



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

September 15, 2021

LICENSEE: Tennessee Valley Authority

FACILITY: Watts Bar Nuclear Plant, Units 1 and 2

SUBJECT: SUMMARY OF AUGUST 19, 2021, TELECONFERENCE WITH TENNESSEE VALLEY AUTHORITY REGARDING PLANNED LICENSE AMENDMENT REQUEST RELATED TO THE WATTS BAR NUCLEAR PLANT, UNITS 1 AND 2 (EPID L-2021-LRM-0074)

On August 19, 2021, the U.S. Nuclear Regulatory Commission (NRC) staff conducted an observation (i.e., public) teleconference with representatives of Tennessee Valley Authority (TVA). The purpose of the teleconference was for TVA to discuss a proposed license amendment requests (LAR) for Watts Bar Nuclear Plant (Watts Bar), Units 1 and 2 to permanently extend the completion time in Technical Specification 3.7.8, "Essential Raw Cooling Water (ERCW) System," to support cleaning of the 6.9 kilovolt (kV) shutdown board (SDBD) and associate 480 volt boards and motor control centers when a Watts Bar unit is in an outage and defueled. The current completion time to restore an inoperable train of ERCW to operable status is 72 hours. TVA will propose to extend the completion time to 7 days. Additionally, TVA stated that it is planning to propose to increase the ultimate heat sink temperature during the maintenance from 71 to 78 degrees Fahrenheit (°F).

The meeting notice and agenda, dated July 27, 2021, are available at Agencywide Documents Access and Management System (ADAMS) Accession No. ML21217A184. TVA's presentation slides for the meeting are available at ADAMS Accession No. ML21231A097. A list of participants is enclosed.

TVA reviewed the background of the proposed request and referred to Amendment 35 to the Watts Bar, Unit 2, license for which it received a one-time extension to the completion time from 72 hours to 7 days. The revised TS was contingent on four conditions (ADAMS Accession No. ML20024F835), two of which limited the activities to spring 2020 outage for Unit 1 and the ultimate heat sink (UHS) temperature to less than or equal to 71 °F.

TVA described the ERCW system which is a common two-train system and consists of four 50 percent capacity pumps per train. Two ERCW pumps per 6.9kV SDBD are required to be operable per train, with two trains required for each unit. Each train of ERCW has sufficient capacity to provide essential cooling loads for both units under any credible plant condition. The system configuration is illustrated on slides 6 and 7.

TVA enumerated the maintenance activities performed on a 6.9 kV SDBD during an outage, which includes breaker compartment inspections, circuit breaker interface inspections and adjustments, and bus inspections and tests. The NRC staff asked if TVA inspects the fuses. TVA replied that it looks at the condition of the fuses and replaces them, if needed.

According to TVA, it takes approximately 105 hours to perform the various maintenance and inspection on the SDBDs. The request would be to extend the completion time to 7 days (i.e., 168 hours). TVA stated that the remaining time being requested would allow for a contingency should the need arise for an unexpected repair revealed by the maintenance activities.

TVA described the proposed changes to Watts Bar TS 3.7.8. Because Unit 2's TS was previously revised on a one-time basis, the proposed revisions are slightly different than the proposed changes for Unit 1, but will result in the same requirements for each unit. Each unit's TS 3.7.8 is proposed to be revised as follows:

- TS 3.7.8 Condition A will be revised to increase the completion time for an inoperable ERCW Train from 72 hours to 7 days with the following Notes:
  1. Only applicable when WBN (1 or 2) unit is defueled.
  2. Only applicable during planned maintenance of a Unit (1 or 2) 6.9kV SDBD and the associated 480V boards and MCC.
- Both Notes are required to be met in order to use Condition A.
- The UHS temperature in the Completion Time for Required Action A.1 and for Required Action A.2 will be revised from 71 °F to 78 °F
- Conditions A, B, and C will be modified so that they are consistent between Units 1 and 2

The Watts Bar Dual-Unit Updated Final Safety Analysis Report, Section 9.2.1.3, will be revised to reflect the new ERCW system alignments needed to support SDBD maintenance.

TVA stated that it employs a graded approach to defense in depth (DID) as well as protected equipment strategies when equipment is removed from service. These are governed by TVA procedures NPG-SPP-07.0, "Work Management," NPG-SPP-07.1, "On Line Work Management," and NPG-SPP-07.3.4, "Protected Equipment." The NRC staff suggested that inclusion of how the DID applies to the ERCW in its submittal would be helpful to the staff.

TVA also performed engineering analyses with a single ERCW pump powered from the 6.9 kV SDBD under various circumstances. Based on the analyses, TVA concluded that a single ERCW powered from the available 6.9kV SDBD can supply sufficient heat removal while maintaining the outlet piping thermal stress temperature limits. The analyses used Proto-Flo for the hydraulic modeling as modified to reflect the one ERCW pump configuration. TVA described the conservatisms assumed in the analyses as well as proposed hardware change to support the analyses, which is planned to be installed during the Unit 1 Fall 2021 outage. The NRC staff inquired if TVA plans to use risk insights to support the planned LAR. TVA responded that the submittal will not be risk based, but will include a qualitative risk discussion.

To support the change to the UHS temperature, TVA performed a review of the past 6 years of plant intake temperatures for the spring and fall when the Watts Bar outages occur. The results showed that for the typical dates of the outages, the UHS temperatures have historically been below the proposed temperature of 78 °F.

The NRC staff asked if TVA performs the SDBD maintenance activities every outage. TVA stated that the maintenance activities are not performed every outage. The staff also asked if there are other situations for which the plant might enter TS 3.7.8, Condition A. TVA responded that Watts Bar only enters the condition for planned maintenance.

TVA plans to submit the LAR by the end of September 2021 and request approval within 12 months.

No comments or public meeting feedback were received. No regulatory decisions were made at this meeting.

Please direct any inquiries to me at 301-415-1627 or by e-mail to [Kimberly.Green@nrc.gov](mailto:Kimberly.Green@nrc.gov).

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Docket Nos.: 50-390  
50-391

Enclosure:  
List of Participants

cc: Listserv

LIST OF PARTICIPANTS

AUGUST 19, 2021, TELECONFERENCE WITH TENNESSEE VALLEY AUTHORITY

REGARDING WATTS BAR NUCLEAR PLANT, UNITS 1 AND 2

PLANNED LICENSE AMENDMENT REQUEST RELATED TO THE COMPLETION TIME FOR

TECHNICAL SPECIFICATION 3.7.8, "ESSENTIAL RAW COOLING WATER (ERCW) SYSTEM"

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**ADAMS Accession No.: ML21245A425**

**\*via e-mail**

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DATE	9/2/2021	9/13/2021	9/14/2021	9/15/2021

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