



1101 Market Street, Chattanooga, Tennessee 37402

CNL-22-003

February 17, 2022

10 CFR 50.90

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

Watts Bar Nuclear Plant, Unit 1
Facility Operating License No. NPF-90
NRC Docket No. 50-390

**Subject: Application to Modify the Allowable Value for Watts Bar Nuclear Plant,
Unit 1 Technical Specification Table 3.3.2-1, Function 6.e(1)
(WBN-TS-21-010)**

In accordance with the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.90, "Application for amendment of license, construction permit, or early site permit," Tennessee Valley Authority (TVA) is submitting a request for an amendment to Facility Operating License No. NPF-90 for the Watts Bar Nuclear Plant (WBN), Unit 1. The proposed amendment revises the allowable value (AV) for WBN Unit 1 Technical Specification (TS) 3.3.2, "ESFAS Instrumentation," Table 3.3.2-1, "Engineered Safety Feature Actuation System Instrumentation," Function 6.e(1), "Auxiliary Feedwater - Trip of all Main Feedwater Pumps - Turbine Driven Main Feedwater Pumps," from "≥ 48 pounds per square inch gauge (psig)" to "≥ 43.3 psig" for consistency with the AV for WBN Unit 2 TS Table 3.3.2-1, Function 6.e(1).

The enclosure to this submittal provides a description and technical evaluation of the proposed change, a regulatory evaluation, and a discussion of environmental considerations. Attachment 1 to the enclosure provides the existing WBN Unit 1 TS page marked-up to show the proposed change. Attachment 2 to the enclosure provides the existing WBN Unit 1 TS page retyped to show the proposed change. There are no changes to the WBN Unit 1 TS Bases associated with the proposed amendment.

TVA has determined that there are no significant hazards considerations associated with the proposed change and that the TS changes qualify for a categorical exclusion from environmental review pursuant to the provisions of 10 CFR 51.22(c)(9). In accordance with 10 CFR 50.91(b)(1), TVA is sending a copy of this letter and enclosure to the Tennessee State Department of Environment and Conservation.

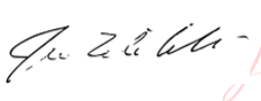
TVA requests approval of the proposed license amendment within one year from the date of this submittal with implementation within 60 days of issuance of the amendment.

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There are no new regulatory commitments associated with this submittal. Please address any questions regarding this request to Stuart L. Rymer, Senior Manager, Fleet Licensing, at slrymer@tva.gov.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 17th day of February 2022.

Respectfully,

 Digitally signed by Carla Edmondson
Date: 2022.02.17 20:30:00 -05'00'

James T. Polickoski
Director, Nuclear Regulatory Affairs

Enclosure: Evaluation of Proposed Change

cc (Enclosure):

NRC Regional Administrator – Region II
NRC Senior Resident Inspector – Watts Bar Nuclear Plant
NRC Project Manager – Watts Bar Nuclear Plant
Director, Division of Radiological Health – Tennessee State Department of
Environment and Conservation

Enclosure

Evaluation of Proposed Change

Subject: **Application to Modify the Allowable Value for Watts Bar Nuclear Plant
Unit 1 Technical Specification Table 3.3.2-1, Function 6.e(1)
(WBN-TS-21-010)**

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1. Proposed TS Changes (Markups) for WBN Unit 1
2. Proposed TS Changes (Final Typed) for WBN Unit 1

1.0 SUMMARY DESCRIPTION

In accordance with the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.90, "Application for amendment of license, construction permit, or early site permit," Tennessee Valley Authority (TVA) is submitting a request for an amendment to Facility Operating License No. NPF-90 for the Watts Bar Nuclear Plant (WBN), Unit 1. The proposed amendment revises the allowable value (AV) for WBN Unit 1 Technical Specification (TS) 3.3.2, "ESFAS Instrumentation," Table 3.3.2-1, "Engineered Safety Feature Actuation System Instrumentation," Function 6.e(1), "Auxiliary Feedwater - Trip of all Main Feedwater Pumps - Turbine Driven Main Feedwater Pumps," from "≥ 48 pounds per square inch gauge (psig)" to "≥ 43.3 psig" for consistency with the AV for WBN Unit 2 TS Table 3.3.2-1, Function 6.e(1).

2.0 DETAILED DESCRIPTION

2.1 Background

The rationale for the differences in the AVs between WBN Units 1 and 2 TS Table 3.3.2-1, Function 6.e(1) (i.e., ≥ 48 psig versus ≥ 43.3 psig) was explained in the TVA response to a Nuclear Regulatory Commission (NRC) Request for Additional Information (RAI) during the development of the initial WBN Unit 2 TS (see the response to NRC Question 10 in Reference 1), which stated:

"The change to the Auxiliary Feedwater Trip of all Turbine Driven Main Feedwater Pumps Allowable Value was made to calculate the value in accordance with the requirements of TSTF-493. These instruments are not safety-related and thus have no Safety or Analytical Limits. The allowable value was calculated in Setpoint and Scaling calculation 2-PS-046-13 and -40 based on the methodology provided in TVA EEB-TI-28. This TI was provided to the NRC in Reference 4. The general FSAR discussion of setpoint methodology is provided in FSAR Section 7.1. NRC's review of the TVA Setpoint Methodology for the RTS is contained in SSER 23. NRC concluded that the methodology meets the relevant requirements of the SRP and is therefore acceptable. WBN Unit 1 has not updated to TSTF-493 methods and this is the reason for the differences. The specific TS values are not discussed in the FSAR, the TS Bases, or in an SSER."

In Reference 2, "Elimination of the Requirement to Adopt TSTF-493, 'Clarify Application of Setpoint Methodology for LSSS Functions'," the Technical Specification Task Force (TSTF) recommended that:

"The TSTF recommends that licensees not propose adding the TSTF-493 footnotes to instrument functions in LARs to revise Allowable Values. In the amendment request, licensees should describe how the methods used to calculate Allowable Values and to control as-found and as-left tolerances for the parameter of concern are consistent with RIS 2006-17."

Conformance with Regulatory Issue Summary (RIS) 2006-17, "NRC Staff Position on the Requirements of 10 CFR 50.36, 'Technical Specifications,' Regarding Limiting Safety System Settings During Periodic Testing and Calibration of Instrument Channels," is addressed in TVA Branch Technical Instruction (BTI)-EEB-TI-28, "Setpoint Calculations."

EEB-TI-28 was provided to the NRC in Reference 3 which, as noted in the quoted RAI response, from Reference 1, was evaluated by the NRC as part of the licensing of WBN Unit 2 (see Section 7.1.3 to Reference 4) as noted below:

"By letter dated September 1, 2010 (ADAMS Accession No. ML102530216), TVA submitted WBN Unit 2 FSAR Amendment 100. In this amendment, TVA discussed in detail the setpoint methodology used by TVA and Westinghouse to calculate instrument setpoints for the RPS and the ESFAS. In response to staff questions about various aspects of the instrument setpoint methodology used by TVA and Westinghouse, TVA provided additional information by letter dated October 29, 2010 (letter open items 306 through 311; ADAMS Accession No. ML103120711). By letter dated December 17, 2010 (ADAMS Accession No. ML110070327), TVA incorporated the revised description of instrument setpoint methodologies used by TVA and Westinghouse into FSAR Amendment 102. TVA's description is consistent with Technical Specification Task Force (TSTF)-493, Revision 4, 'Clarify Application of Setpoint Methodology for LSSS Functions,' which was reviewed and accepted by the NRC staff by letter dated May 11, 2010 (ADAMS Accession No. ML100710442). TVA also stated in the FSAR that 'Single-sided correction factors are not used in setpoint calculations within the scope of TSTF-493.' Based on its review of WBN Unit 2 FSAR Amendment 102, the NRC staff concludes that the instrument setpoint methodology meets the guidance in RIS 2006-17 and RG 1.105."

2.2 System Design and Operation

2.2.1 Main Feedwater System

The Main Feedwater (MFW) system supplies a sufficient quantity of FW to the secondary side inlet of the steam generator (SG) during normal operating conditions and ensures that FW will not be delivered from the MFW system to the SG when FW isolation is required.

The MFW system includes two turbine driven feed pumps, one electric motor driven standby main feedwater pump (SBMFWP), with high and low pressure FW heaters, demineralizers, and other equipment needed to process FW flow. The two turbine driven, variable speed MFW pumps are capable of delivering FW to the four SGs under expected operating conditions.

2.2.2 Auxiliary Feedwater System

The Auxiliary Feedwater System (AFW) System provides a secondary side heat sink for the reactor in the event that the MFW System is not available. The system has two motor driven pumps and a turbine driven pump, making it available during normal unit operation, during a loss of alternating current (AC) power, a loss of MFW, and during an FW System pipe break. The normal source of water for the AFW System is the condensate storage tank (CST). A low suction pressure to the AFW pumps will automatically realign the pump suctions to the essential raw cooling water (ERCW) system. The AFW System is aligned so that upon a pump start, flow is initiated to the respective SGs immediately.

The AFW System automatically supplies FW to the SGs to remove decay heat from the reactor coolant system (RCS) upon the loss of normal FW supply. The AFW pumps take suction from the CST and pump to the SG secondary side via separate connections to the MFW bypass line piping. The SGs function as a heat sink for core decay heat. The heat load is dissipated by releasing steam to the atmosphere from the SGs via the main steam

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safety valves (MSSVs) or atmospheric dump valves. If the main condenser is available, steam may be released via the steam dump valves and recirculated to the CST.

A trip of all main feed pumps is an indication of a loss of MFW and the subsequent need for some method of decay heat and sensible heat removal to bring the reactor back to no load temperature and pressure. Each turbine driven MFW pump (TDMFWP) is equipped with one pressure switch mounted on the control oil line for the speed control system. A low pressure signal from this pressure switch indicates a trip of that pump. The electric motor driven SBMFWP trip channel is provided by breaker contacts from the supply breaker of the motor driven SBMFWP in the AFW start logic. The breaker contacts monitor the SBMFWP and close upon the opening of the breaker, indicating that the pump has tripped. The trip of both TDMFWPs and the SBMFWP pump will start the motor driven and turbine driven AFW pumps to ensure that enough water is available to act as the heat sink for the reactor.

2.3 Current Technical Specifications Requirements

WBN Unit 1 TS 3.3.2, Table 3.3.2-1, Function 6.e(1) for the Auxiliary Feedwater - Trip of all Main Feedwater Pumps - Turbine Driven Main Feedwater Pumps requires an AV of ≥ 48 psig.

2.4 Reason for the Proposed Change

The proposed TS change aligns the AV for WBN Unit 1 TS 3.3.2, Table 3.3.2-1, Function 6.e(1) with the AV for WBN Unit 2 TS 3.3.2, Table 3.3.2-1, Function 6.e(1).

As discussed in Section 3.0 to this enclosure, TVA has evaluated the historical TS surveillance data for the pressure switches for WBN Unit 1 TS 3.3.2, Table 3.3.2-1, Function 6.e(1). This data indicates several occurrences where the as-found instrument values were outside the AV limit of 48 psig. TVA has utilized the Corrective Action Program to investigate these occurrences and determine a resolution to minimize these events. It was determined that the AV for this function was too limiting for the accuracy and repeatability of the switches for their TS nominal trip setpoint.

2.5 Description of the Proposed Change

The proposed change revises the AV for WBN Unit 1 TS 3.3.2, Table 3.3.2-1, Function 6.e(1) from ≥ 48 psig to ≥ 43.3 psig.

Attachment 1 to the enclosure provides the existing WBN Unit 1 TS page marked to show the proposed change. Attachment 2 to the enclosure provides the existing WBN Unit 1 TS page retyped to show the proposed change. There are no changes to the WBN Unit 1 TS Bases associated with the proposed amendment.

3.0 TECHNICAL EVALUATION

3.1 Technical Analysis

The WBN Unit 1 TS AV for the trip of the TDMFWP function is too limiting for the accuracy and repeatability of the switches (1-PS-46-13 & 1-PS-46-40) for their nominal trip setpoint in the TS.

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This trip/alarm is anticipatory because it is not credited in any of the WBN dual-unit Updated Final Safety Analysis Report (UFSAR) Chapter 15 accident analyses. Additionally, there is no safety limit or analytical limit associated with this trip/alarm setpoint. This system trip/alarm setpoint and AV are system generic values supplied by Westinghouse and are not specifically designed for application at WBN. A plant-specific AV has been calculated for the current switch setpoint which is the normal setpoint (50 psig) minus the normal measurable accuracy. The normal measurable accuracy for this pressure switch was determined to be 6.7 psig, based on the below calculation, which results in a new AV of:

$$50 \text{ psig} - 6.7 \text{ psig} = 43.3 \text{ psig}$$

It should be noted that the normal operating pressure of the TDMFWP is between 135 to 155 psig.

3.2 Calculation of New AV

The following calculation is in accordance with EEB-TI-28, which conforms to the guidance of RIS 2006-17. The following calculation is similar to that performed for the Sequoyah Nuclear Plant (SQN) Units 1 and 2 for a revision to the AV for the reactor trip system turbine trip on low fluid oil pressure function, which was approved by the NRC and determined to be in accordance with RIS 2006-17 (References 5, 6, and 7). The manufacturer and model number for the SQN pressure switches in References 5, 6, and 7 are the same as the corresponding WBN Unit 1 pressure switches (United Electric J302-270 or J402-270).

Normal Measurable Accuracy (Anf)

Per EEB-TI-28:

$$Anf_{PS} = \sqrt{(Re_{PS}^2 + De_{PS}^2 + ICTe_{PS}^2 + Ab_{PS}^2 + ICRe_{PS}^2)} \quad (\text{Note 1})$$

$$Re_{PS} = 2.0 \text{ psig}$$

Per vendor information

$$De_{PS} = 4.1 \text{ psig}$$

Note 2

$$ICTe_{PS} = Re_{PS} = 2.0 \text{ psig}$$

Per EEB-TI-28

$$Ab_{PS} = 2 \times Re_{PS} = 4.0 \text{ psig}$$

Per EEB-TI-28

$$ICRe_{PS} = Re_{PS} = 2.0 \text{ psig}$$

Per EEB-TI-28

$$Anf_{PS} = \sqrt{(2.0 \text{ psig})^2 + (4.1 \text{ psig})^2 + (2.0 \text{ psig})^2 + (4.0 \text{ psig})^2 + (2.0 \text{ psig})^2}$$

$$Anf_{PS} = 6.7 \text{ psig}$$

$$AV = SP_{PS} - Anf_{PS}$$

$$SP_{PS} = 50 \text{ psig for TDMFWP Trip; therefore:}$$

$$AV = 50 \text{ psig} - 6.7 \text{ psig} = 43.3 \text{ psig for TDMFWP Trip}$$

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where:

Anf_{PS} = Normal Measurable Accuracy of the Pressure Switch

Re_{PS} = Reference Accuracy of the Pressure Switch

De_{PS} = Drift Error of the Pressure Switch (Note 2)

ICTe_{PS} = Input Calibration Test Instrument Error for the Pressure Switch

Ab_{PS} = Acceptance Band of the Pressure Switch

ICRe_{PS} = Input Calibration Test Instrument Reading Error for the Pressure Switch

SP = Setpoint

Notes:

1. A similar equation in Reference 6 for SQN Units 1 and 2 included TNe (normal temperature effects) to calculate Anf. TNe was removed from the calculation of Anf per Revision 9 of EEB-TI-28 to support RIS 2006-17 and because the pressure switches are not subject to seasonal temperature changes. The above equation was also used to calculate the corresponding AV for WBN Unit 2.
2. Drift, as calculated by statistical analysis, is defined as plus/minus 2.69% of full scale. This statistical analysis was performed using historical data from WBN and SQN. This statistical analysis does not separate drift, temperature, or any other environmental or time effects. Per EEB-TI-28, if alternate methods are used, the Normal Measurable Accuracy shall be small enough to detect abnormal channel performance. Therefore, it is conservative to use the Normal Measurable Accuracy value from the WBN demonstrated accuracy calculation that was calculated using the plus/minus 1.00% of full scale value for switch Acceptance Band. To accommodate this, Drift is defined as +/- 2.05% of full scale which equals 4.1 psi for a 0-200 psi span.

Tables 1 and 2 show the out of tolerance (OOT) conditions for the WBN Unit 1 pressure switches. For comparison purposes, Tables 3 and 4 show the similar comparison data for the corresponding WBN Unit 2 pressure switches. Tables 1 through 4 also list the calibration values for Trip Setpoint, AAF (acceptable as found), and AAL (acceptable as left) for both units based on a head correction of -2.2 psig for WBN Unit 1 and -2.3 psig for WBN Unit 2. Note that only 1 out of 5 LO OOT and 4 out of 20 HI OOT values would have occurred if the WBN Unit 2 AAF limits had been used for WBN Unit 1.

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Table 1 Historical Calibration Data for Pressure Switch 1-PS-46-13			
Data from 1-SI-3-25 (1-PS-46-13 - SW 1 - Alarm Only, Trip at 47.8 psig)			
Date	OOT (Y/N)	HI/LO	Reading (psig) (AAF: 45.8-49.8 psig)
3-29-99	Y	HI	50.0
9-28-00	N	N/A	47.5
3-14-02	N	N/A	49.5
10-10-03	N	N/A	49.3
3-15-05	Y	HI	51.3
10-30-06	N	N/A	48.5
3-9-08	Y	HI	51.5
10-10-09	Y	LO	45.7
5-5-11	Y	HI	50.0
9-25-12	N	N/A	49.3
4-18-14	Y	HI	51.0
10-7-15	N	N/A	48.7
4-14-17	N	N/A	47.6
9-26-18	Y	HI	54.9
5-12-20	N	N/A	46.5
Data from 1-SI-3-25 (1-PS-46-13 - SW 2 - Trip Interlock, Trip at 47.8 psig)			
3-29-99	Y	HI	50.2
9-28-00	N	N/A	46.4
3-14-02	N	N/A	49.5
10-10-03	N	N/A	47.4
3-15-05	N	N/A	49.0
10-30-06	N	N/A	47.0
3-9-08	Y	HI	53.2
10-10-09	N	N/A	47.9
5-5-11	Y	HI	50.0
9-25-12	N	N/A	48.6
4-18-14	Y	HI	51.0
10-7-15	N	N/A	46.0
4-14-17	N	N/A	48.4
9-26-18	Y	HI	54.7
5-12-20	N	N/A	46.8

Note: Each switch has two contacts but only switch contact 2 is a TS function, switch contact 1 is for alarm only. Accuracy is the same for both sets of contacts.

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Table 2 Historical Calibration Data for Pressure Switch 1-PS-46-40			
Data from 1-SI-3-26 (1-PS-46-40 - SW 1 - Alarm Only, Trip at 47.8 psig)			
Date	OOT (Y/N)	HI/LO	Reading (psig) (AAF: 45.8-49.8 psig)
3-29-99	N	N/A	45.8
9-28-00	N	N/A	48.0
3-15-02	Y	HI	51.8
10-11-03	Y	LO	44.2
3-17-05	Y	HI	50.3
10-31-06	Y	LO	43.6
3-12-08	Y	HI	59.3
10-12-09	N	N/A	46.9
5-6-11	Y	HI	50.6
10-2-12	N	N/A	47.6
4-12-14	Y	LO	42.0
10-14-15	N	N/A	49.0
4-1-17	Y	HI	50.5
9-30-18	N	N/A	47.4
5-12-20	N	N/A	47.6
Data from 1-SI-3-26 (1-PS-46-40 - SW 2 - Trip Interlock, Trip at 47.8 psig)			
3-29-99	Y	HI	52.0
9-28-00	N	N/A	47.8
3-15-02	N	N/A	49.4
10-11-03	N	N/A	49.0
3-17-05	Y	HI	51.7
10-31-06	N	N/A	47.2
3-12-08	Y	HI	56.0
10-12-09	N	N/A	46.9
5-6-11	N	N/A	48.6
10-2-12	N	N/A	47.8
4-12-14	Y	LO	39.6
10-14-15	N	N/A	49.0
4-1-17	Y	HI	50.5
9-30-18	N	N/A	46.9
5-12-20	N	N/A	47.6

NOTE: Each switch has two contacts but only switch contact 2 is a TS function, switch contact 1 is for alarm only. Accuracy is the same for both sets of contacts.

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Table 3 - Historical Calibration Data For Pressure Switch 2-PS-46-13			
Data from 2-SI-3-25 (2-PS-46-13 - SW 1 - Alarm Only, Trip at 47.7 psig)			
Date	OOT (Y/N)	HI/LO	Reading (psig) (AAF: 41.0-54.4 psig)
3-10-16	N	N/A	47.7
11-23-17	N	N/A	47.4
4-16-19	N	N/A	49.1
11-10-20	N/A	N/A	SW 1 has been deleted
Data from 2-SI-3-25 (2-PS-46-13 - SW 2 - Trip Interlock, Trip at 47.7 Psig)			
3-10-16	N	N/A	47.7
11-23-17	N	N/A	47.4
4-16-19	N	N/A	49.4
11-10-20	N	N/A	50.2

NOTE: Each switch has 2 contacts but only switch contact 2 is a TS function, switch contact 1 is for alarm only. Accuracy is the same for both sets of contacts.

Table 4 - Historical Calibration Data For Pressure Switch 2-PS-46-40			
Data from 2-SI-3-26 (2-PS-46-40 - SW 1 - Alarm Only, Trip at 47.7 psig)			
Date	OOT (Y/N)	HI/LO	Reading (psig) (AAF: 41.0-54.4 psig)
3-2-16	Y	LO	31.5
11-28-17	N	N/A	50.2
4-17-19	N	N/A	51.0
11-10-20	N/A	N/A	SW 1 has been deleted
Data from 2-SI-3-26 (2-PS-46-40 - SW 2 - Trip Interlock, Trip at 47.7 PSIG)			
3-2-16	N	N/A	43.0
11-28-17	N	N/A	52.7
4-17-19	N	N/A	50.0
11-10-20	N	N/A	47.0

NOTE: Each switch has two contacts but only switch contact 2 is a TS function, switch contact 1 is for alarm only. Accuracy is the same for both sets of contacts.

The information provided in this section is also consistent with the information the NRC has requested from another licensee regarding a summary of a calculation for a revised AV (see response to item 1 in Reference 8). The change to the Trip of all Turbine Driven Main Feedwater Pumps Low Fluid Oil Pressure AV was made to calculate the value in accordance with the requirements of EEB-TI-28. These instruments are not safety-related and therefore, have no Analytical or Safety Limits. These instruments only provide a turbine trip, which is not credited in the accident analyses of the WBN dual-unit UFSAR. The proposed AV for WBN Unit 1 was calculated by TVA based on the methodology in EEB-TI-28. Furthermore, as noted in Reference 4, NRC determined that the WBN instrument setpoint methodology meets the guidance in RIS 2006-17.

3.3 Conclusion

This proposed change will allow the instrumentation that performs this trip function to be tested and verified to be operable within the capabilities of the pressure switches. The proposed amendment revises the AV for WBN Unit 1 TS 3.3.2, Function 6.e(1) to be consistent with the similar AV for WBN Unit 2 TS Table 3.3.2-1, Function 6.e(1).

4.0 **REGULATORY EVALUATION**

4.1 Applicable Regulatory Requirements and Criteria

General Design Criteria

WBN Units 1 and 2 were designed to meet the intent of the "Proposed General Design Criteria for Nuclear Power Plant Construction Permits" published in July 1967. The WBN construction permit was issued in January 1973. The dual-unit UFSAR, however, addresses the NRC General Design Criteria (GDC) published as Appendix A to 10 CFR 50 in July 1971. Conformance with the GDCs is described in Section 3.1.2 of the UFSAR.

Each criterion listed below is followed by a discussion of the design features and procedures that meet the intent of the criteria. Any exception to the 1971 GDC resulting from the earlier commitments is identified in the discussion of the corresponding criterion.

Criterion 13 - Instrumentation and Control. Instrumentation shall be provided to monitor variables and systems over their anticipated ranges for normal operation, for anticipated operational occurrences, and for accident conditions as appropriate to assure adequate safety, including those variables and systems that can affect the fission process, the integrity of the reactor core, the reactor coolant pressure boundary, and the containment and its associated systems. Appropriate controls shall be provided to maintain these variables and systems within prescribed operating ranges.

Compliance

The proposed change will continue to provide monitoring of the main feedwater pumps and actuation of the anticipatory AFW automatic start function. No changes are proposed to the safety-related instrumentation (i.e., engineered safety features actuation system). Further compliance with GDC 13 is provided in UFSAR Section 3.1.2.2.

Criterion 20 through 29, "Protection and Reactivity Control Systems," provides the expectations for protection systems associated with reactor operation.

Compliance

The proposed change does not alter the ability for the reactor trip functions to actuate. The proposed change is consistent with the WBN design and analysis and ensures proper actuation to satisfy the anticipatory trip function. Therefore, the

recommendations of these GDC continue to be met with the proposed change. Further compliance with GDC 20 through 29 is provided in UFSAR Section 3.1.2.3.

4.2 Precedent

As noted in Section 3.2 to this enclosure, this LAR is similar to a license amendment, which was approved by the NRC for SQN Units 1 and 2 for a revision to the AV for the reactor trip system turbine trip on low fluid oil pressure function (References 5, 6, and 7). Additionally, as previously noted in this enclosure, the proposed change will result in the AV for WBN Unit 1 TS Table 3.3.2-1, Function 6.e(1) to be consistent with the AV for WBN Unit 2 TS Table 3.3.2-1, Function 6.e(1).

4.3 No Significant Hazards Consideration

The proposed change revises the AV for the WBN Unit 1 TS 3.3.2, "ESFAS Instrumentation," Table 3.3.2-1, "Engineered Safety Feature Actuation System Instrumentation," Function 6.e(1), "Auxiliary Feedwater - Trip of all Main Feedwater Pumps - Turbine Driven Main Feedwater Pumps," from "≥ 48 psig" to "≥ 43.3 psig" for consistency with the AV for WBN Unit 2 TS Table 3.3.2-1, Function 6.e(1). TVA has determined that the AV for WBN Unit 1 TS 3.3.2, Table 3.3.2-1, Function 6.e(1) is too limiting for the accuracy and repeatability of the pressure switches for this instrumentation.

TVA has evaluated the proposed change to the TS using the criteria in Section 50.92 to Title 10 of the *Code of Federal Regulations* (10 CFR) and has determined that the proposed change do not involve a significant hazards consideration. As required by 10 CFR 50.91(a), the TVA analysis of the issue of no significant hazards consideration is presented below:

1. *Does the proposed change involve a significant increase in the probability or consequences of any accident previously evaluated?*

Response: No

The proposed change will not alter any plant components, systems, or processes and will only provide a more appropriate value to assess operability of the associated pressure switches. Because the plant features and operating practices are not altered, the probability of an accident is not affected. This trip function is not directly credited in the WBN accident analysis and is maintained as an anticipatory trip to enhance the overall reliability of the TDMFWP trip function. There is not a specific safety limit associated with this function and the generation of a TDMFWP trip based on low system pressure; therefore, the proposed change will not impact any previously evaluated design basis accidents. Therefore, the proposed change will continue to provide an acceptable anticipatory trip signal, and the offsite dose potential is not affected by this change.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. *Does the proposed change create the possibility of a new or different kind of accident from any previously evaluated?*

Response: No

The proposed change will not alter any plant equipment or operating practices that could create the possibility of a new or different kind of accident. The proposed change revises the operability limits for a function that generates a trip signal when appropriate conditions exist to require accident mitigation response. This type of function does not have the ability to create an accident as its purpose and function is to mitigate events.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. *Does the proposed change involve a significant reduction in the margin of safety?*

Response: No

The proposed change revises the AV for WBN Unit 1 TS 3.3.2 Table 1, Function 6.e(1), auxiliary feedwater auto start from the trip of the TDMFWP to align with the same function for WBN Unit 2. The allowable value change is in response to accuracy aspects of the instrumentation and does not alter the ability of this trip function to operate when and as needed to mitigate accident conditions.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, TVA concludes that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92 (c), and accordingly, a finding of "no significant hazards consideration" is justified.

4.4 Conclusion

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

5.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any radioactive effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore,

pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

6.0 REFERENCES

1. TVA letter to NRC, "Watts Bar Nuclear Plant, Unit 2 -Response to Request for Additional Information Regarding Technical Specifications Changes - Instrumentation and Controls Branch (TAC No. ME7713)," dated March 21, 2013 (ML13085A219)
2. Technical Specification Task Force letter to Members of the PWROG and BWROG Licensing Committees, TSTF-19-07, "Elimination of the Requirement to Adopt TSTF-493, 'Clarify Application of Setpoint Methodology for LSSS Functions'," dated June 18, 2019 (ML19267A158)
3. TVA letter to NRC, "Watts Bar Nuclear Plant (WBN) Unit 2 - Transmittal of TVA EEB-TI-28, Branch Technical Instruction, 'Setpoint Calculations'," dated May 13, 2010 (ML101380297 and ML101390102)
4. NUREG-0847, Supplement 23, "Safety Evaluation Report Related to the Operation of Watts Bar Nuclear Plant, Unit 2 Docket Number 50-391," dated July 2011 (ML11206A499)
5. TVA letter to NRC, "Sequoyah Nuclear Plant (SQN) - Units 1 and 2 - Technical Specifications (TS) Change 07-01 'Permanent Revision of Allowable Value for Reactor Trip System Turbine Trip on Low Trip System Pressure'," dated February 26, 2007 (ML070650317)
6. TVA letter to NRC, "Sequoyah Nuclear Plant (SQN) - Units 1 and 2 - Technical Specifications (TS) Change 07-01 Response to Request for Additional Information (RAI)," dated July 26, 2007 (ML072150054)
7. NRC letter to TVA, "Sequoyah Nuclear Plant, Units 1 and 2 - Issuance of Amendments Regarding Allowable Value for Turbine Trip on Low Trip System Pressure (TS-07-01) (TAC Nos. MD4680 AND MD4681)," dated September 20, 2007 (ML072550285)
8. Exelon Generation letter to NRC, JAFP-19-0105, "Response to Request for Supplemental Information by the Office of Nuclear Reactor Regulation to Support Review of a License Amendment Request to Revise the Allowable Value for Reactor Water Cleanup (RWCU) System Primary Containment Isolation," dated November 6, 2019 (ML19310D579)

Enclosure

Attachment 1

Proposed TS Changes (Markups) for WBN Unit 1

Table 3.3.2-1 (page 5 of 7)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL TRIP SETPOINT
6. Auxiliary Feedwater (continued)						
c. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
d. Loss of Offsite Power	1, 2 ,3	4 per bus	F	Refer to Function 4 of Table 3.3.5-1 for SRs and Allowable Values		
e. Trip of all Main Feedwater Pumps						
(1) Turbine Driven Main Feedwater Pumps	1 ⁽ⁱ⁾ , 2	1 per pump	J	SR 3.3.2.8 SR 3.3.2.9 SR 3.3.2.10	≥ 4843.3 psig	50 psig
and						
(2) Standby Main Feedwater Pump	1, 2	1	P	SR 3.3.2.8 SR 3.3.2.10 SR 3.3.2.12	NA	NA
f. Auxiliary Feedwater Pumps Train A and BG Suction Transfer on Suction Pressure - Low	1, 2, 3, 4 ^(k)	3	B	SR 3.3.2.6 SR 3.3.2.9 SR 3.3.2.10	A) ≥0.5 psig B) ≥1.33 psig	A) 1.2 psig B) 2.0 psig
7. Automatic Switchover to Containment Sump						
a. Automatic Actuation Logic and Actuation Relays	1, 2, 3, 4	2 trains	C	SR 3.3.2.2 SR 3.3.2.3 SR 3.3.2.5	NA	NA

(continued)

- (i) Entry into Condition J may be suspended for up to 4 hours when placing the second Turbine Driven Main Feedwater (TDMFW) Pump in service or removing a TDMFW pump from service.
- (j) Deleted.
- (k) When steam generators are relied on for heat removal.

Enclosure

Attachment 2

Proposed TS Change (Final Typed) for WBN Unit 1

Table 3.3.2-1 (page 5 of 7)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL TRIP SETPOINT
6. Auxiliary Feedwater (continued)						
c. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
d. Loss of Offsite Power	1, 2 ,3	4 per bus	F	Refer to Function 4 of Table 3.3.5-1 for SRs and Allowable Values		
e. Trip of all Main Feedwater Pumps						
(1) Turbine Driven Main Feedwater Pumps	1 ⁽ⁱ⁾ , 2	1 per pump	J	SR 3.3.2.8 SR 3.3.2.9 SR 3.3.2.10	≥ 43.3 psig	50 psig
and						
(2) Standby Main Feedwater Pump	1, 2	1	P	SR 3.3.2.8 SR 3.3.2.10 SR 3.3.2.12	NA	NA
f. Auxiliary Feedwater Pumps Train A and BG Suction Transfer on Suction Pressure - Low	1, 2, 3, 4 ^(k)	3	B	SR 3.3.2.6 SR 3.3.2.9 SR 3.3.2.10	A) ≥0.5 psig B) ≥1.33 psig	A) 1.2 psig B) 2.0 psig
7. Automatic Switchover to Containment Sump						
a. Automatic Actuation Logic and Actuation Relays	1, 2, 3, 4	2 trains	C	SR 3.3.2.2 SR 3.3.2.3 SR 3.3.2.5	NA	NA

(continued)

- (i) Entry into Condition J may be suspended for up to 4 hours when placing the second Turbine Driven Main Feedwater (TDMFW) Pump in service or removing a TDMFW pump from service.
- (j) Deleted.
- (k) When steam generators are relied on for heat removal.