UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

Report Nos.: 50-315/83-13 and 50-316/83-14

Licensee: American Electric Power Service Corporation
Indiana and Michigan Power Company
1 Riverside Plaza
Columbus, Ohio 43216

Docket Nos.: 50-315 and 50-316

License Nos.: DPR-58 and DPR-74

Facility Name: D. C. Cook Nuclear Plant

Inspection at D. C. Cook site near Bridgman, MI

Inspector: _____ 8/30/83
for B. R. Crowley Date Signed

Approved by: _____ 8/30/83
J. J. Blake, Section Chief Date Signed
Engineering Programs Branch
Division of Engineering and Operational Programs

SUMMARY

Inspection on August 1-4, 1983

Areas Inspected

This routine, unannounced inspection involved 26 inspector-hours on site in the areas of inservice inspection (ISI), including steam generator eddy current examination (Unit 1), and licensee action on previous enforcement matters (Units 1 and 2).

Results

No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

W. Smith, Plant Manager
*E. Townley, Assistant Plant Manager - Maintenance
*B. Svensson, Assistant Plant Manager - Operations
*J. Stitzel, QC Superintendent
*T. Beilman, QA Supervisor
*R. Otte, ISI Supervisor
D. Dudding, Maintenance Superintendent
H. Bolinger, ISI Assistant
E. Morse, NDE Supervisor

Other licensee employees contacted included security force members, and office personnel.

Other Organizations

D. Hafer, Senior Engineer, AEP Service Corporation
D. Obazenu, Eddy Current Coordinator, Westinghouse
R. Hosley, Shift Supervisor, Westinghouse
J. Siegel, Level IIA Examiner, Zetec, Inc.

NRC Resident Inspectors

E. Swanson
*N. DuBry

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on August 4, 1983, with those persons indicated in paragraph 1 above. The licensee was informed of the inspection findings listed below and acknowledged the findings with no dissenting comments.

(Open) Open Item 315/83-13-01, Clarification of ISI Procedures Relative to Organization and Responsibilities, paragraph 5.b.

(Open) Open Item 315/83-13-02, Clarification of PT Procedure, paragraph 6.b.

3. Licensee Action on Previous Enforcement Matters

(Closed) Infraction 315/79-15-01, 316/79-12-01, Failure to Follow Procedures - Weld Rod Control. Indiana and Michigan Power Company letter of response dated August 30, 1979, has been reviewed and determined to be

acceptable. The inspector held discussions with the licensee and examined corrective actions as stated in the letter of response. The inspector concluded that Indiana and Michigan Power Company had determined the full extent of the subject violation, performed the necessary followup actions to correct the present conditions and developed necessary actions to preclude recurrence of similar circumstances. The inspection included review of revision 5 to plant procedure 12 MHP 5050 SPC.001 and review of surveillance reports 2-83-007, 008, 009, 010 and 12-83-088. The surveillance reports indicate that although some weld rod control problems still exist, procedures are in place to detect and correct the problems.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Inservice Inspection - Review of Program (73051B) (Unit 1)

The inspector reviewed the licensee's inservice inspection (ISI) program for the current outage in the areas indicated below. The applicable code is the ASME Boiler and Pressure Vessel Code, Section XI, 1974 Edition with Addenda through S75, except for steam generator tube eddy current (ET) inspection which is be performed in accordance Section XI, Appendix IV, 1980 Edition with addenda through S81. The ISI, with exception of ET inspections, is being performed by Indiana and Michigan Power Company (I&M) and Southwest Research Institute (SwRI) using a SwRI plan. The ET inspection is being performed by Westinghouse (W).

a. The inspector reviewed the following I&M, SwRI, and W documents relative to the ISI Program:

(1) I&M PMI-5070, Revision 6, "Inservice Inspection"

(2) I&M QHI-5070, Revision 0, "Inservice Inspection"

(3) I&M PMI-1010, Revision 5, "Organization and Responsibilities of AEPSC and I&M Electric Company"

(4) I&M QHI-2070, Revision 1, "Training"

(5) I&M PMI-7020, Revision 3, "Review and Audit"

(6) I&M QHI-7020, Revision 2, "Review and Audit"

(7) I&M QHI-7021, Revision 0, "Qualification of Plant Quality Assurance Audit Personnel"

(8) I&M PMI-6030, Revision 2, "Instrument Maintenance and Calibration"

(9) I&M PMI-2010, Revision 7, "Plant Manager and Department Head Instructions, Procedures and Associated Indexes"

(10) I&M PMI-7030, Revision 6, "Condition Report"

(11) I&M MI-1-5-2-1, Revision C, "Nondestructive Examination Personnel Qualification"

(12) I&M "Quality Assurance Department Audit Schedule" (Remainder of 1982-1983 Cycle)

(13) I&M 12 QHP 5070.ISI-013, Revision 1, "Westinghouse Steam Generator Inspection and Maintenance Procedures Listed on Index Page 1A"

(14) W OPR 610-3, Revision 1, "Control of Field Service Activities"

(15) W MRS 2.2.2 GEN-2, Revision 5, "Installation and Removal of Temporary Nozzle Covers"

(16) W MRS 2.2.2 GEN-6, Revision 4, "Post-Activity Sign-Off for Area Cleanliness"

(17) W MRS 2.2.2 GEN-9, Revision 7, "Steam Generator Tube Sheet Cleaning Full Recirculation System"

(18) W MRS 2.2.2 GEN-12, Revision 0, "Steam Generator Tube Sheet Marking"

(19) W MRS 2.4.2 GEN-19, Revision 1, "Installation and Removal of Eddy Current Positioning Devices"

(20) W MRS 2.4.2 GEN-23, Revision 4, "Multi-Frequency Eddy Current Inspection of Heat Exchanger Tubing - Preservice and Inservice"

(21) SwRI Revision 2, "Nuclear Quality Assurance Program Manual"

(22) SwRI "1983 Inservice Examination Plan for Selected Components - The Donald C. Cook Nuclear Plant, Unit 1"

(23) SwRI IX-FE-101-2, Revision 2, "Deviations to Nuclear Projects Operating Procedures"

(24) SwRI IX-FE-103-2, Revision 2, "Weld Joint Identification Marking on Nuclear Power Plant Piping"

(25) SwRI IX-FE-117-1, Revision 1, "Recording Indications from Ligaments, Bolting, and Piping Weld Examinations"

(26) SwRI X-FE-101-1, Revision 1, "Onsite NDE Records Control"

(27) SwRI XIII-AG-101-2, Revision 2, "Control of Nuclear Inspection Equipment and Materials"

(28) SwRI XVII-AG-101-1, Revision 1, "Data Storage and Retrieval"

These documents were reviewed to assure that procedures and plans had been estalbished (written, reviewed, approved and issued) to control and accomplish the following activities:

- Program approval by the licensee.
- Organizational structure including qualifications, training, responsibilities, and duties of personnel responsible for ISI.
- Audits including procedures, frequency, and qualification of personnel.
- General QA requirements including examination report, deviations from previously established program, material certifications and identification of components to be covered.
- Work and inspection procedures.
- Control of processes including suitably controlled work conditions, special methods, and use of qualified personnel.
- Corrective action.
- Document control.
- Control of examination equipment.
- Quality records including documentation of indications and NDE findings, review of documentation, provisions to assure legibility and retrievability, and corrective action.
- Scope of the inspection including description of areas to be examined, examination category, method of inspection, extent of examination, and justification for any exception.
- Definition of inspection interval and extent of examination.
- Qualification of NDE personnel.
- Controls of generation, approval, custody, storage and maintenance of NDE records.

b. During review of the above ISI documents, the inspector noted the following areas where licensee procedures need to be clarified:

(1) The organization and responsibilities for licensee personnel responsible for ISI are not clearly defined. The ISI control

procedures, PMI-5070 and QHI-5070 should clearly show organizational relationships (Interfaces within I&M and I&M to Contractors) and responsibilities.

(2) Related to (1) above, the data review and evaluation process are not clearly defined. Process and responsibilities for review and approval of data (I&M and contractor) needs to be clearly defined.

At the time of the inspection, the ISI control procedures were being revised. The licensee agreed to evaluate the need for procedure clarification in the above areas and make necessary changes to the ISI control procedures. Pending review of revised procedures, this matter is identified as Open Item 315/83-13-01, Clarification of ISI Procedures Relative to Organization and Responsibilities.

Within the areas inspected, no violations or deviations were identified.

6. Inservice Inspection - Review of Procedures (73052B) (Unit 1)

The inspector reviewed the ISI procedures indicated below to determine whether the procedures were consistent with regulatory requirements and licensee commitments. See paragraph 5 above for the applicable code.

a. The following procedures were reviewed in the areas of requirements for qualification of NDE personnel and compilation of required records:

(1) SwRI - NDT-600-6, Revision 22, "Manual Ultrasonic Examination of Reactor Coolant Pump Flywheels"

(2) 12 QHP 5050-NDE-.001, Revision 5, "Liquid Penetrant Examination For Nuclear and Non-Nuclear Welds and Components"

(3) 12 QHP 5050-NDE-.002, Revision 0, "Magnetic Particle Inspection Procedure For Nuclear Components - Dry Powder Method Using Prods, Coils, and Yoke"

(4) MRS 2.4.2 GEN 23, Revision 4, "Multi-Frequency Eddy Current Inspection of Heat Exchanger Tubing - Preservice and Inservice"

b. Procedure 12 QHP 5050.NDE.001 was reviewed in the area of procedure technical content relative to: method consistent with ASME code, specification of brand names of penetrant materials, specification of limits of sulfur and total halogens for materials, pre-examination surface preparation, minimum drying time following surface cleaning, penetrant application and penetration time, temperature requirements, solvent removal, method of surface drying, type of developer and method of application, examination technique, technique for evaluation, acceptance standards, requalification requirements, methods of removing water washable penetrants, method of applying emulsifier and emulsification time, and examination conditions for fluorescent penetrants.

During review of this procedure, the inspector identified two areas that needed clarifying as follows:

(1) The procedure is not clear in limiting the maximum time for evaluation after developing.

(2) The specifications for the black light used in fluorescent inspections are not included in the procedure.

The licensee agreed to clarify the procedure in the above two areas. Pending review of the revised procedure, this matter is identified as Open Item 315/83-13-02, Clarification of PT Procedure.

c. Procedure 12 QHP 5050.NDE.002 was reviewed in the area of procedure technical content relative to: examination method, surface preparation, use of color contrast particles, examination directions and overlap, pole spacing, acceptance criteria, surface temperature, viewing condition for flourescent particles, and current or strength requirements.

d. Procedure SwRI-NDT-600-6 was reviewed in the area of procedure technical content relative to: type of apparatus, extent of coverage including beam angles and scanning techniques, calibration requirements, search units DAC curves, transfer requirements, reference level for monitoring discontinuities, method of demonstrating penetration, levels of evaluation and recording indications, and acceptance standards.

e. Procedure MRS 2.4.2 GEN 23 was reviewed in the area of procedure technical content relative to: use of two channel examination equipment, criteria for maximum sensitivity, material permeability, examination method, calibration, and acceptance criteria.

With the areas inspected, no violations or deviations were identified.

7. Inservice Inspection - Observation of Work and Work Activities (73753B) (Unit 1)

The inspector observed the ISI activities described below to determine whether these activities were being performed in accordance with regulatory requirements and licensee procedures. See paragraph 5 above for the applicable code.

a. Personnel certification records for three Level I, seven Level II, and one Level IIA eddy current examiners were reviewed.

b. In-process eddy current examination was observed for the following steam generator tubes:

Generator 14 - Column 26, Row 31
Column 26, Row 32
Column 26, Row 33
Column 26, Row 35
Column 26, Row 36
Column 26, Row 37

Generator 11 - Column 11, Row 11
Column 11, Row 10
Column 12, Row 10
Column 12, Row 11
Column 12, Row 12
Column 12, Row 13
Column 12, Row 14
Column 12, Row 15
Column 12, Row 17

The inspections were compared with applicable procedures in the areas of:

(1) Use of two channel Eddy Current equipment

(2) Examination method

(3) Equipment calibration

(4) Amplitude and Calibration

(5) 100% coverage of tubes

(6) Acceptance criteria

c. The W "Quality Release to Site" certifying all eddy current equipment was reviewed.

d. Eddy current inspection of steam generator tubes in generators 12 and 13 had been completed. Twenty-seven hundred, forty (2740) tubes in each generator were inspected. The inspector reviewed the test results of these two generators. Results were as follows:

Generator 12: (1) 53 tubes had indications

(2) 2 tubes had indications of thru wall degradation $\geq$40%

(3) 8 tubes had indications of thru wall degradation $\geq$20% <40%

(4) 2 tubes with >40 degradation had been plugged. An evaluation was being made relative to plugging 4 row 1 tubes which had indications that could not be quantified as to % degradation.

Generator 13: (1) 59 tubes had indications

(2) 5 tubes had indications of thru wall degradation $\geq$40%

(3) 32 tubes had indications of thru wall degradation $\geq$20% <40%

(4) 6 tubes were plugged - the 5 with >40% degradation and 1 row one tube with probe restriction

Within the areas inspected, no violations or deviations were identified.

8. IE Bulletins (Units 1 and 2)

(Closed) IEB 315, 316/82-BU-03, Stress Corrosion Cracking In Large Diameter Stainless Steel Recirculation System Piping at BWR plants. D.C. Cook is a PWR plant. Th efore, this IEB does not apply.

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