

June 1, 1995

Mr. E. Thomas Boulette, Ph.D
Senior Vice President - Nuclear
Boston Edison Company
Pilgrim Nuclear Power Station
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SUBJECT: ISSUANCE OF AMENDMENT NO. 163 TO FACILITY OPERATING LICENSE NO. DPR-35, PILGRIM NUCLEAR POWER STATION (TAC NO. M90997)

Dear Mr. Boulette:

The Commission has issued the enclosed Amendment No. 163 to Facility Operating License No. DPR-35 for the Pilgrim Nuclear Power Station. This amendment is in response to your application dated November 22, 1994.

This amendment revises the suppression chamber water level operating range, increasing it 2 inches, and revises the water level recorder range in response to a commitment from an inspection.

A copy of the related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register Notice.

Sincerely,

Original signed by:

Ronald B. Eaton, Senior Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-293

- Enclosures: 1. Amendment No. 163 to License No. DPR-35
- 2. Safety Evaluation

cc w/encls: See next page

DOCUMENT NAME: A:\PIM90997.AMD

*See previous concurrence

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

June 1, 1995

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Senior Vice President - Nuclear
Boston Edison Company
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Sincerely,

A handwritten signature in black ink, appearing to read "Ron B. Eaton", written over a horizontal line.

Ronald B. Eaton, Senior Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosures: 1. Amendment No. 163 to
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2. Safety Evaluation

cc w/encls: See next page

E. Thomas Boulette

Pilgrim Nuclear Power Station

cc:

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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. 163
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 November 22, 1994, 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.

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3. This license amendment is effective as of its date of issuance and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Ledyard B. Marsh, Director
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 1, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 163

FACILITY OPERATING LICENSE NO. DPR-35

DOCKET NO. 50-293

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

<u>Remove</u>	<u>Insert</u>
3/4.2-25	3/4.2-25
3/4.7-3	3/4.7-3
B 3/4.7-1	B 3/4.7-1

PNPS
TABLE 3.2.F

SURVEILLANCE INSTRUMENTATION

<u>Minimum # of Operable Instrument Channels</u>	<u>Instrument #</u>	<u>Parameter</u>	<u>Type Indication and Range</u>	<u>Notes</u>
2	640-29A & B	Reactor Water Level	Indicator 0-60"	(1) (2) (3)
2	640-25A & B	Reactor Pressure	Indicator 0-1200 psig	(1) (2) (3)
2	TRU-9044 TRU-9045	Drywell Pressure	Recorder 0-80 psia	(1) (2) (3)
2	TRU-9044 TI-9019	Drywell Temperature	Recorder, Indicator 0-400°F	(1) (2) (3)
2	TRU-9045 TI-9018	Suppression Chamber Air Temperature	Recorder, Indicator 0-400°F	(1) (2) (3)
2	LR-5038 LR-5049	Suppression Chamber Water Level	Recorder -7 to +7 inches	(1) (2) (3)
1	NA	Control Rod Position	28 Volt Indicating Lights	(1) (2) (3) (4)
1	NA	Neutron Monitoring	SRM, IRM, LPRM 0 to 100% power	

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.7 CONTAINMENT SYSTEMS (Cont)

4.7 CONTAINMENT SYSTEMS (Cont)

A. Primary Containment (Cont)

- k. The differential pressure may be reduced to less than 1.17 psid for a maximum of four (4) hours for maintenance activities on the differential pressure control system and during required operability testing of the HPCI system, the relief valves, the RCIC system and the drywell-suppression chamber vacuum breakers.
- l. If the specifications of Item i, above, cannot be met, and the differential pressure cannot be restored within the subsequent (6) hour period, an orderly shutdown shall be initiated and the reactor shall be in a cold shutdown condition in twenty-four (24) hours.
- m. Suppression chamber water level shall be maintained between -6 to -1 inches on torus level instrument which corresponds to a downcomer submergence of 3 feet to 3 feet 5 inches.
- n. The suppression chamber can be drained if the conditions as specified in Sections 3.5.F.3 and 3.5.F.5 of this Technical Specification are adhered to.

BASES:

3/4.7 CONTAINMENT SYSTEMS

A. Primary Containment

The integrity of the primary containment and operation of the core standby cooling system in combination limit the off-site doses to values less than those suggested in 10CFR100 in the event of a break in the primary system piping. Thus, containment integrity is specified whenever the potential for violation of the primary reactor system integrity exists. Concern about such a violation exists whenever the reactor is critical and above atmospheric pressure. An exception was made to this requirement during initial core loading and while the low power test program was being conducted and ready access to the reactor vessel was required. There was no pressure on the system at this time, thus greatly reducing the chances of a pipe break. Should this type of testing be necessary in the future, the reactor may be taken critical; however, restrictive operating procedures would be in effect again to minimize the probability of an accident. Procedures and the Rod Worth Minimizer would limit control worth such that a rod drop would not result in any fuel damage. In addition, in the unlikely event that an excursion did occur, the secondary containment and standby gas treatment system, which shall be operational during this time, offer a sufficient barrier to keep off-site doses well below 10CFR100 limits.

The pressure suppression pool water provides the heat sink for the reactor primary system energy release following a postulated rupture of the system. The pressure suppression chamber water volume must absorb the associated decay and structural sensible heat released during primary system blowdown from 1035 psig. Since all of the gases in the drywell are purged into the pressure suppression chamber air space during a loss-of-coolant accident, the pressure resulting from isothermal compression plus the vapor pressure of the liquid must not exceed 62 psig, the suppression chamber maximum pressure. The design volume of the suppression chamber (water and air) was obtained by considering that the total volume of reactor coolant to be condensed is discharged to the suppression chamber and that the drywell volume is purged to the suppression chamber.

Using the minimum or maximum water volumes given in the specification, containment pressure during the design basis accident is approximately 45 psig which is below the maximum of 62 psig. Maximum water volume of 94,000 ft³ results in a downcomer submergency of 4'-0" and the minimum volume of 84,000 ft³ results in a submergence approximately 12-inches less. Mark I Containment Long Term Program Quarter Scale Test Facility (QSTF) testing was performed at various downcomer submergences and a number of wetwell to drywell pressure differentials. The results of these tests were used to demonstrate that a downcomer submergence of 3'0" to 3'5" at a wetwell to drywell differential pressure of 1.17 psi is acceptable.

Should it be necessary to drain the suppression chamber, provision will be made to maintain those requirements as described in Section 3.5.F BASES of this Technical Specification.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 163 TO FACILITY OPERATING LICENSE NO. DPR-35

BOSTON EDISON COMPANY

PILGRIM NUCLEAR POWER STATION

DOCKET NO. 50-293

1.0 INTRODUCTION

By letter dated November 22, 1994, the Boston Edison Company (the licensee or BECo) submitted a request for changes to the Pilgrim Nuclear Power Station Technical Specifications (TSs). The requested changes would revise the suppression chamber water level operating range, increasing it 2 inches, and revises the water level recorder range in response to a commitment from an inspection.

2.0 EVALUATION

The proposed change revises the suppression chamber water level operating range, increasing it 2 inches, and revises the water level recorder range in response to a commitment from Inspection 91-201 (BECo Letter dated March 10, 1992). In the March 10, 1992, response to the Systems Based Instrumentation and Control Inspection No. 50-293/91-201, BECo committed to evaluate the feasibility of increasing the water level operating range. The basis for the TS limit on maximum suppression pool water level relates to the fact that the water level affects the line clearing loads from safety/relief valves discharges and the vent clearing and pool swell loads associated with a design-basis accident loss-of-coolant accident (LOCA). Other considerations involve the need for margin to the evaluation of torus vent connections and instrument line connections, and the need for a minimum free air volume to accommodate the blowdown of non-condensable gases during a LOCA. All necessary calculations have been completed and BECo has determined the torus water level operating range can be increased by 2 inches. BECo did not repeat the hydrodynamic and structural analyses performed as part of the Mark I Long Term Program but by scaling the loads calculated in the previous analyses, and applying an uncertainty factor, they found that the hydrodynamic load increases due to the increased water level could be accommodated by the existing excess margins. This change reflects the inspection commitment.

Increasing the operating range for the suppression chamber water level will allow plant operators greater maneuvering flexibility while maintaining a sufficient margin of safety. The current 3-inch range for the torus water level requires frequent operator manipulations, (filling or draining), especially during testing of emergency core cooling systems. Increasing the

range to 5 inches will reduce the manipulations plant operators are required to make to maintain the appropriate water level. The level transmitters were replaced with a smaller span (14 inches) for better accuracy since accuracy is related to span. The recorder scale was replaced due to this change.

An increase in water level enhances the suppression pool's ability to mitigate an accident by providing more water for use by emergency cooling systems. The higher water level increases the heat sink capabilities resulting in lower torus water temperatures from steam blowdowns. There is a minor reduction in the free air volume of the torus which has a negligible effect on containment post-accident pressures. The change in the water level recording range is due to replacing the transmitter with a smaller span. The change from 0 to 32 inches to -7 to +7 inches enhances resolution and accuracy of the water level instrument loop. The change in water level recorder range does not involve an increase in the probability or consequences of an accident because the new recording range accounts for instrument loop uncertainties and is thus more conservative than the previous range.

This proposed change is a result of a response to a commitment from an inspection. The increase in water level enhances the suppression pool's ability to mitigate an accident by providing more water for use by emergency cooling systems. The new recordings range is more conservative than the previous range. Therefore, the NRC staff finds this change acceptable.

3.0 STATE CONSULTATION

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

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change 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. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (60 FR 3672). 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.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) 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: K. R. Cotton

Date: June 1, 1995