

U.S. NUCLEAR REGULATORY COMMISSION
Region I

Report No. 50-293/85-34
Docket No. 50-293
License No. DPR-35
Licensee: Boston Edison Company M/C Nuclear
800 Boylston Street
Boston, Massachusetts 02199

Facility Name: Pilgrim Nuclear Power Station

Inspection At: Plymouth, Massachusetts

Inspection Conducted: December 2-6, 1985

Inspector: S. Kucharski
S. Kucharski, Reactor Engineer

12/20/85
date

Approved By: Jon R Johnson
J. Johnson, Chief, Operational Programs Section,
Operations Branch, DRS

12/20/85
date

Inspection Summary: Inspection on December 2-6, 1985 (Report No. 50-293/85-34)

Areas Inspected: Routine unannounced inspection of the Inservice Testing Surveillance program for pumps and valves, and tours of the facility. The inspection involved 31 hours onsite by one region-based NRC inspector.

Results: No violations or deviations were identified.

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DETAILS

1. Persons Contacted

- * J. F. Crowder, Senior Compliance Engineer
- * B. Eldredge, Chief Radiological Engineer
- * F. N. Famulari, OQC Group Leader
- E. T. Graham, Compliance Group Leader
- * D. G. Long, Onsite Safety and Performance (OSS&P) Engineer
- * P. Mastrangelo, Chief Operations Engineer
- C. J. Mathis, Nuclear Operations Manager
- * J. C. Mattia, QA Audit Group Leader
- * S. S. Wollman, OSS&P Group Leader
- M. Williams, QC Senior Mechanical Engineer
- * E. Ziemianski, Nuclear Operations Support Manager

NRC Personnel

- * M. McBride, Senior Resident Inspector

* Denotes those present at the exit meeting on December 6, 1985.

2. Licensee Action on Previous Inspection Findings

2.1 (Closed) Unresolved Item (82-04-01) - Identification of Primary Containment Boundaries to be Leak Rate Tested

The licensee's procedure for Type B and C testing now identifies all the containment boundaries required to be local leak rate tested. This item is now closed.

2.2 (Closed) Inspector Followup Item (82/25-01) - ISI Drawing Control

A review of the P&ID's during inspection 82-25 identified a concern regarding the control of ISI drawings because changes that were being made were not kept current.

Subsequently, the licensee has contracted Nutech to update the ISI P&ID's and QA procedures have been revised to assure that the plant ISI group reviews Plant Design Change Requests (PDCR). This item is closed.

2.3 (Closed) Unresolved Item (84-16-01) - Perform ISI on Check Valves for the RHR System and RCIC in Accordance with Section XI Paragraph IWV-3520

During inspection 84-16, the inspector questioned the testing of the check valves for the Residual Heat Removal (RHR) system (1001-68A and B) and Reactor Core Isolation Cooling (RCIC) system (1301-50) in accordance with ASME, Section XI. The licensee stated that the check valves would be replaced and tested before October 1984.

Subsequently, the inspector reviewed the new test procedures Nos. 2.1.7 (1001-68A and B) and 8.I.14 (1301-50), plus the results of the tests performed to acquire the base line data. This item is closed.

2.4 (Closed) Unresolved Item (84-17-01) - Review Bases for Core Spray Discharge and RHR Suction Piping Relief Valves

Review of the core spray system and RHR system, during inspection 84-16, identified relief valves set at a pressure above the design pressure of the piping in both systems. For the core spray system, the original piping code ANSI B31.1, 1967, yields a maximum pressure of about 1050 psig which is well above the relief valve set pressure of 450 psig for that system.

For the RHR system, the code maximum pressure (635 psig for the piping) is also above the 120 psig set point for the relief valves.

The inspector has no further questions. This item is closed.

2.5 (Closed) Deviation (85-17-02) - The IST Program was not Implemented in Accordance with Licensee Submittals

During inspection 85-17, the inspector noted several valves for which the licensee failed to perform stroke tests according to the IST program. These valves are listed as follows:

<u>System</u>	<u>Valve</u>
HPCI	2301-8 YRV-9066
Diesel Oil Transfer	1 in. No. 223 (2 Valves) Foot-Val A&B

The licensee has corrected the surveillance procedure to include a stroke closure test of HPCI valve No. 2301-8. This action was completed and approved on August 21, 1985. For the remaining valves, the licensee has included relief request in the Inservice Test Program submitted on October 24, 1985 for review by the NRC. This item is closed.

3. Inservice Testing (IST) Program for Pumps and Valves

3.1 Documents Reviewed

- Inservice Testing Program for Pumps and Valves - Pilgrim Nuclear Power Station, Revision 1A, September 30, 1985

- Audit No. 85-4, OSS&P/Inservice Testing Program, April 10, 1985
- Procedure No. 8.I.14, RCIC System Check Valve 1301-50 Injection Operability, Revision 2, June 26, 1985
- Procedure 18.04, Conduct and Reporting of Nuclear Operations Surveillance Monitoring Activities, Revision 5, November 2, 1985
- Procedure 18.01, Preparation, Performance, Reporting and Followup of Quality Assurance Department Audits, Revision 12, November 2, 1985
- Procedure No. 2.1.7, Vessel Heatup and Cooldown, Revision 18, September 9, 1985
- Procedure No. TP-83-45, Preoperational Tests on Two Valves in the RCIC System (1301-64 and 1301-50), Revision 2, October 17, 1984
- Procedure No. 8.5.5.1, RCIC Pump Operability Flow Rate and Valve Test at 1000 psig, Revision 19, November 13, 1985
- Procedure No. 8.5.5.4, RCIC Valve Operability, Revision 13, June 22, 1984
- Procedure No. 8.4.1.1, Standby Liquid Control Pump Operability and Flow Rate Test, Revision 14, July 6, 1984
- Procedure No. 8.5.1.1, Core Spray Pump Operability and Flow Rate Test, Revision 12, March 20, 1985
- Procedure No. 8.I.16, Test of Suppression Chamber to Reactor Building Vacuum Breakers, Revision 0, January 4, 1984
- Procedure No. 8.7.4.3, Test (Close and Reopen) Isolation Valves, Revision 14, June 26, 1985
- Procedure No. 8.5.4.1, HPCI Pump Operability Flow Rate and Valve Test at 1000 psig, Revision 25, October 30, 1985
- Procedure No. 8.9.1, Manually Start and Load Each D/G once/month, Revision 18, October 9, 1985

3.2 Scope of Review

The inspector reviewed the above documents to ascertain compliance with 10 CFR 50.55a(g) which requires Inservice Testing (IST) of pumps and valves in accordance with Section XI of the ASME Boiler and Pressure Vessel Code. A major portion of this review was an evaluation of the licensee's IST program with respect to procedures, conduct of test and analysis of results.

3.3 Procedure Review

The inspector reviewed the surveillance procedures listed in paragraph 3.1 for technical adequacy and to ascertain compliance with requirements of Technical Specifications, Section XI of the ASME Boiler and Pressure Vessel Code, and 10 CFR 50.55a. During the review process, the inspector noted that the surveillance procedures do not specify the ranges of acceptance criteria (allowable, test and required action range) so that the results could be analyzed immediately upon completion of the test. The licensee has agreed to review this matter to decide if additional actions are needed since a Shift Technical Advisor (STA) is required to witness all tests. The inspector had no further questions at this time.

3.4 Test Witnessing

On December 4, 1985, the inspector witnessed the Reactor Core Isolation Cooling (RCIC) surveillance test. The test was being conducted with approved procedure No. 8.5.5.1, RCIC Pump Operability Flow Rate and Valve Test at 1000 psig, Revision 19. The test was conducted in two parts: for technical specification requirements and for inservice testing requirements. The inspector observed the performance of the test to ascertain that the prerequisites were met, the proper precautions were taken, the instrumentation used for the test had the required calibration stickers, and the personnel involved in performing the test were knowledgeable of the procedure and its requirements. The inspector did note that there was a lack of communication between the control room operator and the personnel taking data in the RCIC quadrant. The reason this observation was noted is because, at the time of the test, two different instruments were used to take vibration data from the RCIC pump. Both instruments were supposed to read the same and there was a discrepancy between the two. Instead of relating this information to the control room, technicians left and the test was completed. The licensee recorded the higher of the two readings which would be considered the most conservative approach. But, when questioned by the inspector, the licensee decided to check out both instruments to determine which one was correct. As a result of the check, it was discovered that the instrument that was recording the higher displacement was reading correctly. The other instrument had a faulty wire; this instrument was removed from service. Since a conservative approach was used, the inspector had no further questions.

On the same day, December 4, 1985, the inspector witnessed the RCIC valve operability test. The test was being conducted with approved procedure No. 8.5.5.4, RCIC Valve Operability, Revision 13. This test was conducted solely for valve timing. The inspector independently verified the opening and closing times of the motor operated valves to be within the specification. No violations were identified.

3.5 IST Results Evaluation

The inspector reviewed individual data sheets and trend charts for a sample of the tests listed in Section 3.1. All the data reviewed was analyzed by the STA within 2 days of the test. The inspector did note that there were several problems (minor) with the documentation (missing signatures, verification of the trend charts being initiated by the STA's signature and no data on the chart for that test).

The licensee has agreed to review this matter and make the needed adjustments to keep good documentation. The inspector had no further questions at this time.

4.0 QA/QC Involvement

During the review of the IST program, the inspector interviewed the QA department personnel to determine their involvement with the program. The inspector noted that QA does perform an annual audit of the IST program in which they review a sample of the completed procedures to assure that actions were performed within the guidelines of that procedure. As far as witnessing a test itself, the QA department has had essentially no involvement. They have witnessed technical specification related surveillance tests but have not been involved when an IST was being performed. The QA department has agreed to plan increased coverage of this area but also stated that they are limited because of manpower. The inspector had no further questions at this time.

5.0 Management Meeting

A meeting was held on December 6, 1985 to discuss the scope and findings of the inspection as delineated in this report. At no time during this inspection was written information provided to the licensee.