



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

December 17, 2013

Mr. Kevin Walsh, Site Vice President
c/o Michael Ossing
Seabrook Station
NextEra Energy Seabrook, LLC
P.O. Box 300
Seabrook, NH 03874

SUBJECT: SEABROOK STATION, UNIT 1 – REVIEW OF THE 2012 STEAM GENERATOR
TUBE INSPECTIONS (TAC NO. MF0940)

Dear Mr. Walsh:

By letter dated December 31, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13008A160), as supplemented by letter dated September 13, 2013 (ADAMS Accession No. ML13261A149), NextEra Energy Seabrook, LLC (NextEra), submitted its 2012 Steam Generator (SG) Tube Inspections, performed during the 15th refueling outage at Seabrook Station, Unit 1 (Seabrook).

The U.S. Nuclear Regulatory Commission (NRC) staff has determined that NextEra provided the information required by their technical specifications. In addition, the NRC staff did not identify any technical issues that warrant follow up action at this time. Enclosed is the NRC staff evaluation of the Seabrook 2012 SG Tube Inspections. Technical Assignment Control (TAC) number MF0940 will be closed.

If you have questions, you can contact me at 301-415-3100 and/or John.Lamb@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "John G. Lamb".

John G. Lamb, Senior Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-443

Enclosure:
Review of 2012 SG Tube Inspections

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REVIEW OF THE 2012 STEAM GENERATOR TUBE INSPECTIONS

NEXTERA ENERGY SEABROOK, LLC.

SEABROOK STATION, UNIT 1

DOCKET NO. 50-443

By letter dated December 31, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13008A160), and supplemented by letter dated September 13, 2013 (ADAMS Accession No. ML13261A149), NextEra Energy Seabrook, LLC (NextEra or the licensee) submitted information summarizing the results of the 2012 steam generator (SG) tube inspections at Seabrook Station, Unit 1 (Seabrook). These inspections were performed during the 15th 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 tube ends were hydraulically expanded 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 their SG tube inspections in the documents referenced above. The licensee also described corrective actions in the form of tube plugging and tube stabilization taken in response to the inspection findings.

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

- Two tubes were identified with indications of cracking.
- A single indication of axial outside diameter stress-corrosion cracking (ODSCC) was observed in a pre-existing dent on the hot-leg side of one tube in SG "C." The dent was located near the bottom of the uppermost (8th) tube support plate.
- Three indications of axial ODSCC were detected in the freespan of a tube between the flow distribution baffle plate and the first tube support plate in SG "B." The three indications are not in the same axial plane and are not components of a single indication. The three indications were spread over a length of approximately 6 inches with significant ligaments between the three indications.
- Additional information concerning these flaws is contained in Information Notice 2013-11, "Crack-Like Indications at Dents/Dings and in the Freespan Region of Thermally Treated Alloy 600 Steam Generator Tubes."
- At least one crack has been detected near the top of the tubesheet in a past outage at Seabrook. During the 2012 inspections, 50 percent of the tubes were inspected at

Enclosure

the top of the tubesheet with a probe capable of reliably finding cracks in this region. The NRC staff notes that when a very limited number of cracks are present in a SG, a sampling approach may have limitations.

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 NRC staff concludes that there are no technical issues that warrant 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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/ra/

John G. Lamb, Senior Project Manager
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ADAMS Accession No.: ML13295A252

*via email **via memo

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