Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402

CNL-20-055

June 12, 2020

10 CFR 50.90

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

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

Subject: **Supplement to Application to Revise Watts Bar Nuclear Plant (WBN) Unit 2 Technical Specifications for Steam Generator Tube Repair Sleeve (WBN-TS-391-19-13) (EPID L-2019-LLA-0209)**

References:
1. TVA Letter to NRC, CNL-19-067, "Application to Revise Watts Bar Nuclear Plant (WBN) Unit 2 Technical Specifications for Steam Generator Tube Repair Sleeve (WBN-TS-391-19-13)," dated September 30, 2019 (ML19274C003 and ML19274C005)

2. TVA Letter to NRC, CNL-19-114, "Supplement to Application to Revise Watts Bar Nuclear Plant (WBN) Unit 2 Technical Specifications for Steam Generator Tube Repair Sleeve (WBN-TS-391-19-13)," dated November 21, 2019 (ML19326C091 and ML19326C094)

In Reference 1, Tennessee Valley Authority (TVA) submitted a request for an amendment to Facility Operating License No. NPF-96 for the Watts Bar Nuclear Plant (WBN), Unit 2. The proposed license amendment request (LAR) revises WBN Unit 2 Technical Specifications (TS) 3.4.17, "SG Tube Integrity," 5.7.2.12, "Steam Generator (SG) Program," and TS 5.9.9, "Steam Generator Tube Inspection Report," to allow the use of Westinghouse leak-limiting non-nickel banded Alloy 800 sleeves to repair degraded SG tubes as an alternative to plugging the tube. In Reference 1, proposed WBN Unit 2 TS 5.7.2.12.f.1 referenced WCAP-15918-P, Revision 3, "Steam Generator Tube Repair for Combustion Engineering and Westinghouse Designed Plants with ¾ Inch Inconel 600 Tubes Using Leak Limiting Alloy 800 Sleeves."

In Reference 2, TVA submitted a supplement to Reference 1 that included Revision 4 to WCAP-15918-P; however, TVA neglected to revise the proposed TS changes in Reference 1 to reference Revision 4 to WCAP-15918-P. Therefore, this supplement provides the following changes to Reference 1 to reflect Revision 4 to WCAP-15918-P:

- Enclosure 1 to this submittal provides an updated Section 2.1, "Proposed Changes."
- Enclosure 2 provides a revised WBN Unit 2 TS 5.7.2.12.f.1 marked-up to show the proposed change.
- Enclosure 3 provides a revised WBN Unit 2 TS 5.7.2.12.f.1 retyped to show the proposed change.
- Enclosure 4 provides a revised Reference 7 to WBN Unit 2 TS Bases 3.4.17 marked-up to show the proposed change. The change to the TS Bases is provided for information only.

Enclosures 2, 3, and 4 supersede the corresponding information in Reference 1. This letter does not change the conclusions, the no significant hazards consideration, nor the environmental considerations contained in Reference 1. Additionally, in accordance with 10 CFR 50.91(b)(1), TVA is sending a copy of this letter and the enclosure to the Tennessee Department of Environment and Conservation.

There are no new regulatory commitments associated with this submittal. If you have any questions about this proposed change, please contact Gordon R. Williams, Senior Manager, Fleet Licensing (Acting) at (423) 751-2687.

I declare under penalty of perjury that the foregoing is true and correct. Executed on this 12th day of June 2020.

Respectfully,

James Barstow
Vice President, Nuclear Regulatory Affairs & Support Services

Enclosures:

1. Updated Section 2.1, "Proposed Changes"
2. Revised Proposed TS 5.7.2.12.f.1 (Mark-Up) for WBN Unit 2
3. Revised Proposed TS 5.7.2.12.f.1 (Final Typed) for WBN Unit 2
4. Revised TS Bases 3.4.17 (Mark-Up) for WBN Unit 2 (For Information Only)

cc (Enclosures):

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

2.1 PROPOSED CHANGES

The following is a detailed description of the proposed WBN Unit 2 TS changes.

- The option to repair SG tubes is being added to TS limiting condition for operation (LCO) 3.4.17; TS 3.4.17, Condition A; SR 3.4.17.2; TS 5.7.2.12; and TS 5.9.9, because these TS currently allow only tube plugging.
- A new TS 5.7.2.12.f is being added as follows:

  f. Provisions for SG Tube Repair Methods

  Steam generator tube repair methods shall provide the means to reestablish the RCS pressure boundary integrity of SG tubes without removing the tube from service. For the purposes of these Specifications, tube plugging is not a repair. All acceptable tube repair methods are listed below.

  1. Westinghouse leak-limiting Non-Nickel Banded Alloy 800 sleeves, WCAP-15918-P, Revision 4, “Steam Generator Tube Repair for Combustion Engineering and Westinghouse Designed Plants with ¾ Inch Inconel 600 Tubes Using Leak Limiting Alloy 800 Sleeves.” A Non-Nickel Banded Alloy 800 sleeve installed in the hot-leg or cold-leg tubesheet region shall remain in service for no more than five fuel cycles of operation starting from the outage when the sleeve was installed.

- The following new requirement is being added to TS 5.9.9 as follows:

  h. Repair method utilized and the number of tubes repaired by each repair method.

Attachment 1 to this enclosure provides the existing WBN Unit 2 TS pages marked-up to show the proposed changes. Attachment 2 to this enclosure provides the existing TS pages retyped to show the proposed changes. Attachment 3 to this enclosure provides the existing WBN Unit 2 TS Bases pages marked-up to show the proposed changes. The changes to the TS Bases are provided for information only.

Enclosure 2

Revised Proposed TS 5.7.2.12.f.1 (Mark-Up) for WBN Unit 2

5.7.2.12 Steam Generator (SG) Program (continued)

f. Provisions for SG Tube Repair Methods:

Steam generator tube repair methods shall provide the means to reestablish the RCS pressure boundary integrity of SG tubes without removing the tube from service. For the purposes of these Specifications, tube plugging is not a repair. All acceptable tube repair methods are listed below.

1. Westinghouse leak-limiting Non-Nickel Banded Alloy 800 sleeves, WCAP-15918-P, Revision 4, “Steam Generator Tube Repair for Combustion Engineering and Westinghouse Designed Plants with ¾ Inch Inconel 600 Tubes Using Leak Limiting Alloy 800 Sleeves.” A Non-Nickel Banded Alloy 800 sleeve shall remain in service for no more than five fuel cycles of operation starting from the outage when the sleeve was installed.

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Enclosure 3

Revised Proposed TS 5.7.2.12.f.1 (Final Typed) for WBN Unit 2

5.7.2.12 Steam Generator (SG) Program (continued)

f. Provisions for SG Tube Repair Methods:

Steam generator tube repair methods shall provide the means to reestablish the RCS pressure boundary integrity of SG tubes without removing the tube from service. For the purposes of these Specifications, tube plugging is not a repair. All acceptable tube repair methods are listed below.

1. Westinghouse leak-limiting Non-Nickel Banded Alloy 800 sleeves, WCAP-15918-P, Revision 4, “Steam Generator Tube Repair for Combustion Engineering and Westinghouse Designed Plants with ¾ Inch Inconel 600 Tubes Using Leak Limiting Alloy 800 Sleeves.” A Non-Nickel Banded Alloy 800 sleeve shall remain in service for no more than five fuel cycles of operation starting from the outage when the sleeve was installed.

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Enclosure 4

Revised TS Bases 3.4.17 (Mark-Up) for WBN Unit 2 (For Information Only)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.4.17.2

During an SG inspection, any inspected tube that satisfies the Steam Generator Program plugging or repair (Ref. 7) criteria is either plugged or repaired~~removed from service by plugging~~. The tube plugging or repair criteria delineated in Specification 5.7.2.12 are intended to ensure that tubes accepted for continued service satisfy the SG performance criteria with allowance for error in the flaw size measurement and for future flaw growth. In addition, the tube plugging or repair criteria, in conjunction with other elements of the Steam Generator Program, ensure that the SG performance criteria will continue to be met until the next inspection of the subject tube(s). Reference 1 provides guidance for performing operational assessments to verify that the tubes remaining in service will continue to meet the SG performance criteria.

The Frequency of prior to entering MODE 4 following an SG inspection ensures that the Surveillance has been completed and all tubes meeting the plugging or repair criteria are plugged prior to subjecting the SG tubes to significant primary-to-secondary pressure differential.

REFERENCES

1. NEI 97-06, “Steam Generator Program Guidelines.”
2. 10 CFR 50 Appendix A, GDC 19, Control Room.
3. 10 CFR 100, Reactor Site Criteria.
4. ASME Boiler and Pressure Vessel Code, Section III, Subsection NB.
5. Regulatory Guide 1.121, “Basis for Plugging Degraded Steam Generator Tubes,” August 1976.
6. EPRI, “Pressurized Water Reactor Steam Generator Examination Guidelines.”
7. WCAP-15918-P, Revision 4, “Steam Generator Tube Repair for Combustion Engineering and Westinghouse Designed Plants with ¾ Inch Inconel 600 Tubes Using Leak Limiting Alloy 800 Sleeves.”

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