



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

February 16, 2021

U.S. Nuclear Regulatory Commission Public Meeting Summary

Title: Meeting with the Industry Steam Generator Task Force

Meeting Identifier: 20210037

Date of Meeting: January 26, 2021

Location: Webinar

Type of Meeting: Category 2

Purpose of the Meeting: The purpose of this meeting was for the U.S. Nuclear Regulatory Commission (NRC) staff to discuss steam generator (SG) issues with the industry Steam Generator Task Force (SGTF).

General Details: The industry SGTF met with NRC staff on January 26, 2021, by Webinar. The purpose of the meeting was to discuss a variety of SG issues. The meeting consisted of open and closed portions during which public and proprietary information was discussed, respectively. The public industry slides are available in the Agencywide Documents Access and Management System (ADAMS) under Package Accession No. ML21025A072. This meeting was noticed as a public meeting and the agenda is available in ADAMS under Accession No. ML21015A002.

LISTING OF ATTENDEES
U.S. NRC MEETING WITH THE INDUSTRY STEAM GENERATOR TASK FORCE

January 26, 2021

Participant	Affiliation	Participant	Affiliation
Bill Cullen	EPRI	Mo Uddin	Engineering Mech Corp.
Brent Capell	EPRI	Patrick Fabian	PSEG Nuclear
Brian Mann	EXCEL Services Corp.	Phil Rush	MPR
Brian Thomas	PSEG Nuclear	Rich Guill	EPRI
Craig Kelley	Framatome	Russell Cipolla	Intertek
Damian Testa	Westinghouse	Russ Wells	TVA
Daniel Folsom	TVA	Scott Redner	Xcel Energy, Inc.
Dan Mayes	Duke Energy	Sean Kil	EPRI
Fred Madden	Certrec	Steve Brown	Entergy
Gary Alberti	Energy Harbor	Tim Thulien	Duke Energy
Helen Cothron	EPRI	Thomas Bipes	Zetec
James Skirpan	Westinghouse	Al Butcavage	NRC
Jana Bergman	Curtiss-Wright	Allen Hiser	NRC
Jay Smith	Westinghouse	Andrew Johnson	NRC
Jeff Lanum	Entergy	Brendan Collins	NCC
Jeff Raschiatore	Westinghouse	Elise Burket	NRC
Jeremy Mayo	TVA	Greg Makar	NRC
Jesse Baron	TVA	Jennifer Tobin	NRC
James Benson	EPRI	John Bozga	NRC
John Arhar	PG&E	Leslie Terry	NRC
Kent Colgan	Framatome	Mat Burton	NRC
Kester Thompson	FPL	Patrick Purtscher	NRC
Lee Friant	Exelon Nuclear	Paul Klein	NRC
Michael Stark	Dominion Energy	Steven Bloom	NRC

Summary of Presentations: During the meeting, industry representatives discussed and made presentations on their draft template for reporting SG inspection results to the NRC as required by the technical specifications (TS), loose parts strategy, enhanced probe inspections, and the status of high stress tube re-analysis. A summary of the information exchanged during the meeting is discussed below.

TS Reporting Requirements Template

- The industry discussed the contents of their draft TS reporting requirements template and highlighted changes since it was last discussed with the NRC staff.
- With regards to reporting the design and operating parameters, the NRC staff noted that it would be helpful for plants to identify if there is a loose parts strainer in the feed water system.
- The NRC staff noted that if an indication was not in-situ pressure tested but further analyses were performed (e.g., flaw profiling) to demonstrate that the tube met the structural and leakage performance criteria, then a description of the further analyses performed should be included as part of the of the description of the condition monitoring assessment and results.
- With regards to reporting a summary of the forward-looking tube integrity assessment, the NRC staff noted that it would be helpful to include a discussion of how the growth rates for each degradation mechanism were determined.
- The NRC staff stated that whenever statements are made about primary- or secondary-side inspections being performed, the statement should include the scope of the inspections and the inspection results (e.g., no degradation detected).
- The NRC staff shared an example of a deposit loading table received as part of a license amendment request. The staff noted that a similar table being submitted as part of the SG tube inspection report would help the staff understand the extent of deposit loading at a given plant.

Industry Plans for Loose Parts Strategy

- Both the NRC staff and Industry SGTF agree that longer inspection intervals may increase SG tube susceptibility to loose parts damage.
- The Industry SGTF described their approach for an industry loose parts strategy and discussed requirements related to loose parts that are currently in the Electric Power and Research Institute (EPRI) SG Integrity Assessment Guidelines. Additional requirements will be included in the EPRI SG Integrity Assessment Guidelines.
- The Industry SGTF is considering a graded approach based on SG design and operating experience. In addition, plants would assess their current loose parts management

activities. The Industry SGTF noted that the additional requirements may only be required by plants that are operating for longer periods.

- The NRC staff stated that they are aligned with the direction of the Industry SGTF; however, even plants that are not running longer can benefit from best practices.

Enhanced Probe Inspections

- During the January 7, 2021, meeting, the NRC staff presented its position on Technical Specification Task Force (TSTF) submitted TSTF-577, Revision 0, "Revised Frequencies for Steam Generator Tube Inspections," (ADAMS Accession No. ML21012A322). The Industry SGTF asked for clarification of the staff's Conditional 72 EFPM for Alloy 600TT SG tubing and further explanation of "no cracking history". The NRC staff stated that all requirements contained in the Conditional 72 EFPM must be met and that the statements listed should be read with an "AND" (NOT an "OR"). The staff clarified that "no cracking history" means that there have been no cracks detected throughout the entire inspection history (with the exception of the portion of the tube below the H* distance in the tubesheet according to the H* alternate repair criteria).
- The Industry SGTF stated that TS wording about eddy current probe technology requirements needs to be open and not specific to probe type. The NRC staff commented that the wording related to use of enhanced probes is intended to give plants flexibility and indicate that for SGs with A600TT tubes, the staff considers inspections performed primarily with bobbin probes insufficient extending the inspection interval to 72 EFPM.

High Stress Tube Rescreening Status

- During the October 28, 2020, meeting, Westinghouse informed NRC staff that a high stress tube was not identified in the original screening for long row tubes in 2004 for one plant, Plant D2 (ADAMS Package Accession No. ML20300A215).
- Westinghouse stated that the high stress tube was not identified due to a miscommunication regarding the "LAR" code definition between Engineering and the Data Analyst.
- Westinghouse is performing Extent of Condition (EOC) reviews; rescreening all eight of the plants for which they performed long row high stress tube eddy current screening.
 - 2 out of 8 EOC reviews are In-Progress
 - 4 out of 8 EOC reviews are Complete (Pending Review / Verification)
 - 2 out of 8 EOC reviews are Complete (Results Final)

Completed (Results Final) EOC Reviews identified 14 in-service tubes to be added to the high stress tube list for Plant D2. All 14 tubes were associated with the "LAR" code.

Open Discussion

- During the open discussion portion of the meeting, the Industry SGTF voiced concerns regarding the timeline of TSTF-577 issuance and asked about the potential to coordinate TSTF-577 issuance with plant outages planned for fall 2021. The NRC staff discussed the need to coordinate the timeline internally but clarified that completion dates will be contingent upon submittal of the final version of TSTF-577 for NRC review. The TSTF approximated that the circulation of the final version to EPRI and throughout the Industry – prerequisite to final submittal to NRC -- could be completed before the end of February 2021 (approximately 3 weeks).
- The Industry SGTF answered an inquiry regarding typical design and locations of loose parts strainers. Locations include, but are not limited to:
 - Feeding with Perforated Spray Cans to Distribute Feed Water (On Newer SG Design with Thermally Treated Alloy 690)
 - Internal SG Screens
 - Pre-Heater Design, Small Holes in the Heater Box before the SG Bulk Flow
 - Feedwater Pump Inlet Strainers
 - Flexitallic Gaskets with Internal Retaining Rings

Closed Discussion

- The final portion of the meeting was closed due to proprietary information related to EPRI SG guideline revisions, AP1000, and in-progress high stress tube screening extent of condition reviews.

If you have any questions regarding this meeting summary, please feel free to contact me by phone at 301-415-1167, or by email at Leslie.Terry@nrc.gov.

Attachments:

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| 1. Meeting Notice: | ML21015A002 |
| 2. Industry Slides: | ML21025A074 |
| 3. Package: | ML21025A072 |