



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

July 6, 2009

Mr. Barry S. Allen  
Site Vice President  
FirstEnergy Nuclear Operating Company  
Davis-Besse Nuclear Power Station  
Mail Stop A-DB-3080  
5501 North State Route 2  
Oak Harbor, OH 43449-9760

SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION (DBNPS), UNIT NO. 1 -  
REVIEW OF THE STEAM GENERATOR TUBE INSPECTIONS  
PERFORMED DURING THE 2008 REFUELING OUTAGE (TAC NO.  
MD9347)

Dear Mr. Allen:

The U.S. Nuclear Regulatory Commission (NRC) staff summarized a conference call about the 2008, steam generator (SG) tube inspections at DBNPS in a letter dated March 5, 2008 (Agencywide Documents Access and Management System (ADAMS), Package No. ML080430629). By letters dated April 10, 2008 (ADAMS Accession No. ML081070433), April 29, 2008 (ADAMS Accession No. ML081290415), and July 25, 2008 (ADAMS Accession No. ML082110266), FirstEnergy Nuclear Operating Company (the licensee), submitted information summarizing the results of the 2008, SG tube inspections at Davis-Besse Nuclear Power Station, Unit No. 1 (DBNPS) during refueling outage (RFO) 15. The licensee submitted additional information in a letter dated May 22, 2009 (ADAMS Accession No. ML091470191).

The NRC staff has completed its review of the report and concludes that you have provided the information required by the DBNPS technical specifications, and that no additional follow-up is required at this time. A copy of the NRC staff evaluation is enclosed.

Sincerely,

A handwritten signature in cursive script, appearing to read "C. Goodwin".

Cameron S. Goodwin, Project Manager  
Plant Licensing Branch III-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-346

Enclosure:  
Evaluation of Steam Generator Tube Inservice Inspection Report

cc w/encl: Distribution via Listserv

OFFICE OF NUCLEAR REACTOR REGULATION  
EVALUATION OF STEAM GENERATOR TUBE INSPECTION REPORT  
FOR SPRING 2008 REFUELING OUTAGE  
DAVIS-BESSE NUCLEAR POWER STATION, UNIT NO. 1  
DOCKET NO. 50-346

The U.S. Nuclear Regulatory Commission (NRC) staff summarized a conference call about the 2008, steam generator (SG) tube inspections at DBNPS in a letter dated March 5, 2008 (Agencywide Documents Access and Management System (ADAMS), Package No. ML080430629). By letters dated April 10, 2008 (ADAMS Accession No. ML081070433), April 29, 2008 (ADAMS Accession No. ML081290415), and July 25, 2008 (ADAMS Accession No. ML082110266), FirstEnergy Nuclear Operating Company (the licensee), submitted information summarizing the results of the 2008, SG tube inspections at Davis-Besse Nuclear Power Station, Unit No. 1 (DBNPS) during refueling outage (RFO) 15. The licensee submitted additional information in a letter dated May 22, 2009 (ADAMS Accession No. ML091470191).

There are two Babcock and Wilcox (B&W) once-through steam generators (OTSG), designated 1-B and 2-A, at DBNPS. Each SG has approximately 15,500 Alloy 600 tubes in the mill-annealed condition. The tubes have a nominal outside diameter of 0.625 inches and a nominal wall thickness of 0.037 inches. Both OTSG 1-B and 2-A contain tubes with sleeves and tubes with shop re-rolls. In the once-through steam generators at DBNPS, the tubes were roll expanded into the tubesheet for only a portion of the tubesheet's total thickness. When degradation is found in these rolled joints, new rolled joints can be formed below the original joints in the upper tubesheet, or above the original joints in the lower tubesheet.

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, e.g., tube plugging, taken in response to the inspection findings.

As a result of the review of the information provided by the licensee, the NRC staff has the following comments/observations:

- No crack-like indications were identified in dents or wear scars.
- Based on bobbin coil examination data, the licensee reported that the auxiliary feedwater headers had not moved during cycle 15.
- The NRC staff review did not address the acceptability of the best-estimate, primary-to-secondary leakage expected for a large-break, loss-of-coolant accident (LBLOCA). This best estimate determination was performed to satisfy a license condition to permit the use of a re-roll repair process for the DBNPS SGs.

ENCLOSURE

- The Pressurized-Water Reactor Owner's Group (PWROG) is addressing the large-break loss-of-coolant accident (LBLOCA) of concern on a generic basis in a topical report that is applicable to DBNPS. The NRC staff is currently reviewing that topical report, BAW-2374, Revision 2, "Risk-Informed Assessment of Once-Through Steam Generator Tube Thermal Loads Due to Breaks in Reactor Coolant System Upper Hot Leg Large-Bore Piping," which was submitted on January 4, 2007 (ADAMS Accession No. ML070330123). The staff believes that the generic PWROG program is the proper place to address the LBLOCA issue since the technical nature of this issue is complex, and the issue is generic to Babcock and Wilcox plants.

Based on a review of the information provided, the NRC staff concludes that the licensee provided the information required by their technical specifications. In general, the SG tube inspections at DBNPS 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. As discussed above, the NRC staff is reviewing the best-estimate, primary-to-secondary leakage expected for a LBLOCA with the PWROG on a generic basis for all B&W plants.

Principal Contributor: A. Johnson

Date: July 6, 2009

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July 6, 2009

SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION, UNIT NO. 1 - REVIEW OF  
THE STEAM GENERATOR TUBE INSPECTIONS PERFORMED DURING  
THE 2008 REFUELING OUTAGE (TAC NO. MD9347)

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*/RA/*

Cameron S. Goodwin, Project Manager  
Plant Licensing Branch III-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-346

Enclosure:

Evaluation of Steam Generator Tube Inservice Inspection Report

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ADAMS Accession No. ML091671135

\*By memo dated

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