1901 Chouteau Avenue
Post Office Box 149
St. Louis, Missouri 63166
314-554-2650

UNION ELECTRIC

March 13, 1997

**Donald F. Schnell**
Senior Vice President
Nuclear

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Stop P1-137
Washington, DC 20555-0001

ULNRC-3536

Gentlemen:

**REPLY TO NOTICE OF VIOLATION**
**INSPECTION REPORT NO. 50-483/96010**
**CALLAWAY PLANT**

This responds to Mr. Thomas P. Gwynn's letter dated February 14, 1997, which transmitted a Notice of Violation for events discussed in Inspection Report 50-483/96010. Our response to the violation is presented in the attachment.

None of the material in the response is considered proprietary by Union Electric.

If you have any questions regarding this response, or if additional information is required, please let me know.

Very truly yours,

Donald F. Schnell

DFS/bjp

Attachment: 1) Response to Violation

IE01

cc: Mr. James E. Dyer
Regional Administrator - Acting
U.S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011-8064

Senior Resident Inspector
Callaway Resident Office
U.S. Nuclear Regulatory Commission
8201 NRC Road
Steedman, MO 65077

Ms. Kristine M. Thomas (2 copies)
Licensing Project Manager, Callaway Plant
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Mail Stop 13E16
Washington, DC 20555-2738

Manager, Electric Department
Missouri Public Service Commission
PO Box 360
Jefferson City, MO 65102

Mr. Thomas A. Baxter
Shaw, Pittman, Potts, & Trowbridge
2300 N. Street N.W.
Washington, DC 20037

Manager, Plant Support
Wolf Creek Nuclear Operating Corporation
PO Box 411
Burlington, KS 66839

**Statement of Violation**

During an NRC inspection conducted on October 21 through December 9, 1996, one violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," NUREG-1600, the violation is listed below:

> Criterion IX of Appendix B to 10 CFR Part 50 states, in part, "Measures shall be established to assure that special processes, including ... nondestructive testing, are controlled and accomplished ... using qualified procedures in accordance with applicable codes, standards, specifications, criteria, and other special requirements."
>
> Section 2.3 of Procedure ETP-BB-01309, "Steam Generator Eddy Current Testing Acquisition and Analysis Guidelines," Revision 7, states, "All techniques used shall be qualified in accordance with Appendix H of the EPRI PWR Steam Generator Examination Guidelines, Revision 4."
>
> Westinghouse Report DDM-96-009, "Documentation of Appendix H Compliance and Equivalency," identifies the qualified Appendix H analysis span and phase rotation settings for plus point coil examination of tube expansion transition regions to be, respectively, one-half screen height response to a 40 percent notch and rotation set to 20 degrees for a 100 percent through-wall notch.
>
> Contrary to the above, analysis of plus point probe eddy current data during Refueling Outage RF8 was not controlled to assure use of Appendix H qualified settings for span and phase rotation, as evidenced by:
>
> 1. Specific direction was not provided by the primary eddy current analysis contractor, Westinghouse, to the analysts on span and phase rotation settings to be used for analysis of plus point coil examination data.
>
> 2. Procedure ETP-BB-01309, Revision 7, provided span and phase rotation settings for only the rotating pancake coil. These settings differed from those used in the qualification of the plus point coil and were inappropriate for use with that coil.

This is a Severity Level IV violation (Supplement 1) (50-483/9610-01).

**Background/Reason for the Violation**

Prior to Refuel 8 (October 1996), steam generator Rotating Pancake Coil (RPC) eddy current examinations at Callaway were conducted using a standard 3-coil probe. Industry experience indicated the +Point probe was capable of detecting smaller flaws and had the ability to identify previously undetected defects at locations such as the top of tubesheet area. Although we had not experienced problems with the previous technology, Union Electric made the decision to use the more sensitive +Point probe to enhance our steam generator condition monitoring program. Our eddy current contractor was advised of the change, and made preparations to provide the proper probes and personnel.

Union Electric provides eddy current test and analysis guidelines to its inservice inspection (ISI) contractors in procedure ETP-BB-01309 entitled: "Steam Generator Eddy Current Acquisition and Analysis Guidelines". Because eddy current test (ECT) hardware and analysis techniques are rapidly evolving and technically challenging, we supplement our staff knowledge with that of recognized external authorities in defining ISI requirements associated with our steam generators. Accordingly, prior to Refuel 8, we involved representatives from the Electric Power Research Institute (EPRI) as well as from Westinghouse and Framatome (our primary contractor and contractor for secondary independent data review respectively) in the updating of our guidelines to assure incorporation of the latest technology and techniques, including the requirement that analysts and test techniques must be qualified in accordance with Appendix H of EPRI's ISI guidelines. Our procedure was also reviewed as part of Union Electric's QA surveillance (SP96-015) of the steam generator program. Despite this extensive review effort, we failed to incorporate specific details for setup of the newly developed +Point probe in our document. These details, however, were provided indirectly to our contractors and were known and implemented by the analysts through our imposition of Appendix H qualifications on the work.

**Corrective Steps Taken and Results Achieved:**

Failure to incorporate span and phase rotation criteria into our guidance procedure for setup of the +Point ECT probe was not identified until after the outage. At that point, discussions were held with the lead analysts for Westinghouse and Framatome who confirmed that +Point setups had been performed in accordance with Appendix H techniques and industry practice. Therefore, our omission of specific +Point setup instructions in the guidelines did not compromise the reliability and accuracy of the +Point eddy current analysis.

**Corrective Steps to Avoid Further Violations:**

Procedure ETP-BB-01309 will be revised to incorporate proper guidance for setup of the +Point coil (and any others prior to use at Callaway). Union Electric will continue to utilize outside expertise for assistance in establishing steam generator ISI program requirements. To do otherwise would risk obsolescence of knowledge and loss of initiative in this rapidly changing field of technology. Direction will be provided to specifically maintain our procedures and requirements in conformance to Appendix H qualifications and current industry practice, thus ensuring the reliability of the ISI program.

**Date when Full Compliance will be Achieved:**

Full compliance will be achieved prior to the next steam generator inspection during Refuel 9, currently scheduled to commence in April, 1998.