Watts Bar Nuclear Plant Unit 2

Pre-Submittal Meeting for Proposed Alternative Request WBN-2-ISI-02

November 19, 2024

TVA TENNESSEE VALLEY AUTHORITY

Agenda

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Introduction

- Purpose of the meeting is to brief the Nuclear Regulatory Commission (NRC) regarding Watts Bar Nuclear Plant (WBN) Unit 2 Alternative Request WBN-2-ISI-02.
- TVA is requesting an alternative from the requirements of 10 CFR 50.55a(g)(4)(ii) for the WBN Unit 2 Containment Inservice Inspection (CISI) Program interval end date to align with the TVA fleet, including WBN Unit 1, interval end dates.
- The proposed alternative is to allow the WBN Unit 2 CISI Program interval end date to extend to align with the other TVA units, while still using the 2013 edition of ASME Section XI.
- TVA is submitting this alternative request in accordance with 10 CFR 50.55a(z)(1) in that the proposed alternative will maintain an acceptable level of quality and safety.

Applicable Code Edition and Addenda

- The Code of Record (Code) for the first CISI Program interval for WBN Unit 2 is the 2013 Edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (BP&V) Code, Section XI, Division 1, “Rules for Inservice Inspection of Nuclear Power Plant Components.”

Reason for Request

- Currently all seven TVA Units' CISI Programs utilize the 2013 Edition of the ASME B&PV Code.

- Six of the seven units share the same start and end dates of 9/9/2018 - 9/8/2028 for the current CISI Program interval. However, based on the timing of the WBN Unit 2 initial startup, WBN Unit 2's first interval start and end dates are 10/19/2016 - 10/19/2026.

- WBN Unit 2 entered commercial operation on October 19, 2016. This commercial service date established the initial CISI Program interval for WBN Unit 2. WBN Unit 1, and the other units in TVA's fleet, entered commercial operation prior to September 9, 1998, such that the effective date of the applicable 10 CFR 50.55a rule that mandated implementation of a CISI Program, per Federal Register 61FR41303, defined the CISI Program interval start dates.

Reason for Request (cont.)

- Per the requirements of 10 CFR 50.55a(g)(4)(ii), successive intervals must comply with the latest edition and addenda of the ASME BP&V Code. Inspection intervals may only be extended by one year, per IWA-2430(c)(1).
- Compliance with these requirements will place the WBN Unit 2 CISI Program on a different Code of Record than WBN Unit 1 and the rest of the TVA fleet, based on the interval dates previously mentioned. This creates an error-likely situation managing the WBN Unit 1 and 2 CISI Programs on different Code editions and impacts TVA's ability to share resources across standardized CISI Programs.

Proposed Alternative and Basis for Use

- In accordance with regulation 10 CFR 50.55a(z)(1), TVA requests an alternative to the ASME Code and CFR requirements to extend WBN Unit 2's CISI Program interval by approximately 23 months while still using the 2013 Edition of ASME Section XI.
- The WBN Unit 2 first CISI Program interval duration will be modified to end on September 8, 2028, to coincide with the WBN Unit 1 and TVA fleet CISI Program interval end dates. Subsequent CISI Program intervals will follow all requirements specified within and allowed by IWA-2430, based on the applicable ASME Section XI Code Edition, as defined by the start date of the CISI Program interval and the governing regulation at that time (e.g., 18 months prior to the start of the successive interval and then similarly for subsequent intervals).
- Subsequent CISI Program intervals will comply with the applicable requirements of ASME Section XI, as specified by 10 CFR 50.55a, including any applicable conditions in 10 CFR 50.55a(b)(2), based on the sequencing of intervals from the new synchronized CISI Program interval date. Administrative procedures, non-destructive examination procedures, and CISI documents will be updated to meet the requirements of the selected Edition of Section XI on September 9, 2028. All requirements of the new CISI Program will be implemented at that time.

Proposed Alternative and Basis for Use (cont.)

- There are two refueling outages (Cycle 7 and Cycle 8) for WBN Unit 2 that are scheduled to occur between October 18, 2026, and September 8, 2028. To ensure that there is no gap of examinations during the approximately 23-month extension, WBN Unit 2 will revise its CISI Program schedule to perform the periodically required examinations during this extension period as follows:

    1. E-A, E1.11 - General Visual examinations of 100% of the accessible surface areas will be completed during one of the two listed refueling outages above.
    2. E-A, E1.31 - General Visual examinations of 100% of the moisture barrier seals will be performed during one of the two listed refueling outages above.
    3. E-A E1.32 - General Visual examinations will be performed on an additional 33% of the leak chase channel enclosures during one of the two listed refueling outages above, in accordance with 2017 Edition of the ASME Section XI as required by 10 CFR 50.55a(b)(2)(ix)(k).
    4. E-G, E8.10 - For bolted connections, 100% of the examination requirements will be completed by the end of the originally scheduled interval for Unit 2. However, any bolted connections that are dissembled during this timeframe and were not previously examined in the disassembled condition will be VT-1 examined in the disassembled condition during the extension period.
    5. E-C, E4.11 and E4.12 – There are currently no Category E-C components for WBN Unit 2. However, if there are items added to Category E-C as required by IWE-1241, these items will be examined in one of the two outages mentioned above.

Duration of Proposed Alternative

- Relief is requested for the first CISI Program interval to extend to the proposed end date (September 8, 2028).

Schedule for Submittal

- TVA to submit request for alternative to NRC by December 5, 2024.
- TVA requests NRC approval by December 5, 2025.

Closing Remarks

- The proposed alternative will allow the use of a common ASME Section XI Code Edition for CISI activities, enabling program and inspection procedures to be maintained and implemented to one Code Edition. This efficiency will eliminate the error-likely situation of applying incorrect CISI requirements for component examinations and will support resource sharing for the TVA fleet. Common interval dates and procedures will reduce the administrative burden of performing multiple interval updates and will maintain the quality and safety of the CISI Programs in accordance with the latest regulations, codes, and standards.


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