

10CFR50.90

July 26, 2021

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Calvert Cliffs Nuclear Power Plant, Units 1 and 2
Renewed Facility Operating License Nos. DPR-53 and DPR-69
Docket Nos. 50-317 and 50-318

Subject: Response to Request for Additional Information for Application to Revise Technical Specifications to Adopt TSTF-567 Rev 1, "Add Containment Sump TS to Address GSI-191 Issues"

- References:
1. Letter from David P. Helker (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission – "Application to Revise Technical Specifications to Adopt TSTF-567 Rev 1, "Add Containment Sump TS to Address GSI-191 Issues," dated November 24, 2020 (ADAMS Accession No. ML20329A334)
 2. Email from Michael Marshall, U.S. Nuclear Regulatory Commission, to Frank Mascitelli, Exelon Generation Company, LLC, "Calvert Cliffs Nuclear Power Plant, Units 1 and 2 – Request for Additional Information Regarding License Amendment Request Concerning Containment Sump (EPID L 2020-LLA-0256)," dated June 28, 2021 (ADAMS Accession No. ML21180A156)

By letter November 24, 2020 (Reference 1), in accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," Exelon Generation Company, LLC (Exelon) requested changes to the Technical Specifications (TS) of the Calvert Cliffs Nuclear Power Plant, Units 1 and 2 (CCNPP).

The proposed changes would revise TS 3.5.2, "ECCS [Emergency Core Cooling System] – Operating," and TS 3.5.3, "ECCS – Shutdown," and TS 5.5.15, "Safety Function Determination Program (SFDP). The proposed changes would also add a new TS 3.6.9 "Containment Emergency Sump," to Section 3.6, "Containment," and an associated Surveillance Requirement (SR 3.6.9.1). These proposed changes are consistent with NRC-approved Technical Specification Task Force (TSTF) Standard Technical Specification Traveler, TSTF-567, Revision 1, "Add Containment Sump TS to Address GSI-191 Issues."

By email dated June 28, 2021 (Reference 2), the NRC notified Exelon that additional information is needed to complete its review of the Reference 1 submittal. Attachment 1 to this letter provides a response to the request for additional information contained in the Reference 2 email. Attachment 2 contains the CCNPP Safety Injection and Containment Spray System Drawing. Attachment 3 contains Revised Proposed Technical Specification Page 3.6.9-2 to remove the Risk Informed Completion Time (RICT) from the TS 3.6.9.B.1 Required Action. Attachment 4 contains the associated Revised Proposed Technical Specification Bases Page B 3.6.9-5 (for information only).

Exelon has reviewed the information supporting a finding of no significant hazards consideration, and the environmental consideration, that were previously provided to the NRC in the Reference 3 letter. Exelon has concluded that the information provided in this response does not affect the bases for concluding that the proposed license amendments do not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92. In addition, Exelon has concluded that the information in this response does not affect the bases for concluding that neither an environmental impact statement nor an environmental assessment needs to be prepared in connection with the proposed amendments.

There are no regulatory commitments contained in this response.

In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b), Exelon is notifying the State of Maryland of this response to a request for additional information by transmitting a copy of this letter and its attachment to the designated State Official.

Should you have any questions concerning this submittal, please contact Frank Mascitelli at (610) 765-5512.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 26th day of July 2021.

Respectfully,



David P. Helker
Sr. Manager - Licensing and Regulatory Affairs
Exelon Generation Company, LLC

- Attachments:
1. Response to Request for Additional Information
 2. CCNPP Safety Injection and Containment Spray System Drawing No. 60731SH0003
 3. Revised Proposed Technical Specification Page 3.6.9-2
 4. Revised Proposed Technical Specification Bases Page B 3.6.9-5 (for information only)

cc: Regional Administrator, Region I, USNRC
USNRC Senior Resident Inspector, CCNPP
Project Manager [CCNPP] USNRC
S. Seaman, State of Maryland

ATTACHMENT 1

License Amendment Request

**Calvert Cliffs Nuclear Power Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-53 and DPR-69
Docket Nos. 50-317 and 50-318**

**Application to Revise Technical Specifications to Adopt TSTF-567 Rev 1,
“Add Containment Sump TS to Address GSI-191 Issues”**

Response to NRC Request for Additional Information

- References:
1. Letter from David P. Helker (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission – “Application to Revise Technical Specifications to Adopt TSTF-567 Rev 1, “Add Containment Sump TS to Address GSI-191 Issues,” dated November 24, 2020 (ADAMS Accession No. ML20329A334)
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 3. CCNPP Safety Injection and Containment Spray System Drawing No. 60731SH0003 (See Attachment 2 of this submittal)

By letter November 24, 2020 (Reference 1), in accordance with 10 CFR 50.90, “Application for amendment of license, construction permit, or early site permit,” Exelon Generation Company, LLC (Exelon) requested changes to the Technical Specifications (TS) of the Calvert Cliffs Nuclear Power Plant, Units 1 and 2 (CCNPP).

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By email dated June 28, 2021 (Reference 2), the NRC notified Exelon that additional information is needed to complete its review of the Reference 1 submittal. This attachment provides a response to the request for additional information (RAI) contained in the Reference 2 email. NOTE: The NRC staff’s questions are in italics throughout this attachment to distinguish from the Exelon responses.

REQUEST FOR ADDITIONAL INFORMATION

Technical Specification Task Force Traveler (TSTF) 567 Revision 1, Section 3.3.2 (ADAMS Accession No. ML17214A813) states:

Should a plant have previously adopted TSTF 505 and have a Risk-Informed Completion Time program in the Administrative Controls section of their [Technical Specifications] TS, the option to calculate a Risk-Informed Completion Time for Required [TS 3.6.9] Action B.1 may be proposed and a plant-specific justification, consistent with the justification provided when adopting TSTF-505, must be provided in the license amendment request.

NEI 06-09-A is the methodology document that supports the adoption of Risk-Informed Completion Time (RICT) Program. The NRC safety evaluation (SE) for NEI 06-09 (ADAMS Accession No. ML071200238) specifies that the LAR for RICTs should provide a comparison of the TS functions to the functions modeled in the probabilistic risk assessment (PRA). Justification should be provided to show that the scope of the PRA model is consistent with the licensing basis assumptions. The Calvert Cliffs RICT Program LAR (ADAMS Accession No. ML16060A223), as supplemented, provided information consistent with the NRC SE for NEI 06-09. Accordingly, Enclosure 1 of Calvert Cliffs RICT Program LAR provided confirmation that the PRA models include the necessary scope of structures, systems, and components (SSCs) and their functions to address each proposed application of the RICT Program to the TS Required Actions. Enclosure 2 of Calvert Cliffs RICT Program LAR provided information supporting the licensee evaluation of the technical adequacy of the PRA models supporting the RICT Program.

Regulatory Position 2.3.3 of RG 1.174, Revision 3 (ADAMS Accession No. ML17317A256) states that the level of detail in the PRA should be sufficient to model the impact of the proposed licensing basis change. The characterization of the change should include establishing a cause-effect relationship to identify portions of the PRA affected by the change being evaluated. Full-scale applications of the PRA should reflect this cause-effect relationship in a quantification of the impact of the proposed licensing basis change on the PRA elements.

The SE for NEI 06-09-A also states the following:

NEI 06-09, Revision 0, specifically applies the [Risk Managed Technical Specifications] RMTS only to those SSCs which mitigate core damage or large early releases. Where the SSC is not modeled in the PRA, and its impact cannot otherwise be quantified using conservative or bounding approaches, the RMTS are not applicable [...]

The LAR requested the option to apply a RICT for Required Action B.1 of proposed new TS 3.6.9. In its application the licensee stated that it had reviewed the NRC SE provided to the Technical Specifications Task Force on July 3, 2018 and the information provided in TSTF-567, Revision 1. Further, the licensee stated that the justifications presented in TSTF-567, Revision 1 and the NRC staff SE are applicable to Calvert Cliffs and justify the amendment request for the incorporation of the changes to the Calvert Cliffs TS. However, the LAR did not include a plant-specific justification for applying a RICT to TS 3.6.9 Action B.1, as stated in TSTF-567, Revision 1.

- 1) *Provide plant-specific justification for the use of a RICT for Required Action B.1 of proposed TS 3.6.9 consistent with information provided for Calvert Cliffs RICT Program LAR, as supplemented. Consistent with Enclosure 1 to Calvert Cliffs RICT Program LAR, as supplemented, this information should include confirmation that the PRA models*

include the necessary scope of SSCs and their functions to address the application of the RICT Program to TS 3.6.9:

- a) The TS Required Action;*
- b) The corresponding SSC;*
- c) Each design basis function of the SSC;*
- d) How each design basis function is modeled in the PRA. If one of the design basis functions of an SSC or the SSC is not modeled in the PRA, describe any proposed surrogates and why the proposed surrogate adequately captures the configuration risk;*
- e) The success criteria used in the PRA model compared to the licensing basis criteria. The success criteria should include both train-level and component/parameter level; and*
- f) Numerical RICT estimate for TS 3.6.9 Action B1.*

EXELON RESPONSE to RAI #1

Exelon conducted a detailed review of the Safety Injection (SI) and Containment Spray (CS) System Piping and Instrumentation Drawing (Reference 3) in conjunction with a review of the PRA modeling for the containment sump.

The SI system consists of high-pressure and low-pressure subsystems, shown in Reference 3.

The high-pressure subsystem is capable of delivering emergency coolant at a discharge pressure up to 1275 psia. Three High Pressure Safety Injection (HPSI) pumps take suction from two independent suction headers. After the headers are initially supplied with at least 360,000 gallons of borated water from the Refueling Water Tank (RWT), a Recirculation Actuation Signal (RAS) occurs. The RAS shifts the suction of the headers from the RWT to the containment sump to recirculate the borated water.

The Low Pressure Safety Injection (LPSI) system utilizes four pressurized Safety Injection Tanks (SITs) and two LPSI pumps. Each of the two pumps is connected to one of the two independent suction headers which serve the high-pressure pumps. This assures an adequate supply of borated water.

The containment spray (CS) pumps are centrifugal pumps which discharge at the design flow rate against containment design pressure and system losses. When the system is switched over to the recirculation mode of operation, the pumps take suction from the Containment Building and therefore do not have to pump against the pressure in the containment. The reduced pumping requirements during recirculation cause the pump to operate at a higher capacity thus providing more spray flow. This excess spray flow can be diverted to the suction of the HPSI pumps without compromising the Containment Spray Systems effectiveness.

The PRA model considers the following events regarding the failure/unavailability of the containment sump and the SI and CS suction headers:

- Potential of one of the suction headers to a train of SI and CS being out of service due to maintenance
- Potential failure of MOV 4144/4145
- Potential failure of check valves 4148/4149
- A few other failures (RAS failure, electrical failures, etc.)

The containment sump pit is a common structure containing the entrance to both the East and West Recirculation Headers. There is no barrier within the sump pit separating the entrance to the East and West Recirculation Headers. Therefore, an issue affecting availability of the sump strainer or sump pit will affect the entire containment sump availability. This would cause the East and West Recirculation Headers to be out of service and would fail the recirculation mode and would be considered a loss of safety function. This insight was not identified during development of the initial submittal (Reference 1).

Since loss of the containment sump would be a loss of function for the technical specification, Risk Management Technical Specifications (RMTS) are not applicable.

The proposed application of the RICT Program in Reference 1 cannot be applied to the new proposed Required Action B.1 of TS 3.6.9. Therefore, the option to apply a RICT for Required Action B.1 of proposed new TS 3.6.9. under TSTF-567 is being withdrawn.

The proposed Required Action B.1 of proposed new TS 3.6.9 (page 3.6.9-2) has been revised to remove the RICT wording and is contained in Attachment 3 of this submittal. The associated TS Bases page B 3.6.9-5 (for information only) has been revised to remove the RICT wording and is contained in Reference 4. The remaining proposed TS and TSB pages of LAR submittal (Reference 1) are unaffected.

- 2) *To address information needs provided in Enclosure 2 of Calvert Cliffs RICT Program LAR, as supplemented, provide a high level summary of changes to the PRA model/methods since the issuance of the amendment to add risk-informed completion time for Calvert Cliffs (ADAMS Accession No. ML18270A130), and confirmation that any PRA model/method changes been evaluated and closed consistent with the guidance in RG 1.200.*

EXELON RESPONSE TO RAI # 2:

See Response to RAI # 1.

ATTACHMENT 2

License Amendment Request

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CCNPP Safety Injection and Containment Spray System Drawing No. 60731SH0003

ATTACHMENT 3

License Amendment Request

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Revised Proposed Technical Specification Page 3.6.9-2

ATTACHMENT 4

License Amendment Request

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**Revised Proposed Technical Specification Bases Page B 3.6.9-5
(for information only)**

Bases

- 0 Briefing operators on LOCA debris management actions; or

- 0 Applying an alternative method to establish new limits.

While in this condition, the RCS water inventory balance, SR 3.4.13.1, must be performed at an increased Frequency of once per 24 hours. An unexpected increase in RCS leakage could be indicative of an increased potential for an RCS pipe break, which could result in debris being generated and transported to the Containment Emergency Sump. The more frequent monitoring allows operators to proactively minimize the potential for an RCS pipe break while the Containment Emergency Sump is inoperable.

The inoperable Containment Emergency Sump must be restored to OPERABLE status in 90 days. A 90-day Completion Time is reasonable for emergent conditions that involve debris in excess of the analyzed limits that could be generated and transported to the Containment Emergency Sump under accident conditions. The likelihood of an initiating event in the 90-day Completion Time is very small and there is margin in the associated analyses. The mitigating actions of Required Action A.1 provide additional assurance that the effects of debris in excess of the analyzed limits will be mitigated during the Completion Time.

B.1

When the Containment Emergency Sump is inoperable for reasons other than Condition A, such as blockage, structural damage, or abnormal corrosion that could prevent recirculation of coolant, it must be restored to OPERABLE status within 72 hours. The 72-hour Completion Time takes into account the reasonable time for repairs, and low probability of an accident that requires the Containment Emergency Sump occurring during this period. ~~Alternatively, a Completion Time can be determined in accordance with the Risk Informed Completion Time Program.~~