

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-440
License No: NPF-58

Report No: 50-440/96007

Licensee: Cleveland Electric Illuminating Company

Facility: Perry Nuclear Power Plant, Unit 1

Location: Post Office Box 5000
Cleveland, OH 44101

Dates: August 12-15, 1996

Inspector: M. S. Holmberg, Inspector, DRS

Approved by: John M. Jacobson, Chief
Engineering Branch 1

Report Details

II. Maintenance

M3 Maintenance Procedures and Documentation

M3.1 Inservice Inspection (ISI)

a. Inspection Scope (73753, 73051, 73052, 73755)

The inspector reviewed and evaluated the ISI program, procedures, ISI personnel certifications, and ISI data taken during the 1996 refueling outage for compliance with technical specifications, ASME Code, SNT-TC-1A and NRC requirements.

b. Observations and Findings

The inspector's review of the ISI program concluded that it met ASME Code Section XI, 1983 Edition through Summer addenda requirements. The ISI plan was well organized with augmented inspections of applicable welds and core internal components scheduled and distinguished by separate, well defined inspection categories based on the requirement source (e.g., NRC generic letters, NUREGs, vendor guidance (GE SILs) and USAR commitments).

The inspector reviewed ultrasonic testing data reports for volumetric examination of recirculation and feedwater nozzle to safe end welds completed during the 1996 refueling outage (RFO 5). Automated ultrasonic equipment, using shear and refracted longitudinal-wave transducers had been used for these examinations. The inspector considered these examinations to be thorough and of high quality.

On February 18, 1996, during visual examination of core internal components, ISI personnel identified a potential gap between a set screw of the jet pump restrainer bracket and mixer section of jet pumps 12 and 14. No evidence of vibration induced wear/damage was detected and the affected restrainer bracket set screw tack welds were intact. On July 18, 1996, the licensee issued PIF 96-2455 to document concerns for the potential set screw gaps after receiving General Electric Nuclear Energy (GE) RICSIL 078, "Jet Pump Restrainer Bracket Set Screw Gaps" (issued June 3, 1996). RICSIL 078 identified that a number of GE Boiling Water Reactor Plants (BWRs) had observed set screw gaps and/or wear at the restrainer bracket pad and wedge interface. Jet pumps 12 and 14 were considered operable based on GE's evaluation of the estimated gap size with gaps observed at other BWRs and the absence of vibration wear/damage. The inspector reviewed commitment identification form B00929, which committed to incorporate future RICSIL 078 inspections into the ISI program.

c. Conclusions

The ISI program complied with NRC and ASME Code requirements and no violations or deviations were identified. The inspector considered the ISI plan particularly well organized and documented. The use of "state of the art" equipment to perform ultrasonic examinations for the Inservice Inspection Program demonstrated an important element of a quality program.

M3.2 FAC Program Review

a. Inspection Scope (49001)

The inspector reviewed the FAC program used during RFO 5 to verify compliance with NRC requirements, commitments and industry standards.

b. Observations and Findings

In 1992, inspectors concluded that management commitment to a quality Erosion Corrosion (E/C) Program was weak (Inspection Report (IR) 50-440/92007). An independent EPRI review of the FAC program completed in July of 1993 concluded that the Perry FAC program was significantly behind the majority of U.S. plants. The licensee implemented improvements to their FAC program (formerly E/C Program) based on standards established in EPRI document NSAC-202L, "Recommendations for an Effective Flow-Accelerated Corrosion Program." Program improvements have been completed, which included; system susceptibility studies, detailed system modeling and implementation of the latest EPRI software. Full implementation of the current FAC program concluded during RFO 5 with the completion of susceptible system and component baseline inspections. Based on reviews of the FAC program, Perry Course of Action Updates, and discussions with the Program Manager, the inspector concluded that the current FAC program met industry standards.

The inspector reviewed CEIO 28.0602, Revision 0, "Flow Accelerated Corrosion Small Bore Piping Risk Assessment Document," completed in April of 1994. This document assessed the susceptibility and risk of Perry's small bore piping systems (two inch and smaller in diameter). The inspector noted that the components of these small bore piping systems assessed as "high risk" had not been evaluated for incorporation into the FAC program. The inspector discussed with the FAC Program Manager this potential opportunity for further improvement of the program. The Program Manager indicated that the licensee would evaluate and incorporate "high risk" small bore piping components into their FAC program.

c. Conclusions

No violations or deviations were identified. Changes have been made which bring the Perry FAC program up to the current industry standards

and demonstrated increased support for this program important to plant safety and reliability.

V. Management Meetings

X1 Exit Meeting Summary

At the conclusion of the inspection on August 15, 1996, the inspector met with licensee representatives identified herein and summarized the scope and findings of the inspection activities. The inspector questioned licensee personnel as to the potential for proprietary information in the likely inspection report material discussed at the exit. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

D. Cobb, Systems Engineering Supervisor
D. Dietrich, Systems Engineering
C. Wirtz, Systems Engineering
D. Dervay, Systems Engineering
R. Portman, Systems Engineering
L. Zerr, Regulatory Assurance

NRC

D. Kosloff, Senior Resident Inspector, Division of Reactor Projects

INSPECTION PROCEDURES USED

IP 49001: Inspection of Erosion/Corrosion Monitoring Programs
IP 73753: Inservice Inspection
IP 73755: Inservice Inspection, Data Review and Evaluation
IP 73052: Inservice Inspection, Review of Procedures
IP 73051: Inservice Inspection, Review of Program

LIST OF ACRONYMS USED

ASME	American Society of Mechanical Engineers
BWR	Boiling Water Reactor Plant
E/C	Erosion-Corrosion
FAC	Flow-Accelerated Corrosion
GE	General Electric Nuclear Energy
EPRI	Electric Power Research Institute
USAR	Updated Safety Analysis Report
GL	Generic Letter
IP	Inspection Procedure
IR	Inspection Report
ISI	Inservice Inspection
NRC	Nuclear Regulatory Commission
RICSIL	Rapid Information Communication Services Information Letter
RFO	Refueling Outage
TS	Technical Specification
UT	Ultrasonic Testing