

U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Docket/Report No. 50-293/85-36

License: DPR-35

Licensee: Boston Edison Company
800 Boylston Street
Boston, Massachusetts 02199

Facility: Pilgrim Nuclear Power Station

Location: Plymouth, Massachusetts

Dates: December 7, 1985 - December 31, 1985

Inspector: M. McBride, Senior Resident Inspector

Approved by:

J. Tripp

L. Tripp, Chief, Reactor Projects Section 3A

1/23/86
Date

Summary: December 7-31, 1985: Inspection Report 50-293/85-36

Areas Inspected: Routine resident inspection of the control room, accessible parts of plant structures, plant operations, radiation protection, physical security, fire protection, plant operation records, maintenance, surveillance, documents provided to the licensee, and reports to the NRC. Inspection hours totaled 40.5.

Results: No violations were identified. A concern regarding the response of the contractor security guard force to a security incident is discussed in Section 6.

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1. Persons Contacted

N. Brosee, Maintenance Section Manager
P. Mastrangelo, Chief Operating Engineer
C. Mathis, Nuclear Operations Manager (Senior licensee manager present at exit meeting)
J. McEachern, Resources Protection and Control Group Leader
R. Sherry, Chief Maintenance Engineer (acting)

The inspector also interviewed other licensee employees and contractors during the inspection, including members of the operations, maintenance, radiation protection, security, and technical staff.

2. Summary of Facility Activities

At the start of the inspection period, December 7, 1985, the plant was at full power. Plant conditions remained stable throughout the inspection period. The plant has been operating continuously since September 7, 1985.

Two regional specialist inspections were conducted in the inservice testing and fire protection functional areas. An IE team inspection of the environmental qualification of plant equipment was also conducted.

3. Licensee Action on Previous Inspection Findings

(Open) Unresolved Item (85-31-01). Review root cause for drifting main steam line high flow switch set points. A licensee event report (LER), No. 85-032-00, was submitted which described cause of the switch drift problem. The LER indicated that lack of detail in the vendor manual for the switches contributed to the drift. Specifically, the vendor manual did not emphasize the importance of aligning the switch linkages during field conversion of the Barton model 278 switches. Misaligned linkage following field conversion at Pilgrim was believed to be the principal cause of the switch drift problem.

Subsequently, the main steam line switch linkages were realigned. Unused switch components (low flow micro switches) were disconnected from the switch linkages to remove any possible interference. Set point calibrations were checked at a weekly frequency following these adjustments and no drift was noted. At the exit interview, the licensee indicated that the set point calibration frequency would be decreased to monthly. This item will remain open until future testing data confirms the stability of the switches and the technical specification calibration frequency (quarterly) is reestablished.

4. Routine Periodic Inspections

a. Daily Inspection

During routine facility tours, the following were checked: manning, access control, adherence to procedures and limiting conditions for operations (LCO's), instrumentation and recorder traces, control room annunciators, safety equipment operability, control room logs and other licensee documentation.

No unacceptable conditions were identified.

b. Systems Alignment Inspection

Operating confirmation was made of selected piping system trains. Major motor operated and manual valve positions for safety equipment were verified during routine checks of the control room. Valve power supply, breaker alignment, and safety equipment controller set points were also checked.

No items for further inspection were identified and no unacceptable conditions noted.

c. Biweekly Inspections

During plant tours, the inspector observed shift turnovers and checked plant conditions, valve positioning and locking (where required), instrumentation lineup, radiological controls, security, safety, and general adherence to regulatory requirements. Plant housekeeping and cleanliness were evaluated.

On December 24, 1985, several items were noted during a plant tour which will require further inspection. These items are discussed in Section 8 of this report.

d. Plant Maintenance

The inspector observed and reviewed maintenance and problem investigation activities to verify compliance with regulations, administrative and maintenance procedure, codes and standards, proper QA/QC involvement, safety tag use, equipment alignment, jumper use, personnel qualifications, radiological controls for worker protection, fire protection, retest requirements, and reportability per Technical Specifications.

A list of reviewed items is included in the Attachment to this report. The inspector noted the following:

- On December 13 and 25, 1985, one of two diesel generators was taken out of service for maintenance. In the first instance, a leaking hose carrying lubricating oil was replaced on the "A" diesel generator. In the second instance, a surveillance test was halted to

correct a minor fuel oil leak on the "B" diesel generator. The inspector discussed the maintenance with plant personnel and identified no problems.

e. Surveillance Testing

The inspector observed parts of tests to assess performance in accordance with approved procedures and LCO's, test results (if completed), removal and restoration of equipment, and deficiency review and resolution.

A list of reviewed items is included in the Attachment to this report. The inspector noted the following:

- On December 16, 1985, a recirculation pump differential pressure switch, no. 261-37A, was found to have drifted high during a routine surveillance test, 8.M.2-2.2.1. The switch, one of eight, is used in low pressure coolant injection (LPCI) loop selection logic. The as-found switch set point was 1.7 psid, which was less than the technical specification limit of ≤ 2 psid but greater than the licensee's no adjust limit of ≤ 1.5 psid. The switch was promptly adjusted to 1.0 psid.

The inspector reviewed the testing history of the recirculation pump differential pressure switches. The switches, Barton model 288, were generally stable. The 261-37A had not required adjustment during 1985. However, another switch, no. 261-38A, had to be adjusted in three of four quarterly calibrations during 1985. At the exit meeting, the licensee agreed to evaluate the cause of drift in the 261-38A switch. The switches are similar in design to the main steam line high flow switches, discussed in Section 3 of this report. The switch evaluation will be reviewed during a subsequent inspection (85-36-01).

5. Review of Plant Events

a. Dropped Drill in the Control Room

On December 13, 1985 at 10:20 pm, a worker installing conduit over a control room back panel, slipped on a ladder and accidentally dropped a drill. The drill damaged the cover of a safety related HFA relay, no. 16A-K7D. The relay was replaced. The replacement was completed at 3:57 am on December 14, 1985. The operability of the original relay was confirmed by bench testing. The incident was isolated.

The inspector discussed the incident with construction management and maintenance personnel and reviewed the maintenance request for the relay replacement, M.R. 85-684. Contacts on the replacement relay were tested in accordance with GE SIL 44, Supplement 4, Revision 2 prior to installation. Contact wires were labeled prior to removal from the original

relay. A maintenance supervisor checked contact wire placement before and after the replacement. A post work functional test verified coil movement in the new relay on an isolation signal.

The inspector had no further questions.

b. Rod Block Monitor Operability

On December 26, 1985, the "A" rod block monitor was declared inoperable after it failed a routine surveillance test. The "A" monitor was promptly declared inoperable and compensatory surveillance testing required by the technical specifications was initiated for the "B" monitor. The "A" monitor was declared operable on December 31, 1985 following the replacement of circuit cards and a power supply.

The inspector reviewed the compensatory surveillance test results for testing done per Procedure 8.M.2-3.2.1, and discussed the rod block monitor LCO with the licensee. The Pilgrim LCO is not worded as clearly as the equivalent standard technical specification LCO. The licensee stated at the exit meeting that the LCO would be clarified as part of a previously prepared technical specification submittal.

The inspector had no further questions.

6. Observations of Physical Security

Checks were made to determine whether security conditions met regulatory requirements, the physical security plan, and approved procedures. Those checks included security staffing, protected and vital area barriers, personnel identification, access control, badging, and compensatory measures when required.

On December 24, 1985 at approximately noon, a security egress device malfunctioned and opened a vital area door for a plant visitor. The visitor was escorted by the inspector. The licensee subsequently determined that the security device would occasionally malfunction in this manner. Compensatory measures were established. No other security devices malfunctioned in this manner during the inspection period.

The inspected noted that the contractor guard response seemed sluggish when the problem was initially reported. One guard asked the inspector what type of followup evaluation should be conducted. In addition, the licensee indicated that the contractor security evaluation and corrective actions were not clearly documented. The licensee's security supervisor was on vacation at the time of the incident and had to subsequently determine by interview the extent of the initial problem and the security corrective actions.

At the exit meeting, the inspector expressed concern with the sluggishness of the contractor response and the inadequate documentation. The licensee indicated that the incident would be reviewed with the contractor's corporate

management. The licensee will also issue guidance on the scope of contractor incident reports. The security hardware problem will be discussed with the equipment vendor. The licensee's evaluation of the security equipment problem will be reviewed during a future inspection (85-36-02).

7. Review of Licensee Event Reports (LER's)

LER's submitted to NRC:RI were reviewed to verify that the details were clearly reported, including accuracy of the description of cause and adequacy of corrective action. The inspector determined whether further information was required from the licensee, whether generic implications were indicated, and whether the event warranted onsite followup. The following LER's were reviewed.

<u>LER No.</u>	<u>Event Date</u>	<u>Report Date</u>	<u>Subject</u>
85-30	10/30/85	11/27/85	Inadequate recirculation pump start procedure
85-31	10/29/85	11/27/85	Failure to meet minimum shift crew composition
85-32	11/25/85	12/19/85	Main steam line high flow switch set point drift
85-33	11/27/85	12/17/85	Main stack and reactor building vent missed surveillance test

The surveillance test procedure problems in LER's 85-30 and 85-33 were discussed in NRC inspection reports 50-293/85-26 and 50-293/85-32, respectively. The failure to meet the minimum shift crew composition requirements (LER 85-31) was linked to an ongoing shortage of licensed reactor operators at the plant. This shortage was discussed in NRC inspection report 50-293/85-26. The main steam line flow switch drift problem was discussed in Section 3 of this report and in NRC inspection report 50-293/85-31.

The inspector had no further questions concerning the LER's.

8. Regional Management Plant Tour

On December 24, 1985, the Director of the Division of Reactor Projects, Region I, toured the Pilgrim Facility. The following items were noted during the tour:

- The Woodward governors on the diesel generators have adjustment settings which could be accidentally moved. The governor settings are not routinely checked between diesel surveillance tests. At the exit meeting, the licensee indicated that protective covers for the governor controls were not needed because the governors were located above the diesels,

out of normal traffic. However, the licensee is planning to determine the setting tolerances and have the governors checked by operators on their routine plant tours. Future routine NRC inspections of operator activities will confirm that this is being accomplished.

- Tissue-like material was observed floating in certain cells in safety related station batteries. At the exit meeting, the licensee stated that an engineering evaluation of the phenomena would be conducted.
- A steam leak was noted on the impulse trap for the high pressure coolant injection system steam line drain. A water leak was also observed at a temperature element on the salt service water system outlet from the "B" turbine building closed cooling water heat exchanger. Both leaks were subsequently repaired during a short plant outage in the beginning of January 1986.

The licensee corrective actions for these findings will be reviewed during a future NRC inspection (85-36-03).

9. Management Meetings

During the inspection, licensee management was periodically notified of the preliminary findings by the resident inspectors. A summary was also provided at the conclusion of the inspection and prior to report issuance. No written material was provided to the licensee during this inspection.

ATTACHMENT 10 INSPECTION

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1. Portions of the following surveillance tests were reviewed:
 - Calibration data for all main steam line high flow switches for December, 1985
 - Calibration data for all recirculation pump differential pressure switches for 1985, procedure 8.M.2-2.2.1
 - Post work testing for HFA relay 16A-K7D
2. Portions of the following maintenance activities were reviewed:
 - MR 85-701, "A" rod block monitor failed during surveillance test 8.M.2-3.2
 - MR 85-61-6, the discharge hose on the prelube pump for the "A" diesel generator is leaking oil
 - MR 85-684, relay 16A-K7D face cover is broken
 - MR 85-685, battery terminals arcing on diesel fire pump
 - Maintenance on directional control solenoid valves for control rod drive 14-35
 - Modifications to main steam line differential pressure flow switches during December, 1985