



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

December 5, 2022

Mr. Daniel G. Stoddard
Senior Vice President and
Chief Nuclear Officer
Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, VA 23060-6711

SUBJECT: SURRY POWER STATION, UNIT 1 AND 2 - SUMMARY OF CONFERENCE
CALL REGARDING THE FALL 2022 STEAM GENERATOR TUBE
INSPECTIONS (RFO 31) (EPID L-2022-NFO-0015)

Dear Mr. Stoddard:

On November 17, 2022, the U.S. Nuclear Regulatory Commission staff participated in a conference call with Virginia Electric and Power Company (the licensee), regarding the ongoing steam generator tube inspection activities at Surry Power Station, Unit 1.

A summary of the conference call is provided in the enclosure.

If you have any questions, please contact me at (301) 415-5136, or via email at John.Klos@nrc.gov.

Sincerely,

/RA/

John Klos, Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-280

Enclosure:
Conference Call Summary

cc: Listserv

SUMMARY OF CONFERENCE CALL

VIRGINIA ELECTRIC AND POWER COMPANY

SURRY POWER STATION, UNIT NO. 1

FALL 2022 STEAM GENERATOR TUBE INSPECTIONS (RFO 31)

DOCKET NO. 50-280

On November 17, 2022, the U.S. Nuclear Regulatory Commission (NRC) staff, including the Corrosion and Steam Generator Branch (NCSG) of the Division of New and Renewed Licenses, participated in a conference call with Virginia Electric and Power Company (the licensee), regarding the ongoing steam generator (SG) tube inspection activities at Surry Power Station (Surry), Unit 1 during refueling outage (RFO) 31.

Surry Unit 1 has three Westinghouse Model 51F SGs that were installed in 1981. Each SG contains 3,342 thermally treated Alloy 600 tubes that have a nominal outside diameter of 0.875 inches and a nominal wall thickness of 0.050 inches. The tubes were hydraulically expanded at both ends for the full length of the tubesheet and are supported by stainless steel tube support plates (TSPs). The U-bends of the tubes installed in rows 1 through 8 were thermally stress relieved after bending.

The following information was provided by the licensee during the conference call on November 17, 2022. The NRC staff notes that some of the inspection information is preliminary and subject to change in the final data analysis.

- At the time of the call, 100 percent of the eddy current data acquisition and analysis had been completed for SGs A and B, and approximately 64 percent of the eddy current acquisition and analysis had been completed for SG C.
- The eddy current inspection scope for each SG included:
 - A 100 percent full-length bobbin probe examination of all in-service tubes, except for the U-bends of rows 1 and 2 that are examined with the +Point™ probe.
 - An array probe examination of all hot leg (HL) tubes from the first TSP to the H* depth of 17.89 inches.
 - An array probe examination of all tubes with high residual stress (43 tubes total – all were high-row tubes (i.e., 2-sigma tubes)
 - +Point™ probe inspections on:
 - All Row 1 and 2 U-bends
 - All dents and dings ≥ 2 volts in the HL straight leg (~300/SG)
 - All dents and dings ≥ 5 volts in the cold leg straight leg (~45/SG)
 - All dents and dings ≥ 5 volts in the U-bends (~35/SG)
 - All anti-vibration bar (AVB) wear indications greater than 35 percent through-wall
 - All magnetic permeability indications and anomalous indications
 - All existing and new possible loose part (PLP) signals, including a one-tube deep bounding inspection around PLP signals

Enclosure

- A complete visual inspection of both sides of all SG channel heads including the divider plate, stub runner, and channel head welds; a cladding inspection, and inspection of all installed plugs.
- At the time of the call, the licensee had identified:
 - A tube to be plugged in row 5 column 35 of SG A with a large (>33 volt) free spanning indication. This historical ding is difficult to inspect because it requires use of an undersized probe and multiple passes. After completing the inspection, the licensee decided to plug the tube rather than risk getting a probe stuck during future inspections.
 - A total of 114 AVB indications in 84 tubes. The largest in SG C, 1.59 volts and 28 percent through-wall (TW).
 - A total of six TSP wear indications.
 - A total of 16 historical foreign object indications. The largest was first identified in 2007, was 33 percent TW, 0.32 inches long, measured 0.34 volts, and has not grown. One indication in SG A is from water lancing equipment and there is one historical pitting indication from the 1980s. There was no apparent new wall loss due to foreign objects detected and all foreign objects that could challenge tube integrity were removed.
- High pressure sludge lancing was performed, followed by a foreign object search and retrieval inspection. The largest objects retrieved were a wire in SG A (2 inches long), a piece of weld slag in SG B (1.5 inches long), and a small sludge rock in SG C.
- At the time of the call, all indications met the condition monitoring limits demonstrating that tube integrity was maintained. No in-situ pressure tests had been performed and none were planned.
- No inspections were planned for the secondary side steam drum. In response to an NRC staff question, the licensee stated that visual inspections of the steam drum were currently scheduled on a 54-month cycle.

The NRC staff did not identify any issues that required follow-up action at this time. The NRC staff asked to be notified in the event of any unexpected findings or if any new degradation mechanisms were detected during the remainder of the SG inspections in the current outage.

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DATED DECEMBER 5, 2022

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