April 28, 1997

Mr. Donald Schnell
Senior Vice President - Nuclear
Union Electric Company
Post Office Box 149
St. Louis, Missouri 63166

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION (RAI) REGARDING UNION ELECTRIC COMPANY'S APRIL 12, 1996, REQUEST FOR TECHNICAL SPECIFICATION AMENDMENT TO APPROVE THE INSTALLATION OF FRAMATOME ELECTROSLEEVES IN THE CALLAWAY PLANT STEAM GENERATORS (TAC NO. M95204)

Dear Mr. Schnell:

The NRC staff has reviewed your April 12, 1996, request for amendment to the Callaway Plant technical specifications to approve the installation of Framatome Electrosleeves in the Callaway Plant steam generators. As a result of the review, the staff has determined that additional information is needed to complete the review. The information needed, which was discussed in a teleconference with your staff and Framatome on April 14, 1997, is detailed in the enclosure.

To assist the NRC staff in meeting its review schedule, we request that you respond to the RAI in writing within 30 days of receipt of this letter.

If you have any questions, please contact me at (301) 415-1362

Sincerely,

Original Signed By

Kristine M. Thomas, Project Manager
Project Directorate IV-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-483

Enclosure: Request for Additional Information

cc w/encl: See next page

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Enclosure

CALLAWAY PLANT, UNIT 1

REQUEST FOR ADDITIONAL INFORMATION

FRAMATOME ELECTOSLEEVES

1. Past experience with the materials of construction of the reactor coolant pressure boundary and in particular steam generator tubing has been that cracking has occurred in many of these materials even when not predicted to occur or not predicted to occur as early as observed. An argument advanced by Framatome with regard to the electrosleeving application is that cracks in alloy 600 tubing will not propagate as cracks into an electrosleeve. It appears from our review of the electrosleeving documents that NDE detection (and sizing) of postulated cracks in the sleeve is not addressed. This approach rests upon metallurgical arguments about the expected performance of the new material. This approach departs from the the traditional approach of providing inspection techniques capable of detecting (and sizing, as necessary depending upon the application) postulated cracks in repairs. Provide a discussion of plans for addressing the staff's concern regarding your approach to NDE. In addition, provide a copy of the references with key information on nanocrystalline material that are not readily available to the NRC.

2. Provide the crack size (in percent through wall of combined layer of parent tube and sleeve) that would be the limit for unacceptability at the Callaway Plant.

3. Provide the location of the defects (e.g., top of tubesheet, tube support plate, etc.) for the defects discussed in Attachment 1 (Table 1) of the September 24, 1996, supplemental information.

4. Provide a copy of the EDM calibration standard drawing.

5. Provide the results (or a reference to a submittal) from the electrosleeve assembly leakage tests performed for 11/16 inch tubes.

6. Provide additional information pertaining to the number of EDM defects used for UT qualification testing. Specifically, describe the makeup of the 77 and 99 EDM notches referenced on page 11-4 of the topical report (BAW-10219P, Rev. 1, March 1996). Correlate these EDM defect groups to Attachment 2 (Table 2) of the September 24, 1996, supplemental information. In addition, revise the units from "percent throughwall" to "mils".

7. Provide the number of samples used to determine the thickness accuracy of +/- 2 mils.

8. Page 11 of the February, 1997, supplemental information stated that axial ID initiated cracks had to be 100 percent throughwall of the parent tube to be detected by UT. Describe the sizes (length, depth) of these cracks.

9. Provide a list of references to foreign experience with electrosleeves, including Canadian experience.

10. Describe how the UT signal, generated from the parent tube flaw behind the electrosleeve, will be dispositioned during the preservice inspection and future inservice inspections. Explain the basis for this method of dispositioning. Explain how the UT analyst can determine whether the flaw resides in the parent tube or if it has propagated into the sleeve.