October 30, 19

Mr. E. Thomas Boulette, Ph.D
Senior Vice President - Nuclear
Boston Edison Company
Pilgrim Nuclear Power Station
RFD #1 Rocky Hill Road
Plymouth, MA 02360

SUBJECT: ISSUANCE OF AMENDMENT NO. 174 TO FACILITY OPERATING LICENSE NO. DPR-35, PILGRIM NUCLEAR POWER STATION (TAC NO. M99831)

Dear Mr. Boulette:

The Commission has issued the enclosed Amendment No. 174 to Facility Operating License No. DPR-35 for the Pilgrim Nuclear Power Station. This amendment is in response to your application dated October 24, 1997.

The amendment adds a footnote to Technical Specification 3.7.A.5, "Primary Containment." The footnote provides a one-time exception to the reverse flow testing requirement for containment isolation check valve 30-CK-432. The licensee has committed to reverse flow test this check valve during a 1998 maintenance outage and to submit the test results to the NRC staff for review.

A copy of the related Safety Evaluation is also enclosed. Notice of Issuance of Amendment to Facility Operating License and Final Determination of No Significant Hazards Consideration and Opportunity for a Hearing will be included in the Commission's biweekly Federal Register notice.

Sincerely,

Original signed by
Craig Smith for

Alan B. Wang, Project Manager
Project Directorate I-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosures: 1. Amendment No.174 to License No. DPR-35
2. Safety Evaluation

cc w/encls: See next page

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DATED: October 30, 1997

AMENDMENT NO. 174 TO FACILITY OPERATING LICENSE NO. DPR-35-PILGRIM NUCLEAR POWER STATION

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

BOSTON EDISON COMPANY

DOCKET NO. 50-293

PILGRIM NUCLEAR POWER STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 174
License No. DPR-35

1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:

   A. The application for amendment filed by the Boston Edison Company (the licensee) dated October 24, 1997, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment.

3. This license amendment is effective as of its date of issuance and shall be implemented by November 2, 1997.

FOR THE NUCLEAR REGULATORY COMMISSION

Albert W. McGuire FOR

Ronald B. Eaton, Acting Director
Project Directorate I-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 30, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 174

FACILITY OPERATING LICENSE NO. DPR-35

DOCKET NO. 50-293

Replace the following page of the Appendix A Technical Specifications with the attached page. The revised page is identified by Amendment number and contains vertical lines indicating the area of change.

Remove	Insert
3/4.7-5	3/4.7-5

3.7 CONTAINMENT SYSTEMS (Cont)

A. Primary Containment (Cont)

5. All containment isolation check valves are operable or at least one containment isolation valve in each line having an inoperable valve is secured in the isolated position.**

Primary Containment Isolation Valves

2. b. In the event any automatic Primary Containment Isolation Valve becomes inoperable, at least one containment isolation valve in each line having an inoperable valve shall be deactivated in the isolated condition. (This requirement may be satisfied by deactivating the inoperable valve in the isolated condition. Deactivation means to electrically or pneumatically disarm, or otherwise secure the valve.)*

* Isolation valves closed to satisfy these requirements may be reopened on an intermittent basis under ORC approved administrative controls.

** Check valve 30-CK-432 will be considered operable until reverse flow testing is performed no later than the 1998 maintenance outage.

4.7 CONTAINMENT SYSTEMS (Cont)

A. Primary Containment (Cont)

4. Combined main steam lines: 46 scfh @ 23 psig.

where P_a = 45 psig
L_a = 1.0% by weight of the contained air @ 45 psig for 24 hrs.

Primary Containment Isolation Valves

2. b. 1. The primary containment isolation valves surveillance shall be performed as follows:

a. At least once per operating cycle the operable primary containment isolation valves that are power operated and automatically initiated shall be tested for simulated automatic initiation and closure times.

b. Test primary containment isolation valves:

1. Verify power operated primary containment isolation valve operability as specified in 3.13.

2. Verify main steam isolation valve operability as specified in 3.13.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 174 TO FACILITY OPERATING LICENSE NO. DPR-35

BOSTON EDISON COMPANY

PILGRIM NUCLEAR POWER STATION

DOCKET NO. 50-293

1.0 INTRODUCTION

By letter dated October 24, 1997, the Boston Edison Company (BECo/the licensee) submitted a license amendment request to the Pilgrim Nuclear Power Station (PNPS) Technical Specifications (TSs). The requested revision adds a footnote to TS 3.7.A.5, "Primary Containment." The footnote provides a one-time exception to the reverse flow testing requirement for containment isolation check valve 30-CK-432. The licensee will reverse flow test this check valve during a 1998 maintenance outage.

The PNPS is presently at full power. The inability to test this valve would result in declaring this containment isolation valve inoperable and would require the plant to enter the action statement for the loss of containment integrity which would require the plant to be in cold shutdown within 24 hours. In order to prevent a shutdown, the licensee has requested that this amendment be reviewed on an emergency basis pursuant to 10 CFR 50.91(a)(5). The circumstances supporting BECo's request for an emergency review are discussed below.

2.0 EVALUATION

During a review of the Master Surveillance Tracking Program, the licensee discovered that the surveillance to reverse flow exercise check valve 30-CK-432 was not performed during Refueling Outage #11 which ended in April 1997. The surveillance was due May 2, 1997, and the valve will become administratively inoperable when the surveillance grace period expires on November 2, 1997.

Check valve 30-CK-432 provides isolation to nonsafety-related drywell equipment cooled by the reactor building closed cooling water (RBCCW) system. This check valve is the outboard primary containment isolation valve for a system required to be in service during plant operation. The forward flow exercise of this valve is verified quarterly in accordance with the licensee's inservice test (IST) program requirements.

The licensee has determined that reverse flow testing of check valve 30-CK-432 during power operation has the potential to degrade essential plant equipment and could subject the plant to transients. Performance of check valve closure

testing during plant operation would result in the isolation of cooling water for the drywell to all area coolers and both recirculation pump motor lubrication oil coolers. Permanent plant installed, non-intrusive test equipment does not exist for this valve.

In the past, the reverse flow test was performed concurrently with the Appendix J local leak rate test. The local leak rate test was used to confirm that the disk had seated. This had been acceptable to the staff as a method for demonstrating operability of the check valve. The licensee reviewed local leak rate test data for check valve 30-CK-432 from 1984 until present. The valve has had no failures of the operability test in this time frame. Therefore, records of past in-service testing of this valve indicate that the valve is reliable and should remain operable until the reverse flow test can be performed during a 1998 maintenance outage.

In addition, check valve 30-CK-432 was disassembled and inspected for signs of abnormal wear in April 1993 as part of the licensee's check valve program. The inspection showed no signs of internal abnormalities or signs of excessive erosion/corrosion. The valve was hand exercised at this time and functioned smoothly with no signs of excessive force or binding.

Check valve 30-CK-432 provides containment isolation for a seismic Class 1 closed system. For this check valve to be challenged during an accident it would require a rupture of the RBCCW piping inside containment. This provides some assurance that should an accident occur, containment integrity would be maintained should the check valve be inoperable.

Based on the above, there is reasonable assurance that check valve 30-CK-432 is operable and containment integrity would be maintained during an accident until reverse flow testing can be performed during the 1998 maintenance outage.

3.0 EMERGENCY CIRCUMSTANCES

The licensee's October 24, 1997, submittal states the following in regard to the emergency circumstances related to the proposed action:

> Under the provisions of 10 CFR 50.91(5) Technical Specification amendments may be processed under emergency conditions if failure to do so derates the plant and the necessary amendment could not have been requested by the licensee in a timely manner. Failure to grant this amendment will derate Pilgrim by forcing entry into 3.7.A.(5), which will result in a shutdown.
>
> Pilgrim could not make timely application for an amendment request. This problem was identified September 18, 1997, by Problem Report [PR] 97.2806. Our immediate response to PR97.2806 was to (1) identify other valves that may have been inadvertently not tested, and (2) investigate methods to test without subjecting Pilgrim to unnecessary challenges.
>
> Our investigation indicates 30-CK-432 is the only valve that experienced this testing problem. However, our investigation also indicated no safe means to test the valve at power.

Once the inability to test at power was determined, Pilgrim submitted a request for enforcement discretion (NOED) by letter to the NRC dated October 10, 1997. We believed a NOED was the appropriate mechanism to resolve this issue.

On October 21, 1997, the NRC informed us by telephone that our NOED request was not the appropriate mechanism, that this issue required an amendment request. Since the LCO [limiting condition for operation] requiring shutdown becomes operant November 2, 1997, there is insufficient time to request this amendment under any condition but as an emergency amendment request. Therefore, despite our efforts, we cannot avoid submitting an emergency amendment request because the option to make timely application was denied us by the circumstances prior to October 21, 1997.

The NRC staff has determined that the licensee has not abused the emergency provision of 10 CFR 50.91 in that the licensee's application was submitted timely after being informed that a NOED was not the appropriate licensing action for this situation. The staff finds that an emergency situation exists in that failure to act in a timely manner would result in the licensee having to shut down. Therefore, the amendment is being processed on an emergency basis pursuant to 10 CFR 50.91(a)(5).

4.0 FINAL NO SIGNIFICANT CONSIDERATION DETERMINATION

The Commission has made a final determination that the amendment involves no significant hazards consideration. Under the Commission's regulations in 10 CFR 50.92(c), this means that the operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

The amendment has been evaluated against the three standards in 10 CFR 50.92(c). In its analysis of the issue of no significant hazards consideration as required by 10 CFR 50.91(a), the licensee has provided the following:

1. Operating Pilgrim in accordance with this proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

   Pilgrim inadvertently failed to perform the required reverse flow testing on 30-CK-432 as required by the IST program. The valve is located in a closed system (Class C) [Reference: Updated Final Safety Analysis Report] that does not communicate with the reactor coolant system, the containment atmosphere, or environs. The system piping is seismic Class 1. Performing the reverse flow test during power operation was considered, but that option was rejected because a potential resulting rise in containment temperature could lead to a plant transient, accelerated equipment wear, or a reactor trip on high drywell pressure. It would compel entry into Emergency Operating Procedure (EOP-3) due to high

containment temperature. Elevated containment temperature also has the potential to violate Pilgrim Technical Specification section 3/2.H, "Drywell Temperature".

Performance of a check valve closure test during plant operation would result in the isolation of cooling water for the drywell to all area coolers and both recirculation pump motor lubrication oil coolers. Isolation of those coolers associated with the recirculation pumps could potentially lead to accelerated degradation of the recirculation pump motors due to overheating. Additionally, isolation of the cooling water to the drywell area coolers during plant operation could impact the environmental qualification life of electrical equipment due to drywell heatup. Drywell heating also increases the probability of a reactor scram due to high drywell pressure.

Hence, testing during power operation subjects the plant to possible degradation and transients without a significant increase in safety. Likewise, the additional confidence in the valve's ability to perform its designed safety function provided by the subject test is outweighed by the risk and stress placed on plant and equipment by a forced shutdown to implement the test.

Permanent plant-installed, non-intrusive test equipment does not exist for 30-CK-432. Other surveillance methods using portable equipment (e.g., acoustic, ultrasonic, magnetic, and radiographic) that can be used to verify a reverse flow exercise on this valve require valve closure for periods that could result in plant transients and are, therefore, not practical during power operation.

Seat leak testing (normally performed during a refuel outage) in accordance with 10CFR50, Appendix J also confirms successful reverse flow operability in the closed direction. A review of LLRT data from 1984 until 1995 shows this valve has a history of good leakage test results (with all tests equal to or below 0.1 SLM), and no signs of a declining performance trend. This performance record provided the basis under option 'B' of Appendix J to extend the LLRT test frequency of 30-CK-432 from 2 years to 60 months. Similarly, records of past in-service testing of 30-CK-432 indicate the valve is reliable.

In addition to in-service and Appendix J testing, the 30-CK-432 was disassembled April 24, 1993, hand exercised, and its accessible areas were inspected for abnormal wear and signs of degradation as part of the Pilgrim check valve program. During the exercise, this valve functioned smoothly with no signs of excessive force or binding. The examination showed no internal abnormalities (structural deformation, crack-like flaws, loose or detached items) or signs of excessive erosion/corrosion.

Since past test data indicate this temporary relief from adherence to the license as it relates to this schedule for 30-CK-432 does not result in a significant reduction in confidence that the valve

will perform its designed safety function, operating Pilgrim Station in accordance with the requested Technical Specification Amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Operating Pilgrim in accordance with this proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

   As stated in the narrative of 1 above, testing the valve on line is not feasible, and shutting down places unnecessary stresses on the plant when compared to the value of performing the test. There is high confidence the valve will function as designed; therefore, operating Pilgrim in accordance with the proposed Technical Specification Amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Operating Pilgrim in accordance with this proposed amendment does not involve a significant reduction in a margin of safety.

   In addition, for the reasons given above, the margin of safety is not affected by operating Pilgrim in compliance with this request. There are also no environmental consequences as a result of this request because confidence in the valve's actual operability remains high (in contrast to administrative operability), and the design of the plant is not affected. Therefore, operating Pilgrim in accordance with this amendment does not involve a reduction in a margin of safety.

Based on the above considerations, the staff concludes that the amendment meets the standards set forth in 10 CFR 50.92 for no significant hazards consideration. Therefore, the staff has made a final determination that the proposed amendment involves no significant hazards consideration.

5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Massachusetts State official was notified of the proposed issuance of the amendment. The official was notified on October 30, 1997. The State official had no comments.

6.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a surveillance requirement. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant changes in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment. The Commission has made a final no significant hazards finding with respect to this amendment.

7.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) the amendment does not (a) significantly increase the probability or consequences of an accident previously evaluated, (b) increase the possibility of a new or different kind of accident from any previously evaluated or (c) significantly reduce a safety margin and, therefore, the amendment does not involve a significant hazards consideration; (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (3) such activities will be conducted in compliance with the Commission's regulations, and (4) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: C. Smith

Date: October 30, 1997