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

May 11, 2021

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

SUBJECT: WOLF CREEK GENERATING STATION, UNIT 1 - SUMMARY OF APRIL 16, 2021, CONFERENCE CALL WITH REPRESENTATIVES OF WOLF CREEK GENERATING STATION REGARDING THE SPRING 2021 STEAM GENERATOR TUBE INSPECTIONS (EPID L-2021-NFO-0003)

Dear Mr. Reasoner:

On April 16, 2021, the U.S Nuclear Regulatory Commission staff participated in a conference call with representatives of the Wolf Creek Generating Station (the licensee) regarding the ongoing steam generator inspection activities at the Wolf Creek Generating Station, Unit 1.

A summary of the conference call is provided as Enclosure 1. A list of participants is provided as Enclosure 2.

If you have any questions regarding this matter, please contact me at (301) 415-3168 or by e-mail to Samson.Lee@nrc.gov.

Sincerely,

/RA/

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

Docket No. 50-482

Enclosures:
1. Conference Call Summary
2. List of Participants

cc: Listserv

SUMMARY OF APRIL 16, 2021 CONFERENCE CALL

REGARDING SPRING 2021 STEAM GENERATOR TUBE INSPECTIONS AT

WOLF CREEK GENERATING STATION, UNIT 1

DOCKET NO. 50-482

On April 16, 2021, the U.S. Nuclear Regulatory Commission staff participated in a conference call with Wolf Creek Nuclear Operating Corporation (the licensee), regarding the ongoing steam generator (SG) tube inspection activities at Wolf Creek Generating Station, Unit 1 (Wolf Creek) during refueling outage (RFO) 24. The licensee estimated that the data acquisition and analysis were about 80 percent complete at the time of the call.

The four Model F SGs designated A through D at Wolf Creek were designed by Westinghouse. 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 support plates (TSPs) with quatrefoil-shaped holes and V-shaped chrome-plated Alloy 600 anti-vibration bars (AVBs). The tubes are hydraulically expanded for the full depth of the tubesheet at each end. The most recent previous SG inspections were performed during RFO 22.

Information provided by the licensee during the April 16, 2021, conference call is summarized below:

- No primary-to-secondary leakage was observed during the two preceding operating cycles.

- Secondary-side pressure tests were not performed during the outage.

- No exceptions were taken to the industry guidelines.

- Eddy current tube inspections were performed in all four SGs. The inspection scope for each SG included a full-length bobbin probe inspection of all in-service tubes, except for the U-bend section in Rows 1 and 2, which were inspected with a +Point™ rotating probe in 50 percent of the tubes.

- A variety of eddy current tube inspections were performed in all four SGs using +Point™ and array probes, including array probe inspection from 3 inches above the top of the tubesheet to 15.21 inches below the top of the tubesheet on the hot leg (HL) in every in-service tube, array probe inspection of 100 percent of the periphery tubes two pitches deep on the cold leg (CL), and confirmation with +Point™ probes of bobbin probe special interest or I-codes.

- The licensee described how recent detection of stress corrosion cracking in Seabrook Station (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20295A551) and Catawba Nuclear Station, Unit 2 (ADAMS Accession No. ML19353A416) SG tubes were incorporated into the Wolf Creek inspections. In addition to a review of the industry documentation of the experience at both plants, analyst training and performance demonstration used actual inspection data from Seabrook Station,

which has the same model of SGs as Wolf Creek. Inspections with +Point™ probes were performed on all dents and dings greater than 5 volts (bobbin probe) at the top TSP on both the HL and CL, 50 percent of other dents and dings in the HL and U-bend region, 25 percent of other dents and dings in the CL region, all periphery tubes at the other CL TSPs, and a 25 percent sample of dents and dings between 2 and 5 volts (bobbin probe). Baseline inspection years of 1996 (SGs A and D) and 1997 (SGs B and C) were established using an automatic history trending database.

- The licensee reported the following eddy current indications at the time of the call:

    - 4,052 AVB wear indications in 1,770 tubes. The maximum depth was 46 percent through-wall, and the growth rate for the two operating cycles since the previous inspection was 2-3 percent through-wall per effective full power year (EFPY), which was slightly lower than the historical rate of 3-4 percent through-wall per EFPY (0.95 probability in both cases).

    - New foreign object wear indications in two tubes, one each in SG A and SG B. Both indications were located just below the second HL TSP and were less than 40 percent through-wall in depth. No foreign objects were present at the locations of the wear, and eddy current inspection of the surrounding tubes had not yet been completed.

    - Historical wear indications at TSPs from foreign objects and pressure pulse cleaning had not yet been inspected at the time of the call.

- No cracking had been detected at the time of the call.

- At the time of the call, the licensee planned to plug 30 tubes, all due to AVB wear (5 in SG A, 12 in SG B, 3 in SG C, and 10 in SG D.)

- No in situ pressure tests or tube pulls were planned for the outage.

- Primary-side inspection included visual inspection of tube plugs and surfaces in the channel head. One cladding anomaly first observed in RFO 19 had not changed according to the visual inspection and ultrasonic thickness testing performed during this outage.

- Secondary-side cleaning and inspections were being performed in all four SGs and included sludge lancing (SL), post-SL visual inspection in the tube bundle and of the material collected in the SL grit tank screens, foreign object search and retrieval (FOSAR), a combination of visual and ultrasonic thickness testing of the upper steam drum, feedring and feedring j-nozzles.

- At the time of the call, SL was complete in SG A and SG D, and underway in SG B and SG C. Approximately 22 and 40 pounds of material, respectively, had been collected from SG A and SG D. FOSAR resulted in identification of 10 foreign objects in SGs A and D, all of which were small (wire bristles and machining remnants), and 4 of which were retrieved. The six objects not retrieved were being evaluated as part of condition monitoring and operational assessment.

- No secondary-side deposit assessment, scale profiling, or chemical cleaning was being performed during this outage. All four SGs have had multiple full-bundle chemical cleanings, and the most recent was a full-bundle advanced scale conditioning agent application in all four SGs during RFO 21.

- The estimated completion date of the SG inspections was April 20, 2021.

LIST OF PARTICIPANTS

APRIL 16, 2021, CONFERENCE CALL REGARDING

SPRING 2021 STEAM GENERATOR TUBE INSPECTIONS AT

WOLF CREEK GENERATING STATION

DOCKET NO. 50-482

U.S Nuclear Regulatory Commission
Steve Bloom
Andrew Johnson
Paul Klein
Greg Makar
Leslie Terry
Nick Taylor (Region IV)

Wolf Creek:
Josh Turner – Manager of Licensing
Jason Knust – Licensing Engineer
Pat Wagner – Steam Generator Program Engineer

Westinghouse
Ed Kurdziel
Kevin Smouse
Jay Smith
Ed Ericson

Anatech
Neil Farenbaugh
Dave Darst

SUBJECT: WOLF CREEK GENERATING STATION, UNIT 1 - SUMMARY OF APRIL 16, 2021, CONFERENCE CALL WITH REPRESENTATIVES OF WOLF CREEK GENERATING STATION REGARDING THE SPRING 2021 STEAM GENERATOR TUBE INSPECTIONS (EPID L-2021-NFO-0003) DATED MAY 11, 2021

DISTRIBUTION:

PUBLIC
PM File Copy
RidsACRS_MailCTR Resource
RidsNrrDorlLpl4 Resource
RidsNrrDnrl Resource
RidsNrrDnrlNcsg Resource
RidsNrrDexEeeb Resource
RidsNrrDexEseb Resource
RidsNrrDraAplc Resource
RidsNrrDssSnsb Resource
RidsNrrDssStsb Resource
RidsNrrLAPBlechman Resource
RidsNrrPMWolfCreek Resource
RidsRgn4MailCenter Resource
PKlein, NRR
AJohnson, NRR
GMakar, NRR
LTerry, NRR
JDrake, RIV
NTaylor, RIV

ADAMS Accession No.: ML21127A132

OFFICE	NRR/DORL/LPL4/PM	NRR/DORL/LPL4/PMit	NRR/DORL/LPL4/LA
NAME	SLee	BJain	PBlechman
DATE	5/7/2021	5/7/2021	5/10/2021
OFFICE	NRR/DNRL/NCSG/BC	NRR/DORL/LPL4/BC	NRR/DORL/LPL4/PM
NAME	SBloom	JDixon-Herrity	SLee
DATE	5/7/2021	5/11/2021	5/11/2021

OFFICIAL RECORD COPY