



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

January 27, 2017

Mr. G. T. Powell  
Executive Vice President and CNO  
STP Nuclear Operating Company  
South Texas Project  
P.O. Box 289  
Wadsworth, TX 77483

**SUBJECT: SOUTH TEXAS PROJECT, UNIT 1 - REVIEW OF THE FALL 2015 STEAM  
GENERATOR TUBE INSERVICE INSPECTION REPORT FOR REFUELING  
OUTAGE 19 (CAC NO. MF7616)**

Dear Mr. Powell:

By letter dated April 25, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16125A248), STP Nuclear Operating Company (STPNOC) submitted information summarizing the results of the fall 2015 steam generator tube inspections performed at South Texas Project (STP), Unit 1, during refueling outage 19.

On November 9 and December 30, 2015, the U.S. Nuclear Regulatory Commission (NRC) and representatives of STPNOC participated in conference calls to discuss the steam generator tube inspection activities. The summary of the conference calls is provided in a letter dated January 14, 2016 (ADAMS Accession No. ML16013A066).

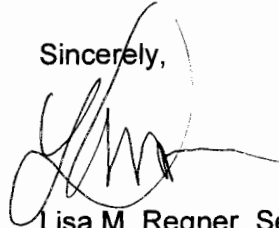
The NRC staff has completed its review of the submittal and concludes that the licensee provided the information required by the STP, Unit 1, technical specifications. No additional followup is required at this time. The results of the NRC staff's review and observations are enclosed.

G. Powell

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If you have any questions, please contact me at 301 415-1906 or via e-mail at [Lisa.Regner@nrc.gov](mailto:Lisa.Regner@nrc.gov).

Sincerely,

A handwritten signature in black ink, appearing to read 'Lisa M. Regner', with a long horizontal flourish extending to the right.

Lisa M. Regner, Senior Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-498

Enclosure:  
Review of the Steam Generator Tube  
Inservice Inspection Report

cc w/encl: Distribution via Listserv

REVIEW OF RESULTS OF THE 2015 STEAM GENERATOR TUBE INSPECTIONS

PERFORMED DURING REFUELING OUTAGE 19

STP NUCLEAR OPERATING COMPANY

SOUTH TEXAS PROJECT, UNIT 1

DOCKET NO. 50-498

By letter dated April 25, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16125A248), STP Nuclear Operating Company (STPNOC, the licensee) submitted information summarizing the results of the fall 2015 steam generator (SG) tube inspections performed at South Texas Project (STP), Unit 1. These inspections were performed during refueling outage (RFO) 19. In a letter dated January 14, 2016 (ADAMS Accession No. ML16013A066), the U.S. Nuclear Regulatory Commission (NRC) staff summarized conference calls between the staff and representatives of the licensee to discuss the SG tube inspection activities at STP, Unit 1.

STP, Unit 1, has four Westinghouse recirculating Model Delta 94 SGs. Each SG contains 7585 thermally-treated Alloy 690 tubes. Each tube has a nominal outside diameter of 0.688 inches with a nominal wall thickness of 0.040 inches. The tubes were hydraulically expanded at both ends for the full depth of the tubesheet and are supported by a flow distribution baffle, tube support plates, and anti-vibration bars.

The licensee provided the scope, extent, methods, and results of its SG tube inspections in the documents referenced above. Based on the NRC's review of the report, the NRC staff has the following observations.

- A volumetric indication was identified with a +Point coil in a tube at row 30, column 78 in SG D. The indication was 0.2 inches above the hot leg tubesheet and the tube was located in the "sludge pile region" of the tubesheet. The 0.08 volt indication was sized to a through-wall depth of 12 percent with dimensions of 0.1 inches in the axial and circumferential directions. A review of prior +Point and pancake coil inspection data (all prior rotating probe inspection data for this location was reviewed) showed that a +Point probe signal was discernable, but not reportable, in the RFO 16 (2011) inspection data. The indication was not present in inspections performed during RFOs 9, 10, and 13. The licensee stated that the tube with the indication did not require in situ testing. This indication led to expansion of the top of the tubesheet +Point probe inspection program to include all tubes within the sludge pile region of all four SGs, plus a minimum two tube border around the sludge pile region. No additional volumetric indications were observed in the scope expansion.
- Since the volumetric indication could not definitely be associated with mechanical wear, the licensee plugged the tube. As stated in the call summary, the licensee posed four possibilities for the cause of the volumetric indication: loose part

Enclosure

wear, corrosion, a false call due to spalling of the hard sludge collar, or a surface blemish created during manufacturing.

- No crack-like indications or indications of foreign object wear were identified during the RFO 19 inspections. One possible new degradation mechanism was found: the volumetric indication under the hard sludge deposits described above.

The NRC staff concludes that the licensee provided the information required by the Technical Specifications.

G. Powell

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If you have any questions, please contact me at 301 415-1906 or via e-mail at [Lisa.Regner@nrc.gov](mailto:Lisa.Regner@nrc.gov).

Sincerely,

*/RA/*

Lisa M. Regner, Senior Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-498

Enclosure:  
Review of the Steam Generator Tube  
Inservice Inspection Report

cc w/encl: Distribution via Listserv

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**ADAMS Accession No. ML17009A008**

\* via e-mail

OFFICE	NRR/DORL/LPL4/PM	NRR/DORL/LPL4/LA	NRR/DE/ESGB/BC*	NRR/DORL/LPL4/BC	NRR/DORL/LPL4/PM
NAME	LRegner	PBlechman	EWong	RPascarelli	LRegner
DATE	1/6/2017	1/13/2017	1/3/2017	1/18/2017	1/27/2017

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