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52-026

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10 CFR 50.90

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

Southern Nuclear Operating Company  
Vogtle Electric Generating Plant Units 3 and 4  
Response to Request for Additional Information Letter No. 01  
Related to License Amendment Request (LAR) 12-006

Ladies and Gentlemen:

In accordance with the provisions of 10 CFR 50.90, by letter dated October 17, 2012, Southern Nuclear Operating Company (SNC) requested an amendment to the Vogtle Electric Generating Plant (VEGP) Units 3 and 4 combined licenses (COLs) (License Nos. NPF-91 and NPF-92, respectively). During the course of their review of this LAR, the NRC staff identified the need for additional information to continue portions of the review. The NRC's request for additional information (RAI) was provided to SNC in RAI Letter No. 01 related to LAR-12-006, dated January 10, 2013 [ML13010A115]. This letter provides the requested response to the subject RAI, which is also referred to as electronic RAI (eRAI) 6592.

The proposed departures include changes to Turbine Building layout details and Turbine Building elevations and associated wall thicknesses. The requested departures are necessary to reflect the evolution and advancement of systems and building design identified during design finalization of the Turbine Building. Enclosure 1 of the original LAR provided the description, technical evaluation, and regulatory evaluation (including the Significant Hazards Consideration determination) for the proposed changes. Enclosure 2 of the original LAR provided the background and supporting basis for the requested exemption. Enclosure 3 of the original LAR provided markups depicting the requested changes to the plant-specific Tier 1 information and COLs and the Updated Final Safety Analysis Report (UFSAR) text, tables, and figures that are available for disclosure to the public. Enclosure 4 of the original LAR provided markups of the plant-specific Tier 1 and COLs and the UFSAR figures that are withheld from public disclosure in accordance with 10 CFR 2.390(d). Enclosure 5 of the original LAR provided figures comparing the floor response spectra at the three locations of interest to the generic AP1000 envelope. This letter contains no regulatory commitments.

With this supplemental submittal, SNC has included clarifying changes to the Technical Evaluation in Enclosure 1 of the October 17, 2012 submittal. The responses to LAR-12-006 RAI Letter No. 1 and the necessary revisions to Enclosure 1 are provided as Enclosure 6 for the LAR.

SNC expects to implement the proposed amendment (through incorporation into the licensing basis documents, e.g., the plant-specific DCD and COL Appendix C) within 30 days of approval of the requested changes.

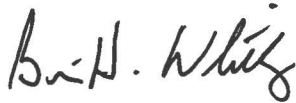
In accordance with 10 CFR 50.91, SNC is notifying the State of Georgia of this LAR by transmitting a copy of this letter and enclosures to the designated State Official.

Should you have any questions, please contact Mr. Wesley A. Sparkman at (205) 992-5061.

Mr. Brian H. Whitley states that he is a 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



Brian H. Whitley

BHW/NH/kms

Sworn to and subscribed before me this 25<sup>th</sup> day of January, 2013

Notary Public: Christin Marie Seibert

My commission expires: August 16, 2016

Enclosure: 6. Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Response to Request for Additional Information Letter No. 01 Related to License Amendment Request (LAR) 12-006

cc: Southern Nuclear Operating Company/ Georgia Power Company

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**Southern Nuclear Operating Company**

**ND-13-0198**

**Enclosure 6**

**(Note that Enclosures 1 through 5 were provided with the original LAR submittal.)**

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

**Response to Request for Additional Information Letter No. 01**

**Related to**

**License Amendment Request (LAR) 12-006**

**eRAI Tracking No. 6592**

**NRC RAI No. 13.06-1**

In Section 3 of Enclosure 1 (Page 12 of 19) of LAR-12-006, Security Considerations, bullet 3, states, “No lighting is credited in TR-94 as originating from the Turbine Building; therefore the proposed changes have no impact on lighting.”

With the overall height of the turbine building increasing by approximately 9 feet, clarify how the increased height of the turbine building structure does not impact the protected area lighting requirements. Explain what actions the licensee will implement to meet regulatory requirements as described in APP-GW-GLR-066, “AP1000 Safeguards Threat Assessment,” (TR-94, Section 4.1, Page 18) and Physical Security Plan, (Dated July 30, 2010, Rev 2, Section 15.1).

**SNC Response:**

Protected area lighting will be provided, primarily, from High Mast lighting located throughout the protected area and will be independent of the height of any buildings on site. While some lighting within the protected area may be mounted on the exterior of site buildings, such as the turbine building, the height of the building is not related to the height at which this building mounted lighting would be mounted (i.e., changing the overall height of the building would not change the height at which lighting will be mounted on the sides of the building). The height of the mounted lighting fixtures will be based on the desired coverage and light intensity (foot-candles) needed for the areas to be illuminated. Specifically, changing the overall height of the turbine building will have no impact on the sites ability to meet the regulatory requirements for lighting within the protected area – which is measured at ground level and is provided by High Mast and building-mounted lighting. There is no regulatory required security lighting mounted on the roof of the Turbine Building.

**ENCLOSURE 1 (License Amendment Request) Change**

The request for LAR-12-006, Enclosure 1 (page 12 of 19), Section 3, Technical Evaluation, third bullet under the heading, “Security Considerations,” is revised from:

“No lighting is credited in TR-94 as originating from the Turbine Building; therefore the proposed changes have no impact on lighting.

To read:

“Protected area lighting required to meet regulatory commitments will be provided by high mast lighting and building-mounted lighting. The height at which building-mounted lighting is mounted is unchanged with the change in overall building height; therefore, the proposed changes to the turbine building height have no impact on meeting regulatory lighting commitments. The final lighting arrangement within the protected area will be designed to satisfy the regulatory required 0.2 foot-candles as a minimum.”

**NRC RAI No. 13.06-2**

In Section 3 of Enclosure 1 (Page 12 of 19) of LAR-12-006, Security Considerations, bullet 6, states, "The increase in overall height of the external fighting positions located on the turbine building exterior has no adverse impact on lines of sight or field of fire from these positions." Also Section 3 of Enclosure 1 (Page 12 of 19) of LAR-12-006, Security Considerations, bullet 8, "The overall height of the fighting position increases by only 9 feet (increasing the floor from approximately 87 feet above ground level to approximately 96 feet above ground level) and as such has no adverse impact on any lines of sight from these positions. Because the change does increase the height, the line of sight from the Turbine Building fighting positions is actually improved."

Explain the analysis and data the licensee used or developed that supports the conclusion that a 9 foot increase in height of all external fighting positions located on the turbine building exterior has no adverse impact on lines of sight or fields of fire and target engagements at these higher elevations. Also describe how the licensee will replicate this elevation and fields-of-fire as part of the Tactical Weapons Qualification as described in the Physical Security Plan, Appendix B, Section 3.6.3 (Dated July 30, 2010, Rev 2,)

**SNC Response:**

During the design process associated with the change to Turbine Building height, Westinghouse Electric Company used applicable building drawings that included the proposed height of the Turbine Building in combination with the most currently available yard drawings to determine, on the basis of engineering judgment, the potential for impacts to the fields-of-fire from external fighting positions. Angles from each applicable external fighting position were reviewed. These angles and expected lines of sight and fields of fire were applied to the applicable TR-94 scenarios, and no adverse impact was identified. As documented in the design review process, SNC subsequently reviewed and concurred with the results of the determination. The fields of fire described in the TR-94 revision that is referenced in Revision 19 of the AP1000 DCD are based on the proposed new height.

The PSP requires the tactical training to replicate a reasonable and representative facsimile of the defensive positions, elevations, and distances. It should be noted that VEGP Units 1 and 2 currently have elevated building-mounted defensive positions similar in nature to those designed for VEGP Units 3 and 4 and that the existing qualification training for Units 1 and 2 replicates these locations, elevations, and distances using industry standard methodology (e.g., reduced target size). The as-built height of the VEGP Units 3 and 4 Turbine Building defensive positions will be factored into the qualification training for VEGP Units 3 and 4 in a manner consistent with the methodology currently employed for Units 1 and 2.

**NRC RAI No. 13.06-3**

Section 3 of Enclosure 1 (Page 12 of 19) of LAR-12-006, Security Considerations, final comment states, "...the review confirmed that this change does not impact any of the existing ITAAC related to physical security."

Clarify why the changes to the overall height of the turbine building and the modification to the first bay does not impact any of the existing PS-ITAAC.

- a. Clarify how the increased height of the turbine building structure will be address as described in ITAAC 2.6.09.08 (Table 2.6.9-1 of Appendix C to Vogtle Units 3 COL and Appendix C to Vogtle Unit 4 COL). (NUREG-0800, SRP 14.3.12, PS-ITAAC # 5). Will any additional modification be made (for example, will lighting towers be relocated, increased in height or will additional lighting Units be added) to meet the established requirement?
- b. Explain why the modification to the first bay as describe in Section 1 of LAR-12-006 was not included in Section 3 of Enclosure 1 of LAR-12-006, Security Considerations. Clarify the relationship to the first bay as described in Physical Security Plan, (Dated July 30, 2010, Rev 2, Section 14.5, AP1000 DCD PS-ITAAC # 7b). (NUREG-0800, SRP 14.3.12, PS-ITAAC # 1b).

**SNC Response:**

- a. As discussed in the response to RAI 13.06-1, changing the overall height of the turbine building will have no impact on the site's ability to meet the regulatory requirements for lighting within the external areas of the protected area. Required lighting is measured at ground level and will be provided by High Mast and building-mounted lighting, which will be mounted at a specific distance above ground level regardless of building height. The final lighting arrangement within the protected area will be designed to meet the regulatory required 0.2 foot-candles minimum and will be addressed through the completion of this ITAAC. Therefore, since the regulatory requirement remains the same and the referenced ITAAC must still be accepted as described, the increase in height of the turbine building does not impact the existing ITAAC.

**ENCLOSURE 1 (License Amendment Request) Change**

The request for LAR-12-006, Enclosure 1 (page 12 of 19), Section 3, Technical Evaluation, first paragraph under the heading, "Security Considerations," is revised from:

"Reviews of APP-GW-GLR-066, "AP1000 Safeguards Threat Assessment," (TR-94), Reference 3, and the VEGP 3 and 4 Physical Security Plan (PSP) were completed regarding the Turbine Building configuration changes identified in this LAR."

To read:

"Reviews of APP-GW-GLR-066, "AP1000 Safeguards Threat Assessment," (TR-94), Reference 3, and the VEGP Units 3 and 4 Physical Security Plan (PSP) were completed regarding the proposed changes identified in this LAR."



- b. The modifications to the first bay were included in the security evaluation of LAR-12-006; however, SNC concurs that the terminology used in the introduction to the Security Considerations discussion in Section 3 of Enclosure 1 may not have clearly expressed the full scope of the security review that was performed. The “configuration changes” discussed in the first sentence of the Security Considerations encompassed both the “Turbine Building layout changes” and the “Main area elevation changes and first bay wall height and thickness changes” that are proposed by this request. Accordingly, the request for LAR-12-006 is revised as indicated below to clarify the scope of the Security Considerations review.

The Vogtle Units 3 and 4 Physical Security Plan (PSP) and TR-94 were reviewed for potential impact on Physical Security ITAAC (PS-ITAAC). Vogtle plant-specific ITAAC 2.6.09.07a verifies that vital equipment is located only within a vital area and plant-specific ITAAC 2.6.09.07b verifies that access to vital equipment requires passage through the vital area barrier. This review confirmed that the proposed changes to the Turbine Building structures and layout do not change access to vital equipment or to the vital area barrier as described in the PSP. Because the proposed change does not change the location of vital equipment, the Protected Area perimeter barrier, or the vital area barrier, following implementation of the proposed change, access to the vital area barrier still requires passage through the Protected Area perimeter barrier, and access to vital equipment still requires passage through the vital area barrier. Therefore, there is no impact to the acceptance criteria of PS-ITAAC #7b (Vogtle Units 3 and 4 ITAAC 2.6.09.07a and 2.6.09.07b).