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

June 25, 2025

Mr. Steven M. Snider
Site Vice President, Oconee Nuclear Station
Duke Energy Carolinas, LLC
7800 Rochester Highway
Seneca, SC 29672-0752

SUBJECT: OCONEE NUCLEAR STATION, UNIT 1 - REVIEW OF THE FALL 2024 STEAM GENERATOR TUBE INSPECTION REPORT (O1R33) (EPID L-2025-LRO-0020)

Dear Mr. Snider:

By letter dated April 17, 2025, Duke Energy Carolinas, LLC (the licensee) submitted information summarizing the results of the fall 2024 steam generator inspections performed at Oconee Nuclear Station, Unit 1, during refueling outage 33 (O1R33).

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

If you have any questions, please contact me at 301-415-1009 or via e-mail at Shawn.Williams@nrc.gov.

Sincerely,

/RA/

Shawn A. Williams, Senior Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-269

Enclosure:
Review of Steam Generator Tube
Inspection Report

cc: Listserv

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OCONEE NUCLEAR STATION, UNIT 1

NRC STAFF REVIEW OF THE

FALL 2024 STEAM GENERATOR TUBE INSPECTION REPORT (O1R33)

DOCKET NO. 50-269

By letter dated April 17, 2025 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML25107A007), Duke Energy Carolinas, LLC (the licensee), submitted information summarizing the results of the fall 2024 steam generator (SG) inspections performed at Oconee Nuclear Station, Unit 1 (Oconee, Unit 1), during refueling outage 33 (O1R33).

Oconee, Unit 1, has two replacement once-through steam generators (OTSGs) designed and fabricated by Babcock and Wilcox International. Each OTSG has 15,631 thermally treated Alloy 690 tubes with a nominal outside diameter of 0.625 inches and a nominal wall thickness of 0.038 inches. The tubes were hydraulically expanded for 13 inches from the tube end into the 22-inch thick tubesheet. Tube support is provided by 15 stainless steel horizontal tube support plates (TSPs) with trefoil broached openings. Some of the openings in the 14th TSP are drilled holes.

The licensee provided the scope, extent, methods, and results of the SG tube inspections in the letter referenced above. In addition, the licensee described corrective actions (e.g., tube plugging) 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:

- The licensee increased the reporting threshold for wear at TSP broached holes from 8 percent to 10 percent through-wall (TW) in O1R33. This follows similar increases in the reporting threshold for wear at TSP broached holes from 5 to 8 percent TW in O1R31 and for wear at TSP drilled holes from 8 percent to 11 percent TW in O1R32. The increases eliminate the reporting of signals from tube noise or mix residual as opposed to true tube wear. For additional information see the NRC summary (ML21225A666) of the licensee's report for the O1R31 inspection.
- In the 1A SG, 14 tubes were plugged due to wear at TSP intersections. In the 1B SG, 12 tubes were plugged due to wear at TSP intersections and 10 tubes were plugged due to a loose part. The eddy current inspection detected no wear associated with the part and it could not be removed.

- Foreign object search and retrieval was performed in both SGs. There was one indication of presumed foreign object wear in one tube in the 1A SG, 16 percent TW, located at the top of the lower tubesheet. A foreign object in this location was removed from the SG. There were 19 metallic or potentially metallic foreign objects found in the two SGs. Eleven of the objects were removed and the remaining were evaluated for continued operation.

Based on a review of the information provided, the NRC staff concludes that the licensee provided the information required by their technical specifications. In addition, the staff concludes that there are no technical issues that warrant follow-up action currently, 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.

Principal Contributor: G. Makar, NRR

SUBJECT: OCONEE NUCLEAR STATION, UNIT 1 - REVIEW OF THE FALL 2024 STEAM GENERATOR TUBE INSPECTION REPORT (O1R33) (EPID L-2025-LRO-0020) DATED JUNE 25, 2025

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