



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

May 5, 2022

Mr. Cleveland Reasoner  
Chief Executive Officer and  
Chief Nuclear Officer  
Wolf Creek Nuclear Operating Corporation  
Post Office Box 411  
Burlington, KS 66839

SUBJECT: WOLF CREEK GENERATING STATION, UNIT 1 – REVIEW OF THE  
SPRING 2021 REFUELING OUTAGE 24 STEAM GENERATOR TUBE  
INSERVICE INSPECTION REPORT (EPID L-2021-LRO-0060)

Dear Mr. Reasoner:

By letter dated November 1, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21305B855), as supplemented by letter dated March 15, 2022 (ML22074A281), Wolf Creek Nuclear Operating Corporation (the licensee) submitted a summary of the results of the spring 2021 steam generator (SG) inspections performed at Wolf Creek Generating Station, Unit 1. The inspections were performed during Refueling Outage 24. The SG tube inspection report was submitted in accordance with Technical Specification (TS) 5.6.10, "Steam Generator Tube Inspection Report."

Based on its review, the U.S. Nuclear Regulatory Commission (NRC) staff concludes that the licensee has provided the information required by TS 5.6.10, and that no follow-up is required at this time. A summary of the NRC staff's review is enclosed.

If you have any questions, please contact me at 301-415-3168 or via e-mail at [Samson.Lee@nrc.gov](mailto:Samson.Lee@nrc.gov).

Sincerely,

*/RA/*

Samson S. Lee, Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-482

Enclosure:  
Review of the Steam Generator  
Tube Inspection Report

cc: Listserv

REVIEW OF THE SPRING 2021 REFUELING OUTAGE 24  
STEAM GENERATOR TUBE INSERVICE INSPECTION REPORT  
WOLF CREEK NUCLEAR OPERATING CORPORATION  
WOLF CREEK GENERATING STATION, UNIT 1  
DOCKET NO. 50-482

By letter dated November 1, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21305B855), as supplemented by letter dated March 15, 2022 (ML22074A281), Wolf Creek Nuclear Operating Company (the licensee) submitted information summarizing the results of the spring 2021 steam generator (SG) inspections performed at Wolf Creek Generating Station, Unit 1 (Wolf Creek). These inspections were performed during Refueling Outage 24 (RF24). In addition, the U.S. Nuclear Regulatory Commission (NRC) staff held a conference call with the licensee on April 16, 2021, regarding the ongoing SG inspection activities at Wolf Creek. A summary of the conference call regarding the spring 2021 SG inspections is available in ADAMS under Accession No. ML21127A132. The licensee provided additional information concerning the inspections in its letter dated March 15, 2022

Wolf Creek has four Westinghouse Model F SGs. Each SG contains 5,626 thermally treated Alloy 600 tubes. Each tube has a nominal outside diameter of 0.688 inches and a nominal wall thickness of 0.040 inches. The tubes are supported by stainless steel tube supports with quatrefoil-shaped holes and V-shaped chrome-plated Alloy 600 anti-vibration bars. The tubes are hydraulically expanded for the full depth of the tubesheet at each end.

The licensee provided the scope, extent, methods, and results of the SG tube inspections in its letter dated November 1, 2021, as supplemented. In addition, the licensee described corrective actions (e.g., tube plugging) that were taken in response to the inspection findings.

Based on the review of the information provided, the NRC staff has the following observations:

- Wear was the only degradation mechanism found and 32 tubes were plugged due to wear during RF24. Thirty tubes with anti-vibration bars wear indications greater than 40 percent through-wall were plugged (5 in SG A, 12 in SG B, 3 in SG C, and 10 in SG D). Two tubes with new foreign object wear indications attributed to transient foreign objects were preventatively plugged (one each in SGs A and B).
- No indications of primary water stress corrosion cracking or outside diameter stress corrosion cracking were found during RF24.
- In the March 15, 2022, letter, the licensee clarified that full length Bobbin coil/Zephyr™ probe inspections were performed in Rows 2 and higher. In addition, as stated in the licensee's letter dated November 1, 2021, 50 percent of the Rows 1 and 2 U-bends received a mid-range +Point™ probe inspection.

Enclosure

- The area of channel head wastage due to cladding breach initially found in SG A during RF19 was visually and ultrasonically tested during RF24 and no changes were found. No additional cladding degradation was found in any SG.

Based on the review of the information provided, the NRC staff concludes that the licensee provided the information required by Wolf Creek Technical Specification 5.6.10, "Steam Generator Tube Inspection Report." In addition, the NRC staff concludes that there are no technical issues that warrant additional follow-up action at this time since the inspections appear to be consistent with the objective of detecting potential tube degradation and the inspection results appear to be consistent with industry operating experience at similarly designed and operated units.

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 DATED MAY 5, 2022

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