



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

August 25, 2020

**LICENSEE:** Tennessee Valley Authority

**FACILITY:** Watts Bar Nuclear Plant, Units 1 and 2

**SUBJECT:** SUMMARY OF AUGUST 11, 2020, TELECONFERENCE CALL WITH TENNESSEE VALLEY AUTHORITY REGARDING A PLANNED LICENSE AMENDMENT REQUEST FOR WATTS BAR NUCLEAR PLANT, UNITS 1 AND 2 (EPID L-2020-LRM-0064)

On August 11, 2020, a Category 1 public teleconference call was held between the U.S. Nuclear Regulatory Commission (NRC) staff and representatives of Tennessee Valley Authority (TVA). The purpose of the meeting was to discuss TVA's planned license amendment request (LAR) for Watts Bar Nuclear Plant (WBN), Units 1 and 2. The LAR would seek to revise WBN Technical Specification (TS) 3.3.2, Table 1 Function 6.e "Auxiliary Feedwater Auto -Start from Loss of Main Feedwater Pumps."

The meeting notice and agenda, dated July 17, 2020, are available in Agencywide Documents Access and Management System (ADAMS) at Accession No. ML20202A061. TVA's slides for the meeting are available at ADAMS Accession No. ML20220A202. A list of participants is provided as an enclosure to this summary. No regulatory decisions were made at this meeting.

A previous meeting on this subject was held on May 27, 2020 ADAMS Accession No. ML20153A362 to acquaint NRC staff with the regulatory history of the standby main feedwater pump (SBMFP) at WBN. At the May 27<sup>th</sup> meeting, TVA stated that it would schedule a pre-submittal meeting in August 2020.

During the August 11<sup>th</sup> meeting, TVA stated that the purpose of TS 3.3.2, Table 1 Function 6.e, Trip of all Turbine Driven Main Feedwater Pumps (TDMFWPs), for Auxiliary Feedwater (AFW) auto-start function is an anticipatory function that provides early actuation of AFW system to mitigate the consequences of a loss of normal feedwater. For the "Loss of Normal Feedwater" event, the credit for that AFW safety function actuation is from the AFW auto-start on low-low steam generator (SG) level, which is TS 3.3.2, Table 1 Function 6.b.

TVA recalled the function and operation of main feedwater system (see description in ADAMS Accession No. ML20153A362).

TVA explained that it wants to change Function 6.e because controlling SG water level and feedwater control using AFW motor-driven pumps at low reactor thermal power can be challenging. Additionally, feedwater swings affect temperature and power, which is not ideal at low powers when there are tight control bands. TVA places a TDMFP in service at around 4 percent reactor thermal power (RTP), but the use of the TDMFP is more suitable at a higher reactor thermal power. TVA proposes to use the SBFMP to provide feedwater flow from

Mode 3 to Mode 1, up to 15 percent RTP. At approximately 15 percent RTP, a TDMFP would be placed in service in Mode 1 to control SG water levels, and the SBMFP would be removed from service. TVA stated that the use of the SBMFP during start up activities would simplify startup activities.

To make the change, TVA proposes to revise the AFW auto-start logic by adding a SBMFP power supply breaker contact interface to the AFW auto-start logic. This breaker contact will close when the breaker is open. This will cause the AFW auto-start logic to initiate from the trip of both TDMFPs and the SBMFP. TVA explained that the SBMFP trip channel will be provided with a manual "trip enable" switch (hand switch) that allows operators to enable the trip when the SBMFP is not operable. The revised circuitry will remain as an anticipatory AFW auto-start function but will not be credited in the WBN accident analyses. The NRC staff asked why it was necessary to include the hand switch for bypass of the SBMFP AFW actuation contact. TVA replied that this will allow the operators to defeat the SBMFP AFW actuation when MFPs are operating so that the loss of MFPs when the plant is operating at higher power levels will ensure AFW actuation regardless of the state of the SBMFP. The NRC staff suggested that TVA consider including language in the TS about the operation of the hand switch. TVA indicated that it will consider the staff's feedback.

The NRC staff asked TVA if there would be a need for a note to require bypass of the SBMFP trip when operating at high loads with the SBMFP and both TDMFPs in service. The staff commented that the anticipatory AFW pump start following a trip of both TDMFPs (e.g., due to loss of condenser vacuum) at high-power with the SBMFP continuing to operate may be more safety-significant than an anticipatory AFW pump start following a SBMFP trip during startup and at low power. TVA stated that it has an analysis for when both TDMFPs are unavailable and the conclusion is that a partial loss of normal feedwater is not worse than a complete loss of normal feedwater. However, TVA said that it would consider the staff's feedback.

The NRC staff noted that the ability to operate the SBMFP and the TDMFPs simultaneously is conservative in certain circumstances. The staff wanted to be sure that the licensee could take advantage of the added flexibilities during startup. The staff stated that there might be a safety benefit to have main feedwater pump idling and ready even if it's not feeding water to the steam generators. TVA said that it would also consider this feedback from the staff.

The proposed TS changes will include a revision to TS 3.3.2, Table 1 Function 6.e to denote that the AFW auto-start will include the trip of the two TDMFPs and the SBMFP. They will also include the applicability of the SBMFP trip channel to Modes 1 and 2, and a new TS 3.3.2 condition to address the inoperability of the SBMFP trip function.

TVA plans to submit the LAR on or about September 1, 2020.

No comments or public meeting feedback were received.

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

**/RA/**

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Plant Licensing Branch II-2  
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Docket Nos. 50-390 and 50-391

Enclosure: List of Participants

cc: Listserv

SUBJECT: SUMMARY OF AUGUST 11, 2020, TELECONFERENCE CALL WITH  
TENNESSEE VALLEY AUTHORITY REGARDING A PLANNED LICENSE  
AMENDMENT REQUEST FOR WATTS BAR NUCLEAR PLANT, UNITS 1  
AND 2 (EPID L-2020-LRM-0064) DATED AUGUST 25, 2020

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\*via email

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NAME	KGreen	BAbeywickrama	UShoop	KGreen
DATE	08/24/2020	08/21/2020	08/24/2020	08/25/2020

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LIST OF PARTICIPANTS  
AUGUST 11, 2020, PUBLIC TELECONFERENCE CALL  
TENNESSEE VALLEY AUTHORITY  
REGARDING PLANNED LICENSE AMENDMENT REQUEST  
WATTS BAR NUCLEAR PLANT, UNITS 1 AND 2

<u>Name</u>	<u>Organization</u>
Kim Green	U.S. Nuclear Regulatory Commission (NRC)
Steve Smith	NRC
Calvin Cheung	NRC
Rich Stattel	NRC
Steve Jones	NRC
Vic Cusumano	NRC
Brian Wittick	NRC
Wesley Deschaine	NRC
Craig Kontz	NRC
Russell Wells	Tennessee Valley Authority (TVA)
Tony Langley	TVA
Gordon Williams	TVA
Don Lewis	TVA
Daniel Fox	TVA
Kasey Decker	TVA
Charles Broesche	TVA
Alex Bowman	TVA
Ron Cox	TVA
Yan Peng	Member of the public (China Institute of Atomic Energy)