



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

March 19, 2021

Ms. Cheryl A. Gayheart
Regulatory Affairs Director
Southern Nuclear Operating Company, Inc.
P. O. Box 1295, Bin 038
Birmingham, AL 35201-1295

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNIT 1 – REVIEW OF THE
SPRING 2020 STEAM GENERATOR TUBE INSPECTION REPORT
(EPID L-2020-LRO-0059)

Dear Ms. Gayheart:

By letter dated September 17, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20262G974), Southern Nuclear Operating Company (SNC, the licensee) submitted information summarizing the results of the spring 2020 steam generator (SG) inspections performed at Vogtle Electric Generating Plant, Unit 1. The inspections were performed during refueling outage 22. The licensee provided additional information concerning the inspections in a letter dated March 2, 2021 (ADAMS Accession No. ML21061A331). The SG tube inspection report was submitted in accordance with Technical Specification 5.6.10, "Steam Generator Tube Inspection Report."

The U.S. Nuclear Regulatory Commission (NRC) staff has completed its review of the information provided by SNC and concludes that the licensee provided the information required by Vogtle, Unit 1, technical specifications and no follow-up is required at this time. The NRC staff's review of the report is enclosed.

If you have any questions, please contact me at (301) 415-3100 or via email at John.Lamb@nrc.gov.

Sincerely,

/RA/

John G. Lamb, Senior Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-424

cc: Listserv

REVIEW OF THE REFUELING OUTAGE 22 STEAM GENERATOR

TUBE INSPECTION REPORT

SOUTHERN NUCLEAR OPERATING COMPANY

VOGTLE ELECTRIC GENERATING PLANT, UNIT 1

DOCKET NO. 50-424

By letter dated September 17, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20262G974), Southern Nuclear Operating Company (SNC, the licensee) submitted information summarizing the results of the spring 2020 steam generator (SG) inspections performed at Vogtle Electric Generating Plant (Vogtle), Unit 1. The inspections were performed during refueling outage (RFO) 22. The licensee provided additional information concerning the inspections in a letter dated March 2, 2021 (ADAMS Accession No. ML21061A331).

Vogtle, Unit 1, has four Westinghouse Model F SGs, each of which contains 5,626 U-bend 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. During SG fabrication, the tubes were hydraulically expanded, at both ends, over the full depth of the tubesheet. Type 405 stainless steel support plates, which have broached quatrefoil holes, support the vertical section of the tubes, and anti-vibration bars support the U-bend section of the tubes.

The licensee provided the scope, extent, methods, and results of the SG tube inspections in the letters referenced above. In addition, SNC described corrective actions (e.g., tube plugging), if any were taken in response to the inspection findings. Based on the review of the information provided, the U.S. Nuclear Regulatory Commission (NRC) staff has the following observations:

- Two circumferential outside diameter stress corrosion cracking indications were reported in two tubes below the top of the tubesheet hot leg expansion transition (tube Row 7, Column 20 (R7C20) in SG # 1 (SG-1) and tube (tube Row 16, Column 61 (R16C61) in SG # 2 (SG-2). The maximum depths for these indications were 63 and 36 percent through-wall (TW). Both tubes were plugged and stabilized during Vogtle, Unit 1, RFO 22. No tubes exhibited degradation in excess of the condition monitoring limits and, therefore, no in situ pressure tests were required.
- The licensee clarified that a precursor signal for the new foreign object (FO) wear indication in tube R1C2 in SG-1 was present in the bobbin and +Point™ probe eddy current data since at least Vogtle, Unit 1, RFO 10 (spring 2002), and Vogtle, Unit 1, RFO 21 (fall 2018), respectively. The FO wear indication was measured at 11 percent through wall (TW) with +Point™ probe during Vogtle, Unit 1, RFO 22 and the tube was returned to service. SNC clarified that the FO that caused the wear appears to no longer be present, because no FO signals were detected in the affected tube or adjacent tubes with either bobbin or +Point™ probe; no wear was present on the adjacent tubes; and, based on historical review of the eddy current data, there has been little to no change in the FO wear indication.

Enclosure

Based on a review of the information provided, the NRC staff concludes that the licensee provided the information required by the Vogtle technical specifications. 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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SPRING 2020 STEAM GENERATOR TUBE INSPECTION REPORT
(EPID L-2020-LRO-0059) DATED MARCH 19, 2021

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