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Docket Nos.: 52-025  
52-026

ND-17-0299  
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  
Preliminary Amendment Request (PAR):  
Hydrogen Venting from Passive Core Cooling System (PXS) Compartments (PAR-17-003)

Ladies and Gentlemen:

The U.S. Nuclear Regulatory Commission (NRC) issued the Vogtle Electric Generating Plant (VEGP) Unit 3 and Unit 4 combined licenses (COLs) (License Nos. NPF-91 and NPF-92, respectively) to Southern Nuclear Operating Company (SNC) on February 10, 2012.

SNC submitted a License Amendment Request (LAR)-17-003 on February 22, 2017, as ND-17-0264 [ML17053A425]. The LAR requests to amend the VEGP Units 3 and 4 Updated Final Safety Analysis Report (UFSAR) and corresponding plant-specific Tier 1 information to revise the locations of the hydrogen venting primary openings in the passive core cooling system (PXS) valve/accumulator rooms inside containment.

The construction schedules for VEGP Units 3 and 4 show placement and field assembly (including subsequent concrete pour to complete the floor module (CA37) placement) of the seismic Category I containment internal floor for Room 11300 at an approximate design elevation of 107'-2" (which are subject to the changes proposed in LAR-17-003) prior to the requested approval date for the LAR. Thus, SNC is submitting this Preliminary Amendment Request (PAR), PAR-17-003, to minimize construction delays for VEGP Units 3 and 4 during the NRC's evaluation of the related LAR. The determination of whether the NRC has any objection to SNC proceeding with construction based on the proposed plant licensing basis changes identified in the LAR is requested on or before March 20, 2017. Delayed determination regarding this PAR will result in a delay of the construction completion of VEGP Units 3 and 4 structures.

A description of the proposed change and the reason for the change are contained in the Enclosure to this letter. This PAR has been developed in accordance with guidance provided in the most recent revision to the 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-17-003. The technical scope of this PAR is consistent with the subject

LAR. Section 7 of the Enclosure further identifies and details the scope of the "no objection" finding sought in this PAR.

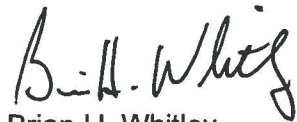
This letter does not contain any NRC commitments. Should you have any questions, please contact Ms. Amy Chamberlain at (205) 992-6361.

This letter, including the enclosure, has been reviewed and confirmed to not contain security-related information.

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

  
Brian H. Whitley



BHW/ERG/ljs

Sworn to and subscribed before me this 23rd day of February 2017

Notary Public: Lisa Myrick Spears

My commission expires: June 18, 2019

Enclosure: Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Preliminary Amendment Request Regarding Hydrogen Venting from Passive Core Cooling System Compartments (PAR-17-003)

cc:

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**Southern Nuclear Operating Company**

**ND-17-0299**

**Enclosure**

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

**Preliminary Amendment Request**

**Regarding**

**Hydrogen Venting from Passive Core Cooling System Compartments**

**(PAR-17-003)**

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

ND-17-0299

Enclosure

PAR-17-003: Hydrogen Venting from Passive Core Cooling System Compartments

Pursuant to 10 CFR 52.98(c) and in accordance with 10 CFR 50.90, Southern Nuclear Operating Company (SNC) submitted a license amendment request (LAR) to change the Vogtle Electric Generating Plant (VEGP), Units 3 and 4, licensing basis documents associated with Combined License Nos. NPF-91 and NPF-92, respectively.

The construction schedules for VEGP Units 3 and 4 show placement and subsequent field assembly (including placement of concrete to complete the floor module (CA37) placement) of the seismic Category I containment internal floor for Room 11300 at an approximate design elevation of 107'-2" (which are subject to the changes proposed in LAR-17-003) prior to the requested approval date for the LAR. This construction is currently on hold. Thus, SNC is submitting this Preliminary Amendment Request (PAR), PAR-17-003, to minimize construction delays for VEGP Units 3 and 4 during the NRC's evaluation of the related LAR. The determination of whether the NRC has any objection to SNC proceeding with construction based on the proposed plant licensing basis changes identified in the LAR is requested on or before March 20, 2017. Delayed determination regarding this PAR will result in a delay of the construction completion of VEGP Units 3 and 4 structures.

Accordingly, SNC requests the determination of whether the NRC has any objection to proceeding with construction of VEGP Units 3 and 4 seismic Category I containment internal floor module connections subject to the changes proposed in LAR-17-003.

PAR Request Number: <b>SNC PAR-17-003</b>	Station Name: <b>VEGP</b>	Unit Number(s): <input checked="" type="checkbox"/> 3 <input checked="" type="checkbox"/> 4	PAR Request Date: <b>February 23, 2017</b>
<b>1. NRC PAR Notification Requested Date (see Block 7 for basis): March 20, 2017</b>			
<b>2. License Amendment Request References (as applicable):</b> <input checked="" type="checkbox"/> LAR submittal date and SNC Correspondence Number: February 22, 2017 / ND-17-0264 <input type="checkbox"/> Expected LAR submittal date: _____			
<b>3. Brief Description of Proposed Change:</b> <p>The containment hydrogen control system (VLS) functions following a severe accident to promote hydrogen burning soon after the lower flammability limit is reached in the containment to prevent accidental hydrogen burn initiation at high hydrogen concentration levels. This function provides confidence that containment integrity can be maintained during hydrogen burns and that safety-related equipment can continue to operate during and after the burns.</p> <p>Hydrogen may be vented from the passive core cooling system (PXS) valve/accumulator rooms (PXS-A and PXS-B compartments) inside containment (Rooms 11206 and 11207, respectively) to the Core Make-up Tank (CMT)-A and CMT-B compartment (Room 11300) through openings in the floor of Room 11300 where each CMT is located, to prevent accumulation of hydrogen in a dead-ended compartment during a beyond design basis accident.</p> <p>COL Appendix C (and corresponding plant-specific Tier 1) Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) 2.3.09.03.iii acceptance criteria and UFSAR subsection 6.2.4.5.1 describe the minimum distance between the primary openings and the containment shell. The acceptance criteria also define primary openings of these compartments as those that constitute 98% of the opening area. UFSAR Figure 1.2-7 shows the equipment access opening from Room 11206 to Room 11300, which is located along the refueling cavity wall.</p>			

UFSAR Figure 1.2-9 shows the locations of CMT-A and CMT-B. The CMT openings are located directly underneath each CMT. Because the equipment access opening and CMT-A opening account for at least 98% of the opening area, the other openings shown from Room 11206 to Room 11300 on UFSAR Figure 1.2-7 are bounded by these two openings.

For Room 11206, in the proposed reconfiguration, the equipment access opening and CMT-A opening constitute at least 98% of the vent paths within Room 11206 that vent to Room 11300. Because the CMT-A opening is closer to the containment vessel than the 19 feet currently specified in the acceptance criteria, the actual distances (less 6 inches for construction tolerances) for each opening are proposed to be used instead of 19 feet. The equipment access opening is at least 24.3 feet away from the containment vessel and the CMT-A opening is at least 9.4 feet away from the containment vessel, instead of 19 feet as currently described. To be consistent with the use of actual distances for the openings, the acceptance criteria for the CMT-B opening from Room 11207 to Room 11300 is revised to use the actual distance (less 6 inches for construction tolerances) to the containment vessel, which is 24.6 feet instead of 19 feet.

The licensing basis documents are proposed to be revised to reflect the revised layout of the vent openings, the revised analysis results, and to add the containment vessel lower equipment hatch to the sustained hydrogen combustion survivability assessment.

The proposed revised hydrogen venting locations from the PXS compartments (Rooms 11206 and 11207) have been evaluated to confirm that a diffusion flame hydrogen burn at the venting locations does not challenge containment integrity. The methodology and the analyses for evaluating the diffusion flame hydrogen burn is described in the technical evaluation provided in LAR-17-003.

Additional details are provided in the referenced LAR.

#### 4. Reason for License Amendment Request:

The openings in Room 11206 are proposed to be reconfigured to allow for access to perform maintenance activities on the equipment in Room 11206. The revised layout led to the equipment access opening along the refueling cavity wall no longer constituting 98% of the primary openings from Room 11206 to 11300. Because of this, the opening around the CMT-A also needed to be considered a primary opening. Therefore, the description of the primary openings in the licensing basis documents, including ITAAC 2.3.09.03.iii acceptance criteria, for Room 11206 is proposed to be changed.

#### 5. Is Exemption Request Required? ☒ Yes ☐ No

##### If Yes, Briefly Describe the Reason for the Exemption.

An exemption is requested to depart from AP1000 plant-specific DCD Tier 1 material with regard to the venting of hydrogen from the Passive Core Cooling System (PXS) compartments into the Core Makeup Tank (CMT) rooms above.

An exemption is requested because LAR-17-003 requests a departure from plant-specific DCD Tier 1 information in Table 2.3.9-3, Inspections, Tests, Analyses and Acceptance Criteria (ITAAC). Specifically, a plant-specific departure would change the locations for the hydrogen venting primary openings in the passive core cooling system (PXS) valve/accumulator rooms inside containment, redefine the openings constituting 98% of the vent path area, and allow some of these openings to be closer than the currently identified 19 feet from the containment shell.

#### 6. Identify Applicable Precedents: No precedent identified

**7. Impact of Change on Installation and Testing Schedules:**

SNC's requested date for approval of this license amendment is November 8, 2017. This date is based upon the scheduled ITAAC closure. However, the impacted containment internal floor modules (CA37) are currently forecast for placement and subsequent field assembly beginning on March 27, 2017 (Unit 3) and July 11, 2017 (Unit 4). Additionally, concrete pours to an approximate design elevation of 107'-2" that complete the module placement are currently forecast for May 2, 2017 (Unit 3) and October 19, 2017 (Unit 4).

A delayed determination regarding this PAR will result in delay in the construction completion of VEGP Units 3 and 4 structures.

As such, this PAR requests a "no objection" finding related to this LAR by the date identified in Block 1 above (or sooner if reasonably achievable) to allow for appropriate notifications and release of further containment internal construction activities dependent on placing these modules and making the appropriate connections to allow construction to continue.

This "no objection" finding would be specifically applicable to setting and field assembly construction activities for the VEGP Units 3 and 4 containment internal floor module for Room 11300 at a design elevation of approximately 107'-2" and include subsequent concrete pour to a design elevation of approximately 107'-2" to complete the module placement.

Construction holds have been issued for the above activities related to this floor module.

A "no objection" finding for the above activities would release the associated VEGP Units 3 and 4 construction holds related to this floor module CA37 construction activity.

**8. Impact of Change on ITAAC:**

The plant-specific Tier 1 ITAAC 2.3.09.03.iii acceptance criteria define the primary openings of these compartments and describe the minimum distance between the primary openings and the containment shell. The defined primary openings are reconfigured and the minimum distances are proposed to be revised.

**9. Additional Information: None**