U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report No. 50-315/79-10; 50-316/79-07

Docket No. 50-315; 50-316 License No. DPR-58; DPR-74

Licensee: American Electric Power Service Corporation
Indiana and Michigan Power Company
2 Broadway
New York, NY 10004

Facility Name: D. C. Cook Nuclear Power Plant, Units 1 and 2

Inspection At: D. C. Cook Site, Bridgman, Michigan

Inspection Conducted: May 21-24, 1979

Inspector: for W. J. Key 6/28/79

Approved By: D. H. Danielson, Chief 6/28/79
Engineering Support Section 2

Inspection Summary

Inspection on May 21-24, 1979 (Report No. 50-315/79-10; 50-316/79-07)
Areas Inspected: Evaluation of cracking detected in feedwater system piping. Observation of feedwater pipe crack repair activities. The inspection involved a total of 28 inspector-hours on site by one NRC inspector.
Results: Of the two areas inspected, no apparent items of noncompliance or deviations were identified in one area; one apparent item of noncompliance was identified in one area (infraction - failure to develop repair procedures prior to starting work - Paragraph 1).

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DETAILS

Persons Contacted

Indiana and Michigan Power Company (I&M)

*D. Shaller, Plant Manager
*B. Svensson, Assistant Plant Manager
*J. Stietzel, Quality Assurance Supervisor
G. Montenegro, Quality Control Supervisor
H. Bolinger, Assistant ISI Coordinator

American Electric Power Service Corporation (AEP)

J. Jensen, NSSS Engineer
D. Patience, Metallurgist

Michigan Department of Labor

A. Kozlowski, Boiler Division Supervisor

*Denotes those present at the exit interview.

Functional or Program Areas Inspected

1. Feedwater System Piping Cracks - Units 1 and 2

Due to unidentified nonradioactive leakage of about 3 GPM into the containment building, Unit 2 was shut down on May 19, 1979. The licensee's inspection revealed through wall cracking in the 16" 90° elbow on feedwater system loops 1 and 4. The cracking is circumferential and up stream of the weld joining the elbow to the steam generator nozzle.

On May 21, 1979, the inspector arrived on site to examine the cracking and to review the licensee's repair activities. The inspector observed excavation of the defective areas in process; excavation had started on May 20, 1979. A review of the licensee's activities to date indicated that the extent and cause of cracking had not been determined and procedures to adequately control the repair activities had not been established as required by Technical Specification 6.8.1 and ASME Section XI. This is an item of noncompliance identified in Appendix A. (316/79-07-01)

The licensee stopped excavation of the defective areas and developed special procedures for the repair activities.

Additional excavation of the defective areas failed to clear the defects. The licensee then performed radiographic examination of the Unit 2 loops 1 and 4 affected areas and revealed more extensive cracking. The affected areas of loops 2 and 3 were radiographed.

The licensee then radiographically examined the same area on three loops of Unit 1 and revealed cracking as in Unit 2. Due to water in loop 4, this area could not be examined by the end of this inspection. The inspector reviewed the radiographs, confirming that all were cracked.

Limited ultrasonic examination was performed by Southwest Research Institute (SWRI) with confirmed reflectors from the cracked area of the elbow. A boat sample was removed from Unit 1, loop 3, for analysis, half was sent to Chicago Service Laboratory and half was sent to Westinghouse. Other samples were taken from Unit 1, loop 2, Unit 2, loops 1, 2, 3, and 4. The NRC was supplied with a ring sample from Unit 2, loop 2, for independent analysis.

Except as noted, no items of noncompliance or deviations were identified.

2. Review of As Build Documentation

The inspector reviewed the original installation documentation of fit-up and welding of the elbow to steam generator nozzles.

Documentation indicates that installation was in accordance with procedures, and the radiographic film of welds shows them to meet code acceptance requirements.

3. Review of Repair Procedures

The inspector reviewed the following procedures that are to be used for feedwater piping repair activities.

a. Procedure No. 12 MHP-SP-001, Revision 0, dated May 28, 1979, titled "Special Procedure for Steam Generator Feedwater Inlet Nozzle Elbow Repair." This procedure will be revised as needed when more analysis information is generated.

b. Instruction No. PMI-1010, Revision 3, dated August 30, 1976, titled "Organization and Responsibilities of AEPSC and I&M Power Companies."

c. Welding Procedure No. 23.88, 23.88a, and 1.3e.

No items of noncompliance or deviations were identified.

4. Exit Interview

The inspector met with licensee representatives (denoted in the Persons Contacted paragraph) at the conclusion of the inspection on May 24, 1979. The inspector summarized the scope and findings of the inspection, and discussed, in detail, the item of noncompliance identified in Appendix A of this report.