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Docket No. 50-293

MAR 20 1982

Mr. A. Victor Morisi, Manager  
Nuclear Operations Support Department  
Boston Edison Company  
M/C NUCLEAR  
800 Boylston Street  
Boston, Massachusetts 02199

Dear Mr. Morisi:

The Commission has issued the enclosed Amendment No. 56 to Facility Operating License No. DPR-35 for the Pilgrim Nuclear Power Station. This amendment consists of changes to the Technical Specifications in response to your application dated February 19, 1982 and subsequent discussions between the NRC staff and your staff. These changes have been discussed with, and agreed to by, your staff.

These changes to the Technical Specifications incorporate limiting conditions for operation and surveillance requirements for safety relief valve discharge pipe temperatures and temperature monitoring instrumentation.

Copies of the Safety Evaluation and Notice of Issuance are also enclosed.

Sincerely,

ORIGINAL SIGNED BY

Kenneth T. Eccleston, Project Manager  
Operating Reactors Branch #2  
Division of Licensing

Enclosures:

1. Amendment No. 56 to DPR-35
2. Safety Evaluation
3. Notice

cc w/enclosures  
See next page

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OFFICE	ORB#2	ORB#2	ORB#2	AD-OR:DI	OELD		
SURNAME	SNORRIS	KECCLSTON	DVASSATO	NOVAK	LICHONMIL		
DATE	3/19/82	3/19/82	3/19/82	3/19/82	3/19/82		

OFFICIAL RECORD COPY

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Boston Edison Company

CC:

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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. 56  
License No. DPR-35

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by the Boston Edison Company (the licensee) dated February 19, 1982 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;
  - 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:

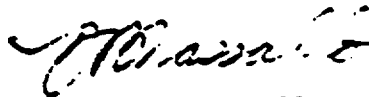
B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 56, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Domenic B. Vassallo, Chief  
Operating Reactors Branch #2  
Division of Licensing

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: March 20, 1982

ATTACHMENT TO LICENSE AMENDMENT NO. 56

FACILITY OPERATING LICENSE NO. DPR-35

DOCKET NO. 50-293

Replace the following pages of the Appendix "A" Technical Specification with the enclosed pages. The revised page is identified by Amendment Number and contains a vertical line indicating the area of change.

Remove

-  
59  
126  
127  
145

Replace

58a  
59  
126  
127  
145

## Surveillance Instrumentation

Table 3.2.F. (Continued)

<u>Minimum # of Operable Instrument Channels</u>	<u>Instrument #</u>	<u>Instrument</u>	<u>Type Indication and Range</u>	<u>Notes</u>
1/Valve	See Note (6)	Tail Pipe Temperature Indication	Thermocouple	(6)

**NOTES FOR TABLE 3.2.F**

- (1) From and after the date that one of these parameters is reduced to one indication, continued operation is permissible during the succeeding thirty days unless such instrumentation is sooner made operable.
- (2) From and after the date that one of these parameters is not indicated in the control room, continued operation is permissible during the succeeding seven days unless such instrumentation is sooner made operable.
- (3) If the requirements of notes (1) and (2) cannot be met, an orderly shutdown shall be initiated and the reactor shall be in a Cold Shutdown Condition within 24 hours.
- (4) These surveillance instruments are considered to be redundant to each other.
- (5) At a minimum, the primary or back-up\* parameters shall be operable for each valve when the valves are required to be operable. With both primary and backup\* instrument channels inoperable either return one (1) channel to operable status within 31 days or be in a shutdown mode within 24 hours.

The following instruments are associated with the safety/relief & safety valves:

Valve	Primary Acoustic Monitor	* Secondary Tail Pipe Temperature Thermocouple
203-3A	ZT-203-3A	TE6271-B
203-3B	ZT-203-3B	TE6272-B
203-3C	ZT-203-3C	TE6273-B
203-3D	ZT-203-3D	TE6276-B
203-4A	ZT-203-4A	TE6274-B
203-4B	ZT-203-4B	TE6275-B

\* See Note (6)

- (6) At a minimum, the above listed SRV tail pipe temperature, one of the dual thermocouples, will be operable for each valve when the valves are required to be operable. If a thermocouple becomes inoperable, it shall be returned to an operable condition within 31 days or the reactor shall be placed in a shutdown mode within 24 hours.

**LIMITING CONDITION FOR OPERATION****SURVEILLANCE REQUIREMENT****3.6.C Coolant Chemistry (Cont'd)**

power operation is permissible only during the succeeding seven days.

3. If the conditions in 1 or 2 above cannot be met, an orderly shutdown shall be initiated and the reactor shall be in a Cold Shutdown Condition within 24 hours.

**D. Safety and Relief Valves**

1. During reactor power operating conditions and prior to reactor startup from a Cold Condition, or whenever reactor coolant pressure is greater than 104 psig and temperature greater than 340°F, both safety valves and the safety modes of all relief valves shall be operable.
2. If Specification 3.6.D.1 is not met, an orderly shutdown shall be initiated and the reactor coolant pressure shall be below 104 psig within 24 hours. Note: Technical Specifications 3.6.D.2 - 3.6.D.5 apply only when two Stage Target Rock SRVs are installed.
3. If the temperature of any safety relief discharge pipe exceeds 212°F during normal reactor power operation for a period of greater than 24 hours, an engineering evaluation shall be performed justifying continued operation for the corresponding temp. increases, and a Report shall be issued per T.S. Section 6.9.B.1 which shall address the actions that have been taken or a schedule of actions to be taken.
4. Any safety relief valve whose discharge pipe temperature exceeds 212°F for 24 hours or more shall be removed at the next cold shutdown of 72 hours or more tested in the as-found condition, and recalibrated as necessary prior to reinstallation. Power operation shall not continue beyond 90 days

**4.6****D. Safety and Relief Valves**

1. At least one safety valve and two relief/safety valves shall be checked or replaced with bench checked valves once per operating cycle. All valves will be tested every two cycles.

The set point of the safety valves shall be as specified in Specification 2.2.

2. At least one of the relief/safety valves shall be disassembled and inspected each refueling outage.
3. Whenever the safety relief valves are required to be operable, the discharge pipe temperature of each safety relief valve shall be logged daily.
4. Instrumentation shall be calibrated and checked as indicated in Table 4.2.F.
5. Notwithstanding the above, as a minimum safety relief valves that have been in service shall be tested in the as-found condition during both Cycle 6 and Cycle 7.



## LIMITING CONDITIONS FOR OPERATION

## SURVEILLANCE REQUIREMENT

### 3.6.D Safety and Relief Valves (Cont'd)

from the initial discovery of discharge pipe temperatures in excess of 212°F for more than 24 hours without prior NRC approval of the engineering evaluation delineated in 3.6.D.3.

5. The limiting conditions of operation for the instrumentation that monitors tail pipe temperature are given in Table 3.2.F.

#### E. Jet Pumps

1. Whenever the reactor is in the startup or run modes, all jet pumps shall be operable. If it is determined that a jet pump is inoperable, an orderly shutdown shall be initiated and the reactor shall be in a Cold Shutdown Condition within 24 hours.

#### F. Jet Pump Flow Mismatch

1. Whenever both recirculation pumps are in operation, pump speeds shall be maintained within 10% of each other when power level is greater than 80% and within 15% of each other when power level is less than or equal to 80%.

#### G. Structural Integrity

1. The structural integrity of the primary system boundary shall be maintained at the level required by the ASME Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," 1974

#### E. Jet Pumps

Whenever there is recirculation flow with the reactor in the startup or run modes, jet pump operability shall be checked daily by verifying that the following conditions do not occur simultaneously:

1. The two recirculation loops have a flow imbalance of 15% or more when the pumps are operated at the same speed.
2. The indicated value of core flow rate varies from the value derived from loop flow measurements by more than 10%.
3. The diffuser to lower plenum differential pressure reading on an individual jet pump varies from established jet pump P characteristics by more than 10%.

#### F. Jet Pump Flow Mismatch

Recirculation pump speeds shall be checked and logged at least once per day.

#### G. Structural Integrity

The nondestructive inspections listed in Table 4.6.1 shall be performed as specified. The results obtained from compliance with this specification will be evaluated after 3 years and the conclusions of this evaluation will be reviewed with AEC.

## **BASIS:**

### **3.6.D and 4.6.D**

#### **Safety and Relief Valves**

As discussed in Subsection 4.4.6 of the Final Safety Analysis Report, design of the nuclear system pressure relief system is intended to protect the nuclear system from overpressurization in the event of the safety valve sizing transient. An indirect scram is assumed because ASME Boiler and Pressure Vessel Code, Section III, requires that protection systems directly related to the valve sizing transient must not be credited with action in determining valve relieving capacity. A total of 4 relief/safety valves and 2 safety valves is provided by the design.

Experience in safety valve operation shows that a testing of at least 50% of the safety valves per refueling outage is adequate to detect failures or deterioration. The tolerance value of  $\pm 1\%$  is in accordance with Section III of the ASME Boiler and Pressure Vessel Code. An analysis has been performed which shows that with all safety valves set 1% higher, the reactor coolant pressure safety limit of 1375 psig is not exceeded.

The relief/safety valves have two functions; i.e., power relief or self-actuated by high pressure. Power relief is a solenoid actuated function (Automatic Pressure Relief) in which external instrumentation signals of coincident high drywell pressure and low-low water level initiate the valves to open. This function is discussed in Specification 3.5.D. In addition, the valves can be operated manually.

Pilgrim's experience with 2 stage safety/relief valves has demonstrated that minimum leakage exists when the tailpipe temperature is 215° Fahrenheit. Therefore, a reporting requirement triggered by a temperature of 212°F is conservative, and assures timely reporting before leakage reaches significant proportions.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 56 TO FACILITY LICENSE NO. DPR-35

BOSTON EDISON COMPANY

PILGRIM NUCLEAR POWER STATION

DOCKET NO. 50-293

Author: Kenneth T. Eccleston

1.0 Introduction

By letter dated February 19, 1982, Boston Edison Company (the licensee) requested changes to the Pilgrim Nuclear Power Station Technical Specifications (TS) to incorporate limiting conditions for operation and surveillance requirements for safety relief valve (SRV) discharge pipe (tailpipe) temperatures and associated instrumentation.

2.0 Background

The safety relief valves employed at Pilgrim are two stage Target Rock valves which were installed prior to Cycle 5 operation. Setpoint drift experienced during as-received testing of these valves at Wyle Laboratories after Cycle 5 operation has been attributed, at least in part, to excessive valve leakage.

3.0 Evaluation

The TS changes proposed by the licensee require 1) daily recording of SRV discharge pipe temperatures whenever these SRVs are required to be operable and 2) calibration, instrument checks, and operability for the thermocouples installed to monitor discharge pipe temperatures. In addition, limiting conditions for operation (LCOs) have been proposed which require the submittal of a prompt report to the NRC describing the corrective actions taken or planned and measures taken to prevent recurrence if the temperature of any SRV discharge pipe exceeds 212°F for a period of greater than 24 hours. In addition, LCOs have been proposed which require testing of any valve whose discharge pipe temperature exceeds 212°F for 24 hours or more at the next cold shutdown of 72 hours or more. Further, NRC approval is required before operation may continue for more than 90 days after discovery of discharge pipe temperatures in excess of 212°F. Discharge pipe temperatures of 212°F correspond to minimal SRV leakage. The proposed surveillance requirements include testing of all SRVs in the as-found condition during both Cycle 6 and Cycle 7. As-found testing of the SRVs will provide further assurance of satisfactory SRV performance during the current and future cycles of operation. Finally, the proposed TS require that an engineering evaluation be performed justifying continued operation for the temperature increases experienced.

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The proposed LCO/surveillance requirements associated with SRV temperatures and temperature monitoring instrumentation provide assurance that valve leakage will be identified when valve leakage is minimal, thereby minimizing the potential for valve setpoint drift. The additional testing, reporting, and engineering evaluations required by these TS assures timely identification and resolution of any problems before excessively long (>90 days) operation with leaking safety relief valves. Consequently, we find the licensee's proposed TS acceptable.

#### 4.0 Environmental Considerations

We have determined that the amendment does not involve a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and pursuant to 10 CFR Section 51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of the amendment.

#### 5.0 Conclusions

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, 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, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: March 20, 1982

UNITED STATES NUCLEAR REGULATORY COMMISSIONDOCKET NO. 50-293BOSTON EDISON COMPANYNOTICE OF ISSUANCE OF AMENDMENT TO FACILITYOPERATING LICENSE

The U.S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 56 to Facility Operating License No. DPR-35 issued to Boston Edison Company (the licensee) which revised the Technical Specifications for operation of the Pilgrim Nuclear Power Station (the facility) located near Plymouth, Massachusetts. The amendment is effective as of its date of issuance.

The amendment incorporates limiting conditions for operation and surveillance requirements for safety relief valve discharge pipe temperatures and temperature monitoring instrumentation.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment was not required since it does not involve a significant hazards consideration.

The Commission has determined that the issuance of the amendment will not result in any significant environmental impact and that pursuant to 10 CFR 51.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of the amendment.

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For further details with respect to this action, see (1) the application for amendment dated February 19, 1982, (2) Amendment No.56 to License No. DPR-35, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C., and at the Plymouth Public Library on North Street in Plymouth, Massachusetts 02360. A copy of items (2) and (3) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Licensing.

Dated at Bethesda, Maryland this 20th day of March 1982.

FOR THE NUCLEAR REGULATORY COMMISSION



Domenic B. Vassallo, Chief  
Operating Reactors Branch #2  
Division of Licensing

**UNITED STATES NUCLEAR REGULATORY COMMISSION****DOCKET NO. 50-293****BOSTON EDISON COMPANY****NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY**  
**OPERATING LICENSE**

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Dated at Bethesda, Maryland this 20th day of March 1982.

FOR THE NUCLEAR REGULATORY COMMISSION



Domenic B. Vassallo, Chief  
Operating Reactors Branch #2  
Division of Licensing