



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

November 19, 2019

LICENSEE: Southern Nuclear Operating Company, Inc.  
FACILITY: Vogtle Electric Generating Plant, Units 1 and 2  
SUBJECT: SUMMARY OF NOVEMBER 4, 2019, PUBLIC MEETING WITH SOUTHERN NUCLEAR OPERATING COMPANY, INC., REGARDING GENERIC LETTER 2004-02 FOR VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2

On November 4, 2019, a Category 1 public meeting was held between the U.S. Nuclear Regulatory Commission (NRC) and representatives of Southern Nuclear Operating Company, Inc. (SNC, the licensee) at NRC Headquarters, One White Flint North, 11555 Rockville Pike, Rockville, Maryland. The purpose of the meeting was to understand SNC's plan regarding Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents at Pressurized-Water Reactors," dated September 13, 2004 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML042360586) for Vogtle Electric Generating Plant (VEGP), Units 1 and 2.

A list of attendees is provided as an Enclosure.

On October 23, 2019 (ADAMS Accession No. ML19296A885), the meeting was noticed on the NRC public webpage.

The SNC presented slides contained in ADAMS Accession No. ML19303A025.

By letter dated September 30, 2019 (ADAMS Accession No. ML19120A469), the NRC issued the "Final Staff Evaluation for Vogtle Electric Generating Plant, Units 1 and 2, Systematic Risk-Informed Assessment of Debris Technical Report (EPID L-2017-TOP-0038)."

By letter dated April 21, 2017 (ADAMS Accession No. ML17116A098), as supplemented by letters dated July 11; (ADAMS Accession No. ML17192A245) and November 9, 2017 (ADAMS Accession No. ML17314A014), and January 2 (ADAMS Accession Nos. ML18004A070 and ML18004A071, non-publicly available), January 9 (ADAMS Accession No. ML18009A841), February 6 (ADAMS Accession No. ML18037B121), February 12 (ADAMS Accession No. ML18045A094), February 21 (ADAMS Accession No. ML18052B342), May 23 (ADAMS Accession No. ML18143B785), July 10 (ADAMS Accession Nos. ML18193B163, ML18193B164 and ML18193B165), and December 4, 2018 (ADAMS Accession No. ML18338A497), SNC submitted a technical report for NRC staff review regarding the use of a risk-informed approach to resolve Generic Safety Issue (GSI)-191, "Assessment of Debris Accumulation on PWR [Pressurized-Water Reactor] Sump Performance," at VEGP, Units 1 and 2, and to supplement its response to NRC GL 2004-02.

The NRC staff found that the technical report enclosed with the letter dated July 10, 2018, is acceptable for use in plant-specific licensing applications for VEGP, Units 1 and 2, in accordance with the limitations and conditions section and applicability provided in the NRC staff's evaluation, dated September 30, 2019.

The staff evaluation in the letter provided the basis for the NRC to consider use of the technical report in future licensing applications. Except for downstream effects - fuel and vessel and licensing basis, the NRC staff has concluded that the technical report contains sufficient information to address the information requested in NRC GL 2004-02. The NRC staff's evaluation, dated September 30, 2019, applies only to material provided in the technical report. License amendment requests that deviate from this technical report will be subject to additional review in accordance with applicable review standards.

The SNC staff discussed their proposed plan for GL 2004-02 regarding VEGP, Units 1 and 2, with the following areas of interest:

- Resolution of in-vessel issue
  - Discussion of allowed credit for non-uniform debris accumulation at the reactor core inlet
  - In addition to crediting non-uniform bed formation, SNC stated that they would include an evaluation of other conservatisms that lead to assurance of LTCC [Long Term Core Cooling] in the submittal
- Refueling water storage tank (RWST) surveillance requirement (SR)
  - SNC proposed change to allow 7 days following Mode 4 entry to meet RWST SR 3.5.4.2 requirement of 686,000 gallons
  - Requires 672,193 gallons in RWST to use this allowance in MODE 4 and above
  - Allows use of reactor coolant system (RCS) borated water during shutdown to be make-up source for RWST
    - Currently required to make-up volume to RWST to meet Mode 4 requirements, and then process excess RCS volume to rad waste during heat-up
    - Probability risk assessment (PRA) calculations show negligible risk during 7-day period
- Conditions and limitations from the NRC staff evaluation, dated September 30, 2019 (ADAMS Accession No. ML19120A469)
  - SNC may provide information similar to that included in the South Texas Project pilot for risk-informing GL 2004-02 responses
- Debris limits and how to perform future operability determinations
  - Discuss how Traveler Technical Specifications Task Force (TSTF)-567, Revision 1, "Add Containment Sump [Technical Specification] TS to Address GSI [Generic Safety Issue]-191 Issues" (ADAMS Accession No. ML18109A077) requirements for risk-informed licensing basis would be implemented if unanalyzed debris is discovered

- Content of a proposed licensing submittal
  - Proposed License Amendment Request (LAR)
    - Change licensing basis to risk-informed methodology for debris limits
    - Adopt Traveler TSTF-567 Containment Sump TS
    - RWST SR Allowance
  - Proposed GL 2004-02 Closure
  - Proposed Exemption Requests

#### Resolution of In-Vessel Issue

SNC stated that VEGP, Units 1 and 2, is bounded by the assumed values in WCAP-17788, “Comprehensive Analysis and Test Program for GSI-191 Closure (PA-SEE-1090)” (ADAMS Accession No. ML15210A667), except for the core inlet debris limit. Further details can be found on slide 4 of SNC’s presentation slides. SNC explained that the fiber accumulation for VEGP, Units 1 and 2, at the core inlet is 90.6 grams/fuel assembly (g/FA), which exceeds the WCAP-17788 core inlet limit for the bound hot leg break if no alternate flow path credit is taken. SNC provided a summary of the core inlet fiber accumulation methodology for VEGP, Units 1 and 2, on slides 6 and 7 of the SNC presentation slides. In addition to crediting a non-uniform debris deposition at the core inlet, SNC stated that they would also include conservatisms in other areas to demonstrate adequate long-term core cooling.

The NRC staff stated that SNC cannot simply reference WCAP-17788 as if it had been approved for use by the NRC staff. The NRC staff noted that the WCAP-17788 has not been approved by the NRC. The NRC stated that SNC needs to decide how to address the resolution of the in-vessel issues for VEGP and provide support and justification for the proposed submittal, and use of material in WCAP-17788 would require appropriate justification.

#### RWST SR Change

SNC stated that they plan to submit a Technical Specification (TS) change to allow 7 days following MODE 4 entry to meet RWST SR 3.5.4.2 requirement of 686,000 gallons and would require 672,193 gallons in RWST in MODES 4 and above. The proposed TS change by SNC would allow the use of RCS borated water during heat-up to be the make-up source for RWST. SNC evaluated the risk associated with lower RWST water level in a sensitivity study. On slide 12, SNC presented the conditional failure probability values calculated in NARWHAL and the change in conditional core damage frequency (delta CDF) and the change in large early release frequency (delta LERF) calculated with the PRA.

The NRC staff questioned the 7-day duration and whether SNC considered making a separate LAR for the RWST SR. The NRC staff pointed SNC to Nuclear Energy Institute (NEI) 04-10, Revision 1, “Risk-Informed Technical Specifications Initiative 5b Risk-Informed Method for Control of Surveillance Frequencies” (ADAMS Accession No. ML071360456), and Regulatory Guide (RG) 1.177, “An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications” (ADAMS Accession No. ML100910008).

Conditions and Limitations from the VEGP, Units 1 and 2 GL 2004-02 Submittal Staff Evaluation

The following are the conditions and limitations from the NRC staff evaluation dated September 30, 2019:

1. The applicability of the NRC's acceptance is limited to the structures, systems, and components; plant configurations; and operations described in Enclosures 2, 3, and 4 of SNC's letter dated July 10, 2018 and the strainer design described in the Section entitled, "16-Disk ECCS [emergency core cooling system] Suction Strainer Summary," of Enclosure 2.
2. The applicability of the NRC's acceptance is limited to the Vogtle assessment of risk attributable to debris described in Enclosures 1 and 3 of SNC's letter dated July 10, 2018.
3. Describe in-vessel analysis, establish in-vessel acceptance criteria, and demonstrate the criteria are met.
4. Address Key Principle 1 (i.e., the proposed licensing basis change meets the current regulations unless it is explicitly related to a requested exemption) and Key Principle 5 (i.e., the impact of the proposed licensing basis change should be monitored using performance measurement strategies) in RG 1.174, Revision 3 (ADAMS Accession No. ML17317A256).
5. Identify key elements of the risk-informed analysis (e.g., methods, approaches, and data) that will be described in the Vogtle UFSAR [Updated Final Safety Analysis Report].
6. Identify key elements of the risk-informed analysis and corresponding methods, approaches, and data that, if changed, would constitute a departure from the method used in the safety analysis as defined by 10 CFR 50.59.
7. Identify the relevant elements of the risk-informed assessment that may need to be periodically updated. The licensee must describe the program or controls that will be used to ensure relevant elements of the risk-informed assessment are periodically updated.
8. Describe a reporting and corrective action strategy for addressing situations in which an update to the risk-informed assessment reveals that the acceptance guidelines described in Section 2.4 of RG 1.174, Revision 3, have been exceeded.
9. Correct the error concerning the evaluation of transported coatings debris loads described in SNC's letter dated December 4, 2018. Specifically, provide corrected coating debris volumes and describe how coating debris loads on the strainers are determined. In addition:
  - a. Verify that the use of the corrected coating debris volumes has a limited impact on strainer head loss and the head loss is acceptable. Also, the licensee must describe the method of verification.

- b. Verify that the use of the corrected coating debris volumes has a limited impact on CDF and does not result in exceeding the acceptance guidelines for very small change in risk, as described in Section 2.4 of RG 1.174, Revision 3. Also, the licensee must describe the method of verification.

SNC stated that they will propose to use WCAP-17788 methodology and acceptance criteria with justification for the core inlet fiber quantity.

Also, SNC stated that they plan to request an exemption for certain aspects of Title 10 of the *Code of Federal Regulations* (10 CFR), 50.46, "Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors;" General Design Criteria (GDC) 35, "Emergency Core Cooling;" GDC 38, "Containment Heat Removal;" and GDC 41, "Containment Atmosphere Cleanup."

SNC stated that they plan to submit a LAR with changes to the UFSAR, a description of key elements of the risk-informed analysis, a description of the operability evaluation process, and a description of the correction to the coatings error, updated results, and methods. SNC explained that the current model of record for VEGP, Units 1 and 2, is a common PRA that includes internal events, internal flood, fire, and seismic hazards.

The NRC staff suggested that SNC should review the South Texas Project LAR (ADAMS Accession Nos. ML131750250 and ML15246A125). SNC asked if exemptions from GDC 35, 38, and 41 were required. The NRC stated that SNC should determine the appropriate contents of their submittal and the NRC staff will review it.

#### Debris Limits and How to Address Future Operability Issues

On slides 22 through 31, SNC presented details on their plan to address debris limits and future operability issues. SNC proposed a risk-informed or risk-based approach to determining sump operability.

The NRC staff stated that a system is operable or inoperable. The NRC staff explained that if Vogtle exceeds a design limit, the system would be inoperable. The NRC staff stated that operability determinations cannot be based on PRA, but a design limit could be based on PRA. The NRC staff notes that the SNC approach to future operability poses policy issues that are outside the licensing process.

#### Content of Proposed License Submittal

SNC plans to submit exemption requests, a LAR, and an updated response to GL 2004-02. In addition, SNC plans to submit exemption requests from certain aspects of 10 CFR 50.46, and possibly GDC 35, GDC 38, and GDC 41.

SNC explained that the proposed LAR would revise VEGP, Units 1 and 2, licensing basis to (1) allow the use of risk-informed approach to address safety issues discussed in GSI-191 and GL 2004-02, (2) adopt Traveler TSTF-567 for the containment sump, and (3) revise TS SR 3.5.4.2 for the RWST level following MODE 4 entry.

SNC stated that they will provide an updated response to GL 2004-02 to include (1) correction of the coatings error identified previously and update the risk quantification results, and (2) a description of the approach used to address in-vessel effects.

SNC plans to submit the LAR and exemption as one submittal in the second quarter of 2020 and would request approval to support the VEGP, Unit 1, refueling outage scheduled for spring 2021.

The NRC staff questioned the need to submit these licensing actions in one submittal instead of separately. The NRC stated that bundling the licensing actions into one may take longer to review than if the licensing actions were separated.

The NRC staff made no regulatory decisions during the meeting.

Three members of the public were in attendance via the phone line. No members of the public made any comments or asked questions of the NRC staff. Public Meeting Feedback forms were available, but no comments were received.

The meeting adjourned at 4:03 pm.

Please direct any inquiries to me at 301-415-3100.

*/RA/*

John G. Lamb, Senior Project Manager  
Plant Licensing Branch, II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-424 and 50-425

Enclosure: List of Attendees

cc: Listserv

LIST OF ATTENDEES

NOVEMBER 4, 2019, PUBLIC MEETING WITH SOUTHERN NUCLEAR COMPANY

REGARDING GL 2004-02 FOR

VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2

<u>ATTENDEE</u>	<u>REPRESENTING</u>
John G. Lamb	NRC
Mike Markley	NRC
Vic Cusumano	NRC
Ben Parks*	NRC
Ashley Smith	NRC
Stephen Smith	NRC
Caroline Tilton*	NRC
Andrea Russell	NRC
John Tsao	NRC
Paul Klein*	NRC
Matt Yoder*	NRC
Candace de Messieres	NRC
Ken Lowery*	SNC
Bill Henne*	SNC Contractor
James Spring*	SNC Contractor
Ryan Joyce*	SNC
Franchelli Febo*	SNC
James Flowers*	SNC
Owen Scott*	SNC
Tim Sande*	SNC Contractor
Haifeng Li*	SNC Contractor
Roger Andreasen*	Public – Ameren Missouri Callaway
Inaudible Name	Public
Inaudible Name	Public
<b>*Via Phone</b>	

SUBJECT: SUMMARY OF NOVEMBER 4, 2019, PUBLIC MEETING WITH SOUTHERN NUCLEAR OPERATING COMPANY, INC., REGARDING GENERIC LETTER 2004-02 FOR VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2 DATED NOVEMBER 19, 2019

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RidsNrrLAKGoldstein	MEndress, Region 2	
Resource	CSafouri, Region 2	

**ADAMS Accession No. Meeting Summary ML19310D797**

OFFICE	DORL/LPL2-1/PM	DORL/LPL2-1/LA	DORL/LPL2-1/BC	DORL/LPL2-1/PM
NAME	JLamb	KGoldstein	MMarkley	JLamb
DATE	11/05/19	11/14/19	11/18/19	11/19/19

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