



B. H. Whitley
Director
Regulatory Affairs

Southern Nuclear
Operating Company, Inc.
42 Inverness Center Parkway
Birmingham, AL 35242
Tel 205.992.7079
Fax 205.992.5296

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Docket No.: 52-025

ND-17-1459
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U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Ms. Vonna Ordaz
Director, Office of New Reactors
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Unit 3
Second Preliminary Amendment Request (PAR):
Pipe Rupture Hazard and Flooding Analyses (PAR-17-010-2) and
Notification in Accordance with License Condition 2.D(12)(b) for
As-Design Pipe Rupture Hazards Analysis

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).

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 rooms 12341, 12351, 12352, 12354 and 12563 pursuant to LAR 17-010.

As described in the PAR-17-010, LAR-17-010 proposes to modify UFSAR Section 3.6.1.3.2. Because AP1000 DCD, Rev. 19 Section 3.6.1.3.2 is referenced in license condition 2.D(12)(b) of the combined license for VEGP Unit 3, Number NPF-91, LAR-17-010 also included a conforming change to that license condition. Specifically, LAR-17-010 proposed to modify

license condition 2.D(12)(b) to reference AP1000 DCD, Rev. 19 Section 3.6.1.3.2 “as revised by Amendment No. 51 and Amendment No.____”.

As required by license condition 2.D(12)(b), SNC also notified the NRC in the previous PAR-17-010 that the PRHA analyses for the Auxiliary Building rooms 12341, 12351, 12352, 12354 and 12563 had been completed in accordance with AP1000 DCD, Rev. 19, Section 3.6.1.3.2 as modified by Amendment No. 51 and proposed to be modified by LAR-17-010. The analyses were provided to the NRC Staff as part of the on-going audit [ML17090A570] of the calculations that support LAR-17-010.

The No Objection Letter for PAR-17-010 was received on July 6, 2017, [ML17186A014] at which time SNC began individual piping segment installation and connected components. As installation of these piping segments and connected components is completed, concrete installation (which will embed some of these piping segments in the concrete), will be the following process step. As such, SNC is submitting this additional PAR-17-010-2 to request NRC “no objection” to concrete installation which will result in embedment of some of the installed piping segments.

As required by license condition 2.D(12)(b), SNC also hereby notifies the NRC that the PRHA analyses for the Auxiliary Building rooms 12421 and 12452 are complete in accordance with AP1000 DCD, Rev. 19, Section 3.6.1.3.2 as modified by Amendment No. 51 and proposed to be modified by LAR-17-010. The analyses have been provided to the NRC Staff as part of the on-going audit [ML17090A570] of the calculations that support LAR-17-010.

Upon receipt of a No Objection Letter for PAR-17-010-2, SNC will complete installation of individual piping segments and connected components in their final locations in rooms 12341, 12351, 12352, 12421 and 12452 pursuant to LAR 17-010, embedding the piping segments in concrete in these final locations. SNC understands that, in the event the NRC ultimately does not approve LAR-17-010 or approves LAR-17-010 with additional or different departures from UFSAR Section 3.6.1.3.2, SNC will issue a new or modified notification under license condition 2.D(12)(b) before re-commencing installation of individual piping segments and connected components in their final locations pursuant to the approved licensing basis.

Therefore, SNC is submitting the attached PAR-17-010-2, 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 embedding the VEGP Unit 3 piping segments associated with rooms 12341, 12351, 12421 and 12452 (which are subject to the changes proposed in LAR-17-010) in concrete, is requested on or before September 13, 2017. Delayed determination regarding this PAR could result in the delay of the completion of construction, testing and turnover of the piping systems associated with these rooms for VEGP Unit 3.

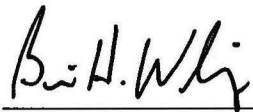
A description of the proposed change and the reason for the change are contained in the Enclosure to this letter. This PAR has been developed in accordance with guidance provided in the most recent revision to the Interim Staff Guidance on Changes during Construction Under 10 CFR Part 52, COL-ISG-25 [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.

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 18th day of August 2017.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Brian H. Whitley", is written above a horizontal line.

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

Enclosure: Vogtle Electric Generating Plant (VEGP) Unit 3 – Second Preliminary Amendment
Request: Pipe Rupture Hazard and Flooding Analyses (PAR-17-010-2)

cc:

Southern Nuclear Operating Company / Georgia Power Company

Mr. S. E. Kuczynski (w/o enclosure)
Mr. M. D. Rauckhorst
Mr. D. G. Bost (w/o enclosure)
Mr. M. D. Meier (w/o enclosure)
Ms. P. Reister
Mr. D. H. Jones (w/o enclosure)
Mr. D. L. McKinney (w/o enclosure)
Mr. T.W. Yelverton (w/o enclosure)
Mr. B. H. Whitley
Mr. J.J. Hutto
Mr. C. R. Pierce
Ms. A. G. Aughtman
Mr. D. L. Fulton
Mr. M. J. Yox
Mr. E. W. Rasmussen
Mr. T. R. Takats
Mr. W. A. Sparkman
Ms. A. C. Chamberlain
Mr. M. K. Washington
Ms. A. L. Pugh
Mr. J. D. Williams
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Nuclear Regulatory Commission

Mr. W. Jones (w/o enclosure)
Ms. J. Dixon-Herrity
Mr. C. Patel
Mr. W. C. Gleaves
Ms. R. Reyes
Ms. J. M. Heisserer
Mr. B. Kemker
Mr. P. Kallan
Mr. G. Khouri
Ms. S. Temple
Ms. V. Ordaz
Mr. T.E. Chandler
Ms. P. Braxton
Mr. T. Brimfield
Mr. C. J. Even
Mr. A. Lerch

State of Georgia

Mr. R. Dunn

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Oglethorpe Power Corporation

Mr. M. W. Price

Mr. K. T. Haynes

Ms. A. Whaley

Municipal Electric Authority of Georgia

Mr. J. E. Fuller

Mr. S. M. Jackson

Dalton Utilities

Mr. T. Bundros

Westinghouse Electric Company, LLC

Mr. R. Easterling (w/o enclosure)

Mr. G. Koucheravy (w/o enclosure)

Mr. P. A. Russ

Mr. M. L. Clyde

Mr. C. A. Castell

Ms. K. Chesko

Mr. J. Hopkins

Mr. D. Hawkins

Other

Mr. S. W. Kline, Bechtel Power Corporation

Ms. L. A. Matis, Tetra Tech NUS, Inc.

Dr. W. R. Jacobs, Jr., Ph.D., GDS Associates, Inc.

Mr. S. Roetger, Georgia Public Service Commission

Ms. S. W. Kernizan, Georgia Public Service Commission

Mr. K. C. Greene, Troutman Sanders

Mr. S. Blanton, Balch Bingham

Mr. R. Grumbir, APOG

NDDocumentinBox@duke-energy.com, Duke Energy

Mr. S. Franzone, Florida Power & Light

Southern Nuclear Operating Company

ND-17-1459

Enclosure

Vogtle Electric Generating Plant (VEGP) Unit 3

Second Preliminary Amendment Request:

**Pipe Rupture Hazard and Flooding Analyses
(PAR-17-010-2)**

(This Enclosure consists of 5 pages, including this cover page.)

ND-17-1459

Enclosure

PAR-17-010-2: 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:

- Passive Containment Cooling System (PCS) piping in rooms 12341 and 12351,
- Passive Containment Cooling System (PCS) piping in rooms 12421 and 12452,
- Radioactive Waste Drain System (WRS) piping in room 12352,

Delayed determination regarding this Preliminary Amendment Request (PAR) could result in the delay of the completion of construction, testing and turnover of the piping and valves in rooms 12341, 12351, 12352, 12421 and 12452 for VEGP Unit 3. Accordingly, SNC requests the determination of whether the NRC has any objection to proceeding with installation and embedding in concrete the installed VEGP Unit 3 components as indicated below, subject to the changes proposed in LAR-17-010:

- Installation and embedding PCS piping systems in rooms 12421 and 12452,
- Embedding PCS piping systems in rooms 12341 and 12351,
- Embedding WRS piping systems in room 12352.

PAR Request Number: SNC PAR-17-010-2	Station Name: VEGP	Unit Number(s): <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4	PAR Request Date: August 18, 2017
1. NRC PAR Notification Requested Date (see Block 7 for basis): September 13, 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 previous PAR-17-010 dated June 30, 2017 / ND-17-1191) <input type="checkbox"/> Expected LAR submittal date: _____			
3. Brief Description of Proposed Change: 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.			

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.

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) 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 requested date for approval of this license amendment is October 30, 2017. This date is based upon the scheduled ITAAC closure.

However, some of the impacted piping segments must be set in place prior to this requested approval date for the LAR (addressed by PAR-17-010 with some PCS piping added by this PAR) and some of these piping segments are anticipated to be embedded in concrete in the near-term schedule (the first of these are currently scheduled for mid-September).

This requested PAR need for the PCS piping installation and the concrete embedment of piping segments was recently identified when it was determined the concrete installation could proceed in the scheduled activities.

A delayed determination regarding this PAR will result in delay of final installation of the VEGP Unit 3 piping in the walls in rooms 12341, 12351, 12352, 12421 and 12452.

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 activities dependent on installing additional piping segments in rooms 12421 and 12452, and embedding installed piping segments in the concrete walls of rooms 12341, 12351, 12352, 12421, and 12452, which will allow construction, testing and turnover for the subject valves and piping in these rooms at VEGP Unit 3 to continue.

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

- PCS piping systems installation in rooms 12421 and 12452,
- PCS piping systems embedment in concrete in rooms 12341, 12351, 12421 and 12452,
- WRS piping systems embedment in concrete in room 12352.

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.

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