Brent Ballard

From: Brent Ballard
Sent: Wednesday, November 19, 2025 8:28 AM
To: Moore, Dennis M: (Constellation Nuclear)
Cc: Justin Poole; Ilka Berrios
Subject: Christopher M. Crane Clean Energy Center - Final RAI for SG Tube Inspection Report (EPID L-2024-LRO-0064)
Attachments: RAI-10545-R1-FINAL.pdf

Good morning, Dennis,

On September 20, 2024, Constellation Energy Generation, LLC (CEG) announced their intent to restore the Christopher M. Crane Clean Energy Center (CCEC), formerly Three Mile Island Nuclear Station, Unit 1, to commercial power operation. In anticipation of the restart announcement, CEG completed an examination of the steam generator (SG) tubing in Spring 2024. This was the first examination of the steam generator tubing since the plant shutdown in September 2019, at the end of Cycle 22.

The NRC staff has determined that additional information is needed to complete its review. Attached is NRC staff's request for additional information (RAI).

Clarification calls were held April 21, 2025, and November 12, 2025, with CEG. Following the call on November 12, 2025, changes were made to Question 2 for clarity. The revised draft RAIs were provided for review prior to this issuance as final. As discussed during the clarification call on November 12, 2025, the NRC staff is requesting a response to the RAI within 30 days of the date of this email, which is December 19, 2025. Please let me know if you have any questions.

Thank you,
Brent

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301-415-0680

REQUEST FOR ADDITIONAL INFORMATION
BY THE OFFICE OF NUCLEAR REACTOR REGULATION
TMI-1/CRANE (CYCLE 22) STEAM GENERATOR INSPECTION REPORT
CONSTELLATION ENERGY GENERATION, LLC
CHRISTOPHER M. CRANE CLEAN ENERGY CENTER
DOCKET NO. 05000289
ISSUE DATE: 11/18/2025

Background

On September 20, 2024, Constellation Energy Generation, LLC (CEG) announced their intent to restore Three Mile Island Nuclear Station, Unit 1 (TMI-1) to commercial power operation. In anticipation of the restart announcement, CEG completed an examination of the TMI-1 steam generator (SG) tubing in Spring 2024. This was the first examination of the steam generator tubing since the plant shutdown in September 2019, at the end of Cycle 2.On May 13, 2025, the Nuclear Regulatory Commission (NRC) issued Amendment No. 306 (ML25100A006) changing the name of the facility to the Christopher M. Crane Clean Energy Center.

Regulatory Basis

All pressurized water reactors have Technical Specifications (TS) according to § 50.36 of Title 10 of the *Code of Federal Regulations* (10 CFR) that include a SG Program with specific criteria for the structural and leakage integrity, repair, and inspection of SG tubes. The TMI-1 TS Section 6.9.6, in effect at the time of shutdown, required that a report be submitted within 180 days after the reactor coolant temperature exceeds 200 F, following completion of an inspection of the SGs. In addition, the TS in effect at the time of shutdown required that a SG Program be established and implemented to ensure SG tube integrity is maintained.

Question 1

Submit a copy of the final steam generator Condition Monitoring and Operational Assessment (CMOA) document from the May 2024 steam generator (SG) tube inspection. If a final CMOA is not available, please provide a copy of the preliminary CMOA and discuss when the final CMOA will be available.

Question 2

Based on the inspection report, secondary side visual inspections were focused on the top of tubesheet region. Please discuss whether or not there is a potential for high humidity inside the steam generators during the extended shutdown period to have resulted in formation of oxides (i.e. corrosion of the alloy steel) on the secondary side that could:

a) Cause the tube support plate (TSP)-to-shroud locking issue in SG B to become more severe, resulting in greater tube wear than has been experienced in previous outages.

b) Cause an issue with TSP-to-shroud locking in SG A that has not previously been observed.

Question 3

During the most recent operating cycle, two wear indications at broached tube supports in SG B grew from non-detectable to greater than 40 percent through-wall in one cycle. The deepest indication, sized as 47 percent through-wall, has a distinctly tapered wear shape. Discuss if

other deep wear scar that exhibited high growth from the previous inspection had flat wear or tapered wear. In addition, discuss how these higher growth indications are considered in the operational assessment for wear at broached support plates.

Question 4

Were any deleterious species detected in the secondary side water/sludge samples taken from the steam generator during the extended shutdown? If so, please discuss any actions that are being taken to monitor or mitigate any effects on SG tube degradation. In addition, please discuss the primary side environment the steam generator tubes were exposed to the extended shutdown and if any adverse conditions (e.g., impurities, low pH) were detected that could affect the steam generator tubes.