



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

September 26, 2013

Mr. Eric A. Larson, Site Vice President  
FirstEnergy Nuclear Operating Company  
Beaver Valley Power Station  
Mail Stop A-BV-SEB1  
P.O. Box 4, Route 168  
Shippingport, PA 15077

SUBJECT: BEAVER VALLEY POWER STATION, UNIT NO. 2 – STAFF EVALUATION  
REGARDING THE 2012 STEAM GENERATOR INSPECTION REPORTS  
(TAC NOS. MF0592 AND MF1499)

Dear Mr. Larson:

By letters dated January 24, 2013, and April 23, 2013, as supplemented by letter dated August 12, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML130280632, ML13114A050, and ML13226A007, respectively), FirstEnergy Nuclear Operating Company, (FENOC) submitted information summarizing the results of the 2012 steam generator tube inspections for the 16<sup>th</sup> refueling outage at Beaver Valley Power Station, Unit No. 2, in accordance with technical specification (TS) 5.6.6.2.4.

The U.S. Nuclear Regulatory Commission (NRC) staff has completed its review of these reports and has concluded that FENOC provided the information required by its TSs and that no additional follow-up is required at this time. The NRC staff's review of the report is enclosed.

Please contact me at (301) 415-3100, if you have any questions regarding this issue.

Sincerely,

A handwritten signature in black ink, appearing to read "John G. Lamb".

John G. Lamb, Senior Project Manager  
Plant Licensing Branch 1-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-412

Enclosure:  
Staff Evaluation of 2012 Steam Generator  
Tube Report

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STAFF EVALUATION REGARDING THE  
2012 STEAM GENERATOR TUBE REPORT  
BEAVER VALLEY POWER STATION, UNIT NO. 2  
DOCKET NUMBER 50-412

By letters dated January 24, 2013, and April 23, 2013, as supplemented by letter dated August 12, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML130280632, ML13114A050, and ML13226A007, respectively), FirstEnergy Nuclear Operating Company, (FENOC or the licensee) submitted information summarizing the results of the 2012 steam generator (SG) tube inspections for the 16<sup>th</sup> refueling outage (RFO) at Beaver Valley Power Station, Unit No. 2 (BVPS-2), in accordance with technical specification (TS) 5.6.6.2.4. In addition to these reports, the U.S. Nuclear Regulatory Commission (NRC) staff summarized a conference call about the 2012 SG tube inspections at BVPS- 2 in a letter dated November 13, 2012 (ADAMS Accession No. ML12310A066).

BVPS-2 is a 3-loop plant with Westinghouse model 51 SGs. Each SG contains 3,376 mill annealed Alloy 600 tubes. Each tube has a nominal outside diameter of 0.875-inch and a nominal wall thickness of 0.050-inch. The tubes are supported by a number of carbon steel tube support plates and Alloy 600 anti-vibration bars. The tubes were roll expanded at both ends for the full length of the tubesheet. The entire length of tube within the tubesheet was shot-peened on both the hot and cold leg side of the SG, prior to operation. In addition, the U-bend region of the small radius tubes were in-situ stress relieved prior to operation.

The licensee provided the scope, extent, methods, and results of their SG tube inspections in the documents referenced above. In addition, the licensee described corrective actions (i.e., tube plugging or repair) taken in response to the inspection findings.

Based on the NRC staff's review of the information submitted by the licensee, the staff has the following observations/comments:

- Based upon the inspection history of distorted support plate signals and support plate mix residual signals, the licensee has concluded that BVPS- 2 is not susceptible to extreme cases of voltage growth for Cycle 17.
- The licensee installed a patch plate over a hole in the feedwater header in SG "A" during their 2008 RFO outage (RFO-13). During the 2012 RFO, no evidence of erosion or corrosion of the patch plate was observed.

Based on a review of the information provided by the licensee, NRC staff has concluded that the licensee provided the information required by its TSs. In addition, the NRC staff has also concluded 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.

Enclosure

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John G. Lamb, Senior Project Manager  
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Staff Evaluation of 2012 Steam Generator  
Tube Report

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**ADAMS Accession No.: ML13233A427**

\*via memo

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