April R. Rice
Manager
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August 18, 2016
NND-16-0346
10 CFR 50.90

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

Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3
Combined License No. NPF-93
Docket No. 52-027

Subject: CORRECTED – Preliminary Amendment Request (PAR) 14-11: Debris Screen Related Dimensions

Reference:
1. South Carolina Electric & Gas Company (SCE&G) Request for License Amendment and Exemption LAR 14-11: Debris Screen Related Dimensions, dated August 12, 2016 (NND-16-0308)

2. South Carolina Electric & Gas Company (SCE&G) Preliminary Amendment Request (PAR) 14-11: Debris Screen Related Dimensions, dated August 12, 2016 (NND-16-0334)

Pursuant to 10 CFR 52.98(c) and in accordance with the provisions of 10 CFR 50.90, South Carolina Electric & Gas Company (SCE&G), acting on behalf of itself and the South Carolina Public Service Authority (Santee Cooper), submitted a request for license amendment and exemption to the Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3 combined licenses (COLs) numbers NPF-93 and NPF-94, respectively. The requested amendment and exemption (LAR 14-11) was submitted as indicated in Reference 1 above, to revise plant-specific Tier 1 material, with corresponding changes to the associated COL Appendix C information. The proposed changes, discussed in Reference 1, are to information identifying the frontal face area and screen surface area for the In-Containment Refueling Water Storage Tank (IRWST) screens, the location and dimensions of the protective plate located above the containment recirculation (CR) screens, and increasing the maximum Normal Residual Heat Removal System (RNS) flowrate through the screens.

This submittal corrects a typographical error found in Section 8 of the original Preliminary Amendment Request, Reference 2. SCE&G submitted this Preliminary Amendment Request, PAR 14-11, to minimize construction delays for Unit 2 during the NRC's evaluation of the related license amendment request. The determination of whether the NRC has any objection to SCE&G proceeding with construction based on the proposed plant licensing basis changes identified in the LAR is requested on or

before August 26, 2016. Delayed determination regarding this PAR could result in a delay in the construction of VCSNS Unit 2 Containment Building.

A description of the proposed change and the reason for the change are contained in Enclosure 1A to this letter. This PAR has been developed in accordance with guidance provided in Interim Staff Guidance on Changes during Construction Under 10 CFR Part 52, COL-ISG-25 [ML15058A377], and corresponds accurately and technically with the above-mentioned LAR 14-11. Section 7 of the Enclosure identifies and details the scope of the "no objection" sought in this PAR.

Should you have any questions, please contact Mr. Nick R. Kellenberger by telephone at (803) 941-9834, or by email at nicholas.r.kellenberger@scana.com.

This letter contains no regulatory commitments.

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

Executed on this 18th day of August, 2016.

Sincerely,

April R. Rice
Manager
New Nuclear Licensing

MHK/ARR/mhk

Enclosure 1: Virgil C. Summer Nuclear Station Unit 2: Preliminary Amendment Request Regarding Debris Screen Related Dimensions (PAR 14-11) (Not provided in this letter, contained in Reference 2)

Enclosure 1A: CORRECTED – Virgil C. Summer Nuclear Station Unit 2: Preliminary Amendment Request Regarding Debris Screen Related Dimensions (PAR 14-11)

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South Carolina Electric and Gas Company

NND-16-0346

Enclosure 1A

CORRECTED

Virgil C. Summer Nuclear Station (VCSNS) Unit 2

Preliminary Amendment Request

Regarding:

Debris Screen Related Dimensions

(PAR 14-11)

The correction is identified by a change bar in the right hand margin.

(This Enclosure consists of 4 pages, including this cover page.)

Pursuant to 10 CFR 50.90, South Carolina Electric and Gas Company (SCE&G) requested an amendment to Combined License (COL) Numbers NPF-93 and NPF-94, for Virgil C. Summer Nuclear Station (VCSNS) Unit 2 and 3, respectively. Accordingly, SCE&G requests the determination of whether the NRC has any objection to proceeding with the construction of the VCSNS Unit 2 Containment Building with the installation of the protective plate, module CH77, as identified in the Preliminary Amendment Request (PAR) provided below to be provided by the date shown below.

PAR Number	Station Name	Unit Number	PAR Date
PAR 14-11	**VCSNS**	☒ **2** ☐ **3**	**08/12/16**

1. NRC PAR Notification Requested Date (see Block 7 for basis) August 26, 2016

2. License Amendment Request References (as applicable)

☒ **LAR submittal date and SCE&G Correspondence Number:** August 12, 2016 / NND-16-0308

☐ **Expected LAR submittal date:** _____

3. Brief Description of Proposed Change

The proposed changes, discussed in the License Amendment Request (LAR), would depart from the licensing basis documents to (1) increase the credited frontal face area and screen surface area for the In-Containment Refueling Water Storage Tank (IRWST) screens, (2) modify the required elevation and front extension of the protective plate located above the containment recirculation (CR) screens to increase the maximum spacing above the CR screens and to decrease the minimum length that the protective plate must extend to the front of the CR screens, and (3) increase the maximum Normal Residual Heat Removal System (RNS) flowrate through the IRWST and CR screens.

Due to an increase in RNS flow requirements, it was determined that corresponding changes to the minimum required IRWST screen frontal face and surface areas specified in COL Appendix C (and plant-specific Tier 1) and Tier 2 information was required. The minimum required IRWST total screen surface area for the IRWST screens is proposed to be increased from 2000 ft^2 to 2300 ft^2. This is accomplished by increasing the IRWST Screens A and B required surface area from 500 ft^2 to 575 ft^2 and increasing the IRWST Screen C required surface area from 1000 ft^2 to 1150 ft^2. Since the design and size of the screens are not being changed by this activity, the relationship between IRWST screen frontal face area to IRWST screen surface area is not changed, and is thus consistent with the current design and licensing basis. Changes to the minimum required IRWST screen surface area is a proposed change within the LAR, however, this proposed change is not included in the scope of this PAR.

The AP1000 design includes two containment recirculation screens, whose function is described in UFSAR subsection 6.3.2.2.7.3. These screens are oriented vertically along walls above the loop compartment floor in Room 11202 (also identified in the UFSAR as SG Compartment 2), significantly above the lowest level in containment, the reactor vessel cavity. As the accumulators, core makeup tanks, and IRWST inject, the containment is flooded up to a level above the top of the screens sufficient to provide recirculation flow through the gravity injection lines back into the reactor coolant system. A protective plate is located directly above the screens, as shown in UFSAR Figures 6.3-8 and 6.3-9, to prevent debris from above from entering and becoming entrained in the coolant flowpath directly in front of the screens. In addition, a two-foot high curb is provided in front of the screens to prevent settled debris from reaching the screen. Without the protective plate, recirculation flow may cause debris falling into the flowpath directly in front of the screens to be swept to the screens before it settles to the floor. Coatings are not used in the area located under the plate in order to prevent paint debris from bypassing the plate entirely.

PAR Number	Station Name	Unit Number	PAR Date
PAR 14-11	**VCSNS**	☒ **2** ☐ **3**	**08/12/16**

The LAR proposes that the maximum distance of the plate above the top of the screen be increased from a height of 1 foot to 1 foot 3 inches. Note that this height requirement applies only at the required distances perpendicular to and to the side of the screens, as the corresponding debris transport evaluation credits the height of the plate at these locations only. Changes are proposed to UFSAR subsection 6.3.2.2.7.1 to clarify this requirement. Additionally, it is proposed that the perpendicular extension of the plate beyond the recirculation screens be reduced from 10 feet to 8 feet, 3 inches. This reduction increases clearance to support reactor coolant pump (RCP) removal and increases the accessibility for future maintenance. The proposed dimension changes affect COL Appendix C, plant-specific Tier 1, and the UFSAR identified minimum plate extension length from the front of the CR screens. This reduction in plate length does not adversely affect the design function of the protective plate, and thus continues to support acceptable screen performance.

4. Reason for License Amendment Request

During the detailed design finalization of the protective plate above the CR screens, it was determined that the location of the plate above the CR screens and the length of the extension of the plate beyond the screen impacted equipment accessibility for maintenance. To address this inconsistency, the LAR proposes that the maximum distance of the plate above the top of the screen be increased and the perpendicular extension of the plate beyond the recirculation screens be reduced.

Additionally, design finalization also determined that the minimum IRWST screen size needed to be increased to confirm the screens would meet their design requirements. The increase in the RNS maximum flowrate requires a corresponding increase in the IRWST minimum screen areas required to be credited to maintain the design basis for the IRWST screens consistent with the results of the screen head loss testing that demonstrates acceptability of the screens. Accordingly, the LAR proposes revising the required IRWST minimum screen areas to accommodate the increase in RNS maximum flow.

5. Is an Exemption Request Required? ☒ **Yes** ☐ **No**

If Yes, Briefly Describe Reason for Exemption

An exemption is requested to depart from AP1000 plant-specific DCD Tier 1 material in regard to the location and dimensions of the protective plate above the containment recirculation screen and the surface area of the In-Containment Refueling Water Storage Tank (IRWST) screens.

An exemption is requested because LAR 14-11 requests a departure from plant-specific DCD Tier 1 information, Table 2.2.3-4. Specifically, a plant-specific departure from the DCD Tier 1 Table would 1) increase minimum IRWST Screens A and B frontal face area from 20 ft^2 to 25 ft^2 and minimum total screen surface area from 500 ft^2 to 575 ft^2, 2) increase the minimum IRWST Screen C frontal face area from 40 ft^2 to 50 ft^2 and minimum total screen surface area from 1000 ft^2 to 1150 ft^2, 3) increase the maximum height of the CR screen protective plate above the screens from “1 ft” to “1 ft, 3 in”, and 4) decrease the minimum protective plate extension perpendicular from the screens from “10 ft” to “8 ft, 3 in”.

6. Identify Applicable Precedents

No precedence identified.

7. Impact of Change on Installation and Testing Schedules

SCE&G's requested date for approval of this license amendment as identified in the referenced LAR is May 9, 2017. As such, this PAR requests a "no objection" finding related to this license amendment by the date identified in Block 1 above (or sooner if reasonably achievable) to allow for appropriate notifications and to allow construction to continue.

Specifically, SCE&G requests a "no objection" finding to begin installation of the protective plate, module CH77, in accordance with the changes proposed in LAR 14-11 described above. The protective plate is located directly above the CR screens, as shown in UFSAR Figures 6.3-8 and 6.3-9.

A "no objection" finding for the above construction activity would allow for Unit 2 Containment Building construction to proceed.

8. Impact of Change on ITAAC

COL Appendix C and plant-specific Tier 1 Table 2.2.3-4 specifies the inspections, tests, analyses, and associated acceptance criteria for the Passive Core Cooling System (PXS). These design characteristics are required to be verified by Inspection, Tests, Analyses, and Acceptance Criteria (ITAAC) during construction. The proposed activity of referenced LAR would increase the credited frontal face area and screen surface area for the In-Containment Refueling Water Storage Tank (IRWST) screens and modify the required elevation and front extension of the protective plate located above the containment recirculation (CR) screens to increase the maximum spacing above the CR screens and to decrease the minimum length that the protective plate must extend to the front of the CR screens.

This PAR should be considered for any inspections related to ITAAC 2.2.03.08c.vii (Item Nos. 192) and ITAAC 2.2.03.08c.xiii (Item Nos. 198) of SCE&G Unit 2 and 3 COL Appendix C Table 2.2.3-4. The results which meet the modified ITAAC will be included in the closure packages for the ITAAC described above. A "no objections" finding is requested for this PAR to allow construction to proceed pursuant to the process outlined in COL Condition 2.D. (1), Changes during Construction.

9. Additional Information

None

10. Preparer Name (Print) Matthew Kunkle	**11. Preparer Signature**	**12. Date** 8/18/16
13. Reviewer Name (Print) Nick Kellenberger	**14. Reviewer Signature**	**15. Date** 8/18/16
16. Approver Name (Print) April Rice	**17. Approver Signature**	**18. Date** 8-18-16