

November 4, 2005

Mr. Charles D. Naslund
Senior Vice President and Chief Nuclear Officer
Union Electric Company
Post Office Box 620
Fulton, MO 65251

SUBJECT: CALLAWAY PLANT, UNIT 1 - REVIEW OF STEAM GENERATOR TUBE
INSPECTION SUMMARY REPORTS FOR THE 2004 REFUELING OUTAGE
(TAC NO. MC7253)

Dear Mr. Naslund:

By letters dated May 25, June 24, September 30, 2004, and June 2, 2005, AmerenUE, the licensee for the Callaway Plant, in accordance with the plant's technical specifications, submitted the steam generator tube inspection summary reports for the 2004 refueling outage.

The Nuclear Regulatory Commission (NRC) staff has completed its review of these reports and concludes that the licensee has provided the information required by its technical specifications. The NRC staff's review of the reports is attached.

With the issuance of this summary, all work under TAC No. MC7253 is complete. If you have any questions or comments regarding the summary, please call me at (301) 415-1307.

Sincerely,

/RA

Jack Donohew, Senior Project Manager
Plant Licensing Branch G
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-483

Enclosure: Summary

cc w/encl: See next page

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REVIEW OF THE 2004 REFUELING OUTAGE
STEAM GENERATOR TUBE INSPECTION REPORTS

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

1.0 INTRODUCTION

By letters dated May 25, June 24, September 30, 2004, and June 2, 2005 (Agencywide Documents Access and Management System Accession Numbers ML041560005, ML041830237, ML042820060, and ML051580381, respectively), AmerenUE, the licensee for the Callaway Plant, Unit 1 (Callaway), in accordance with the plant's technical specifications, submitted the steam generator tube inspection summary reports for Refueling Outage 13 in 2004.

Callaway has four Westinghouse Model F recirculating steam generators that began operation in 1984. Each steam generator contains 5,626 Alloy 600 tubes with an outside diameter of 0.688 inch and a wall thickness of 0.040 inch. The first 10 rows of tubes in each steam generator were thermally treated and received a stress-relief heat treatment (1,214 tubes with the smallest radius of curvature in each steam generator). The remaining tubes were mill annealed. The tube support plates are stainless steel with quatrefoil-shaped holes, and the anti-vibration bars are chromium-plated Alloy 600.

2.0 SUMMARY

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

In the report dated June 24, 2004, the licensee provided a table with the tubes that were plugged in Steam Generator C. The licensee stated that the report contained a typographical error. During a conference call with the NRC staff, the licensee clarified that tubes R1C35, R20C24, and R28C33 were plugged on both the hot and cold-leg sides of the steam generator.

In report dated June 2, 2005, the licensee provided in Table 5 the minimum wall thickness for each of the electrosleeves. All but one measurement had decreased in thickness. During a conference call with the NRC staff, the licensee stated that the decrease in thickness is most likely a function of systematic error. In addition, the licensee stated that if the degradation exceeds 30 percent through-wall or a reduction in thickness of 0.009 inches based on nominal wall thickness of 0.031 inches, the tube will be plugged. None of the electrosleeve measurements met these criteria (refer to Tables 12.4.2 and 12.4.4 of BAW-10219P, Revision 4) for plugging.

The 2004 inspections are the last scheduled inspections of the model F steam generators at Callaway as the licensee plans to replace the four steam generators during the current refueling outage, which is scheduled to be completed in the fall of 2005.

Based on a review of the information provided, the Nuclear Regulatory Commission (NRC) staff concludes that the licensee provided the information required by its technical specifications. In addition, the NRC 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.

Callaway Plant, Unit 1

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