

January 25, 1993

Docket No. 50-293

DISTRIBUTION:

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

Docket File 50-293
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J. Linville, RI

Dear Mr. Boulette:

SUBJECT: ISSUANCE OF AMENDMENT NO.145 TO FACILITY OPERATING LICENSE NO. DPR-35, PILGRIM NUCLEAR POWER STATION (TAC NO. M84305)

The Commission has issued the enclosed Amendment No. 145 to Facility Operating License No. DPR-35 for the Pilgrim Nuclear Power Station. This amendment is in response to your application dated August 10, 1992.

This amendment revises the Technical Specifications surveillance requirements for the station batteries by replacing the rated load discharge test with a service discharge test once-per-cycle, and a performance discharge test every 5 years in place of the service test that would normally occur within that time frame.

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. 145 to License No. DPR-35
2. Safety Evaluation

cc w/enclosures:
See next page

LA:PDI-3	PM:PDI-3	OGC <i>WB</i>	D:PDI-3		
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

January 25, 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

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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. 145 to License No. DPR-35
2. Safety Evaluation

cc w/enclosures:
See next page

Mr. E. Thomas Boulette

Pilgrim Nuclear Power Station

cc:

Mr. Edward S. Kraft,
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Mr. David Rodham, Director
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Chairmen, Citizens Urging
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Citizens at Risk
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800 Boylston St., 36th Floor
Boston, Massachusetts 02199



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. 145
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 August 10, 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:

Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No.145 , 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 25, 1993

ATTACHMENT TO LICENSE AMENDMENT NO. 145

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>
195	195
196	196
201	201

LIMITING CONDITIONS FOR OPERATION

3.9.A AUXILIARY ELECTRICAL EQUIPMENT (Cont'd)

4. 4160 volt buses A5 and A6 are energized and the associated 480 volt buses are energized.
5. The station and switchyard 125 and 250 volt batteries are operable. Each battery shall have an operable battery charger.
6. Emergency Bus Degraded Voltage Annunciation System as specified in Table 3.2.B.1 is operable.
7. Specification

Two redundant RPS Electrical Protection Assemblies (EPAs) shall be operable at all times on both inservice power supplies.

Action

- a. With one EPA on an inservice power supply inoperable, continued operation is permissible provided that the EPA is returned to operable status or power is transferred to a source with two operable EPAs within 72 hours. If this requirement cannot be met, trip the power source.
- b. With both RPS EPAs found to be inoperable on an inservice power supply, continued operation is permissible, provided at least one EPA is restored to operable status or power is transferred to a source with at least one operable EPA within 30 minutes. If this requirement cannot be met, trip the power source.

NOTE: Only applicable if tripping the power source would not result in a scram.

SURVEILLANCE REQUIREMENTS

4.9.A AUXILIARY ELECTRICAL EQUIPMENT SURVEILLANCE (Cont'd)

- d. Once a month the quantity of diesel fuel available shall be logged.
 - e. Once a month a sample of diesel fuel shall be checked for quality in accordance with ASTM D4057-81 or D4177-82. The quality shall be within the acceptable limits specified in Table 1 of ASTM D975-81 and logged.
2. Station and Switchyard Batteries
 - a. Every week the specific gravity, the voltage and temperature of the pilot cell and overall battery voltage shall be measured and logged.
 - b. Every three months the measurements shall be made of voltage of each cell to nearest 0.1 volt, specific gravity of each cell, and temperature of every fifth cell. These measurements shall be logged.
 - c. Once each operating cycle, the stated batteries shall be subjected to a Service Discharge Test (load profile). The specific gravity and voltage of each cell shall be determined after the discharge and logged.
 - d. Once every five years, the stated batteries shall be subjected to a Performance Discharge Test (capacity). This test will be performed in lieu of the Service Discharge Test requirement of 4.9.A.2.c above.

LIMITING CONDITION FOR OPERATION

3.9.B Operation with Inoperable Equipment

Whenever the reactor is in Run Mode or Startup Mode with the reactor not in a Cold Condition, the availability of electric power shall be as specified in 3.9.B.1, 3.9.B.2, 3.9.B.3, 3.9.B.4, and 3.9.B.5.

1. From and after the date that incoming power is not available from the startup or shutdown transformer, continued reactor operation is permissible under this condition for seven days. During this period, both diesel generators and associated emergency buses must be demonstrated to be operable.
2. From and after the date that incoming power is not available from both startup and shutdown transformers, continued operation is permissible, provided both diesel generators and associated emergency buses are demonstrated to be operable, all core and containment cooling systems are operable, reactor power level is reduced to 25% of design and the NRC is notified within one (1) hour as required by 10CFR50.72.
3. From and after the date that one of the diesel generators or associated emergency bus is made or found to be inoperable for any reason, continued reactor operation is permissible in accordance with Specification 3.5.F if Specification 3.9.A.1 and 3.9.A.2.a are satisfied.
4. From and after the date that one of the diesel generators or associated emergency buses and either the shutdown or startup transformer power source are made

SURVEILLANCE REQUIREMENTS

4.9.A Auxiliary Electrical Equipment Surveillance (Cont'd)

3. Emergency 4160V Buses A5-A6 Degraded Voltage Annunciation System.
 - a. Once each operating cycle, calibrate the alarm sensor.
 - b. Once each 31 days perform a channel functional test on the alarm system.
 - c. In the event the alarm system is determined inoperable under 3.b above, commence logging safety related bus voltage every 30 minutes until such time as the alarm is restored to operable status.
4. RPS Electrical Protection Assemblies
 - a. Each pair of redundant RPS EPAs shall be determined to be operable at least once per 6 months by performance of an instrument functional test.
 - b. Once per operating cycle, each pair of redundant RPS EPAs shall be determined to be operable by performance of an instrument calibration and by verifying tripping of the circuit breakers upon the simulated conditions for automatic actuation of the protective relays within the following limits:

Overvoltage	≤ 132 volts
Undervoltage	≥ 108 volts
Underfrequency	≥ 57Hz

BASES: (Cont'd)

4.9

deliver full flow. Periodic testing of the various components, plus a functional test once per cycle, is sufficient to maintain adequate reliability.

Although station batteries will deteriorate with time, utility experience indicates there is almost no possibility of precipitous failure. The type of surveillance described in this specification has been demonstrated over the years to provide an indication of a cell becoming irregular or unserviceable long before it becomes a failure.

The Service Discharge Test provides indication of the batteries' ability to satisfy the design requirements (battery duty cycle) of the associated dc system. This test will be performed using simulated or actual loads at the rates and for the duration specified in the design load profile. A once per cycle testing interval was chosen to coincide with planned outages.

The Performance Discharge Test provides adequate indication and assurance that the batteries have the specified ampere hour capacity. The results of these tests will be logged and compared with the manufacturer's recommendations of acceptability. This test is performed once every five years in lieu of the Service Discharge test that would normally occur within that time frame.

The diesel fuel oil quality must be checked to ensure proper operation of the diesel generators. Water content should be minimized because water in the fuel could contribute to excessive damage to the diesel engine.

The electrical protection assemblies (EPAs) on the RPS inservice power supplies, either two motor generator sets or one motor generator and the alternative supply, consist of protective relays that trip their incorporated circuit breakers on overvoltage, undervoltage, or underfrequency conditions. There are two EPAs in series per power source. It is necessary to periodically test the relays to ensure the sensor is operating correctly and to ensure the trip unit is operable. Based on experience at conventional and nuclear power plants, a six-month frequency for the channel functional test is established. This frequency is consistent with the Standard Technical Specifications.

The EPAs of the power sources to the RPS shall be determined to be operable by performance of a channel calibration of the relays once per operating cycle. During calibration, a transfer to the alternative power source is required; however, prior to switching to alternative feed, de-energization of the applicable MG set power source must be accomplished. This results in a half scram on the channel being calibrated until the alternative power source is connected and the half scram is cleared. Based on operating experience, drift of the EPA protective relays is not significant. Therefore, to avoid possible spurious scrams, a calibration frequency of once per cycle is established.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 145 TO FACILITY OPERATING LICENSE NO. DPR-35
BOSTON EDISON COMPANY
PILGRIM NUCLEAR POWER STATION
DOCKET NO. 50-293

1.0 INTRODUCTION

By the letter dated August 10, 1992, Boston Edison Company (BECo), requested a revision to the Technical Specifications of Pilgrim Nuclear Power Station to change the surveillance requirements (SR) of the station batteries. The proposed amendment is to revise the performance test and add a service test of the batteries (Sections 4.9.A.2.c and 4.9.A.2.d).

2.0 EVALUATION

The proposed change is to revise the Technical Specifications (TS) "Surveillance Requirement" of the station batteries to add a service discharge test (load profile) at each operating cycle and establish the performance discharge test (capacity) once every 5 years.

The present SR Section 4.9.A.2.c of the TS requires that the safety related batteries be tested at "rated load discharge test" at each operating cycle. BECo interpreted the "rated load discharge test" as the performance discharge test and not the service discharge test.

The TS change, Section 4.9.A.2.c, proposes to perform the service discharge test once-per-operating-cycle and a proposed TS Section 4.9.A.2.d was added to subject the batteries to a performance discharge test once every 5 years.

However, the proposed TS does not include a provision for battery replacement and degradation as described in IEEE Std. 450-1975 which states "annual performance (discharge) test of the battery capacity should be given to any battery that shows signs of degradation or has reached 85% of service life expected for the application." In response to the above concern, BECo has agreed to revise the Surveillance Test Procedures to include a performance (discharge) test every 12 months to the battery that shows signs of degradation or has reached 85% of service life expected for the application in accordance with IEEE Std. 450-1975. EELB has reviewed the proposed battery test provision and finds it acceptable.

The service discharge test provides adequate indication of the ability of the battery to meet the design requirements of the associated dc system and the performance discharge test provides assurance and indication of battery ampere

hour capacity. These two proposed tests represent improvement in detecting a degraded cell. In addition, the reduction in frequency of the performance test from once-per-operating-cycle to once every 5 years will effectively increase the battery life.

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 (57 FR 61107). 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: E. Y. Wang

Date: January 25, 1993