



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

December 21, 2017

Mr. Mano Nazar
President and Chief Nuclear Officer
Nuclear Division
Florida Power & Light Co.
Mail Stop EX/JB
700 Universe Blvd.
Juno Beach, FL 33408

**SUBJECT: ST. LUCIE PLANT UNIT NO. 1 - REVIEW OF THE FALL 2016 STEAM
GENERATOR TUBE INSERVICE INSPECTION REPORT FOR REFUELING
OUTAGE 27 (CAC MF9659; EPID L-2017-LLL-0012)**

Dear Mr. Nazar:

By letter dated April 27, 2017 (Agencywide Documents Access and Management System Accession No. ML17117A334), Florida Power & Light Company (the licensee) submitted information summarizing the results of the fall 2016 steam generator tube inspections at St. Lucie Plant Unit No. 1. These inspections were performed during Refueling Outage 27 in accordance with Technical Specification Section 6.8.4.1.

The Nuclear Regulatory Commission staff has completed its review of the information provided, concludes that the licensee provided the information required by their technical specifications, and that no followup is required at this time. The staff's review of the report is enclosed.

Sincerely,

A handwritten signature in black ink, appearing to read "Perry H. Buckberg".

Perry H. Buckberg, Senior Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-335

Enclosure:
As stated

cc: ListServ

REVIEW OF THE 2016 STEAM GENERATOR TUBE

INSERVICE INSPECTION REPORT

ST. LUCIE PLANT UNIT NO. 1

DOCKET NO. 50-335

CAC NO. MF9659; EPID L-2017-LLL-0012

By letter dated April 27, 2017 (Agencywide Documents Access and Management System Accession No. ML17117A334), Florida Power & Light Company (the licensee) submitted information summarizing the results of the fall 2016 steam generator (SG) tube inspections at St. Lucie Plant Unit No. 1. These inspections were performed during Refueling Outage (RFO) 27.

St. Lucie Unit 1 has two replacement SGs designed and fabricated by Babcock and Wilcox International that were installed in 1997. Each SG has 8,523 thermally treated Alloy 690 tubes with a nominal outside diameter of 0.75 inches and a nominal wall thickness of 0.045 inches. The tubes are arranged in a triangular pattern with a pitch of approximately 1.0 inch. During manufacturing, the tubes were hydraulically expanded at each end for the full depth of the tubesheet. The tubesheet is 21.5-inches thick; with the cladding, the tubesheet is 21.875-inches thick. The tubes are supported by lattice grid tube supports and fan bars; the lowest fan bar is also referred to as a collector bar since all other fan bars connect to it. All supports are constructed from Type 410 stainless steel. During manufacturing, the U-bend region of the tubes in rows 1 through 20 were stress relieved after bending. The smallest U-bend radius occurs in row 3 and is 3.905 inches. The row 1 U-bend radius measures 4.272 inches.

This was the sixth inservice inspection for the replacement SGs. At the end of RFO 27 in 2016, the replacement SGs had accumulated 198.18 effective full-power months of operation.

The licensee provided the scope, extent, methods, and results of their SG tube inspections in the April 27, 2017, inspection report in accordance with their technical specification (TS) requirements. In addition, the licensee described corrective actions, such as tube plugging, taken in response to the inspection findings.

Based on its review of the report submitted, the Nuclear Regulatory Commission staff has the following observation:

- No tube wear exceeded the TS plugging limit of 40-percent through-wall. Some tubes were plugged to support an operational assessment until the next planned primary-side inspection in RFO 30. No primary-side inspections are planned for RFO 28 or 29.

Based on a review of the information provided by the licensee, the staff concludes that the licensee provided the information required by their TSs. The SG tube inspections at St. Lucie Unit 1 appear to be consistent with the objective of detecting potential tube degradation and inspection results appear to be consistent with industry operating experience at similarly designed and operated units.

Enclosure

SUBJECT: ST. LUCIE PLANT UNIT NO. 1 - REVIEW OF THE FALL 2016 STEAM GENERATOR TUBE INSERVICE INSPECTION REPORT FOR REFUELING OUTAGE 27 (CAC MF9659; EPID L-2017-LLL-0012) DATED DECEMBER 21, 2017

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