



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

March 29, 2018

Mr. Bryan C. Hanson
Senior Vice President
Exelon Generation Company, LLC
President and Chief Nuclear Officer (CNO)
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: BRAIDWOOD STATION, UNIT 2 - REVIEW OF THE SPRING 2017 STEAM
GENERATOR TUBE INSPECTIONS DURING REFUELING OUTAGE 19
(CAC NO. MG0154; EPID L-2017-LLL-0014)

Dear Mr. Hanson:

By letter dated August 24, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17236A457), Exelon Generation Company, LLC (the licensee), submitted information summarizing the results of its spring 2017 steam generator tube inspections performed during refueling outage 19 at Braidwood Station (Braidwood), Unit 2.

The U.S. Nuclear Regulatory Commission (NRC) staff has completed its review of the report and concludes that the licensee provided the information required by the Braidwood, Unit 2, technical specifications. No additional follow-up is required at this time. The NRC staff's review is enclosed.

If you have questions regarding this review, please contact me at (301) 415-6606 or Joel.Wiebe@nrc.gov.

Sincerely,

A handwritten signature in black ink, reading "Joel S. Wiebe", is positioned above the typed name and title.

Joel S. Wiebe, Senior Project Manager
Plant Licensing Branch III
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. STN 50-457

Enclosure:
Summary of the Review of Steam
Generator Tube Inspections

cc: Listserv

SUMMARY OF U.S. NUCLEAR REGULATORY COMMISSION STAFF'S REVIEW OF THE
STEAM GENERATOR TUBE INSPECTIONS FOR REFUELING OUTAGE 19
EXELON GENERATION COMPANY, LLC
BRAIDWOOD STATION, UNIT 2
DOCKET NO. 50-457

By letter dated August 24, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17236A457), Exelon Generation Company, LLC (the licensee) submitted information summarizing the results of the spring 2017 steam generator (SG) inspections performed at Braidwood Station (Braidwood), Unit 2. These inspections were performed during the 19th refueling outage (RFO 19).

Braidwood, Unit 2, has four Westinghouse Model D5 SGs. There are 4570 thermally treated Alloy 600 tubes in each SG with an outside diameter of 0.750 inches and a nominal wall thickness of 0.043 inches. The tubes are hydraulically expanded for the full depth of the tubesheet at each end and are welded to the bottom of each expansion. The tubes are supported by a number of Type 405 stainless steel supports with quatrefoil shaped holes.

The licensee provided the scope, extent, methods, and results of their SG tube inspections in the document referenced above. In addition, the licensee described corrective actions, such as tube plugging, taken in response to the inspection findings.

Based on the review of the information provided, the U.S. Nuclear Regulatory Commission (NRC) staff has the following observations and comments:

- A foreign object search and retrieval inspection of pre-heater baffle plate 02C was performed in the preheater high flow regions of SGs 2A and 2C. The high flow regions included the preheater waterbox rib and cap plate region. No evidence of degradation or nonconformances were reported.
- The largest foreign object (FO) wear indication found during the inspection measured 39 percent through wall (TW), which was less than the condition monitoring limit of 64.8 percent. The tube was in row 22 column 107 (R22C107) in SG 2D and was plugged. The 39 percent TW wall indication was one of seven new FO wear indications identified in RFO 19. All newly identified indications of secondary side FO wear received additional +Point™ (motorized rotating pancake coil) inspection of the surrounding tubes, to bound the wear region. Additional +Point™ inspections were performed on tubes surrounding historical secondary side FOs that could not be confirmed in their originally identified locations, to ensure that no wear had occurred during migration of the FOs. Further +Point™ inspections were performed on tubes surrounding newly found secondary side FOs to ensure no wear had resulted from the FOs.

Enclosure

- While not containing wear, the tubes in R16C91, R16C92, and R17C92 in SG 2D contained possible loose part (PLP) signals just above tube support plate 08C. These three tubes with PLP indications were plugged because they were in close proximity to three tubes that were plugged in a prior outage (RFO 17) due to having FO wear and/or PLP signals. The FO apparently migrated during operation between RFOs 17 and 19.

Based on a review of the information provided, the NRC staff concludes that the licensee provided the information required by their technical specifications. In addition, the staff concludes that there are no technical issues that warrant follow-up action at this time since the inspections appear to be consistent with the objective of detecting potential tube degradation and the inspection results appear to be consistent with industry operating experience at similarly designed and operated units.

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*via memo dated

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