scope, the Technical Evaluation, the Significant Hazards Consideration Determination, nor the environmental considerations evaluation.

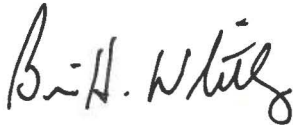
In accordance with 10 CFR 50.91, SNC is notifying the State of Georgia of this LAR by transmitting a copy of this letter and enclosures to the designated State Official.

Should you have any questions, please contact Mr. Jason Redd at (205) 992-6435.

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

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY



B. H. Whitley

BHW/ERG/kms

Sworn to and subscribed before me this 28<sup>th</sup> day of August, 2014

Notary Public: Kristin Marie Seibert

My commission expires: August 16, 2016



Enclosure: 22) Responses to NRC Request for Additional Information Letter No. 01 Related  
to License Amendment Request (LAR) 13-014  
: 23) List of Commitments

cc:

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

**ND-14-1338**

**Enclosure 22**

**Responses to NRC Request for Additional Information**  
**Letter No. 01 Related to License Amendment Request (LAR) 13-014**  
**(LAR-13-014R2S)**

Legend

Underlined blue – new information - example

Double strikethrough red – deleted information – ~~example~~

Green – moved information – ~~example~~, example

**Request for Additional Information**

Issue Date: 7/28/2014

Application Title: Vogtle Nuclear Site, Units 3 and 4, Dockets 52-0025 and 52-0026  
Southern Nuclear Operating Co.  
Docket No. 52-0025 and 52-0026

Review Section: 03.08.04 - Other Seismic Category I Structures  
Application Section: LAR 13-014,

**QUESTIONS**

**03.08.04-3**

1. The staff reviewed LAR-13-014R2, Enclosure 15, "Revised Request for License Amendment Regarding Reinforced Concrete to Steel Plate Composite Construction Connections," along with the referenced enclosures, Enclosure 20, "Proposed Changes to the Updated Final Safety Analysis Report," and Enclosure 21, APP-GW-GLR-602, Revision 4, "AP1000 Shield Building Design Details for Select Wall and RC/SC Connections." The staff observed that the licensee did not adequately address the required information related to the use of the term 'typical' verses 'examples' or 'representative.' The use of the word 'typical' in the design control document (DCD) indicates the specific construction design that will be used. In several places in the license amendment request (LAR) 'typical' is being replaced in Tier 2\* documents, by 'examples' or 'representative' which may imply alternative design can be used. Based on the following, the licensee is requested to address the discrepancy associated with the description of certain figures in the enclosures:

**Response 1 (General):** The information in the LAR is revised as indicated following each item to remove these identified discrepancies.

- a. On page 5 of 24, of Enclosure 15, the last paragraph states that, "An example of the connection is shown in the revised Figure 7 of APP-GW-GLR-602." Figure 7, in Enclosure 21, of the LAR is depicted as a, "Typical Auxiliary building RC roof connection to the shield building SC wall." The description in Enclosure 15 of the LAR is not consistent with description shown in Figure 7 of Enclosure 21.

**Response 1.a:** Revise the LAR write-up in the last paragraph of Page 5 of 24 in Enclosure 15 to replace the term "example" with "typical" as follows (only revised sentences are shown):

The revised auxiliary building roof connection design eliminates the separate radial bars extending into the roof concrete from the wall and directly connects the roof reinforcement to the wall module. ~~An example of the~~ typical connection design is shown in the revised Figure 7 of APP-GW-GLR-602. ~~This example design detail is~~ from a different location and is different than the location shown and the configuration shown for the critical section in Figure 3H.5-7.

- b. On page 7 of 24, of Enclosure 15, the 2nd paragraph states that, "Figure 7 of APP-GW-GLR-602 showing an example of the connection of the auxiliary building roof to the shield building wall." Figure 7, in Enclosure 21, of the LAR is depicted as a, "Typical Auxiliary building RC roof connection to the shield building SC wall." The description in Enclosure 15 of the LAR is not consistent with description shown in Figure 7 of Enclosure 21.

**Response 1.b:** Revise the LAR write-up in the first sentence of the first full paragraph of Page 7 of 24 of Enclosure 15 to replace the term "example" with "typical" as follows (only revised sentences are shown):

Figure 7 of APP-GW-GLR-602 showing a ~~n-example-of-the~~ typical connection design for ~~of~~ the auxiliary building roof to the shield building wall, incorporated by reference into the UFSAR, is proposed to be updated to incorporate the auxiliary building roof to shield building connection design changes described above.

- c. On page 17 of 21, of Enclosure 20, the 3rd paragraph states that in Section 4 of the Topical Report (APP-GW-GLR-602), Figure 7 shows representative details for the connections between the auxiliary building roof and the shield building wall." However, In Revision 4 of the Topical Report (APP-GW-GLR-602), Figure 7 is depicted as a, "Typical Auxiliary building RC roof connection to the shield building SC wall." The licensee is requested to clarify this discrepancy.

**Response 1.c:** Revise the change to APP-FSAR-GLR-602 in the last paragraph of Page 16 of 18 in Enclosure 18, the last paragraph of Page 17 of 21 in Enclosure 20, and the last paragraph of Page 13 in Enclosures 19 and 21, to replace the term "representative" with "typical" as follows (only revised sentences shown):

Figure 7 shows ~~the representative~~ the typical details for the ~~connection~~ connections between the RC auxiliary building roof and the SC Shield building wall. The details of the connections between the auxiliary building roof and the shield building wall vary at some locations from those shown in the figure because of loads on the connection and the orientation of the wall to the roof reinforcement grid.

Add the following change to the third paragraph on Page 8 of 24 in Enclosure 15. (This change was previously not part of the LAR submittal.)

In UFSAR Subsection 3.8.4.5.5.6 and APP-GW-GLR-602 the terms "representative" and "example" are replaced with "typical" when referring to a figure that includes the term "typical" in the figure title. The changes to APP-GW-GLR-602 to correct typographical and format issues and the rewrites of the text to clarify the description and design information are not technical changes and are included in the change description identified below.

Revise the sixth paragraph on Page 12 of 24 in Enclosure 15 under the heading Licensing Basis Change Descriptions as follows:

Revise the last paragraph of Section 4 to replace the term "representative" with "typical" and to identify that the details of the auxiliary building roof to wall connection design may vary.

- d. On page 3 of 21, of Enclosure 20, the last paragraph states that, "Figure 3H.5-7 also shows examples of the connections between the auxiliary building wall and the shield building SC wall modules." In Revision 2 of the UFSAR, Figure 3H.5-7 is depicted as a, "Typical Reinforcement and Connection to Shield Building." The licensee is requested to clarify this discrepancy.

**Response 1.d:** Revise the changes to UFSAR Subsection 3.8.4.5.5.6 in the last paragraph of Page 3 of 18 in Enclosure 18 and in the last paragraph of Page 3 of 21 in Enclosure 20 to replace the term "examples" with "typical" as follows (only revised sentence is shown):

Figure 3H.5-7 also shows ~~examples of the~~ typical connections between the auxiliary building walls and the shield building SC wall modules.

- e. On page 15 of 21, of Enclosure 20, the 4th paragraph states that in Section 4, "Technical Background," of Enclosure 21, "Figure 1 shows the representative \* for the vertical RC/SC connection zone which are based on Figure 4.1-2 of the enhanced SB design report." However, the 2nd paragraph on Page 3 of 21 states that, "Figures 1, 2, 3, and 4 in APP-GW-GLR-602 (Reference 57) show the typical design details for the connection of the wall modules to the reinforced concrete. Figure 5 in Reference 57 shows the typical design details of the shield building concrete-filled steel module walls." The information prescribed in the enclosures is inconsistent.

{\* Note that the text of Enclosure 20 includes the word "details" at this location.}

**Response 1.e:** Revise the changes of APP-FSAR-GLR-602 in the penultimate paragraph on Page 14 of 18 in Enclosure 18, on Page 15 of 21 in Enclosure 20, on Page 11 in Enclosures 19 and 21, to replace the term "representative" with "typical" as follows (only revised sentences shown):

Figure 1 shows ~~the representative~~ typical details for the vertical RC/SC connection zone which are based on Figure 4.1-2 of the enhanced SB design report (Reference 1).

Revise the description of the first paragraph under the heading Steel Concrete Composite (SC) Shield Building RC/SC Connection Zone Details of Section 4 on Page 11 of 24 in Enclosure 15 (penultimate paragraph on Page 11) to include removal of the term "representative" as follows: (This change was previously not part of the LAR submittal.)

Replace the term "representative" with "typical" for the description of the change to Figure 1. Describe the design approach and approximate location of the RC to SC connections. Separate and expand the description of the vertically oriented connection of the hoop bars in the RC portion of the shield building. Change an azimuth dimension from 177 to 183 and note that azimuths are approximate. Add reference to Figure 2. Specify that couplers are welded to the end plate and to clarify where the end plate is connected to the hoop bars.

### **SUPPLEMENTAL RESPONSE INFORMATION**

In addition to the items noted by the NRC Staff, a further review was conducted for inconsistent language regarding “typical” information. One additional change is proposed based on the results of that review. On page 3 of 18 of Enclosure 18, and on page 3 of 21 of Enclosure 20, the 3rd paragraph of proposed changes to Subsection 3.8.4.5.5.6 show the UFSAR currently states that

“Figure 5 in Reference 57 shows the typical design details of the shield building concrete-filled steel module walls.”

However, APP-GW-GLR-602 (page 12) Section 4 under SC Shield Building Wall Panel (3H.5.7.1) states

“Figure 5 shows the representative details for a standard (Type 2 module) shield building wall panel which are based on Figure 3.1-2 of the enhanced SB design report (Reference 1).”

As such, the following information in LAR-13-014S2 is also revised. Add the following sentence to the third paragraph on Page 8 of 24 in Enclosure 15.

In APP-GW-GLR-602 the term “representative” is replaced with “typical” when referring to a figure that is referred to as “typical” in UFSAR Subsection 3.8.4.5.5.6.

Revise the change related to Figure 5 of APP-GW-GLR-602 on Page 15 of 18 of Enclosure 18, and on Page 16 of 21 of Enclosure 20, to read as shown below:

Section 4, Technical Background - Revise information in the discussion related to the Steel Concrete Composite (SC) Shield Building Wall Panel (3H.5.7.1) to remove the underline from the “Figure 5” at the beginning of the first paragraph and to revise “representative” to “typical” in the same sentence.

Revise Page 12 of APP-GW-GLR-602 in Enclosures 19 and 21 to read as shown below:

Figure 5 shows the ~~representative~~typical details for a standard (Type 2 module) shield building wall panel which are based on Figure 3.1-2 of the enhanced SB design report (Reference 1).

2. On page 5 of 24 of Enclosure 15, "Revised Request for License Amendment Regarding Reinforced Concrete to Steel Plate Composite Construction Connections," the last paragraph states, "Connection or ring plates, which provide connections to the top and bottom roof reinforcement, are welded to built-up connection plates on the outer faceplate of the shield building wall. The faceplates in the connection region are thicker than the faceplates for a standard shield building wall module. The added faceplate thickness is provided on the inside surface of the faceplates and does not change the thickness of the shield building wall." The licensee is requested to provide a technical justification that supports the proposed changes to the faceplates of the RC/SC Connections. Also, a summary of the technical justification for the RC/SC connection changes should be reflected in the UFSAR.

**Response 2:** The description of the floor to wall connection in the LAR is revised to clarify the design of the connection and make the terminology for the design elements in the description match the labels on the figures showing the connections. This description is in the paragraph that starts on the bottom of Page 5 of 24 in Enclosure 15. The figures showing the connection design are Section A of Figure 3H.5-7 and Figure 7 of APP-FSAR-GLR-602. The proposed changes to the description of the connection design are explained and shown below.

The wall module faceplate (identified as SC liner plate on the figures) thickness is increased in the area of the connection to facilitate welding of the connection design elements and to minimize the use of stiffeners and other reinforcement to address the local stresses due to the connection loads. To optimize fabrication of the modules, the area of the thicker faceplate may extend over the entire width or height of a shield building wall module. This information is added to the paragraph that starts on the bottom of Page 5 of 24 in Enclosure 15 as shown below. The stresses in the faceplate and connection assembly are evaluated using AISC N690 requirements. Conformance with AISC N690 is the primary technical justification for the thicker faceplates included in the design of the connections. In the last paragraph on page 15 of 24 in Enclosure 15, which is in the Technical Evaluation of the LAR, conformance with AISC N690 is cited for the thicker faceplates. The evaluation of the shield building wall in area with thicker faceplates includes consideration of the reduction of the concrete thickness. The analysis was completed with an updated structural model that includes the changes that impact the configuration, mass, and stiffness of the shield building structure. The changes in the results of the updated analysis are reflected in the proposed changes to UFSAR Table 3H.5-14 included as part of the license amendment request. The reduction in thickness does not affect the capacity of the concrete to carry compression, and does not introduce any additional concrete failure modes not already considered in the analysis and evaluation of the section.

In proposed changes to the UFSAR to support LARs the changes are written to support the changed design rather than discuss the changes from a previous version of the UFSAR. The UFSAR, including the changes that are identified in the LAR, provides a summary of the technical justification of the connection design. In addition to the general requirement in UFSAR Subsections 3.8.3 and 3.8.4 of conformance of the structures design and construction to AISC N690, the requirement that the connections satisfy the requirements in AISC N690 is specifically repeated in the revised Subsection 3.8.4.5.5.6. The variation of faceplate thickness in the area of the connections is identified in an addition to Subsection 3.8.4.5.5.6. The supplemental requirements for the connections to the SC shield building modules are documented in the four bulleted items added to UFSAR

Subsection 3.8.4.5.5.6. See Page 3 of 21 in Enclosure 20 for these additions. These requirements were developed during the design certification review of the shield building design but were not previously included in the licensing basis. In the last paragraph of Section 4 of APP-GW-GLR-602, (Page 14 of Enclosure 21) is the following sentence: "These connections satisfy the supplemental requirement for RC to shield building SC connections identified in Subsection 3.8.4.5.5.6 of plant specific DCDs." This information in the UFSAR and APP-GW-GLR-602 provides the technical justification in the licensing basis for the design of the connections including the variations of the design details.

Revise the last paragraph on Page 5 of 24 in Enclosure 15 as shown below. The change includes breaking the paragraph into multiple paragraphs and rearranging some of the information. See the response for Item 1.a. for a discussion of the changes in the first four sentences.

The revised auxiliary building roof connection design eliminates the separate radial bars extending into the roof concrete from the wall and directly connects the roof reinforcement to the wall module. ~~An example of the~~ typical connection design is shown in the revised Figure 7 of APP-GW-GLR-602. This ~~example design detail is from a~~ different location and is different than the location shown and the configuration shown for the critical section in Figure 3H.5-7. The details of the connections between the auxiliary building roof and the shield building wall vary because of loads on the connection and the orientation of the wall to the roof reinforcement arrangement. The design of the connection is described below. Connection variations use different combinations of the design elements described.

Connection ~~or ring~~ plates, which provide connections to the top and bottom roof reinforcement, are welded to built-up connection backing plates on the outer faceplate of the shield building wall. ~~The faceplates in the connection region are thicker than the faceplates for a standard shield building wall module. The added faceplate thickness is provided on the inside surface of the faceplates and does not change the thickness of the shield building wall. The faceplates are identified as SC Liner Plate in Figure 7 of APP-GW-GLR-602 and UFSAR Figure 3H.5-7.~~ The roof reinforcement bars are welded to the connection plates, or to additional plates welded to the connection plates, using a flare bevel weld in conformance with AWS D1.4. The welded connection fully develops 125% of the specified yield strength of the reinforcement bars. The additional plates are used as spacers when the elevation of the reinforcement is offset from the top surface of the connection plate by other reinforcement. In some locations mechanical connectors welded to front plates perpendicular to the connection plate are used to connect the reinforcement bars to the connection assembly. This configuration of the mechanical connectors welded to the front plates which are welded to the connection plate is shown as part of a critical section in Section A of the revised UFSAR Figure 3H.5-7. ~~Welding and mechanically connecting the reinforcement bars to the connection assembly eliminates the need for the separate reinforcement bars connecting the shield building to the roof to be oriented radially to the shield building wall. This revised design provides a direct connection of the roof reinforcement to the SC wall.~~ The connection design includes radial shear lugs adjacent to the faceplates between the ~~wall~~ connection plates for the upper and lower layers of reinforcement. Stiffener plates between the upper and lower connection plates on the outer edge of the connection assembly provide additional rigidity to the connection assembly when needed and act as additional shear lugs.

The faceplates in the connection region are thicker than the faceplates for a standard shield building wall module. The added faceplate thickness is provided on the inside surface of the faceplates and does not change the thickness of the shield building wall. The thicker faceplates are used because the local stresses in the vicinity of the connections would otherwise require stiffeners or other reinforcement of the faceplate. The thicker faceplate also facilitates the heavy welding of the backing and connection plates to the faceplate. To optimize fabrication of the modules, the area of the thicker faceplate may extend over the entire width or height of a shield building wall module. Welding and mechanically connecting the reinforcement bars to the connection assembly eliminates the need for the separate reinforcement bars connecting the shield building to the roof ~~to be~~ which were oriented radially to the shield building wall. This revised design provides a direct connection of the roof reinforcement to the SC shield building wall. The increase in faceplate thickness in the area of the connection is added to information included in Subsection 3.8.4.5.5.6. The evaluation of the shield building wall in areas with thicker faceplates includes consideration of the reduction of the concrete thickness. The reduction in thickness does not affect the capacity of the concrete to carry compression, and does not introduce any additional concrete failure modes not already considered in the analysis and evaluation of the section. The analysis was completed with an updated structural model that includes the changes that impact the configuration, mass, and stiffness of the shield building structure.

Internal tie bars in the wall module pass the loads from the connection plate and outer faceplate to the faceplate on the far face of the SC wall module. These tie bars replace the extension of the radial reinforcement into the wall module and are sized to fully develop the roof reinforcement. The tie bars in the connection regions may be larger in diameter and spaced closer together than the tie bars for standard shield building wall modules. The spacing of tie bars in these areas may be equal to the spacing of tie bars in Type 1 modules. Type 1 modules are described in APP-GW-GLR-602, Section 4 and Figure 6. In some locations tie plates are used to provide additional load capacity for the connection between the faceplates. The revised connection design, including the design detail variations, of the roof to the wall module is in conformance with the AISC N690 and ACI 349 requirements and supplemental requirements included in the UFSAR Subsection 3.8.4.5.5.6 and the seismic analysis of the structures. Roof girders (beams) supporting the metal decking and concrete are attached to the shield building module faceplates. Tie bars in the wall module provide backup structure for the roof ~~girder~~ beam connection.

Revise the second paragraph of the additions to Subsection 3.8.4.5.5.6 on Page 3 of 18 in Enclosure 18 and on Page 3 of 21 in Enclosure 20 as follows:

The steel plate modules are connected to the reinforced concrete by reinforcement or deformed bars directly connected to the modules. These connections are sized using a strength design approach, and the mechanical connection portion of the connection satisfies the requirements of AISC N690. In the area of the connections the faceplates are thicker (up to 1.0-inch nominal thickness), as necessary, to address loads from the connections. The connection design satisfies the following requirements:

3. On page 7 of 24 (and similarly on page 9 of 24, Question 5) of Enclosure 15, "Revised Request for License Amendment Regarding Reinforced Concrete to Steel Plate Composite Construction Connections," the 1st paragraph states that, "The roof details provided for Region A and Region B are proposed to be removed since information for this type of roof or floor is provided in Subsection 3H.5.2.2 and Figure 3H.5-6. Also, the information for Region B is duplicated in Section A of Figure 3H.5-6\*." The staff reviewed the figures mentioned above and notes that the sizing and spacing of the reinforcement bars, including the region shown on Figure 3H.5-6 are different than the information shown on Figure 3H.5-7. The licensee is requested to provide a rationale for deleting the reinforcement floor detail in Regions A and B on Figure 3H.5-7.

{\* Actual reference in the text of Enclosure 15 is to Figure 3H.5-7 at this location.}

**Response 3:** Figure 3H.5-6 shows the design of a composite floor with a similar construction as the auxiliary building roof and shows the relationship among the reinforcement, concrete, metal decking, and supporting beams that is common to the auxiliary building floor and roof design. The sizing and spacing of the reinforcement for the roof is shown on the Roof Plan in Figure 3H.5-7 and was not intended to be changed to the size and spacing shown in Figure 3H.5-6. To resolve the apparent confusion the Reinforcement Floor Detail in Region "A" will be returned to the figure. The scale previously included with the detail is not appropriate for a licensing basis figure and will not be included. The information included in the Region "B" detail is duplicated in the Upper Section of Section A on Figure 3H.5-7 and the Region "B" detail is not necessary on Figure 3H.5-7.

The discussion of the removal of Region "A" Detail will be revised in the discussion in Enclosure 15 as shown below.

Revise the first paragraph on page 7 of 24 in Enclosure 15 as follows (only revised sentences shown):

The drawing scales are not appropriate and are proposed to be removed from the roof plan, the Reinforcement Floor Details in Region "A", and Section A showing the connections in the roof since UFSAR figures are not to scale. The roof details provided for ~~Region A and~~ Region B are proposed to be removed since information for this ~~type-portion of the roof or floor is provided in Subsection 3H.5.2.2 and Figure 3H.5-6. Also the information for Region B is~~ duplicated in Section A of Figure 3H.5-7.

Revise Item 5 under the information in UFSAR Figure 3H.5-7 beginning on page 9 of 24 in Enclosure 15 as follows:

5. The drawing scale is removed from the REINFORCEMENT FLOOR DETAIL IN REGION "A" because UFSAR figures are not to scale. ~~information is removed since the information is provided in other UFSAR figures including Figure 3H.5-6. The size and spacing of the reinforcement bars are shown in the Roof Plan of Figure 3H.5-7. The dimensions of the metal decking and the roof thickness are included in Figure 3H.5-6. The detail shown~~ drawing scale is not needed to describe the critical section addressed in UFSAR Subsection 3H.5.2.1 and this figure.

Revise the discussion in the third paragraph on Page 16 of 24 under Supporting Technical Details in Enclosure 15 as follows (only revised sentences shown):

The information proposed to be removed from Figure 3H.5-7, including the roof elevations and column line dimensions, and [Region B](#) roof plan details are shown in UFSAR Figure 3.7.2-12 Sheets ~~5, 6,~~ and 7, ~~Subsection 3H.5.2.2, and Figures 3H.5-4 Sheet 1~~ and [in Section A of](#) UFSAR Figure 3H.5-7. The drawing scales ~~are~~ [is](#) removed from the roof plan, [Section A, and roof plan detail](#) because ~~it is~~ [they are](#) inappropriate since licensing basis figures are not to scale.

4. On page 10 of 24 of Enclosure 15, "Revised Request for License Amendment Regarding Reinforced Concrete to Steel Plate Composite Construction Connections," for the proposed revision (Item 9 – 3) to Figure 3H.5-7, the licensee is proposing to add the following note, "The details of the connections between the auxiliary building roof reinforcement and the shield building wall vary because of loads on the connection and the orientation of the wall to the roof reinforcement arrangement." The staff reviewed note 3 on the proposed figure on page 11 of 21 of Enclosure 20, "Proposed Changes to the Updated Final Safety Analysis Report," and noted that additional information is needed in order for the staff to complete its safety evaluation. Thus, the licensee is requested to clearly describe the variation of the connection between the Shield building wall and the Auxiliary building roof.

**Response 4:** Information will be added to Note 3 to describe the design elements that vary among the connections design. The conformance of the connection design to AISC N690 is added. The conformance to AWS D1.4 for welding of reinforcement to the connection assembly is also added. The revised note is shown below.

Revise Note 3 to be added to UFSAR Figure 3H.5-7 on Page 10 of 24 in Enclosure 15, on Page 10 of 18 and Page 12 of 18 in Enclosure 18, and on Page 9 of 21 and Page 11 of 21 in Enclosure 20, as follows:

3. The details of the connections between the auxiliary building roof reinforcement and the shield building wall vary because of loads on the connection and the orientation of the wall to the roof reinforcement arrangement, [and the size and spacing of the roof reinforcement. The connection configurations, including the use and design of backing plates, connections plate, spacer plates, shear lugs, stiffener plates, mechanical connectors, and tie bars and tie plates inside the shield building wall modules, are based on loading and local geometry considerations and are designed to the requirements of AISC N690. Welding of the reinforcement to the connection assembly is in conformance with AWS D1.4.](#)

## **SUPPLEMENTAL INFORMATION REGARDING “PROPRIETARY” DESIGNATIONS**

In addition, during a conference call on August 14, 2014, the NRC Staff noted that SNC had included inconsistent information with regard to proprietary designations for the terms “mechanical connection” and “mechanical couplers” in that these terms were designated as proprietary in APP-GW-GLR-602, Revision 4, Section 4, but were used in the LAR and in the UFSAR markups without a proprietary designation. Further, the NRC Staff indicated that these terms are too generic to warrant a proprietary designation.

SNC and Westinghouse have reviewed the use of these identified terms and agree that the proprietary designations in APP-GW-GLR-602, Revision 4, Section 4, can be removed.

APP-GW-GLR-602 will be revised and the proprietary designation will be removed from use or reference to “mechanical connection” or “mechanical couplers.” This includes the figure title for Figure 4 and a note on Figure 2. The proprietary designation for size and spacing information associated with some of the uses of these terms will remain. The proprietary figures include size information and will retain their proprietary designation.

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

**ND-14-1338**

**Enclosure 23**

**List of Commitments**  
**(LAR-13-014R2S)**

### **List of Regulatory Commitments**

The following table identifies those actions committed to by the Southern Nuclear Operating Company in this submittal. Any other statements are provided for information purposes and are not considered to be regulatory commitments.

<b>Regulatory Commitments</b>	<b>Due Date</b>
1) The proposed revisions to the LAR material identified in these responses will be incorporated into another revision of the LAR within 45 days of the date of this letter.	September 14, 2014