

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	Docket No. 50-293
BOSTON EDISON COMPANY	)	
(Pilgrim Nuclear Power	)	
Station)	)	

EXEMPTION

I.

The Boston Edison Company (BECO/the licensee) is the holder of Facility Operating License No. DPR-35 (the license) which authorizes operation of the Pilgrim Nuclear Power Station, located in Plymouth County, Massachusetts, at steady state reactor core power levels not in excess of 1998 megawatts thermal. This license provides, among other things, that it is subject to all rules, regulations and Orders of the Commission now or hereafter in effect.

II.

Section 50.54(o) of 10 CFR Part 50 requires that primary reactor containments for water cooled power reactors be subject to the requirements of Appendix J to 10 CFR Part 50. Appendix J contains the leakage test requirements, schedules, and acceptance criteria for tests of the leak-tight integrity of the primary reactor containment and systems and components which penetrate the containment. Appendix J was published on February 14, 1973 and, in August 1975, each licensee was requested to review the extent to which its facility met the requirements.

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On October 10, 1975, the Boston Edison Company submitted its evaluation of the Pilgrim Nuclear Power Station with respect to the requirements of Appendix J and that submittal was supplemented by letters dated January 27, 1976; June 4, 1976; and October 27, 1980. In these submittals, BECo requested that certain test methodology, components, and penetrations be exempted from Appendix J requirements.

The Franklin Research Institute (FRC), as a consultant to NRC, reviewed the licensee's submittals and prepared a Technical Evaluation Report (TER) which recommended that the exemption request relative to testing the main steam isolation valves be granted. The NRC staff has reviewed the bases and findings in the TER and concurs with FRC's recommendation.

The exemption found to be necessary concerns the requirement in Section III.C.2 of Appendix J that Type C testing be performed at the calculated peak containment internal pressure (Pa) related to the design basis accident. The licensee proposes to test the main steam isolation valves (MSIVs) at 23 psig instead of 45 psig (Pa) on the following basis: The main steam system design in most operating BWR plants, including Pilgrim, necessitates leak testing of the MSIVs by pressurizing the pipes between the inboard and outboard valves. The MSIVs are angled in the main steam lines in the direction of flow to afford better sealing upon closure. However, a test pressure of Pa acting on the inboard valve in the opposite direction is sufficient to lift the valve disc off its seat and

results in excessive leakage into the reactor vessel. That would be a meaningless test. The proposed test calls for a test pressure of 23 psig to avoid lifting the inboard valve disc. The total observed leakage through both the inboard and outboard valves is then conservatively assigned to the penetration.

On the basis of the review results provided in the Staff's Safety Evaluation, the staff concludes that testing the MSIVs at 23 psig is acceptable.

### III.

Accordingly, the Commission has determined that, pursuant to 10 CFR 50.12, an exemption is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest. Therefore, the Commission hereby approves the exemption request as follows:

Exemption is granted from the requirements of Section III.C.2 of Appendix J pertaining to the Type C testing of the main steamline isolation valves at a test pressure of Pa. Testing them at a reduced pressure of 23 psig is acceptable due to the unique design of the valves.

#### Environmental Assessment

Pursuant to 10 CFR 51.30, the staff concludes as follows regarding the listed factors:

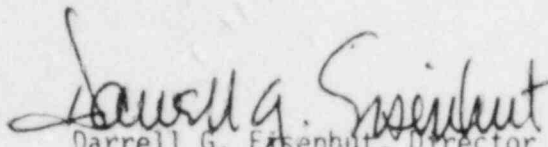
- (1) (i) The need for the proposed action is described above;

- (ii) The alternative to the exemption would be to require literal compliance with Appendix J, Section III.C.2. Such an action would not enhance the protection of the environment and would be adverse to the public interest generally;
  - (iii) The issuance of the exemption, or its denial, would not affect the environmental impact of the facility;
- (2) The NRC staff reviewed the licensee's request and did not consult other agencies or persons.

Based on the above assessment, the NRC staff concludes, pursuant to 10 CFR 51.32, that the issuance of the exemption will have no significant impact on the environment.

For further details with respect to this action, see the Commission's related Safety Evaluation, which is available for public inspection at the Commission's Public Document Room, 1717 H Street, NW., Washington, D.C., and at the Plymouth Public Library, North Street, Plymouth, Massachusetts 02360.

FOR THE NUCLEAR REGULATORY COMMISSION



Darrell G. Eisenhut, Director  
Division of Licensing  
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland  
This 2nd day of July, 1984