

John Klos

From: John Klos
Sent: Tuesday, January 17, 2023 3:47 PM
To: Sigmon, Chet Austin
Cc: Treadway, Ryan I; John Klos
Subject: Formal Issuance RAIs for McGuire Unit 1 SG Tube Inspection Report

Importance: High

Chet,

By letter dated October 25, 2022 (ML22298A071), Duke Energy Carolinas, LLC (the licensee), submitted information summarizing the results of the spring 2022 steam generator (SG) tube inspections performed at McGuire Nuclear Station, Unit 1 (McGuire Unit 1) during refueling outage 28 (M1R28).

Technical Specification (TS) Section 5.6.8 requires that a report be submitted within 180 days after the initial entry into hot shutdown (MODE 4) following completion of an inspection of the SGs performed in accordance with TS Section 5.5.9, which requires that a SG Program be established and implemented to ensure SG tube integrity is maintained.

To complete its review of the inspection, the U.S. Nuclear Regulatory Commission (NRC) staff requests the following additional information.

These RAIs are now formally released today for a 30-day calendar response time; thereby, they are due on Friday February 17, 2023.

1. Twenty-three foreign object (FO) wear indications were reported during M1R28 (spring 2022) with the largest reported as 23 percent through wall (TW). All FO wear indications were reported to be historical and showing no growth. The NRC staff notes that 22 FO wear indications were reported during M1R25 (fall 2017, ML18023A160) with the largest reported as 20 percent TW. Therefore, the staff is unclear on the total number of FO wear indications in the McGuire Unit 1 SGs.

The attachment to the spring 2022 (M1R28) SG tube inspection report includes a list of indications greater than or equal to 20 percent TW for each SG. It is unclear whether the 23 percent TW FO wear indication is included in the list of indications greater than or equal to 20 percent TW for each SG.

TS Section 5.6.8.c.2 requires reporting the location, orientation (if linear), measured size (if available), and voltage response of all service-induced indications that are detected during the inspection. TS Section 5.6.8.c.2 states that only the total number of indications needs to be reported for tube wear at support structures less than 20 percent TW. The staff notes that tube wear at support structures refers to tube wear due to tube contact with support structures, not tube wear due to a FO that happens to be in close proximity to a

support structure. Whether the service-induced indications are historical or not, and/or growing or not, have no bearing on whether indications need to be reported.

To better understand how many indications are in each SG, where the indications are in each SG, and whether the indications are changing between SG inspections, the staff requests the information required by TS Section 5.6.8.c.2 for all indications in each SG that are not related to support structures.

2. The spring 2022 (M1R28) SG tube inspection report stated that a visual inspection of only the 1A SG steam drum was performed during M1R28 and that the last time the separators were inspected was at the end of cycle 25 (M1R25, fall 2017). The staff noted that the fall 2017 (M1R25) SG tube inspection report did not state whether only the 1A SG steam drum was visually inspected or whether the steam drums of other SGs were also inspected. The staff notes that the steam drums of the 1A and 1D SGs were inspected during M1R22 (spring 2013, ML13205A169) and only the 1A SG was inspected during M1R19 (fall 2008, ML101820231). The staff understands from an August 8, 2013 (ML13240A094), conference call summary that SG A is considered the leading SG in both McGuire Units 1 and 2 for inspection of the secondary separators; however, the basis for the selection of SG A is not clear and the staff notes that SG D has also been inspected.

The staff understands from an October 27, 2021 (ML2129A150), conference call summary that the original equipment manufacturer recommended additional steam drum inspections for refueling outage 27 at McGuire Unit 2 and, as a result, flow-accelerated corrosion of stiffener plates in primary separator curved arms was identified for the first time (ML22088A236).

To better understand the McGuire Unit 1 steam drum inspections, please provide:

- a. Which SG steam drums were inspected during M1R25.
- b. Whether the selection of the SG A steam drum as the leading SG has been or will be verified by inspection of the other SG steam drums.
- c. Are there any plans to perform the additional inspections as were performed at McGuire Unit 2?

Thanks in advance,

John Klos
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