



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

March 13, 2019

U.S. Nuclear Regulatory Commission Public Meeting Summary

Title: Steam Generator Task Force Meeting

Meeting Identifier: 20190044

Date of Meeting: February 13, 2019

Location: 3WFN-01C03, 3WFN-01C05

Type of Meeting: Category 2

Purpose of the Meeting: The purpose of this meeting is for the NRC staff to discuss steam generator issues with the industry.

General Details: The industry's Steam Generator Task Force (SGTF) met with U.S. Nuclear Regulatory Commission (NRC) staff on February 13, 2019, at the NRC Headquarters in Rockville, MD. The purpose of the meeting was to discuss a variety of steam generator (SG) issues. The topics are shown in the industry slides, which are available in the Agencywide Documents Access and Management System (ADAMS) under Accession No. ML19044A408. This meeting was noticed as a public meeting and the agenda is available in ADAMS under Accession No. ML19023A439.

**LISTING OF ATTENDEES
STEAM GENERATOR TASK FORCE MEETING
February 13, 2019**

PARTICIPANTS

Steve Fluit
Jana Bergman
Michael Stark
Marc Kreider
Giancarlo Lenci
Daniel Mayes
Jeff Lanum
James Benson
Helen Cothron
Brian Mann
Lee Friant
Kent Colgan
Greg Kammerdeiner
William Cullen
Kester Thompson
Jeremy Mayo
Jesse Baron
Brad Carpenter
Jeff Raschiatore
Scott Redner

Steven Bloom
Alan Huynh
Andrew Johnson
Paul Klein
Greg Makar
Ray McKinley
Seung Min
Pat Purtscher
Leslie Terry

Phone Participants

Fred Madden
Brent Capell
Sean Kil
Jason Christensen
Kylie Lupold
Lawrence Winker
John Arhar

AFFILIATIONS

BWXT
Curtiss-Wright
Dominion Energy
Dominion Engineering
Dominion Engineering
Duke Energy
Energy
EPRI
EPRI
Excel/TSTF
Exelon
Framatome
FENOC
Intertek
NextEra
TVA
Westinghouse
Westinghouse
Westinghouse
Xcel Energy

NRC
NRC
NRC
NRC
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Certrec
EPRI
EPRI
NRC
PA Department of Environmental Protection
PA Department of Environmental Protection
PG&E

Summary of Presentations: During the meeting, industry representatives made presentations which addressed topics described in the meeting notice. At various points in the meeting, there were additional discussions about agenda topics. A summary of the information exchanged during the meeting is discussed below. Unless noted otherwise, the information below was stated by industry representatives.

- All testing for the in-plane (IP) fluid elastic instability (FEI) project is complete. The results of testing have been compiled and presented to the expert panel as well as at world-wide research conferences. World-wide research has concluded that preload (or tube-to-support contact interaction) is the most important parameter regarding the onset of IP FEI and new designs will need to account for this. The Steam Generator Management Project (SGMP) Expert Panel is attempting to develop a simplified practical approach to demonstrate that IP FEI is not a concern for operating steam generators. This approach will be shared with the NRC staff.
- Between 2012 and 2016, the SGMP funded work evaluating the potential for U-bend tube vibration induced fatigue due to improper anti-vibration bar insertion depth. Fatigue analyses have been performed at 15 of the 17 affected plants and the 2 remaining plants have plans to perform these analyses in the near future.
- Industry representatives proposed developing a new Technical Specification Task Force Traveler to revise prescriptive SG inspection frequencies. Currently, the Standard Technical Specifications limit the maximum interval between inspections based on the tube material (e.g., up to three refueling outages or 72 effective full power months for Alloy 690 thermally treated (TT) tubes). The industry is proposing to use the operational assessment performed at each plant, following a refueling outage, to determine the operating interval until the next inspection. The industry representatives provided examples for SGs with Alloy 600TT and Alloy 690TT tubing in which the current prescriptive inspection requirements were viewed as overly conservative, when compared with the results of operational assessments. An industry representative also presented partial examples of proposed wording for the new Technical Specifications. The industry indicated interest in discussing the proposed new Technical Specifications with NRC staff over the next several months in order to determine specific wording and requirements. The NRC staff stated that they would review the industry proposal and provide feedback during future public meetings.
- The NRC staff inquired whether a previous SG chemistry excursion has ever required an operational assessment to be modified. Representatives from the industry were not aware of such an instance.
- An Electric Power Research Institute (EPRI) representative provided summaries of recently issued SGMP technical reports. In response to an NRC staff question, the EPRI representative stated that the intention in developing algorithms for assigning confidence measures to the classification results from automated eddy current SG data analysis systems is to share these algorithms with utilities and vendors to be validated and potentially incorporated into their software products. The desired outcome is to enable lead analysts to be focused on indications that may require more attention.
- Another EPRI report evaluated an inhibitor for the initiation of lead induced stress corrosion cracking in Alloy 690TT and Alloy 800 tubing. An EPRI representative stated

that while the results seem to indicate that the inhibitor could be effective, further work needs to be done to make more definitive findings.

- An industry representative provided an update regarding Nuclear Safety Advisory Letter (NSAL) 05-02, Revision 1. Some unreinforced secondary side closures (2.5 inches or less in diameter) use stress analyses that may be non-compliant with American Society of Mechanical Engineers (ASME) Code requirements. The original evaluation utilizes a plastic stress analysis which may not be acceptable for closure bearing stress conditions. The industry's initial conclusion is that this is not a safety issue. There are two potential paths of resolution listed in NSAL 05-02. The first is to submit a request for relief from the ASME Code requirement. The second potential path is to modify or replace the components. Affected units will enter this condition into their corrective action programs.
- The NRC staff provided an overview of areas of interest for a visit to the EPRI NDE Center in Charlotte, NC. The staff's objectives for a visit would include gaining a greater understanding of the tube inspection qualification process and site-specific adoption of EPRI-qualified techniques, discussing current EPRI SG-related projects, and providing feedback on select EPRI guidelines.

Attachments:

- Meeting Notice - ADAMS Accession No. ML19023A439
- Industry Slides - ADAMS Accession No. ML19044A408
- NRC Slides - ADAMS Accession No. ML19045A453
- Package - ADAMS Accession No. ML19044A416

SUBJECT: SUMMARY OF THE FEBRUARY 13, 2019 CATEGORY 2 PUBLIC MEETING WITH THE STEAM GENERATOR TASK FORCE TO DISCUSS STEAM GENERATOR ISSUES DATED March 13, 2019.

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Package: ML19044A416

Meeting Summary: ML19046A164

Meeting Notice: ML19023A439

Industry Slides: ML19044A408

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