

From: William Orders
Sent: Friday, May 1, 2024
To: Michael.Dilorenzo@aps.com
Subject: DRAFT 2nd Round Request for Additional Information (RAIs) concerning license amendment request (LAR) to modify Limiting Condition for Operation (LCO) for Technical Specification (TS) 3.5.2, "Safety Injection Tanks (SIT) - Shutdown," LCO for TS 3.6.5, "Containment Air Temperature," and Surveillance Requirements (SRs) 3.5.1.2 and 3.5.2.2 for TS 3.5.1, "Safety Injection Tanks (SITs) - Operating," and TS 3.5.2, respectively.

Mr. Dilorenzo,

By letter dated June 29, 2023 (Reference 1), as supplemented by letter dated March 6, 2024 (Reference 2), Arizona Public Service Company (the licensee) submitted a license amendment request (LAR) to modify Limiting Condition for Operation (LCO) for Technical Specification (TS) 3.5.2, "Safety Injection Tanks (SIT) - Shutdown," LCO for TS 3.6.5, "Containment Air Temperature," and Surveillance Requirements (SRs) 3.5.1.2 and 3.5.2.2 for TS 3.5.1, "Safety Injection Tanks (SITs) - Operating," and TS 3.5.2, respectively. The U.S. Nuclear Regulatory Commission (NRC) staff have reviewed the licensee's submittals and concluded that additional information, as discussed below, is required to complete its review:

Background

Regulatory Basis:

The following 10 CFR Part 50, Appendix A, General Design Criteria (GDC) are applicable:

- GDC 16, "Containment design," as it relates to providing a reactor containment and associated systems to establish an essentially leak-tight barrier against the uncontrolled release of radioactivity to the environment and to assure that the containment design conditions important to safety are not exceeded for as long as postulated accident conditions require.
- GDC 38, "Containment heat removal," as it relates to providing a system to remove heat from the reactor containment whose safety function is to reduce rapidly, consistent with the functioning of other associated systems, the containment pressure and temperature following any loss-of-coolant accident and maintain them at acceptably low levels.
- GDC 50, "Containment design basis," as it relates to designing the reactor containment structure, including access openings, penetrations, and the containment heat removal system so that the containment structure and its internal compartments can accommodate, without exceeding the design leakage rate and with sufficient margin, the calculated pressure and temperature conditions resulting from any loss-of-coolant accident.

Issue

Table 6.2.1-3 of the Palo Verde Nuclear Generating Station (PVNGS) updated final safety analysis report (UFSAR) states the following principal containment design parameters (Reference 3):

- Internal Design Pressure, psig 60.0
- Design temperature, °F
 - High mean during normal operation 120.0
 - Maximum, DBA 300.0 [containment wall design temperature]

UFSAR Table 6.2.1-9 summarizes the calculated temperatures and pressures as a result of a loss of coolant accident (LOCA) and main steam line break (MSLB) and states the peak pressure is 72.05 psia (57.85 psig) (based on LOCA), and a peak containment vapor temperature of 405.5°F (based on MSLB).

TS, Section 5.5.16 states the containment integrated leak rate test (ILRT) pressure Pa as 58 psig.

The licensee proposes to change TS LCO 3.6.5 from its existing value of 117°F to the design analytical value of 120°F. To justify, in the letter dated March 6, 2024 (Reference 2), the licensee stated:

- “PVNGS Technical Specifications contain both the LCO limit and Surveillance Requirement (SR) which is implemented by the Control Room Operators in accordance with surveillance testing (ST). The ST procedures reflect the total loop uncertainty calculations which specifies the indicated value to provide reasonable assurance that the analytical limit is not exceeded. Therefore, the TS value of $\leq 120^{\circ}\text{F}$ does not account for instrument uncertainty and instead it is controlled within the licensee-controlled TS Bases and surveillance procedures, pursuant to 10 CFR 50.59.”

Requested Information

Provide the results of a sensitivity analysis based on an initial containment temperature of 120°F (plus instrument uncertainty) while the other input parameters and assumptions remain the same as in the analysis of record to demonstrate the impact that variations in instrument uncertainty assumptions have on the ability of containment to perform as designed during a LOCA and MSLB. Include the impact on the following:

- Maximum containment vapor temperature
- Maximum containment pressure
- Maximum containment wall temperature
- ILRT pressure Pa.

REFERENCES

1. Letter from APS to NRC, “Palo Verde Nuclear Generating Station Units 1, 2, and 3, Docket Nos. STN 50-528, 50-529, and 50-530, Renewed Operating License Number NPF-41, NPF-51, and NPF-74 Application to Revise Technical Specifications (TS) 3.5.1, Safety Injection Tanks (SITs) – Operating, TS 3.5.2, Safety Injection Tanks (SITs) – Shutdown, and TS 3.6.5, Containment Air Temperature.” June 29, 2023, ADAMS Accession No. ML23180A222
2. Letter from APS to NRC, “Palo Verde Nuclear Generating Station Units 1, 2, and 3, Docket Nos. STN 50-528, 50-529, and 50-530, Renewed Operating License Number NPF-41, NPF-51, and NPF-74, Response to Request for Additional Information to Revise Technical Specifications (TS) 3.5.1, Safety Injection Tanks (SITs) – Operating, TS 3.5.2, Safety Injection Tanks (SITs) – Shutdown, and TS 3.6.5, Containment Air Temperature, March 6, 2024, ADAMS Accession No. ML24066A047
3. PVNGS UFSAR, Revision 22, ADAMS Accession No. ML23181A159

This draft RAI is provided to allow you the opportunity to request a clarification call.

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