**Tennessee Valley Authority**, Post Office Box 2000, Spring City, Tennessee 37381-2000

WBL-19-045

August 14, 2019

10 CFR 50.55a

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

Watts Bar Nuclear Plant, Unit 2
Facility Operating License No. NPF-96
NRC Docket No. 50-391

Subject: **American Society of Mechanical Engineers, Section XI, First 10-Year Inspection Interval, Inservice Inspection Owner's Activity Report For Cycle 2 Operation**

The Tennessee Valley Authority is submitting the Watts Bar Nuclear Plant, Unit 2, American Society of Mechanical Engineers (ASME), Section XI, Owner's Activity Report for Unit 2 Cycle 2 operation as required by Article IWA-6000, Section XI, Division 1. The report is contained in the enclosure to this letter and is in accordance with the requirements of ASME Code Case N-532-5, "Repair/Replacement Activity Documentation Requirements and Inservice Inspection Summary Report Preparation and Submission."

The report is an overview of the results from inservice examinations that were performed on components within the ASME Section XI boundary, up to and including the Unit 2 Cycle 2 refueling outage, during the first period of the first inspection interval. The applicable provisions of the ASME Code require that this report be submitted 90 days from the end of the applicable outage, i.e., by August 14, 2019.

There are no new regulatory commitments associated with this submittal. If you have questions regarding this letter, please contact Tony Brown at (423) 365-7720.

Respectfully,

For

Anthony L. Williams IV
Site Vice President
Watts Bar Nuclear Plant

Enclosure:

American Society of Mechanical Engineers, Section XI, First 10-Year Inservice Inspection Interval, Inservice Inspection Owner's Activity Report for Cycle 2 Operation (Form OAR-1)

cc (Enclosure):

NRC Regional Administrator - Region II
NRC Senior Resident Inspector
NRR Project Manager

**ENCLOSURE**

**TENNESSEE VALLEY AUTHORITY**

**WATTS BAR NUCLEAR PLANT, UNIT 2**

# AMERICAN SOCIETY OF MECHANICAL ENGINEERS, SECTION XI, FIRST 10-YEAR INSPECTION INTERVAL, INSERVICE INSPECTION OWNER'S ACTIVITY REPORT FOR CYCLE 2 OPERATION

## FORM OAR-1 OWNER'S ACTIVITY REPORT

Report Number: U2R2

Plant: Watts Bar Nuclear Plant, P.O. Box 2000, Spring City, TN 37381-2000

Unit No.: 2 (if applicable) Commercial Service Date: October 19, 2016 Refueling Outage No.: U2R2

Current Inspection Interval: 1st (1st, 2nd, 3rd, 4th, other)

Current Inspection Period: 1st (1st, 2nd, 3rd)

Edition and Addenda of Section XI applicable to the Inspection Plans: ISI / SPT - 2007 Edition, 2008 Addenda; IWE - 2013 Edition

Date / Revision of Inspection Plans: ISI – June 5th, 2019 / 2-TRI-0-10.1, Revision 004; IWE - September 07, 2018 / 0-TI-100.012, Revision 000; SPT – September 14, 2017 / 0-TI-100.010 R002

Edition and Addenda of Section XI applicable to repair/replacement activities, if different than the inspection plans: 2007 Edition, 2008 Addenda

Code Cases used: N-513-3, N-532-5, N-586-1, N-648-1, N-716-1, N-722-1, N-729-4, N-770-2

### CERTIFICATE OF CONFORMANCE

I certify that (a) the statements made in this report are correct; (b) the examinations and tests, meet the Inspection Plan as required by the ASME Code, Section XI; and (c) the repair/replacement activities and evaluations supporting the completion of U2R2 (refueling outage number) conform to the requirements of Section XI

Signed Shane Norton Date 8/13/2019

Shane Norton, Repair Replacement and Inservice Inspection Program Owner

### CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Tennessee and employed by The Hartford Steam Boiler Inspection and Insurance Company of Hartford, Connecticut have inspected the items described in this Owner's Activity Report, and state that to the best of my knowledge and belief, the Owner has performed all activities represented by this report in accordance with the requirements of Section XI

By signing this certificate neither the Inspector nor his employer makes any warranty expressed or implied concerning the repair/ replacement activities and evaluation described in this report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection

Inspector's Signature

Commissions NB 14057INR, TN 4132

National Board, State, Province, and Endorsements

Date 8-13-19

**TABLE 1**

**ITEMS WITH FLAWS OR RELEVANT CONDITIONS THAT REQUIRED EVALUATION FOR CONTINUED SERVICE**

| Examination Category and Item Number | Item Description | Evaluation Description |
|---|---|---|
| F-A / F1.10C | 2-47A435-13-119<br>Variable Spring Support<br>Safety Injection System | Civil Analysis showed support remains fully functional. Small overload will have no adverse impact on the structural integrity of piping or adjacent supports. |
| F-A / F1.10C | 2-47A432-3-17<br>Variable Spring Support<br>Residual Heat Removal System | Civil Analysis showed support remains fully functional. Small overload will have no adverse impact on the structural integrity of piping or adjacent supports. |

**TABLE 2**

**ABSTRACT OF REPAIRS, REPLACEMENTS, OR CORRECTIVE MEASURES REQUIRED FOR CONTINUED SERVICE**

| Code Class | Item Description | Description of Work | Date Completed | Repair/Replacement Plan Number |
|---|---|---|---|---|
| 3 | ERCW Strainer Flush Valve | Replaced Valve due to through wall leak in valve body to flange area. | 11/5/2018 | 118485274 |
| 1 | Boron Injection Check Valve | Replaced the valve bonnet to correct a boric acid leak discovered during the RFO. | 5/2/2019 | 120424680 |
| 1 | Loop 1 Steam Generator | Primary side tube plugging due to volumetric indications. | 5/17/2019 | 119541910 |
| 1 | Loop 3 Steam Generator | Primary side tube plugging due to volumetric indications. | 5/17/2019 | 119541912 |
| 1 | Loop 4 Steam Generator | Primary side tube plugging due to volumetric indications. | 5/17/2019 | 119541913 |
| MC | Raceway Leak Chase Channel Box (Moisture Barrier) | Repaired gasket material and caulking | 5/10/2019 | 120113635 |
| MC | Reactor Cavity Leak Chase Channel Box (Moisture Barrier) | Repaired gasket material and caulking | 5/10/2019 | 120113635 |
| MC | Thermo-Shield (Moisture Barrier) | Repaired minor degradation due to outage related activities. | 5/6/2019 | 119473096 |

**REPORTING REQUIRED BY 10 CFR 50.55a(b)(2)(ix)**
**ASME Section XI, Subsection IWE**
**Steel Containment Vessel Inspection Program**

10 CFR 50.55a(b)(2)(ix) requires the reporting of inaccessible areas and additional examinations identified during the performance of ASME Section XI, Subsection IWE Steel Containment Vessel Inspection Program when conditions exist in accessible areas that could indicate the presence of or result in degradation to such inaccessible areas.

The accessible portion of the interior and exterior surface of the containment vessel, including (3) bolted connections that were disassembled, (10) Leak Chasse Channel Boxes, and the thermal flashing , were inspected in accordance with IWE Containment Vessel Inspection Program during this cycle.

The thermal flashing on the outer wall of the raceway on elevation 702 is inspected as a moisture barrier(E-A, E1.30). Multiple areas of the flashing were observed to be damaged at the seams. In all occurrences the damage was indicative of damage related to outage activities within the raceway. The damage was not indicative of service induced flaws nor was there indication of moisture intrusion that would result in damage to the inaccessible area behind the thermal flashing.

During performance of the visual examination of the primary moisture barrier for the Leak Chase Channel(LCC) system water was discovered inside some of the boxes above the LCC. The primary moisture barrier is described as the gasket material and sealant that is intended to prevent moisture intrusion into inaccessible areas of the containment liner. If water is discovered inside of the box during performance of this examination it is considered a flaw or degradation of the primary moisture barrier. The water intrusion into the LCC box is considered a condition in an accessible area that could indicate the presence of, or result in, degradation in an in-accessible area, therefore an engineering evaluation of the in-accessible area has been performed in accordance with IWE-2500(d). The engineering evaluation concluded these areas are not likely to experience accelerated degradation or aging. There are no corrective actions required for the inaccessible areas.