



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

December 19, 2022

Mr. Bob Coffey  
Executive Vice President, Nuclear  
Division and Chief Nuclear Officer  
Florida Power & Light Company  
NextEra Energy Seabrook, LLC  
Mail Stop: EX/JB  
700 Universe Blvd.  
Juno Beach, FL 33408

SUBJECT: SEABROOK STATION, UNIT NO. 1 – REVIEW OF THE FALL 2021 STEAM  
GENERATOR TUBE INSPECTIONS (EPID L-2022-LRO-0051)

Dear Mr. Coffey:

By letter dated April 25, 2022, as supplemented by letter dated September 28, 2022 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML22115A158 and ML22272A531, respectively), NextEra Energy Seabrook, LLC (NextEra) submitted information summarizing the results of the fall 2021 steam generator inspections at Seabrook Station, Unit No. 1 (Seabrook). These inspections were performed during the 21st refueling outage.

The U.S. Nuclear Regulatory Commission (NRC) staff has completed its review of the information and determined that NextEra provided the information required by the Seabrook technical specifications. In addition, the NRC staff did not identify any technical issues that warrant followup action at this time. A summary of the NRC staff's review is enclosed.

If you have questions, you can contact me at 301-415-2048 and/or via e-mail at [Justin.Poole@nrc.gov](mailto:Justin.Poole@nrc.gov).

Sincerely,

/RA/

Justin C. Poole, Project Manager  
Plant Licensing Branch I  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-443

Enclosure:  
As stated

cc: Listserv

## REVIEW OF THE FALL 2021 STEAM GENERATOR TUBE INSPECTIONS

### NEXTERA ENERGY SEABROOK, LLC

#### SEABROOK STATION, UNIT NO. 1

#### DOCKET NO. 50-443

By letter dated April 25, 2022, as supplemented by letter dated September 28, 2022 (Agencywide Documents Access and Management System Accession (ADAMS) Nos. ML22115A158 and ML22272A531, respectively), NextEra Energy Seabrook, LLC (NextEra, the licensee) submitted information summarizing the results of the fall 2021 steam generator (SG) inspections at Seabrook Station, Unit No. 1 (Seabrook). These inspections were performed during the 21st refueling outage.

Seabrook has four Westinghouse Model F SGs, each of which 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. During SG fabrication, the tubes' ends were hydraulically expanded over the full depth of the tubesheet. Eight horizontal stainless steel structures support the vertical section of the tubes. The lowest support is a flow distribution baffle with drilled holes. The other seven are tube support plates with broached quatrefoil holes. Chrome-plated Alloy 600 anti-vibration bars support the U-bend section of the tubes. The first 10 rows of tubes received a thermal stress-relief treatment to improve the corrosion resistance of the bend region.

The licensee provided the scope, extent, methods, and results of its SG tube inspections. The licensee also described corrective actions, such as tube plugging, if any were taken in response to the inspection findings.

Based on the U.S. Nuclear Regulatory Commission (NRC) staff's review of the information submitted by the licensee, the NRC staff has the following observations/comments:

- The licensee plugged one tube (Row 8, Column 116) in SG B due to two indications of axial outside diameter stress corrosion cracking (ODSCC) within the quatrefoil opening of the uppermost tube support plate on the hot leg (08H). The cracks were detected with an array probe and sized with a rotating probe (+Point™) at 0.25 and 0.11 inch in length, and 38 and 46 percent through-wall. The tube was not in the population considered to have potentially high residual stress from manufacturing.
- The axial ODSCC in SG B occurred at quatrefoil openings with the highest level of deposit loading among the locations in all four SGs analyzed using eddy current imaging. The licensee is assessing deposit loading to determine appropriate cleaning methods to apply to the tube bundle during the 23<sup>rd</sup> refueling outage (fall 2024).
- The licensee plugged one tube (Row 25, Column 51) in SG C due to one indication of axial ODSCC in the sludge pile and expansion transition region at the top of the tubesheet on the hot leg. The crack was detected with an array probe and sized with a rotating probe (+Point™) at 0.27 inch in length and 82 percent through-wall. The tube was not in the population considered to have potentially high residual stress from manufacturing.

Enclosure

Based on a review of the information provided, the NRC staff concludes that the licensee provided the information required by the Seabrook technical specifications. In addition, the NRC staff concludes that there are no technical issues that warrant followup 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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GENERATOR TUBE INSPECTIONS (EPID L-2022-LRO-0051)  
DATED DECEMBER 19, 2022

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**ADAMS Accession No. ML22339A231**

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