

U.S. NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 50-293/80-16

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: April 21-25, 1980

Inspectors: *P. S. Koltay*  
P. S. Koltay, Reactor Inspector

5/27/80  
Date

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Date

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Date

Approved by: *S. D. Ebner*  
S. D. Ebner, Chief, Engineering Support  
Section #2, RC&ES Branch

6/11/80  
Date

Inspection Summary:

Inspection on April 21-25, 1980 (Report No. 50-293/80-16)

Areas Inspected: Announced inspection of the plant Fire Protection/Prevention Program including: implementation of administrative controls; fire brigade training; observation of ignition source and combustible materials control; review and observation of plant modifications; and observation of critical plant areas. The inspection involved 32 hours onsite by one NRC regional based inspector.

Results: Of the 5 areas inspected, no items of noncompliance were identified in 4 areas; one item of noncompliance was identified in one area (Infraction - failure to follow plant fire extinguishers check procedure).

## REPORT DETAILS

### 1. Persons Contacted

- \*A. Caputo, Fire Protection Officer
- E. Graham, Senior Plant Engineer
- C. Holteen, Construction Engineer
- E. Kearney, Quality Assurance Group Leader
- \*P. McGuire, Station Superintendent
- C. Mathis, Senior Plant Engineer
- J. McEachern, Security Supervisor
- J. Peters, Construction Engineer
- \*T. Vankataraman, Fire Protection Engineer

\*Denotes those present at the exit interview.

### 2. Fire Protection/Prevention Program Review

#### a. Administrative Controls

The inspector reviewed the following licensee administrative procedures:

- . 1.4.2, Smoking in Station, Revision 5, December 27, 1978.
- . 1.4.3, Storage of Flammable, Combustible Materials and Transient Combustible Control, Revision 8, January 14, 1980.
- . 1.4.8, Hazardous and Restricted Material Control, details on handling, storage and fire fighting of hazardous materials, Revision 6, December 27, 1978.

The inspector verified that the licensee has developed administrative controls which include:

- (1) Special authorization for the use of combustible, flammable or explosive hazardous material in safety related areas.
- (2) Prohibition on the storage of combustible, flammable or explosive hazardous material in safety related areas.
- (3) Requirement for the removal of all wastes, debris, rags, oil spills or other combustible materials resulting from the work activity following completion of the activity or at the end of each work shift, whichever is sooner.

- (4) Requirement that all wood used in safety related areas is treated with flame retardant. Requirement for periodic inspection for accumulation of combustibles.
- (5) Prohibition on smoking in safety related areas, except where "smoking permitted" areas have been specifically designated by plant management.

No items of noncompliance were identified.

b. Fire Brigade Actions and Training

The inspector reviewed the following licensee documents:

- . Procedure No. 5.5.1, General Fire Procedure, September 13, 1978.
- . Pilgrim Nuclear Power Station Fire Protection Plan, October 10, 1978.

The inspector verified that the licensee has developed fire fighting procedures and fire brigade training procedures which include:

- (1) Actions to be taken by the fire brigade.
- (2) Coordination of fire fighting activities with offsite fire departments.
- (3) Actions to be taken by plant superintendent and security guards after notification of fire.
- (4) Instructions for plant operators and general plant personnel during a fire.
- (5) Requirement for announced and unannounced drills.
- (6) Requirement that at least one drill per year be performed on a "back shift" for each fire brigade.
- (7) Requirement that local offsite fire department participate in at least one annual drill.

No items of noncompliance were identified.

c. Ignition Source Control

The inspector reviewed the following licensee procedure:

1.5.5 Cutting and Welding, Revision 11, January 14, 1980.

The inspector verified that the procedure provides administrative controls and requirements for special authorization for activities involving welding, open flame, or other ignition sources and that they take cognizance of nearby flammable material, cable trays or critical process equipment.

During the tour of the plant, the inspector, through direct observation of several welding and grinding operations verified that the requirements outlined in the administrative procedure 1.5.5 are being adhered to.

No items of noncompliance were identified.

d. Fire Protection Modifications Required by Amendment 35 to DPR-35

By review and examination of records, including, specifications, purchase orders, drawings, and associated quality assurance documents, and by examination of installed fire protection equipment throughout the plant, the inspector verified the licensee's implementation of scheduled modifications identified in amendment 35 to license no. DPR-35. The inspector verified that for all fire protection related modifications, the design and installation of equipment is in accordance with the codes and standards of the National Fire Protection Association. Also, all fire protection equipment is Underwriters Laboratories listed and/or Factory Mutual approved. For this determination the inspector examined the following items listed in amendment 35 Section 3 paragraphs 3.1 through 3.19.

Item 3.1 Water Suppression Systems and Equipment

The inspector reviewed Specification M503, Revision 3, dated October 24, 1979. This document covers plant design change requests (PDCR) associated with all fixed water suppression systems. The document includes all applicable industry codes and standards for the design and installation of fire protection systems. The inspector reviewed the following PDCRs and verified that all requirements of item 3.1.2 are being met.

PDCR79-08B.2 Sprinkler System Stubouts.

PDCR79-08B.5 Access Control Area Sprinkler System.

PDCR79-08B.6 Hydrogen Seal Oil Area Sprinkler System.

PDCR79-08B.8 Turbine Building Lube Oil Storage and Lube Oil Reservoir Sprinkler Systems (Deluge).

PDCR79-08B.9 Radwaste Truck Lock Sprinkler System (dry pipe).

PDCR79-08B.7 Recirculation Pump Room Sprinkler System.

PDCR79-08B.3 Hose Station Installations

PDCR79-08B.4

The licensee installed seismic supports for the firemain at elevation 23 ft. of the Reactor Building in order to protect MCC-18 from fire water pipe failure.

The licensee stated that all the above modifications will be completed by June 1, 1980.

#### Item 3.1.3 Gas Fire Suppression Systems

The inspector reviewed Specification for Halon 1301 - Fire Extinguishing System, Revision E2, May 17, 1979. By direct observation the inspector verified that the Halon system has been installed in accordance with PDCR79-08A1. The licensee stated a concentration test (7%) will be done by June 1, 1980. This will be accomplished by an actual discharge of the halon gas in the computer room.

#### Item 3.1.4 Ventilation Systems

The inspector reviewed PDCR79-03A.3 and verified by observation that the licensee has erected smoke partitions in the radwaste count area at elevation 23 ft. and at elevation 51 ft. of the Turbine Generator building. The licensee also purchased two 10,000 cfm capacity portable smoke ventilation fans.

By review of records and by direct observation of the completed work the inspector verified that the licensee completed the following modifications:

#### Item 3.1.6 - Fire Retardant Cable Coating

(PDCR79-03C.1.) The licensee utilized Flamemastic 77 for coating and/or fire stopping electrical cables.

#### Item 3.1.7 - Fire Doors

(PDCR79-03A.5 and PDCR79-03A) All new fire door assemblies are 3 hour labeled.

Item 3.1.8 - Fire Dampers

(PDCR79-03B.2 and PDCR79-08A.1-04) The licensee installed double 3 hour dampers (one on each side of the wall) in most areas. Fire dampers in the computer room are activated by smoke detectors. Fusible links are utilized to activate dampers in other areas.

Item 3.1.11 - Control of Combustibles

(PDCR-79-03A.2 - Daytank Curbes; PDCR79-03A.4 - Non-combustible Shields for Feedwater Pumps). The inspector verified that the licensee installed curbes to contain oil spills from the diesel generator day tanks and installed noncombustible marinite panel shields between the feed water pumps at elevation 51 feet of the turbine building.

- Spare gas cylinder storage has been eliminated at elevation 51 ft. of the auxiliary building.
- The duplicating machine and associated supplies have been removed from the control room.

Item 3.1. 13 - Administrative Controls and Quality Assurance

The inspector reviewed administrative procedures, detailed in section 2 of this report and verified that the procedures have been updated to reflect the guidelines in the NRC document "Nuclear Plant Fire Protection Functional Responsibilities, Administrative Controls and Quality Assurance."

The inspector reviewed the following Quality Assurance documents:

- QA Manual Volume II, October 1, 1975, Fire Protection Systems and Equipment, August 6, 1979
- Applicability of QA Criteria for Fire Protection, letter 79-342, April 19, 1979

The inspector randomly reviewed quality assurance packages which included the following fire protection modifications:

- Hydrogen Seal Oil Area Sprinkler Systems,
- Fire Doors,
- Communications, Installation of Radiax Antenna Cable System.

Item 3.1.14 - Exposed Steel Protection

(PDCR79-03C.2) The inspector verified that three hour fire proofing (as per ASTM E119) was provided for structural steel members in the following areas: recirculation pump motor generator sets, cable spreading room, lower and upper 4160V switchgear rooms, and control rod drive module areas.

Item 3.1.17 - Communications Systems

(PDCR78-19) The inspector reviewed the test data on the new Radiax Antenna System and verified that the licensee has provided effective means of portable radio communications.

Item 3.1.16 - Self-Contained Breathing Apparatus

The inspector verified that the licensee installed air cascade filling system in the warehouse. This system is used for filling self-contained air packs.

No items of noncompliance were identified.

3. Facility Tour

The inspector examined fire protection water systems, including fire pumps, fire water piping and distribution systems, yard fire protection equipment including indicator valves, hydrants and contents of hose houses. The inspector toured all accessible vital and nonvital plant areas and examined fire detection and alarm systems, automatic and manual fixed suppression systems interior hose stations, fire barrier penetration seals, and fire doors.

During the tour of the plant the inspector noted that portable hand fire extinguishers were missing from their designated location in several plant areas, (e.g., in the machine shop, elevation 51 ft. of the reactor building, radwaste access control areas). The inspector also noted that in several areas extinguisher were obstructed by contractor's equipment, and that the licensee failed to inspect and update maintenance record tags on most extinguishers in the plant.

Technical Specification 6.8.D states that "Written procedures to implement the Fire Protection Program shall be established, implemented and maintained."

Licensee's procedure no. 8A.6-1, Fire Extinguisher Checks, Revision 5, August 9, 1978 states in part, "Perform a fire extinguisher check on extinguishers once per month...The inspection procedure should determine that:

1. The extinguisher is in its designated place.
2. Access or viability of the extinguisher is not obstructed...
6. Maintenance record tag is up to date...."

The inspector notified the licensee that the portable hand fire extinguisher, inspection and maintenance program is not being carried out in accordance with the applicable procedure. As a result of the licensee's failure to follow procedures, vital plant areas were without adequate first aid fire fighting capability (e.g., CRD units area at elevation 23 ft.).

This is an infraction level item of noncompliance (80-16-01).

4. Exit Interview

The inspector met with the licensee representatives (denoted in Details paragraph 1) at the site on April 25, 1980, and summarized the purpose and scope of the inspection and findings.