

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-293/84-19

Docket No. 50-293

License No. DPR-35 Priority - Category C

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

Facility Name: Pilgrim Nuclear Power Station

Inspection At: Plymouth, Massachusetts

Inspection Conducted: July 9 - 13, 1984

Inspectors: E. H. Gray
E. H. Gray
Lead Reactor Engineer

8/10/84
date

Approved by: Jacque Durr
J. P. Durr, Chief
Materials & Processes Section

8/21/84
date

Inspection Summary:

Inspection During July 9 - 13, 1984 (Report No. 50-293/84-19)

Areas Inspected: Routine unannounced inspection of the recirculation piping replacement program and repair to vessel nozzle safe end buildup. Welder and NDE personnel qualifications, work travelers, work in progress, applicable procedures, weld wire control and radiographs were examined. The inspection included 36 hours on site and eight hours of follow-up in the Region Office.

Results: No violations were identified.

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DETAILS

1. Persons Contacted

Boston Edison Company (BECO)

- * F. Famulari, QA, ISI
- * H. Brannan, QA Manager
- * J. Convey, Senior Quality Assurance Engineer
- J. Crowder, Senior Compliance Engineer
- * E. Graham, Compliance Group Leader
- * E. Kearney, Staff Assistant
- E. Menslage, Quality Control Engineer, Welding
- A. Sanpere, Quality Control Engineer
- * P. Mastrangelo, Acting Station Manager
- * J. Nicholson, IGSCC Project Manager

General Electric Company (GE)

- F. Forsythe, Manager, Technical Support
- M. Hart, QA Manager
- * R. Hamilton, Site Project Manager
- C. Johnson, Weld Supervisor
- J. Plantz, Lead Weld Supervisor
- J. Phelps, QC Supervisor
- D. Tackett, Piping Consultant

NRC

- * J. Johnson, Senior Resident Inspector

* Indicates presence at exit meeting on July 13, 1984.

2. BECO Action on previous inspection findings

(Closed) Unresolved Item (293/84-08-01)

This issue questioned if project problem areas would be identified and if there would be implementation of suitable corrective action. As discussed in paragraph 5, the QA/QC surveillances and inspections of both BECO and GE are scheduled and conducted to provide for identification of problem areas and to implement corrective actions.

This item is closed.

3. Recirculation Pipe Replacement

This inspection is the latest of a series of specialist inspections, 84-02, 84-08, 84-11 and 84-19, directed toward activities required in replacement of the reactor coolant recirculation piping. At the time of the 84-19 inspection, installation of new pipe, including welding was approximately 50% complete. The inspector reviewed the work schedule, planning, work process travelers and applicable procedures. Work in progress was observed including welding, rigging for handling material, temporary supports for piping and equipment and weld wire control. Work and welding in progress was compared to the applicable ASME Code, procedural requirements and installation specification number 23A4048, Revision 1.

Radiographs were examined on the following pipe welds for conformance to Radiographic Procedure PNPS-22.0, and the ASME Code, Sections III and V requirements.

PRE-A-038-FW	PRE-B-085-FW
PRE-B-050A-FW	PRE-B-087-FW
PRE-B-054-FW	PRE-B-093-FW
PRE-B-083-SW	PRW-A-031-FW

The work process travelers reviewed indicated that operations were signed-off as work was completed and that welder records were consistent with requirements. Detailed weld records were observed at the 51' elevation weld control station which demonstrated careful conformance to weld procedural requirements and were current with welding in progress.

No violations were identified.

4. Safe End Repairs

Material defects, intergranular stress corrosion cracking (IGSCC), of the inconel clad weld butter deposit on the joint preparation of certain vessel nozzle ends for attachment of the safe ends was identified by BECO and reported previously to the NRC. Repair of this IGSCC requires removal and replacement of portions of the affected inconel. Four basic repair types apply to the inconel butter repair, repair in inconel away from base metal, repair near the base metal, repair affecting the base metal heat affected zone (HAZ) requiring ASME Code half bead welding, and repair affecting the nozzle HAZ where an 1150°F PWHT per the ASME Code is used.

The inspector reviewed typical travelers, procedures and records of each of the four types of repair. Included in this review was procedure PNPS 48.0 covering the 1150°F PWHT of one 28" recirculation outlet nozzle to be accomplished per the ASME Code Section III, paragraph NB4600, winter 1980 addenda.

Shop and field weld data for the original safe end welds including weld procedures WC-21466-345-0 and P12, P8-AT-Ag(F43)-1, field weld electrode chemistries and nozzle details on drawings E232-345-8 and E232-369 Revision 5. were reviewed. No unusual shop or field conditions were noted that could be attributed latter development of the IGSCC.

No violations were identified.

5. Recirculation 12" Riser Hot Bends

The initial set of 12" riser hot bent stainless steel pipe was determined to be microfissured in the hot bent area. The second set of 12" riser hot bent pipe was on site waiting for QC release from hold. The inspector reviewed the letter of July 9, 1984 (PPRP-E-120) indicating ultrasonic (UT) acceptance of the this batch of hot formed pipe to GE specification E50YP42 and part 3.1 of the draft report by GE of July 10, 1984 on examination of test bends by UT. The inspector concluded that steps have been taken to identify microfissures in the hot bent portions of the second set of riser pipe and had no further concern in this area.

6. QA and QC Coverage of Work Activities

The inspector reviewed BECO QC on-site surveillance and traveler specific hold point and check point inspection activity related to recirculation piping replacement and vessel nozzle inconel weld buildup repairs. QC surveillance reports and logs of QC inspections were sampled indicating continued BECO QC involvement in the replacement project work.

The inspector noted a scheduled QA audit by BECO of on site BECO activities to be in progress and an audit by QA of procurement/control of materials scheduled to start on July 16, 1984.

The coverage of work by GE QC was accomplished by review of completed and in progress travelers, inspection records and examination of a sample of radiographs of completed welds. Work copies of travelers and procedures were observed to be in order at the drywell entrance. Permanent copies of the travelers with sign offs for completed work and inspections were observed to be in the QC department under control.

No violations were identified.

7. Exit Interview

An exit interview was held on July 13, 1984, with members of the licensee's staff and contractor as denoted in paragraph 1. The inspector discussed the scope and findings of the inspection. At no time during this inspection was written material provided to the licensee by the inspector.