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NND-15-0444
10 CFR 50.90
10 CFR 52.98

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Virgil C. Summer Nuclear Station (VCSNS) Units 2 & 3
Combined License Nos. NPF-93 and NPF-94
Docket Nos. 52-027 & 52-028

Subject: VCSNS Units 2 & 3 LAR 13-22S1: Request for License Amendment
and Exemption: Annex Building Structure and Layout Changes
Supplement 1

References: 1. NND-14-0525 VCSNS Units 2 & 3 LAR 13-22: Request for License
Amendment and Exemption: Annex Building Structure and Layout
Changes, Dated December 4, 2014 (Accession Number
ML14339A637)

2. ND-14-1414 Southern Nuclear Operating Company Vogtle Electric
Generating Plant Units 3 and 4 Revised Request for License
Amendment and Exemption: Annex Building Structure and Layout
Changes (LAR-13-038R) Dated September 23, 2014 (Accession
Number ML14266A656)

3. ND-14-1257 Southern Nuclear Operating Company Vogtle Electric
Generating Plant Units 3 and 4 Revised Request for License
Amendment and Exemption: Annex Building Structure and Layout
Changes (LAR-13-038) Dated August 22, 2014 (Accession Number
ML14234A423)

In accordance with the provisions of 10 CFR 52.98 and 10 CFR 50.90, South Carolina Electric & Gas Company (SCE&G), the Licensee for Virgil C. Summer Nuclear Station Units 2 & 3, requested an amendment to Combined License (COL) Numbers NPF-93 and NPF-94, for VCSNS Units 2 & 3, respectively, in Reference 1.

The requested amendment, LAR 13-22, proposed changes to the structure and layout of various areas of the annex building and required changes to the Updated Final Safety Analysis Report (UFSAR) in the form of departures from Tier 2 information, and also involved changes to related plant-specific Tier 2* and Tier 1 information.

Reference 1 was developed after Reference 2. In Reference 2, Enclosure 5, Southern Nuclear Operating Company (SNC) responded to several NRC questions regarding

Reference 3. As a result, Reference 1 captures the revisions to Reference 3 that were incorporated by SNC into Reference 2 as a response to those NRC questions.

Since Reference 1 and Reference 2 are nearly identical, SCE&G elects to provide responses to those NRC questions about Reference 3 with respect to Reference 1 for addition to Docket numbers 52-027 and 52-028. The SCE&G responses are included as Enclosure 1 of this letter.

In accordance with 10 CFR 50.91, SCE&G is notifying the State of South Carolina of this LAR by transmitting a copy of this letter and its enclosures to the designated state official.

Should you have any questions about this letter, please contact Justin Bouknight, Supervisor, Nuclear Licensing, by telephone at (803) 941-9828, or by email at justin.bouknight@scana.com.

This letter contains no regulatory commitments.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on this 23rd day of July, 2015.

Sincerely,



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DK/ARR/dk

Enclosure 1: Virgil C. Summer Nuclear Station Units 2 & 3 – SCE&G Responses to NRC Questions Regarding LAR 13-22.

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South Carolina Electric & Gas Company

Virgil C. Summer Nuclear Station Units 2 & 3

NND-15-0444

Enclosure 1

SCE&G Responses to NRC

Questions Regarding LAR 13-22

(LAR 13-22S1)

(This enclosure contains 4 pages, including this cover sheet)

1. Enclosure 1, Page 12 of 20, Fourth Paragraph—It states in part that the proposed annex building EL. 117 feet-6 inches floor slab thickness increases are currently reflected in the structural configuration of the annex building that was used to analyze the structure for safe shutdown earthquake (SSE) and other design loads and load combinations, thus the structural analysis is not adversely affected. Can you clarify or confirm that the current analysis of record include effect of 8 inch slab (the existing the floor has thickness is 6 inches)?

SCE&G Response: In the detailed structural design, the El. 117'-6" floor slab is 8" thick, however, Tier 1 Table 3.3-1 and certain UFSAR (Tier 2) figures show a 6" thickness value, which is the minimum thickness needed for shielding. This discrepancy was identified during a previous effort to compare the construction requirements to the licensing basis (referred to as "C2LB"). To be consistent with the detailed structural design analyses in Tier 1 and the UFSAR, the El. 117'-6" floor slab thickness between Column Lines 9 and 13 and Rows E and I.1, and El. 135'-3" floor slab thickness between Column Lines 2 and 4 and Rows E and H, and Containment Filtration Room B (Room 40552) floor slab thickness are to be increased from 6 inches to 8 inches. These current analyses are available for NRC Staff review, upon request.

The Lumped Mass Stick Model analysis of the annex building considers the mass at each building level as the summation of equivalent loads addressing the concrete slab self-weight, the suspended or superimposed uniform dead load and a factor for uniform live load. As equivalent loads were used, specific equipment loads were not modeled. The changes proposed in SCE&G LAR 13-22 are bounded by the structural configuration model of the annex building that was updated to analyze the structure for safe shutdown earthquake (SSE) and other design loads and load combinations, thus the structural analysis is not adversely affected. This analysis used equivalent loads to bound specific equipment loads (including battery and battery support equipment) in the final design. The structural analysis description and results in the UFSAR are unchanged.

2. Enclosure 1--This LAR proposes changes to Tier 1 Figure 3.3-11A. LAR 13-019, Annex and Radwaste Building changes also proposes changes to Tier 1 Figure 3.3-11A. Specifically, LAR 13-019 proposes to delete the column line designations. Is there any conflict with these changes with respect to changes proposed in LAR 13-038? Please clarify

SCE&G Response: SCE&G LAR 13-22 was developed and submitted after Reference 2, which included the corrected version of Figure 3.3-11A, showing the column line in question. As a result, this corrected figure was incorporated into SCE&G LAR 13-22 prior to submittal to the NRC and shows the column lines as they appear in the VCSNS Units 2&3 current licensing basis. There is no conflict between the changes proposed in LAR 13-22 and those proposed in LAR 13-09 "License Amendment and Exemption Request: Annex and Radwaste Building Changes" [ML14065A022]. The correct figure can be found in Enclosure 4, page 2 of 24, in SCE&G LAR 13-22.

3. Enclosure 1, Section 4.1 Applicable Regulatory Requirements/Criteria (pages 16 and 17)—In addition to the fire protection changes, this LAR also contains structural changes (room height and floor thickness changes). However, no criteria are specified or discussed for the structural changes. Please clarify

SCE&G Response: Section 4.1 of Reference 3 has been revised in Reference 2 to address the effects of the structural changes on compliance with the applicable regulatory requirements. SCE&G LAR 13-22 was developed and submitted to the NRC after Reference 2. As a result, section 4.1 of Reference 2 was incorporated into SCE&G LAR 13-22 prior to submittal. The revised and incorporated section 4.1 can be found in Enclosure 1, pages 19-20 of SCE&G LAR 13-22.

4. Enclosure 1, Section 4.3, Significant Hazards Consideration, Section 4.3.1 (Page 17 of 20)—It appears that the structural changes (room heights and floor thickness) are addressed for the fire protection analysis aspect but not addressed from the structural analysis aspect (How that impact Seismic category II requirements). Please clarify.

SCE&G Response: Section 4.3, Significant Hazards Consideration, Section 4.3.1 of Reference 3 has been revised in Reference 2 to state that the structural changes do not involve a significant increase in the probability or consequences of an accident previously evaluated. SCE&G LAR 13-22 was developed and submitted to the NRC after Reference 2. As a result, the revised section 4.3.1 of Reference 2 was incorporated into SCE&G LAR 13-22 prior to submittal. The revised and incorporated section 4.3.1 can be found in Enclosure 1, pages 21-22 of SCE&G LAR 13-22.

5. Minimum gap requirements between Cat 1 and non-Cat 1 structures: What's the revised displacements that meet the seismic interaction criteria as per UFSAR commitments (i.e., the combined displacements must be less than 4 inches clearance between the Annex building and NI)?

SCE&G Response: Minimum design gaps (i.e., seismic shake spaces) between Nuclear Island and adjacent structures are set at 2" at grade and below and 4" above grade. These gaps are specified in VCSNS Units 2&3 UFSAR Subsection 3.8.5.1. The relative displacements of the annex building are less than these values, per the VCSNS Units 2&3 site-specific 2D soil-structure interaction (SSI) analysis VSG-1000-S2C-006. The technical evaluation of structure interaction is addressed in SCE&G LAR 13-22 (Reference 1 of this letter), Section 3.0 of Enclosure 1, in the last paragraph on page 15 and the first paragraph on page 16.

6. Provide technical justification on increasing the floor slab thickness from six inches to eight inches at EL. 135'-3" between Column Lines 4 and 4.1 and Column Line E and H, and Room 40552. Similar justification was provided in the LAR for EL. 117'-6" (see Para 4 on Page 12 of 20)

SCE&G Response: Reference 3 initially requested a change to Tier 1 Table 3.3-1 for the slab between Column Lines 2 and 4, not Column Lines 4 and 4.1. The Technical Evaluation of Reference 3 has since been revised and resubmitted in Reference 2 to provide the technical justification for increasing the floor slab thickness from six inches to eight inches in Room 40552 and at EL. 135'-3" between Column Lines 2 and 4 and Column Line E and H, similar to the justification that was provided in the LAR for EL. 117'-6". References to a proposed change to the slab thickness between Column Lines 4 and 4.1 have been removed from the text and table in Section 2, Detailed Description, in Reference 2. SCE&G LAR 13-22 was developed and submitted to the NRC after the Reference 2 submittal. As a

result, the revision to delete reference to a change in the slab thickness at EL. 135'-3" between Column Lines 4 and 4.1, as identified in question 6, was captured and implemented in SCE&G LAR 13-22 prior to submittal to the NRC. This revised Technical Evaluation can be seen in SCE&G LAR 13-22, Enclosure 1, page 15, starting in the 11th line of text on the page.

7. Tier 1 Figure 3.3-11A "Annex Building Plan View at EL. 100'-0"" on Page 2 of 18 Elevator shaft and doors are missing. It is inconsistent with other figures in the LAR at elevation 100'.

SCE&G Response: NRC question 7 was resolved during the public meeting of September 4, 2014 with a verbal explanation. Therefore no SCE&G response is required for LAR 13-22.

8. Confusion between "Rating" vs. "Category": In Para 4 on Page 12 of 20 and Para 2 on Page 13 of 20, there is a confusion between "rating" and "category" in the discussion on Technical Evaluation. Rating refers to capacity while Category refers to classification. Should it be Category?

SCE&G Response: SNC identified in Reference 2 that Reference 3 should not have used the term "rating" when referring to the annex building's seismic Category II structural capability. Therefore, Reference 3 was revised in Reference 2 to correct the inappropriate terminology. Reference 2 changed Section 3, Technical Evaluation, and Section 4.3, Significant Hazards Consideration Determination. In addition, the term "rating" was also used inappropriately in the exemption request that was provided as Enclosure 2 of Reference 3. Therefore, the first paragraph in Section 3.0, Technical Justification of Acceptability of the request for exemption was also revised in Reference 2 to correct the inappropriate terminology.

SCE&G LAR 13-22 was developed and submitted after Reference 2. As a result the revised section 3, Technical Evaluation, revised section 4.3.3 of the Significant Hazards Consideration, and revised section 3.0 the Technical Justification of Acceptability in the Exemption Request provided in Reference 2 were captured and incorporated into SCE&G LAR 13-22 prior to submittal. References to a seismic category "rating" have been removed from these sections and do not exist in SCE&G LAR 13-22. These revised sections from Reference 2 can be found in SCE&G LAR 13-22, Enclosure 1, pages 14-19 for the Technical Evaluation, pages 22-23 of Enclosure 1 for section 4.3.3 of the Significant Hazards Consideration, and pages 3-4 of Enclosure 2 for the Technical Justification of Acceptability in the Exemption Request.

Observation

1. Enclosure 1, Tier 2* changes: Based on review of Enclosure 1 (Table 2-1), it appears that there is only one Tier 2* change (Figure 9A-201 (SUNSI Figure). Can you confirm?

SCE&G Response: LAR 13-22 contains only one Tier 2* change. This change relocates the wall between corridor 40301 / room 40306 and rooms 40300 / 40302 on El. 100'-0". This change can be seen in Table 2-1 on pages 11-13 of Enclosure 1 of SCE&G LAR 13-22.