



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

February 25, 2013

Mr. Michael J. Pacilio  
President and Chief Nuclear Officer  
Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: THREE MILE ISLAND NUCLEAR STATION, UNIT 1 – REVIEW OF STEAM  
GENERATOR TUBE INSPECTION REPORT FOR FALL 2011 OUTAGE (TAC  
NO. ME8735)

Dear Mr. Pacilio:

By letter dated May 15, 2012, (Agencywide Documents Access and Management System (ADAMS) Accession Number ML12143A406), Exelon Generation Company, LLC (Exelon, the licensee), submitted information summarizing the results of the fall 2011 (T1R19) steam generator (SG) tube inspections performed at Three Mile Island Nuclear Station, Unit 1 (TMI-1). Additional information regarding these SG inspections was provided by letter dated December 19, 2012 (ADAMS Accession No. ML12355A208). In addition to these submittals, information concerning these inspections was summarized by the Nuclear Regulatory Commission (NRC) staff in letters dated December 28, 2011, February 9, 2012, as well as in a meeting summary dated February 13, 2012 (ADAMS Accession Nos. ML113550167, ML120300547 and ML120270416, respectively).

The NRC staff has completed its review of the submittals pertaining to the T1R19 TMI-1 SG tube inspection report, and the associated review summary is enclosed. The NRC staff finds that the licensee has provided the information required by the Technical Specifications and that no additional follow-up action is required, with the exception of an ongoing causal investigation of the tube-to-tube wear issue. Based on these considerations, the subject TAC is being closed. As indicated in the response to question number seven in the licensee's submittal dated December 19, 2012, the NRC staff looks forward to Exelon scheduling a meeting to provide the staff a summary of the root cause evaluation for the tube-to-tube wear issue, as well as any planned corrective actions.

Please contact me at 301-415-2833, if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Peter Bamford".

Peter Bamford, Project Manager  
Plant Licensing Branch I-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-289

Enclosure:  
As stated

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SUMMARY OF THE NRC STAFF'S REVIEW OF STEAM GENERATOR TUBE

INSPECTIONS FOR THE FALL 2011 REFUELING OUTAGE

THREE MILE ISLAND NUCLEAR STATION, UNIT 1

DOCKET NO. 50-289

By letter dated May 15, 2012, (Agencywide Documents Access and Management System (ADAMS) Accession Number ML12143A406), Exelon Generation Company, LLC (Exelon, the licensee), submitted information summarizing the results of the fall 2011 (T1R19) steam generator (SG) tube inspections performed at Three Mile Island Nuclear Station, Unit 1 (TMI-1). Additional information regarding these SG inspections was provided by letter dated December 19, 2012 (ADAMS Accession No. ML12355A208). In addition to these submittals, information concerning these inspections was summarized by the Nuclear Regulatory Commission (NRC) staff in letters dated December 28, 2011, February 9, 2012, as well as in a meeting summary dated February 13, 2012 (ADAMS Accession Nos. ML113550167, ML120300547 and ML120270416, respectively).

TMI-1 has two enhanced once-through SGs manufactured by AREVA. Each SG has 15,597 tubes made out of thermally treated Alloy 690 material. The tubes have a nominal outer diameter of 0.625 inches and a nominal wall thickness of 0.037 inches. The SGs contain fifteen stainless steel tube support plates (TSPs) that have broached tri-foil holes. The broached tri-foil holes in each TSP have flat landings with chamfered edges. The tube-to-tubesheet joints were hydraulically expanded over the full depths of the upper and lower tubesheets.

The licensee provided the scope, extent, methods, and results of their SG tube inspections in the letters dated May 15, 2012, and December 19, 2012. In addition, the licensee described corrective actions (e.g., tube plugging) taken in response to the inspection findings.

Based on its review of the reports submitted, the NRC staff has the following observations and comments:

- The licensee provided large-break loss-of-coolant accident structural limits in accordance with a commitment described in an Exelon letter dated September 4, 2009 (ADAMS Accession No. ML092470426), related to Pressurized Water Reactor Owners Group Topical Report BAW-2374, Revision 2. These structural limits were not reviewed in detail.
- A number of wear indications attributed to tube-to-tube contact were identified. These indications were discussed in a public meeting on January 26, 2012 (ADAMS Accession No. ML120270400). A root cause evaluation is underway, and is currently scheduled for completion on April 26, 2013.

Based on a review of the information provided, the NRC staff concludes that the licensee provided the information required by the Technical Specifications. In addition, the staff concludes that, with the exception of reviewing the cause of the tube-to-tube contact, there are

Enclosure

no technical issues that warrant follow-up action at this time. 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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Sincerely,

/ra/

Peter Bamford, Project Manager  
Plant Licensing Branch I-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

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Enclosure: As stated  
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**ADAMS Accession Number: ML13039A436**

**\*via memo**

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