July 19, 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 - RESPONSE TO GENERIC LETTER 2004-01, "REQUIREMENTS FOR STEAM GENERATOR TUBE INSPECTIONS" (TAC NO. MC4806)

Dear Mr. Naslund:

On August 30, 2004, the Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 2004-01, "Requirements for Steam Generator Tube Inspections." The purpose of GL 2004-01 was to obtain information that would enable the NRC staff to determine whether licensees' steam generator (SG) tube inspection programs for nuclear power plants comply with the existing tube inspection requirements, which are in the plant technical specifications in conjunction with Appendix B to Part 50 of Title 10 of the *Code of Federal Regulations*.

By letter dated October 27, 2004 (ULNRC-05), Union Electric Company (UEC) responded to GL 2004-01 for Callaway Plant, Unit 1 (Callaway) and stated that the Callaway SGs are four Westinghouse Model F SGs, with a combination of Inconel 600 mill-annealed and Inconel 600 thermally treated (first 10 rows) tubes. In the letter, it was also stated that (1) an assessment, which includes operating experience, is made prior to each inspection to identify degradation mechanisms that may be present and to verify that the eddy current techniques are capable of detecting the targeted degradation mechanisms and (2) the entire length of the tubesheet is not inspected with a rotating probe beyond the depth where defects do not constitute a structural or leak integrity issue based on WCAP-15932, "Improved Justification of Partial-Length RPC Inspection of Tube Joints of Model F Steam Generators of Ameren UE Callaway Plant," Revision 1, dated May 2003. UEC stated that Revision 0 of the WCAP had been submitted to the NRC in UEC's letter dated October 3, 2002, and reviewed, but not approved, by the NRC staff. Revision 1 of the WCAP incorporated the changes based on discussions with the NRC staff regarding Revision 0. UEC also provided a safety assessment of the inconsistency of the Callaway inspection methodology with respect to the NRC staff's position in GL 2004-01 in Attachment II to its letter.

The NRC staff's review of the GL response in the October 27, 2004, letter did not identify any safety concerns with the SG tube inspection practices at Callaway. Although your response to the "method of evaluation" item did not focus on the staff's area of concern, we concluded that your overall response to the GL is acceptable, as discussed below. Although stress corrosion cracking is an active damage mechanism in the tubesheet region, you identified that the entire length of the tubesheet is not inspected with a rotating probe. You indicated that inspections in the tubesheet region are performed in accordance with WCAP-15932. This document is

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intended to provide the inspection length needed to ensure the structural and leakage integrity of the tubes. Since the inspections performed in the tubesheet region at Callaway are not consistent with the NRC's position, you indicated that this item was entered into your corrective action program. You further indicated that the SGs at Callaway will be replaced at the next refueling outage and that no other corrective action is required. The NRC finds this acceptable since (1) the inspections performed in the tubesheet region, based on your safety assessment and the analysis in WCAP-15932, provide reasonable assurance of tube integrity in this area of the tube bundle until your next outage, (2) you plan to replace your SGs next outage and the tubes in these replacement SGs will be fabricated with thermally treated Alloy 690 which is intended to reduce the likelihood of stress corrosion cracking in this region, and (3) we expect you will follow the regulatory requirements as given in GL 2004-01 when these new SGs are installed.

This letter closes out TAC No. MC4806. If you have any questions regarding this matter, please contact me at (301) 415-1307.

Sincerely,

/RA/

Jack Donohew, Senior Project Manager, Section 2 Project Directorate IV Division of Licensing Project Management Office of Nuclear Reactor Regulation

Docket No. 50-483

cc: See next page

## C. Naslund

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Sincerely, / <b>RA</b> / Jack Donohew, Senior Project M Project Directorate IV Division of Licensing Project Mar Office of Nuclear Reactor Regula	lanager, Section 2 nagement ation
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## Callaway Plant, Unit 1

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