

March 29, 2021

To: Steve Bloom, Branch Chief  
Corrosion and Steam Generator Branch  
Division of New and Renewed Licenses  
Office of Nuclear Reactor Regulation

Subject: Results of Westinghouse High Stress Tube Screening Extent of Condition Review

Reference: Nuclear Regulatory Commission Letter dated December 15, 2020, "Audit Summary for the Regulatory Audit of Electric Power Research Institute for Steam Generator Task Force Information Related to Technical Specification Task Force-577, "Revised Frequencies for Steam Generator Tube Inspections (EPID L-2020-PMP-005)," ADAMS Accession No, ML20345A008.

During the referenced audit, a review of eddy current data was conducted for Alloy 600TT steam generator tubing including review of potentially high residual stress tubes (-2 sigma tubes). Westinghouse identified one tube that should have been considered a -2 sigma tube, but was mis-characterized in the initial screening. They entered this issue in their corrective action program.

The purpose of this letter is to transmit to the NRC the results of the Westinghouse corrective action report extent of condition review. See the attached letter from Westinghouse to Helen Cothron, SGMP Program Manager.

If you have further questions, please contact me at sbrown7@entergy.com, 601-951-6085, or Helen Cothron at hcothron@epri.com, 865-773-4033.

Sincerely,



Steven G. Brown, PE  
Engineering Supervisor, Entergy Services LLC  
Chairman, Steam Generator Task Force  
EPRI Steam Generator Management Program

RT

Attachment

Together . . . Shaping the Future of Electricity

**CHARLOTTE OFFICE**

1300 West W.T. Harris Boulevard, Charlotte, NC 28262-8550 USA • 704.595.2000 • Fax 704.595.2860  
Customer Service 800.313.3774 • www.epri.com



To: Helen Cothron  
SGMP Project Manager  
Electric Power Research Institute

Date: March 18, 2021

cc: Damian Testa  
Michael Bradley

From: Jay R. Smith  
Ext: 724-722-5524

Your ref:  
Our ref: LTR-CDMP-21-23, Revision 0

Subject: **Results of Westinghouse High Stress Tube Screening Extent of Condition Review**

- References:
1. Nuclear Regulatory Commission Letter dated December 15, 2020, "Audit Summary for the Regulatory Audit of Electric Power Research Institute for Steam Generator Task Force Information Related to Technical Specification Task Force-577, "Revised Frequencies for Steam Generator Tube Inspections (EPID L-2020-PMP-005)," ADAMS Accession No, ML20345A008.
  2. EPRI Letter dated September 14, 2004, "SGMP Information Letter on Example Methodology for Screening of Alloy 600TT Tubing for the Seabrook Elevated Residual Stress Issue."
  3. Westinghouse Corrective Action Program Issue Report, IR-2020-10601, Revision 0, "Missed Tube from Screening of Catawba Unit 2 High Stress Steam Generator Tubes," September 2020.

Dear Ms. Cothron,

The Nuclear Regulatory Commission (NRC) conducted an audit of the technical basis documents supporting the TSTF-577 License Amendment Request for thermally treated Alloy 600 (A600TT) steam generator tubing. This audit was conducted in August through September of 2020 (Reference 1). The purpose of the audit was for the NRC Staff to: 1) gain a better understanding of information to evaluate the technical basis supporting the inspection interval extension proposed for Alloy A600TT tubing, and 2) identify information that will require docketing to support the basis of the regulatory decision.

During the conduct of this audit, Westinghouse Electric Company (WEC) identified a legacy error in the identification of a SG tube potentially containing higher residual stress at one plant (Plant D2). The affected tube had developed axial outer diameter stress corrosion cracking in 2009. The original screening for high residual stress long row tubes was performed by WEC in 2004 and had not identified this tube as potentially containing higher residual stress (i.e., minus 2-sigma tube). The condition was entered into the WEC Corrective Action Program (Reference 3) where it was determined that an extent of condition review was necessary for all eight plants where WEC had performed the original long row high stress tube screening per Reference 2. This discovery was communicated to the NRC Staff during the TSTF-577 Audit. The

### Westinghouse Non-Proprietary Class 3

NRC Staff noted in the Audit summary report (Reference 1) and in the Audit exit meeting that the Staff expressed interest in the CAP corrective actions and requested to be apprised of extent of condition evaluations arising from the CAP actions. All actions from the WEC CAP have been completed and the results are presented below.

Table 1 lists the eight plants where the extent of condition review was completed. The extent of condition review identified two plants where tubes were identified as susceptible tubes that were not originally identified as susceptible tubes (minus 2-sigma tubes) in the original screening. These tubes are considered as “newly identified” susceptible tubes potentially containing higher residual stress. The two affected plants were Plant D2 and Plant R2. For Plant D2, sixteen newly identified susceptible tubes were found; all were previously identified with the Lead Analyst Review (LAR) analysis code from the original screening. For Plant R2, one additional newly identified susceptible tube was found. This affected tube was not identified with the LAR code from the original screening. Each of these two plants have been notified via a projects letter of the results of these extents of condition review results, as well as the safety significance of this issue. The extent of condition review for the remaining six plants did not identify any new susceptible tubes that were not previously identified as minus 2-sigma tubes from the original screening.

Should you have any questions regarding this matter, please contact Jay Smith at (724)-722-5524 or by email at [smith3jr@westinghouse.com](mailto:smith3jr@westinghouse.com).

Author: Electronically Approved \*  
Jay R. Smith\*  
OSG/RSG Engineering & Chemistry

Reviewer: Electronically Approved  
James R. Skirpan  
Eddy Current Level III, QDA

Approved: Electronically Approved \*  
Michael E. Bradley, Manager\*  
Component Design & Management Programs

/Attachment

*\* Electronically Approved Records are Authenticated in the Electronic Document Management System*

**Table 1.**  
**WEC High Stress Tube Screening Extent of Condition for Long Row Tubes Re-Analysis Results**

<b>Plant</b>	<b>SG Model</b>	<b>Number of Minus 2-Sigma Tubes from Original Screening</b>	<b>Number of LAR Tubes from Original Screening</b>	<b>Number of New High Stress Tubes from Extent of Condition Screening</b>
Plant B	44F	42	0	0
Plant E1	44F	98	0	0
Plant A2	D5	74	4	0
Plant D2	D5	61	36	16
Plant P2	D5	65	44	0
Plant R2	D5	40	0	1
Plant C	F	59	0	0
Plant S	F	67	0	0

\*\*This page was added to the quality record by the PRIME system upon its validation and shall not be considered in the page numbering of this document.\*\*

## Approval Information

Author Approval Smith Jay R Mar-18-2021 08:20:11

Reviewer Approval Skirpan James R Mar-18-2021 11:45:03

Manager Approval Bradley Michael E Mar-18-2021 14:58:44

Files approved on Mar-18-2021

\*\*\* This record was final approved on 3/18/2021 2:58:44 PM. (This statement was added by the PRIME system upon its validation)