

From: [Poole, Justin](#)
To: [Levander, Matthew](#)
Cc: [Mack, Jarrett](#); [Gonzalez, Hipo](#)
Subject: Request for Additional Information RE: Steam Generator Tube Inspection Report Review
Date: Monday, August 15, 2022 4:09:00 PM
Attachments: [L-2022-LRO-0051 RAI.pdf](#)

Matt,

By letter dated April 25, 2022, (ADAMS Accession No. ML22115A158) NextEra Energy Seabrook, LLC (NextEra, the licensee) submitted information summarizing the results of the fall 2021 steam generator (SG) tube inspections performed at Seabrook Station, Unit No. 1 (Seabrook) during refueling outage 21. In reviewing the submitted information, the U.S. Nuclear Regulatory Commission (NRC) staff has determined that additional information is necessary to complete its review.

On August 2, 2022, the NRC staff sent the licensee DRAFT RAIs to ensure that the questions are understandable, the regulatory basis is clear, there is no proprietary information contained in the RAIs, and to determine if the information was previously docketed. On August 11, 2022, the NRC and the licensee held a clarification call. During the call, it was decided that wording to question 1.a and 4 be modified to provide additional clarification into the staff's request. Also during the call, the licensee requested a response date of 45 days from the date of this email. The NRC staff informed the licensee that this timeframe is acceptable. The attached is the final version of the RAIs. These RAIs will be put in ADAMS as a publicly available document.

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REQUEST FOR ADDITIONAL INFORMATION

FALL 2021 STEAM GENERATOR TUBE INSPECTION REPORT

SEABROOK STATION, UNIT. NO 1

DOCKET NO. 50-443

By letter dated April 25, 2022 (Agencywide Documents Access and Management Systems Accession No. ML22115A158), NextEra Energy Seabrook LLC (the licensee) submitted information summarizing the results of the fall 2021 steam generator (SG) tube inspections performed at Seabrook Station, Unit No. 1 (Seabrook) during refueling outage 21.

All pressurized water reactors have Technical Specifications (TS) according to Section 50.36 of Title 10 of the *Code of Federal Regulations* that include a SG Program with specific criteria for the structural and leakage integrity, repair, and inspection of SG tubes. Seabrook TS 6.8.1.7 requires that a report be submitted within 180 days after the initial entry into hot shutdown following SG inspections performed in accordance with TS 6.7.6.k, which requires that an SG Program be established and implemented to ensure SG tube integrity is maintained.

To complete its evaluation of the inspection report, the U.S. Nuclear Regulatory Commission staff requests the following information:

1. Please provide the following information about the SG tube support plate (TSP) deposits and the two indications of axial outside diameter stress corrosion cracking (ODSCC) reported in SG-B, Row 8, Column 116, on the hot leg at the uppermost tube support plate (TSP O8H):
 - a. The expected chemical composition of the deposits and a qualitative or approximate effect on tube temperature.
 - b. The extent of the deposition in each SG, estimated extent of TSP flow-hole blockage, and plans for deposit removal.
 - c. A description of how the presence of the deposits is being incorporated into the operational assessment (OA), degradation assessment (DA), and future inspection plans.
 - d. With respect to the DA, are the tubes in all four steam generators considered susceptible to cracking due to TSP deposits?
2. Appendix B of the report describes condition monitoring for the axial ODSCC indication at the expansion transition in SG-C.
 - a. Please describe the calculations that produced a “lowest 95/50” predicted burst pressure of 4,555 pounds per square inch (psi) and “calculated burst pressure value for the OR21 [refueling outage 21] ODSCC indication” of 6,962 pounds per square inch. For example, does one calculation refer to the as-found indication and another to an OA projection?

ENCLOSURE

- b. If the 95/50 burst pressure for this indication is lower than the OA predictions, discuss whether any adjustments to the OA model are needed.
3. Table 3c of the report lists newly reported TSP wear indications, including four indications sized at 24 to 30 percent through-wall. The report also states that the indications were identified in lookbacks at previous inspection data and have not grown over several cycles. A previous response on this topic (ML21140A307) stated that the residual eddy current signal from the TSP makes it difficult to detect low-level wear. Discuss what factors (e.g., deposits) have been assessed as potential causes of residual signals that affect detection at TSPs.
4. Section D of the report, in the section on volumetric wear indications at or above the top of tubesheet, lists the areas at which wear indications are considered to originate from foreign objects (FOs). Comparison with the previous (spring 2020) inspection report show the wear source was changed for some indications in the 2021 inspection. For example, an indication in SG-A, Row 11, Column 76, was changed from a new FO wear indication in 2020 to a TSP wear indication in 2021, and an indication in SG-D, Row 5, Column 100, was changed from a TSP wear indication in 2020 to an FO wear indication in 2021. Section D of the 2021 report also states there were no newly reported FO volumetric indications. Please discuss the criteria for judging whether an indication is wear from structures or loose parts, and discuss how these criteria were applied to the examples noted above.