

December 19, 2019

Docket Nos.: 52-025  
52-026

ND-19-1539  
10 CFR 50.90  
10 CFR 52.63

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**  
**Supplement to Request for License Amendment and Exemption:**  
**Automatic Depressurization System (ADS) and Core Makeup Tank (CMT)**  
**Design Parameters (LAR-19-009S1)**

Ladies and Gentlemen:

Pursuant to 10 CFR 52.98(c) and in accordance with 10 CFR 50.90, on September 30, 2019, Southern Nuclear Operating Company (SNC) requested an amendment to the combined licenses (COLs) for Vogtle Electric Generating Plant (VEGP) Units 3 and 4 (License Numbers NPF-91 and NPF-92, respectively) [ADAMS Accession No. ML19273A953]. The requested amendment proposes to depart from Updated Final Safety Analysis Report (UFSAR) Tier 2 information (which includes the plant-specific Design Control Document (DCD) Tier 2 information), involves related changes to plant-specific Tier 1 information, with corresponding changes to the associated COL Appendix C information, and involves related changes to COL Appendix A, Technical Specifications.

Specifically, one of the proposed changes addresses the core makeup tank (CMT) minimum volume and associated surveillance requirements. On a public call with the NRC Staff on December 5, 2019, additional information was requested regarding compliance with Technical Specification (TS) 3.5.2, Core Makeup Tanks (CMTs) – Operating, during conditions related to the volume of noncondensable gases in the CMT inlet line which cause the high-point water level to drop below the sensor. In particular, the Staff was concerned about an indeterminate volume in the CMT which may lead to an indeterminate compliance with the safety analysis and possible necessary entry in TS 3.5.2 Actions Condition E along with Condition D.

As discussed on the public call, SNC expressed our understanding that entry solely into Condition D is sufficient and appropriate for this condition for the following reasons:

The CMT volume is confirmed by the use of the high point gas accumulation instrumentation. The CMT wide range level instrumentation is intended to provide indication of level (volume) for the span of tank height. Due to the arrangement of the level taps on the CMT and accounting for instrument error and uncertainties, the wide range level instrumentation cannot confirm a volume of 2487 ft<sup>3</sup>. It should be noted that the upper taps for the wide range nozzles are not at the uppermost portion of the CMT due to other tank features (inlet nozzle, internal connections, etc.).

The amount of measurable volume with the wide range level, accounting for error and uncertainty, is approximately 2475 ft<sup>3</sup> for the most limiting as-built tank.

The CMT arrangement is depicted in Figure 6.3-1 (Sheet 1 of 3) of the Vogtle 3&4 UFSAR. The high point gas accumulation instrumentation is approximately 28" above the inlet nozzle of the CMT and, therefore, when a gas accumulation alarm is not present, the entire CMT is full. If gas were to accumulate in the inlet line high point, it would generate an alarm. The expected operator action is to vent the gas to clear the alarm and re-confirm adequate CMT volume.

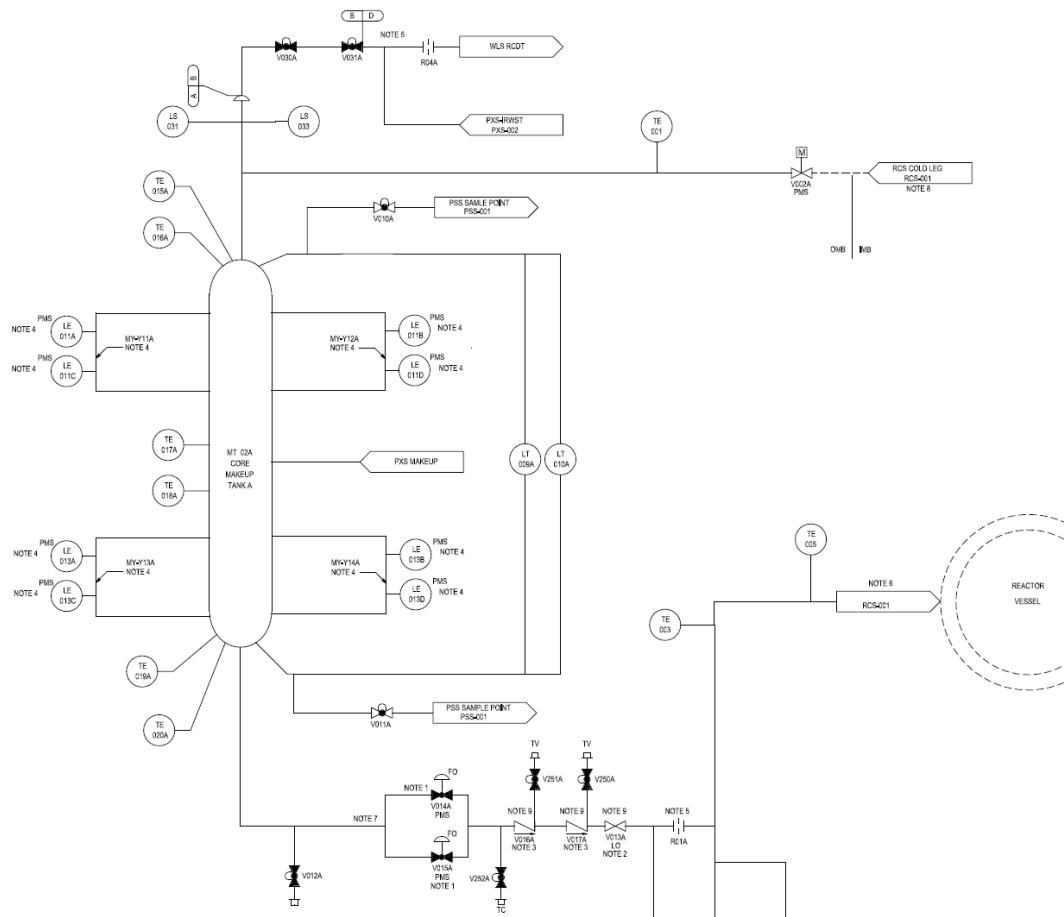


Figure 1: Excerpt from Vogtle 3&4 UFSAR Figure 6.3-1 (Sheet 1 of 3)

As noted in Enclosure 1 of the LAR, on page 10 of 13, "... there is no mechanism that drains water below the top nozzle of the CMT." The CMTs have a normally open inlet line connected to the RCS cold legs which maintains each CMT at RCS pressure. The CMT outlets have parallel, normally closed, air-operated valves. There is no credible mechanism for gross leakage from the CMT and therefore, when an alarm is present, it is not expected that the volume of the CMT would decrease beneath the tee connection of the high point. Additionally, for the volume of the CMT to be affected, not only does the high point gas accumulation pipe stub require voiding, but also the inlet piping in the high point above the CMT inlet nozzle would need to be voided. With no gas voids in the inlet piping, RCS water would flow into the CMT from the balance line to maintain the CMT water volume.

Based upon the information provided regarding the physical arrangement of CMT gas accumulation instrumentation and CMT wide range level taps, when a high point gas alarm is present and the CMT wide range level is at 100%, the volume of the CMT is indeterminate, but there is certainty that the CMT water volume is greater than 2475 ft<sup>3</sup>. However, without a significant amount of accumulated gas and a leak mechanism from the CMT, the water volume would not fall below the inlet nozzle (or vertical inlet piping before the tee). Thus, the expectation is that the reduction of volume in the CMT inlet line due to accumulation of non-condensable gas would be a slowly developing event and venting of the gas intrusion volume within the 24-hour Completion Time of Condition D would result in restoration of CMT level prior to reduction below the safety analysis assumed volume of 2487 ft<sup>3</sup>.

If some unforeseen mechanism causes a significant RCS leak leading to lower CMT levels, TS 3.4.7, RCS Operational LEAKAGE, would necessarily be violated and its Actions imposed. It would take considerable RCS leakage, which would lead to entry into Conditions A or B of TS 3.4.7, depending on identification of the source, and then 4 hours after entering Required Action A.1, would result in a requirement to place the plant in MODE 3. This is more restrictive than the TS 3.5.2 Condition E 8-hour restoration.

With Surveillance Requirement (SR) 3.5.2.2 removed, the only SR not met is volume of noncondensable gases, old SR 3.5.2.4 (proposed SR 3.5.2.3), and thus Condition D would be entered. Since the unexpected potential for not maintaining the safety analysis assumption of CMT volume would not be discernable until a level below 2475 ft<sup>3</sup>, the existing potential for entering Condition E (i.e., inoperable for reasons other than noncondensable gas accumulation) would be expected to be inconsequential since as noted above, the leakage requirements of TS 3.4.7 would generally be expected to be more limiting. Thus, entering only Condition D is appropriate during this indeterminate volume condition since as noted on page 10 of 16 of Enclosure 1 to letter ND-19-1142, "This is acceptable because this Action is entered with greater remaining volume in the CMT, and the 24-hour Completion Time would be expected to lead to restoration in a similar time frame as waiting to enter until the lower volume is reached and providing for restoration in 8 hours. Further, there is no mechanism that drains water below the top nozzle of the CMT."

The information contained in this supplement is consistent with the scope of the original LAR and does not affect the Technical Evaluation or No Significant Hazards Consideration determination.

This letter contains no regulatory commitments. This letter has been reviewed and determined not to contain security-related information.

In accordance with 10 CFR 50.91, SNC is notifying the State of Georgia by transmitting a copy of this letter and its enclosures to the designated State Official.

Should you have any questions, please contact Mr. Mark Humphrey at (205) 992-6452.

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I declare under penalty of perjury that the foregoing is true and correct. Executed on the 19<sup>th</sup> of December 2019.

Respectfully submitted,

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

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

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