

January 27, 1993

Docket No. 50-293

DISTRIBUTION:

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

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SUBJECT: ISSUANCE OF AMENDMENT NO. 146 TO FACILITY OPERATING LICENSE NO. DPR-35, PILGRIM NUCLEAR POWER STATION (TAC NO. M84802)

The Commission has issued the enclosed Amendment No. 146 to Facility Operating License No. DPR-35 for the Pilgrim Nuclear Power Station. This amendment is in response to your application dated October 23, 1992.

This amendment revises the scram insertion times to reflect the use of advanced GE-10 fuel design in fuel cycle 10.

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

Sincerely,

/S/

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

Enclosures:

1. Amendment No. 146 to License No. DPR-35
2. Safety Evaluation

cc w/enclosures:

See next page

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

January 27, 1993

Docket No. 50-293

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

Dear Mr. Boulette:

SUBJECT: ISSUANCE OF AMENDMENT NO. 146 TO FACILITY OPERATING LICENSE NO.
DPR-35, PILGRIM NUCLEAR POWER STATION (TAC NO. M84802)

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Sincerely,

A handwritten signature in black ink, appearing to read "Ronald B. Eaton".

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

Enclosures:

1. Amendment No. 146 to License No. DPR-35
2. Safety Evaluation

cc w/enclosures:
See next page

Mr. E. Thomas Boulette

Pilgrim Nuclear Power Station

cc:

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Resident Inspector
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

BOSTON EDISON COMPANY

DOCKET NO. 50-293

PILGRIM NUCLEAR POWER STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 146
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 23, 1992, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - 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 set forth in 10 CFR Chapter I;
 - 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, and paragraph 3.B of Facility Operating License No. DPR-35 is hereby amended to read as follows:

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Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No.146 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION



Walter R. Butler, 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: January 27, 1993

ATTACHMENT TO LICENSE AMENDMENT NO. 146

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>
6	6
10	10
84	84

2.0 SAFETY LIMIT

2.1 SAFETY LIMITS

2.1.1 With the reactor steam dome pressure < 785 psig or core flow $< 10\%$ of rated core flow:

THERMAL POWER shall be $\leq 25\%$ of RATED THERMAL POWER.

2.1.2 With the reactor steam dome pressure ≥ 785 psig and core flow $\geq 10\%$ of rated core flow:

MINIMUM CRITICAL POWER RATIO shall be ≥ 1.07 .

2.1.3 Whenever the reactor is in the cold shutdown condition with irradiated fuel in the reactor vessel, the water level shall not be less than 12 inches above the top of the normal active fuel zone.

2.1.4 Reactor steam dome pressure shall be ≤ 1325 psig at any time when irradiated fuel is present in the reactor vessel.

2.2 SAFETY LIMIT VIOLATION

With any Safety Limit not met the following actions shall be met:

2.2.1 Within one hour notify the NRC Operations Center in accordance with 10CFR50.72.

2.2.2 Within two hours:

A. Restore compliance with all Safety Limits, and

B. Insert all insertable control rods.

2.2.3 The Station Director and Senior Vice President - Nuclear and the Nuclear Safety Review and Audit Committee (NSRAC) shall be notified within 24 hours.

2.2.4 A Licensee Event Report shall be prepared pursuant to 10CFR50.73. The Licensee Event Report shall be submitted to the Commission, the Operations Review Committee (ORC), the NSRAC and the Station Director and Senior Vice President - Nuclear within 30 days of the violation.

2.2.5 Critical operation of the unit shall not be resumed until authorized by the Commission.

BASES (continued)

REACTOR
STEAM DOME
PRESSURE
(2.1.4)

The Safety Limit for the reactor steam dome pressure has been selected such that it is at a pressure below which it can be shown that the integrity of the system is not endangered. The reactor pressure vessel is designed to Section III of the ASME Boiler and Pressure Vessel Code (1965 Edition, including the January 1966 Addendum), which permits a maximum pressure transient of 110%, 1375 psig, of design pressure 1250 psig. The Safety Limit of 1325 psig, as measured by the reactor steam dome pressure indicator, is equivalent to 1375 psig at the lowest elevation of the reactor coolant system. The reactor coolant system is designed to the USAS Nuclear Power Piping Code, Section B31.1.0 for the reactor recirculation piping, which permits a maximum pressure transient of 120% of design pressures of 1148 psig at 562°F for suction piping and 1241 psig at 562°F for discharge piping. The pressure Safety Limit is selected to be the lowest transient overpressure allowed by the applicable codes.

REFERENCES

1. "General Electric Standard Application for Reactor Fuel," NEDE-24011-P-A (Applicable Amendment specified in the CORE OPERATING LIMITS REPORT).
2. General Electric Thermal Analysis Basis (GETAB): Data, Correlation and Design Application, General Electric Co. BWR Systems Department, January 1977, NEDE-10958-PA and NEDO-10958-A.

3.3.C Scram Insertion Time

- 2. The average of the scram insertion times for the three fastest control rods of all groups of four control rods in a two by two array shall be no greater than:

<u>% Inserted From Fully Withdrawn</u>	<u>Avg. Scram Insertion Time Sec.</u>
10	.58
30	1.35
50	2.12
90	3.71

- 3. The maximum scram insertion time for 90% insertion of any operable control rod shall not exceed 7.00 seconds.

D. Control Rod Accumulators

At all reactor operating pressures, a rod accumulator may be inoperable provided that no other control rod in the nine-rod square array around this rod has a:

- 1. Inoperable accumulator.
- 2. Directional control valve electrically disarmed while in a non-fully inserted position.
- 3. Scram insertion time greater than the maximum permissible insertion time.

If a control rod with an inoperable accumulator is inserted "full-in" and its directional control valves are electrically disarmed, it shall not be considered to have an inoperable accumulator.

4.3.C Scram Insertion Time

- 2. Within each 120 days of operation, a minimum of 10% of the control rod drives, on a rotating basis, shall be scram tested as in 4.3.C.1. An evaluation shall be completed every 120 days of operation to provide reasonable assurance that proper performance is being maintained.

D. Control Rod Accumulators

Once a shift, check the status of the pressure and level alarms for each accumulator.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 146 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 23, 1992, the Boston Edison Company (the licensee), submitted information regarding the minimum critical power ratio (MCPR) and control rod scram insertion time. The licensee requested technical specifications (TS) changes justified by the submitted information. Our review and evaluation follow.

2.0 EVALUATION

In safety limit 2.1.2, the MCPR is presently 1.04 and is proposed to be changed to 1.07. This change request is based on the future use of GE 8 x 8 NB-3 fuel in operating cycle 10. The proposed safety limit is based on the NEDE-31152p, Revision 2, "GE Fuel Bundle Designs" which is referenced in GESTAR-II Revision 10 and has previously been found to be acceptable. Therefore, the proposed change to 1.07 is acceptable.

The control rod scram insertion time is presently listed in technical specification 3.3.C.2 as 5.30 seconds for 90 percent insertion from the fully withdrawn position and is the value used in accident analyses. However, it was discovered that this value is appropriate for BWR2 and not for Pilgrim, which is a BWR3 unit. The correct value is 3.71 seconds. The proposed value is more conservative than that used in the analyses. It is also justified by plant measurements and the associated, approved GE topical report; thus it is acceptable.

The staff has completed its review of the proposed technical specification changes for the Pilgrim plant for MCPR and the rod scram insertion times. We find the proposed changes acceptable based on the justification provided in the licensee's evaluation.

3.0 STATE CONSULTATION

In accordance with the Commission's regulation, 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. 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 (57 FR 58245). 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: L. Lois.

Date: January 27, 1993