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ND-17-1602
10 CFR 50.90

U.S. Nuclear Regulatory Commission
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Washington, DC 20555-0001

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Unit 3
Third Preliminary Amendment Request (PAR):
Pipe Rupture Hazard and Flooding Analyses (PAR-17-010-3)

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)-17-010 on March 31, 2017, by SNC letter ND-17-0496 [ADAMS Accession Number ML17090A570]. The LAR proposed changes to the combined licenses (COLs), COL Appendix C (and to plant specific Tier 1 information) and associated Tier 2 information to address mitigation of flooding of the Auxiliary Building identified during completion of the pipe rupture hazards analysis (PRHA). SNC has also provided supplemental information as responses to a set of NRC Staff Requests for Additional Information by SNC letter ND-17-1465 on August 21, 2017 (LAR-17-010S1) [ADAMS Accession Number ML17233A147]

On June 30, 2017, SNC submitted a Preliminary Amendment Request (PAR)-17-010, by SNC letter ND-17-1191 [ML17187A179] requesting to commence installation of individual piping segments and connected components in their final locations in specific rooms pursuant to LAR 17-010. The No Objection Letter for PAR-17-010 was received on July 6, 2017, [ML17186A014].

On August 18, 2017, SNC submitted a second PAR, PAR-17-010-2, by SNC letter ND-17-1459 [ML17230A362] requesting to commence installation of additional individual piping segments and connected components in their final locations in additional specific rooms and to embed some of this piping in concrete pursuant to LAR 17-010. The No Objection Letter for PAR-17-010-2 was received on September 11, 2017, [ML17243A028].

SNC has since determined that construction activities allow for setting the resized fire water storage tanks in their final locations as soon as the second week of November 2017.

Therefore, SNC is submitting the attached PAR-17-010-3, to minimize construction delays for VEGP Unit 3 during the NRC's evaluation of the related LAR. The determination of whether the NRC has any objection to SNC proceeding with setting the resized fire water storage tanks is requested on or before November 3, 2017. Delayed determination regarding this PAR could result in the delay of the completion of construction, testing and turnover of the fire water storage tanks for VEGP Unit 3.

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 [ADAMS Accession Number ML15058A377], and corresponds accurately and technically with the above-mentioned LAR-17-010. 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.

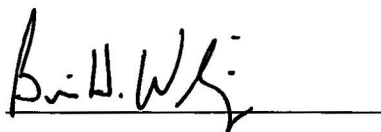
Upon receipt of a No Objection Letter for PAR-17-010-3, SNC plans to complete installation of the two resized fire water storage tanks in their final locations pursuant to LAR 17-010.

This letter has been reviewed and confirmed to not contain security-related information.

Should you have any questions, please contact Ms. Amy Chamberlain at (205) 992-6361.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 25th day of September 2017.

Respectfully submitted,



Brian H. Whitley
Director, Regulatory Affairs
Southern Nuclear Operating Company

Enclosure: Vogtle Electric Generating Plant (VEGP) Unit 3 – Third Preliminary Amendment
Request: Pipe Rupture Hazard and Flooding Analyses (PAR-17-010-3)

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Southern Nuclear Operating Company

ND-17-1602

Enclosure

Vogtle Electric Generating Plant (VEGP) Unit 3

Third Preliminary Amendment Request:

**Pipe Rupture Hazard and Flooding Analyses
(PAR-17-010-3)**

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

ND-17-1602

Enclosure

PAR-17-010-3: Pipe Rupture Hazard and Flooding Analyses

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) Unit 3 licensing basis documents associated with Combined License No. NPF-91.

Installation of the following VEGP Unit 3 components are subject to the changes proposed in LAR-17-010:

- Primary Fire Water Storage Tank, FPS-MT-01A, and
- Secondary Fire Water Storage Tank, FPS-MT-01B

Delayed determination regarding this Preliminary Amendment Request (PAR) could result in the delay of the completion of construction, testing and turnover of the primary and secondary fire water storage tanks for VEGP Unit 3. Accordingly, SNC requests the determination of whether the NRC has any objection to proceeding with installation of the subject VEGP Unit 3 components identified above, subject to the changes proposed in LAR-17-010:

PAR Request Number: SNC PAR-17-010-3	Station Name: VEGP	Unit Number(s): <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4	PAR Request Date: September 25, 2017
1. NRC PAR Notification Requested Date (see Block 7 for basis): November 3, 2017			
2. License Amendment Request References (as applicable): <input checked="" type="checkbox"/> LAR submittal date and SNC Correspondence Number: LAR-17-010 dated March 31, 2017 / ND-17-0496; and LAR-17-010S1 dated August 21, 2017 / ND-17-1465 (and previous PARs, PAR-17-010 dated June 30, 2017 / ND-17-1191, and PAR-17-010-2 dated August 18, 2017 / ND-17-1459) <input type="checkbox"/> Expected LAR submittal date: _____			
3. Brief Description of Proposed Change: <p>Pipe Rupture Hazard Analysis (PRHA) and flooding analysis were performed for Level 1 (Elevation 66'-6") and Level 2 (Elevation 82'-6") in both the radiologically controlled area (RCA) and non-radiologically controlled area (non-RCA) of the Auxiliary Building. The results of this analysis indicated that, considering a seismic event, the bounding pipe rupture flow rates for a circumferential moderate-energy line break in non-seismically qualified piping originated from the upper level piping (10-inch fire protection system main header loop piping) located on the RCA side of the Auxiliary Building. To limit the flooded level in some rooms of the Auxiliary Building, additional measures are necessary.</p> <p>PRHA and flooding analysis were similarly performed for Level 3 (Elevation 92'-6") and higher in both the RCA and non-RCA of the Auxiliary Building. The evaluations (and the evaluations at Levels 1 and 2) of postulated moderate-energy line breaks (MELBs) in non-seismically supported piping and through-wall cracks determined that flood levels in some rooms exceed the maximum levels identified in the Tier 1 information provided in Table 3.3-2.</p> <p>The Pipe Rupture Hazard Analysis (PRHA) performed for the moderate-energy piping in Levels 1 through 5 of the Auxiliary Building radiologically controlled area (RCA) and Level 5 of the Auxiliary Building non-radiologically controlled area (non-RCA) determined that fire protection system (FPS)</p>			

pipe breaks will cause the flooding levels above previously identified levels. The fire water storage tanks (MT-01A and MT-01B) have been increased in size so that each is the same volume, and new limits on the maximum and minimum volume of water in the fire water storage tanks are established to control the flood level and maintain sufficient fire water available for fire protection.

In order to alert the main control room (MCR) operators of a line break in the Auxiliary Building RCA, two safety-related Class 1E seismic Category I Auxiliary Building RCA Floodup Level Sensors are installed to provide indication in the MCR.

The new Auxiliary Building RCA flood levels do not prevent equipment required for safe shutdown of the plant from performing their required functions.

The flooding analyses resulted in modifications to eliminate a pipe break or limit flow into an area such that none of breaks affect the structural design of the Auxiliary Building, or the functional capability of equipment required to safely shut down the plant.

These changes impact COL Appendix C (and associated plant-specific Tier 1) and various Updated Final Safety Analysis Report (UFSAR) Subsections, Tables and Figures.

Additional details are provided in the referenced LAR.

4. Reason for License Amendment Request:

The Combined License (COL) for construction and operation of an AP1000® power plant requires completion of the as-designed pipe rupture hazard analysis (PRHA) for compartments (rooms) prior to installation of the related piping segments and connected components in their final locations in those compartments (rooms). The PRHA is required to be completed in accordance with the criteria outlined in the AP1000® DCD, Rev. 19, Tier 2 Subsections 3.6.1.3.2 and 3.6.2.5. Completion of the PRHA for several of the Auxiliary Building compartments (rooms) has resulted in the need for revision to the description of the evaluation and results provided in the licensing basis documents. Some of the proposed changes to the Updated Final Safety Analysis Report (UFSAR) involve impacts to the COL Appendix C information (and the corresponding plant-specific Tier 1 information), and some impact the above referenced AP1000® DCD Rev. 19 sections specifically identified in the COL (thus, a COL change to the license condition is also needed).

The proposed changes revise the COLs to modify the design of the power plant by adding two floodup level sensors to the auxiliary building radiologically controlled area (RCA). These level sensors provide main control room (MCR) notification of a rise in water level that may cause flooding in the auxiliary building. Changes are also made to the piping and procedures to limit the volume of fire protection system (FPS) water that can be available for flooding the auxiliary building, and to provide other mitigating changes to limit the flooding on Levels 1 and 2 of the auxiliary building RCA. Changes are also proposed to address flooding of Levels 3, 4, and 5 of the auxiliary building RCA.

5. Is Exemption Request Required? Yes No

If Yes, Briefly Describe the Reason for the Exemption.

An exemption is requested to depart from AP1000 generic Tier 1 material with regard to the mitigation of flooding in the RCA portion of the Auxiliary Building.

An exemption is requested because LAR-17-010 requests a departure from plant-specific DCD Tier 1 material in regards to the AP1000:

- revisions to the fire protection system (FPS) water storage tanks, pumps, and piping,
- addition of two Auxiliary Building flooding level sensors, and
- revisions to the identified flood barrier walls, as specified in Tier 1 material.

6. Identify Applicable Precedents: No precedent identified.

7. Impact of Change on Installation and Testing Schedules:

SNC's current requested date for approval of this license amendment is November 30, 2017 (as indicated in ND-17-1567 [ML17256A626]). This date was based on anticipating the submittal of this PAR to support the setting of these fire water storage tanks in early November, and the requested "no objection" finding.

However, NRC Requests for Additional Information (RAIs) and the time necessary to develop the requested information make approval of this LAR by the requested date unlikely. 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 activities to allow construction of the primary and secondary fire water storage tanks at VEGP Unit 3.

The "no objection" finding would be specifically applicable to VEGP Unit 3:

- Primary Fire Water Storage Tank, FPS-MT-01A, and
- Secondary Fire Water Storage Tank, FPS-MT-01B

Construction holds have been issued for these activities.

A "no objection" finding for the above activities would allow for these identified VEGP Unit 3 construction activities to proceed.

The next currently identified project activity associated with the subject LAR-17-010 is for closure of the As-Designed Pipe Rupture Hazards Analysis Report ITAAC in December 2017. As such, with the requested "no objection" finding, the requested approval date for the LAR can be extended to December 15, 2017.

8. Impact of Change on ITAAC:

The proposed changes in LAR 17-010 would:

- specify that the FPS has two fire water storage tanks, each capable of providing 100 percent of the water necessary for FPS use
- provide verification that the volume of water, dedicated to FPS use provided in each fire water storage tank is at least 396,000 gallons
- verify the design commitments for liquid radwaste system (WLS) WLS-400A and WLS-400B for Class 1E qualification, for verifying Class 1E sensors are powered from their respective Class 1E divisions and perform on a simulated test signal, and
- verify the safety related displays for flood indication for WLS-400A and WLS-400B can be retrieved in the main control room.

Therefore, COL Appendix C Table 2.3.4-2 Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) No. 2.3.4.07 is revised, and COL Appendix C Table 2.3.10-1 ITAAC Nos. 2.3.10.11.a and 2.3.10.12 are added, to identify these changes.

9. Additional Information: None