S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-483/92005(DRS)

Docket No. 50-483 License No. NPF-30

Licensee: Union Electric Company
Post Office Box 149
Mail Code 400
St. Louis, MO 63166

Facility Name: Callaway Nuclear Plant

Inspection At: Callaway Site, Steedman, MO

Inspection Conducted: April 6-8, 27 and 28, 1992

Inspector: for R. D. Ward — Date: 4/29/92

Approved By: J. F. Smith, for J. M. Jacobson, Chief, Materials and Processes Section — Date: 4/29/92

Inspection Summary

Inspection on April 6-8, 27 and 28, 1992 (Report No. 50-483/92005(DRS))

Areas Inspected: Routine, unannounced safety inspection of inservice inspection (ISI) activities, including review of programs (73051), data (73755), procedures (73052), observation of work activities (73753), review of the erosion/corrosion (E/C) activities (73051, 73052, 73753, and 73755), and the licensee's action on an open item (92701).

Results: No violations or deviations were identified. Based on the results of the inspection, the NRC inspector noted the following:

- The ISI program was adequately planned with appropriate priorities assigned by the licensee.
- Personnel performing nondestructive examinations appeared to be knowledgeable and conscientious in their work.
- Management involvement and commitment to a quality ISI effort was evident.

DETAILS

1. Persons Contacted

Union Electric Company (UE)

*J. Blosser, Site Manager
*R. Affolter, Superintendent, Systems Engineering
*L. Kanuckel, Supervisor, Engineering - QA
*J. Glide, Supervisory Engineer
*S. McCracken, ISI Engineer
*R. Myatt, System Engineer
*K. Schoolcraft, QA Engineer
G. Randolph, Vice President, Nuclear Operations

U. S. Nuclear Regulatory Commission (NRC)

B. Bartlett, Senior Resident Inspector
*D. Calhoun, Resident Inspector
*K. Marcus, Reactor Engineer, Intern

Nuclear Energy Systems (NES)

W. Downs, Level III

Hartford Steam Boiler Inspection and Insurance Company (HSB)

P. Fisher, ANII Supervisor
H. Potter, ANII

The NRC inspector also contacted and interviewed other licensee and contractor employees.

*Denotes those present at the exit interview on April 28, 1992.

2. Inservice Inspection

a. Program Review (73051)

Personnel from Conam Nuclear, Inc., and NES performed the ISI in accordance with the licensee's program and ASME Section XI, 1980 Edition, Winter 1981 Addenda. The licensee did not make a request for relief from the ASME Code for this outage. The NRC inspector reviewed UE QA Audit #92-07 and surveillances of ISI program activities. These audit efforts were found to be acceptable and performed by qualified personnel. Organizational staffing for the ISI program was found to be acceptable and the services of an Authorized Nuclear Inservice Inspector (ANII) were procured from

the Hartford Steam Boiler Inspection and Insurance Company.

b. Procedure Review (73052)

All applicable ISI procedures were approved by the ANII and were reviewed by the NRC inspector. The ISI procedures were found to be acceptable and in accordance with ASME Section V, 1980 Edition, Winter 1981 Addenda.

c. Data Review (73755)

(1) General

The examination data was found to be in accordance with the applicable ISI procedures and ASME Code requirements. The NRC inspector reviewed documents related to nondestructive examinations, equipment, data, and evaluations.

(2) Eddy Current Examination (ET)

During this outage, 100% of all accessible tubes in steam generators B and C were examined full length. The examinations were conducted utilizing the Zetec MIZ-18 multifrequency digital test equipment with associated acquisition software and remote positioning devices. The Zetec Digital Analysis System was used for the data evaluation.

Motorized rotating pancake coil (MRPC) examinations were utilized to supplement the bobbin coil examinations. The MRPC was used to further characterize manufacturing burnish marks, undefined indications and distorted indications.

The following tubes were plugged as a result of this examination:

Steam Generator	Tubes Plugged	Tubes Plugged Previously
B	15	6
C	14	15

All of the new steam generator tube plugs were Inconel 690 alloy. No tubes were sleeved this outage.

d. Observation of Work Activities (73753)

The NRC inspector observed work activities and had discussions with personnel during the ISI activities. These observations included the following:

(1) NES personnel performing visual examinations (VT) using an underwater TV camera in conjunction with the use of video tape recorders recording the VT. The tapes of the following items were reviewed in part by the NRC inspector:

(a) debris inspection (general view of accessible areas of reactor vessel and core barrel);

(b) upper support ledge surface (ID surface of flange); and

(c) closure head location pin keyways.

(2) NES personnel performing ultrasonic examinations on pipe welds No. 2-AD-5FO-18 and No. 2-AD-5FO-19. These welds were in the main feedwater system.

(3) NES personnel performing liquid penetrant examinations on pipe welds No. 2-AB-01-5046-M, No. 2-AB-01-FW00-6, No. 2-AB-01-FW00-7 and No. 2-AB-01-FW00-8. These welds were in the main steam system.

(4) NES personnel performing magnetic particle examinations on pipe welds No. 2-AB-01-ATR-3 and No. 2-AB-01-5032-N. These welds were in the main steam system.

(5) ANII performing a surveillance on all the activities above. This effort included observing the examinations and review of data.

The NRC inspector reviewed the qualifications and certifications of all inspection personnel performing ISI to ensure conformance with SNT-TC-1A.

No violations or deviations were identified.

3. Erosion/Corrosion Activities (73051, 73052, 73753, and 73755)

Union Electric Company (UE) began their erosion/corrosion (E/C) program in 1985. In 1987, UE established a formalized procedure and administrative controls to ensure continued long-term implementation of the E/C monitoring program for

piping and components. This program was applicable to both safety related and nonsafety related systems with respect to E/C. Various references were used to establish the program, including NRC Bulletin No. 87-01, "Pipe Wall Thinning" and EPRI-NP-3944, "Erosion/Corrosion in Nuclear Power Plant Steam Piping".

An inspection sample is selected prior to every refueling outage utilizing the EPRI Chec, Checmate computer program. This program considers such variables as the effects created by poor geometry, high fluid velocities, moisture content, temperature conditions, historical chemistry data and piping/component material. When a piping component is found that has exhibited wall thinning due to E/C, an engineering analysis is performed. This analysis determines if the degraded component is acceptable for continued use or if repair/replacement is required. To date, there have been several component replacements made, such as, replacement of many feet of pipe in the third and seventh stage extraction system and also many feet of pipe and fittings in the low pressure heater drain system. The NRC inspector reviewed the program, procedures and data, and observed ultrasonic thickness examinations being performed on pipe No. AD06-B5V905. The NRC inspector also reviewed two surveillance reports. One report was the "Erosion/Corrosion Monitoring Program" and the other was "NRC General Letter (GL) 89-13, Service Water System Problems Affecting Safety Related Equipment". The surveillance report on GL 89-13 was on the review of UE's response to GL 89-13 and to verify the program developed and implemented addressing the concerns identified by the NRC. This surveillance report No. SP92-003 was very comprehensive and well written to show coverage of all important elements.

No violations or deviations were identified.

4. Licensee Action on Previously Identified Items (Open Item) (92701)

(Closed) Open Item 483/87030-01 - Justification as to why "pin to foundation" or "pin to pipe" regions of supports with snubbers have not been included in the programs for inspections.

Snubbers and their component attachments were examined for signs of physical damage, and missing, bent or loose parts in accordance with Technical Specification 3/4.7.8.c requirements. Visible portions of snubber support structures and components beyond pin to pin were also examined for weld cracks, insulation and/or fireproofing damage/cracking structure deformation, loose bolts, and missing hardware in accordance with UE procedure QSP-ZZ-

65044, Revision 3, "Mechanical Snubber Visual and Transient Event Inspection". UE procedure QSP-ZZ-65044 addresses the open item concerns. The procedure was revised soon after the open item was addressed in NRC Inspection Report No. 50-483/87030(DRS).

The NRC inspector reviewed the procedure, surveillance reports of mechanical snubbers, data and other related documentation and considers this open item closed.

5. Exit Interview (30703)

The NRC inspector met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection and summarized the scope and findings of the inspection noted in this report. The NRC inspector also discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspector during the inspection. The licensee did not identify any such documents/processes as proprietary.