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

November 19, 2012

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 - REQUEST FOR ADDITIONAL INFORMATION REGARDING 2011 STEAM GENERATOR TUBE INSPECTION REPORT (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, submitted information summarizing the results of the 2011 steam generator (SG) tube inspections performed at Three Mile Island, Unit 1 (TMI-1).

The Nuclear Regulatory Commission staff has been reviewing the submittal and has determined that additional information is needed to complete its review. The specific questions are found in the enclosed request for additional information (RAI). The questions were sent via electronic transmission on November 1, 2012, to Ms. Stephanie Hanson, of your staff. The draft questions were sent to ensure that the questions were understandable, the regulatory basis was clear, and to determine if the information requested was previously docketed. The draft questions were discussed in a teleconference with your staff on November 13, 2012. In this teleconference, a revision to question number seven was discussed, and that revision is incorporated into the enclosed RAI. It was agreed that a response to this RAI would be submitted by December 19, 2012.

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

Sincerely,

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

cc: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION

THREE MILE ISLAND NUCLEAR STATION, UNIT 1

2011 STEAM GENERATOR TUBE INSPECTIONS

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 2011 steam generator (SG) tube inspections performed at Three Mile Island, Unit 1 (TMI-1). In addition to this report, the U.S. Nuclear Regulatory Commission (NRC) staff summarized information concerning the 2011 SG tube inspections at TMI-1, in a letter dated February 9, 2012 (ADAMS Accession No. ML120300547). Further, in a letter dated February 13, 2012 (ADAMS Accession No. ML120270416), the NRC staff documented a summary of a meeting held with Exelon and Entergy Operations, Inc., to discuss tube-to-tube wear in once-through SGs. The NRC staff has determined that the additional information requested below is needed to complete its review of the 2011 SG inspection report for TMI-1.

1. In order for the staff to better understand your inspection results, please provide the following general design information:

   a. Tube manufacturer.

   b. Tube pitch (and whether it is square or triangular).

   c. Please provide a diagram depicting your tube support naming convention and provide a tubesheet map showing the rows and columns of the tubes.

   d. Please discuss if any stress relief was performed on the tubing following the thermal treatment of the Alloy 690 tubing.

2. Please clarify what is meant by the "best estimate structural limit" and "End of Cycle, High Probability limit." For example, is the best estimate structural limit the value determined assuming mean material properties and mean non-destructive examination uncertainties? What probability and confidence levels are used for the various input parameters used in determining the two structural limits? What were the yield and ultimate strengths used in calculating the structural limits and how were they determined?

3. For wear at two lands, you indicate that the acceptance criteria is exceeded (limiting load of 3104 pounds), but that is acceptable due to the conservatism in defining the circumferential extent of the wear scar. Please discuss the conservatisms in determining the circumferential extent of the wear scars. In addition, please discuss whether this is consistent with industry guidelines for determining condition monitoring and operational assessments limits. If it isn't consistent, please discuss your plans for submitting a

deviation per Nuclear Energy Institute 03-08, "Guideline for the Management of Materials Issues."

4. In discussing the wear indications detected at the tube support plate elevations, the term "structural length" is used. Please clarify this term. Is it the length of the limiting portion of the flaw from a structural integrity standpoint? If so, was it determined for all flaws or just a subset of the flaws (i.e., those that were inspected with an array probe)?

5. Regarding the tubes with wear attributed to tube-to-tube contact, please discuss whether these tubes also have indications at the tube support plate elevations and whether there are any unique trends regarding the location of the tube support plate wear indications (e.g., all located at the upper edge of the tube support plate, all extend beyond the tube support plate, all tubes with tube-to-tube wear indications have corresponding tube support plate wear indications at supports 8 and 9, etc.). Please discuss whether the wear at the tube support plates is oriented in a specific direction (e.g., all are pointing to the center of the bundle). Please provide the mid-point of the tube (e.g., 8S + 20 inches).

6. Please clarify whether all indications of wear attributed to tube-to-tube support plate interaction were contained within the axial elevation of the tube support plate.

7. Please discuss the current schedule for completing your assessment of the cause of the tube-to-tube wear occurring in your steam generators. Also, discuss your plans to update the NRC staff on the investigation results when they are complete, as well as any planned corrective actions.

November 19, 2012

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/RA/

Peter Bamford, Project Manager
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ADAMS Accession Number: ML12306A481 ***via memo** ****via email**

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