Watts Bar Nuclear Plant

Watts Bar Nuclear Plant (WBN)
Pre-submittal Meeting for License Amendment Request
Modify the Watts Bar Nuclear Plant Unit 1 and Unit 2 Technical Specification Surveillance Requirement 3.9.5.1

September 12, 2023

TVA TENNESSEE VALLEY AUTHORITY

Agenda

- Introduction
- System Description
- Description of the Proposed Change
- Reason for the Proposed Change
- Technical Evaluation
- Precedent
- Schedule Milestones
- Closing Remarks

Introduction

- The purpose of this meeting is to discuss a proposed license amendment request (LAR) for WBN Units 1 and 2.
- The proposed change revises WBN Units 1 and 2 Technical Specification (TS) Surveillance Requirement (SR) 3.9.5.1, “Residual Heat Removal (RHR) and Coolant Circulation - High Water Level,” to revise the current flow rate of 2,500 gallons per minute (gpm) to 2,000 gpm.
- Proposed change is consistent with similar RHR flow requirements in WBN Units 1 and 2 SR 3.9.6.1, “Residual Heat Removal (RHR) and Coolant Circulation - Low Water Level,” and Sequoyah Nuclear Plant (SQN) SRs 3.9.5.1 and 3.9.6.1.

System Description

- The purpose of the RHR System (RHRS) in Mode 6 is to remove decay heat and sensible heat from the reactor coolant system (RCS), as required by 10 CFR 50 Appendix A, General Design Criterion (GDC) 34, to provide mixing of borated coolant and to prevent boron stratification.
- Heat is removed from the RCS by circulating reactor coolant through the RHR heat exchangers, where the heat is transferred to the Component Cooling Water System. The coolant is then returned to the RCS via the RCS cold leg(s).
- Portions of the RHRS also serve as parts of the emergency core cooling system (ECCS) during the injection and recirculation phases of a loss of coolant accident (LOCA). The RHRS is also used to transfer refueling water between the refueling cavity and the refueling water storage tank at the beginning and end of the refueling operations.

Description of the Proposed Change

- WBN Units 1 and 2 SR 3.9.5.1 is being revised as follows:

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.9.5.1	Verify one RHR loop is in operation and circulating reactor coolant at a flow rate of ≥ 2~~5~~000 gpm.	In accordance with the Surveillance Frequency Control Program

Reason for the Proposed Change

- The proposed change to WBN Units 1 and 2 SR 3.9.5.1 incorporates a reduction in the minimum RHR flow requirement from 2,500 gpm to 2,000 gpm during refueling operations with high water level conditions (Mode 6 with the water level greater than or equal to 23 ft above the top of the reactor vessel flange).
- The proposed change allows operation of the RHR system at reduced flow during refueling operations with high water level conditions and is consistent with similar RHR flow requirements in WBN Units 1 and 2 SR 3.9.6.1 and SQN SRs 3.9.5.1 and 3.9.6.1.
- The RHR flowrate of 2,000 gpm for a water level of less than 23 ft has been in WBN Units 1 and 2 SR 3.9.6.1 since the issuance of the original WBN Unit 1 TS (ML020780254) and the original WBN Unit 2 TS (ML15251A587)

Technical Evaluation

- The technical evaluation supporting the proposed change is provided in Westinghouse Electric Company LLC (Westinghouse) Letter Report, LTR-SEE-23-4-P, Revision 1, “Technical Evaluation in Support of Watts Bar Units 1 & 2 Residual Heat Removal System (RHRS) Flow Rate Reduction During Mode 6 Operation at Refueling Water Level ≥ 23 Feet,” which is a technical evaluation performed by Westinghouse to support the proposed change to WBN Units 1 and 2 SR 3.9.5.1, which will be discussed during the closed portion of the meeting.

Precedent

- The proposed change is similar to a license amendment for SQN Units 1 and 2 (ML013300379), which also approved a reduction in the RHR flowrate from 2,500 gpm to 2,000 gpm for all water levels.
- As previously noted, the proposed change is also consistent with WBN Units 1 and 2 SR 3.9.6.1 and SQN SRs 3.9.5.1 and 3.9.6.1.

Schedule Milestones

- TVA to submit LAR to NRC by September 30, 2023.
- Request NRC approval within 1-year from submittal.
- 30-day implementation following NRC approval.


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