DCD-016

Docket No. 50-293

MAY 2 8 1982

Mr. A. Victor Morisi, Manager
Nuclear Operations Support Department
Boston Edison Company
25 Braintree Hill Park
Rockdale Street
Braintree, MA 02184

Dear Mr. Morisi:

The Commission has issued the enclosed Amendment No. 61 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 26, 1982.

These changes to the Technical Specifications were made to clarify and modify surveillance requirements and limiting conditions for operation for degraded grid voltage protection equipment and procedures.

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. 61 to DPR-35
2. Safety Evaluation
3. Notice

cc: w/enclosures
See next page

DISTRIBUTION:

Docket File	T. Barnhart-4
NRC PDR	L. Schneider
Local PDR	D. Brinkman
ORB#2 Reading	ACRS-10
D. Eisenhut	OPA, C. Miles
S. Norris	R. Diggs
K. Eccleston	NSIC
OELD	ASLAB
SECY	
IE-2	

8206290023 820528
PDR ADOCK 05000293
P PDR

OFFICE	ORB#2	ORB#2	ORB#2	AD:OR	OELD		
SURNAME	SNorris	KEccleston:pbe	DVassallo	TNovak			
DATE	5/14/82	5/11/82	5/14/82	5/17/82	5/27/82 (by telephone per Larry Chandler-Elaine C. had no comments)		

NRC FORM 318 (10-80) NRCM 0240 OFFICIAL RECORD COPY USGPO: 1981—335-960

Mr. A. Victor Morisi
Boston Edison Company

cc:

Mr. Richard D. Machon
Pilgrim Station Manager
Boston Edison Company
RFD #1, Rocky Hill Road
Plymouth, Massachusetts 02360

Resident Inspector
c/o U.S. NRC
P.O. Box 867
Plymouth, Massachusetts 02360

Henry Herrmann, Esquire
Massachusetts Wildlife Federation
151 Tremont Street
Boston, Massachusetts 02111

Plymouth Public Library
North Street
Plymouth, Massachusetts 02360

Massachusetts Department of Public Health
ATTN: Commissioner of Public Health
600 Washington Street
Boston, Massachusetts 02111

Water Quality & Environmental Commissioner
Department of Environmental Quality
Engineering
100 Cambridge Street
Boston, Massachusetts 02202

Mr. David F. Tarantino
Chairman, Board of Selectmen
11 Lincoln Street
Plymouth, Massachusetts 02360

Ms. JoAnn Shotwell
Office of the Attorney General
Environmental Protection Division
1 Ashburton Place
19th Floor
Boston, Massachusetts 02108

U. S. Environmental Protection
Agency
Region I Office
Regional Radiation Representative
JFK Federal Building
Boston, Massachusetts 02203

Ronald C. Haynes
Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

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. 61
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 26, 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. 61 , 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 the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

D B Vassallo

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 28, 1982

ATTACHMENT TO LICENSE AMENDMENT NO. 61

FACILITY OPERATING LICENSE NO. DPR-35

DOCKET NO. 50-293

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

Remove	Replace
50A	50A
53a	53a
61	61
194A	194A
195	195
197	197
199	199

PNPS

TABLE 3.2.B (Cont'd)

INSTRUMENTATION THAT INITIATES OR CONTROLS THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum # of Operable Instrument Channels Per Trip System (1)	Trip Function	Trip Level Setting	Remarks
2	Startup Transformer Degraded Voltage Relays 127A-504/1,2,3 & 4 Bus A5	3745V ± 2% with 9.2 ± 0.5 sec. time delay	1. Trips Startup Transformer to Emergency Bus Breaker. 2. Locks out automatic closure of Startup Transformer to Emergency Bus. 3. Initiates starting of Diesel Generators in conjunction with loss of auxiliary transformer. 4. Prevents simultaneous starting of CSCS components. 5. Starts load shedding logic for Diesel Operation in conjunction with (a) Low Low Reactor Water Level and Low Reactor Pressure or (b) High drywell pressure or (c) Core Standby Cooling System components in service in conjunction with Auxiliary Transformer breaker open.
2	127A-604/1,2,3 & 4 Bus A6		

Amendment No. 42 61

TABLE 3.2.0.1

INSTRUMENTATION THAT MONITORS EMERGENCY BUS VOLTAGE

Minimum # of Operable Instrument Channels Per Trip System	Function	Setting	Remarks
	Emergency 4160V Buses A5 & A6 Degraded Voltage Annunciation Relays (1)	3850 ± 2% with 9.2 ± 0.1 % Second Time Delay	Alerts Operator to possible degraded voltage conditions
1	127A-A5 / 1 & 2 Bus A5		
1	127A-A6 / 1 & 2 Bus A6		

(1) In the event that the alarm system is determined inoperable, commence logging safety related bus voltage every 1/2 hour until such time as the alarm is restored to operable status.

PNPS

TABLE 4.2.B

MINIMUM TEST AND CALIBRATION FREQUENCY FOR CSCS

Instrument Channel	Instrument Functional Test	Calibration Frequency	Instrument Check
1) Reactor Water Level	(1)	Once/3 months	Once/day
2) Drywell Pressure	(1)	Once/3 months	None
3) Reactor Pressure	(1)	Once/3 months	None
4) Auto Sequencing Timers	NA	Once/operating cycle	None
5) ADS - LPCI or CS Pump Disch. Pressure Interlock	(1)	Once/3 months	None
6) Start-up Transf. (4160V)			
a. Loss of Voltage Relays	Monthly	Once/operating cycle	None
b. Degraded Voltage Relays	Monthly	Once/operating cycle	None
7) Trip System Bus Power Monitors	Once/operating cycle	NA	Once/day
8) Recirculation System d/p	(1)	Once/3 months	Once/day
9) Core Spary Sparger d/p	NA	Once/operating cycle	Once/day
10) Steam Line High Flow (HPCI & RCIC)	(1)	Once/3 months	None
11) Steam Line High Temp. (HPCI & RCIC)	(1)	Once/3 months	None
12) Safeguards Area High Temp.	(1)	Once/3 months	None
13) HPCI and RCIC Steam Line Low Pressure	(1)	Once/3 months	None
14) HPCI Suction Tank Levels	(1)	Once/3 months	None
15) Emergency 4160V Buses A5 & A6 Loss of Voltage Relays	Monthly	Once/Operating Cycle	None

Amendment No. 61

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.9.A Auxiliary Electrical Equipment Surveillance (Cont.)

1. Verifying de-energization of the emergency buses and load shedding from the emergency buses.

2. Verifying the diesel starts from ambient condition on the auto-start signal energizes the emergency buses with permanently connected loads, energizes the auto-connected emergency loads through the load sequence and operates for $\geq$ 5 minutes while its generator is loaded with the emergency loads.

   The results shall be logged.

c. Once per operating cycle with the diesel loaded per 4.9.A.1.b verify that on diesel generator trip, secondary (off-site) a-c power is automatically connected within 12 to 14 seconds to the emergency service buses and emergency loads are energized through the load sequencer in the same manner as described in 4.9.A.1.b.1.

   The results shall be logged.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.9.A Auxiliary Electrical Equipment	4.9.A Auxiliary Electrical Equipment Surveillance
4. 4160 volt buses A5 and A6 are energized and the associated 480 volt buses are energized.	d. Once a month the quantity of diesel fuel available shall be logged.
5. The station and switchyard 125 and 250 volt batteries are operable. Each battery shall have an operable battery charger.	e. Once a month a sample of diesel fuel shall be checked for quality in accordance with ASTM D270-1975. The quality shall be within the acceptable limits specified in Table 1 of ASTM D975-77 and logged.
6. Emergency Bus Degraded Voltage Annunciation System as specified in Table 3.2.B.1 is operable.	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 rated load discharge test. The specific gravity and voltage of each cell shall be determined after the discharge and logged.
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.	3. Emergency 4160V Buses A5-A6 Degraded Voltage Annunciation System.
1. From and after the date that incoming power is not availble from the start-up or shutdown transformer, continued	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.

3.9.B Operation with Inoperable Equipment

following conditions are satisfied and the AEC is notified within 24 hours of the occurrence and the plans for restoration of the inoperable components:

a. The startup transormer and both offsite 345 kV transmission lines are available and capable of automatically supplying auxiliary power to the emergency 4160 volt buses.

b. A transmission line and associated shutdown transformer are available and capable of automatically supplying auxiliary power to the emergency 4160 volt buses.

5. From and after the date that one of the 125 or 250 volt battery systems is made or found to be inoperable for any reason, continued reactor operation is permissible during the succeeding three days within electrical safety considerations, provided repair work is initiated in the most expeditious manner to return the failed component to an operable state, and Specification 3.5.F is satisfied. The AEC shall be notified within 24 hours of the situation, the precautions to be taken during this period and the plans to return the failed component to an operable state.

6. With the emergency bus voltage less than 3950 but above 3745 (excluding transients) during normal operation, transfer the safety related buses to the diesel generators. If grid voltage continues to degrade be in at least Hot Shutdown within the next 4 hours and in Cold Shutdown within the following 12 hours unless the grid conditions improve.

can be used for either 125 volt battery, (2) a 250 volt d-c back-up battery charger is supplied. Thus, on loss of normal battery charger, the back-up charger can be used. The 125 volt battery system shall have a minimum of 105 volts at the battery terminals to be considered operable. The 250 volt battery system shall have a minimum of 210 volts at the battery terminals to be considered operable.

Automatic second level undervoltage (Degraded Voltage) protection is installed on the startup transformer and is available when safety related loads are being supplied from this source. During normal operation, the unit auxiliary transformer supplies safety related buses. Automatic second level undervoltage protection is not installed on the unit auxiliary transformer. The Safety Bus Degraded Voltage Alarm System and new Degraded Voltage Operating Procedure will be relied upon to guide Operator action to preclude operation with a degraded bus voltage condition.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 61 TO LICENSE NO. DPR-35

BOSTON EDISON COMPANY

DOCKET NO. 50-293

PILGRIM NUCLEAR POWER STATION

Authors: K. T. Eccleston
R. Prevatte
B. Ungaro

1.0 Introduction

The staff Safety Evaluation supporting Amendment No. 42 to the Pilgrim Operating License identified a concern that when the class 1E buses are supplied through the unit auxiliary transformer (UAT) the class 1E equipment might be subjected to a degraded voltage condition should the main generator voltage degrade to an unacceptable level. Boston Edison Company (the licensee) proposed in its submittal of October 26, 1981, reliance on operator action (in lieu of automatic second level degraded grid voltage protection equipment) as the principal means of preventing damage to class 1E equipment, should a degraded voltage condition occur when the Class 1E buses are supplied through the UAT

By application dated February 26, 1982, Boston Edison requested changes to the Pilgrim I Technical Specifications (TS) to clarify existing TSs and provide additional information concerning detailed procedures to be followed in the event of a degraded grid condition.

2.0 Evaluation

2.1 Unit Auxiliary Transformer Undervoltage Protection

The licensee has installed additional protection consisting of a safety grade trip to the UAT breakers that would function coincident with a reactor scram signal. In addition, the licensee has stated that studies have been completed which adequately demonstrate that additional undervoltage protection is not required on the class 1E buses when powered from the UAT. In a March 18, 1982 telecon, the licensee committed to provide the results of these studies to the

staff by June 1, 1982. We will evaluate this information and determine if additional undervoltage protection is needed for future cycles on the Class 1E buses when powered from the UAT.

In the interim, we find that the presently installed undervoltage protection system for the Class 1E buses (when fed from the offsite power system) and the additional protection offered by the trip of the UAT breakers on reactor scram, when combined with operator action in accordance with the licensee's degraded voltage operating procedures, provide reasonable assurance that the Class 1E system will be adequately protected from sustained offsite power system degraded voltage conditions.

Based on this determination, we conclude that Pilgrim 1 can continue to operate through Cycle 6 without undue risk to the health and safety of the public. Additional modifications, if judged necessary after staff review of the submittal to be made by the licensee by June 1, 1982 can be deferred until startup for Cycle 7 operation.

2.2 Technical Specifications

In its February 26, 1982 license amendment application, the licensee proposed a number of Technical Specification (TS) changes to (1) clarify existing TSs, (2) delete surveillance requirements whose purpose was to check for misoperation of new degraded voltage relays before they were connected for automatic operation, and (3) reword the requirements for paralleling the diesel generator to the UAT to provide a conservative voltage range to preclude damaging safety-related equipment by operation under sustained degraded voltage conditions or from paralleling the diesel generator to a severely degraded grid system.

We have reviewed the TS changes proposed by the licensee to clarify existing TSs and find that they would more clearly define the relays, buses, and equipment to which the specifications apply and would thus improve the quality of the Pilgrim Technical Specifications. Consequently, we find them acceptable.

We have also reviewed the TS changes proposed by the licensee to delete the requirements for an instrument check of the degraded voltage relays on the startup transformer once per 12 hours and the loss of voltage relays on the startup transformer and on emergency 4160V buses A5 and A6. We agree that this surveillance was required only to check misoperation of the new relays before they were connected for automatic operation. Instrument checks of these relays necessitate the temporary installation of equipment to measure relay voltages. We do not require such an instrument check in those circumstances when this surveillance is not feasible with installed equipment. Consequently, we find the licensee's proposed TS to eliminate these surveillance requirements acceptable.

Finally, we have reviewed the licensee's proposed TS changes concerning operation of the diesel generators under degraded voltage conditions and find that these proposed TS changes clarify existing Technical Specifications regarding transferring emergency bus power supplies to the diesel generators. The range provided for in the proposed TS (90-95% of nominal) for paralleling the diesel generator to the unit auxiliary transformer will preclude damaging safety related equipment due to operation under sustained degraded grid voltage conditions. In addition, this range precludes paralleling the diesel generator to a severely degraded grid system. In addition, should grid conditions continue to deteriorate such that safety bus voltage falls below 90% of nominal, the proposed TS require the unit to be brought to a hot shutdown condition within the next four hours, thereby providing further assurance of prevention of damage to safety related equipment.

For the reasons stated above, we find the licensee's proposed TS regarding operation of the diesel generators under degraded voltage conditions to be acceptable.

3.0 Summary

We have reviewed the licensee's proposed Technical Specification changes and supporting information and conclude that they are 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 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: May 28, 1982

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-293

BOSTON EDISON COMPANY

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE

The U.S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 61 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 revises the Technical Specifications to clarify and modify surveillance requirements and limiting conditions for operation for degraded grid voltage protection equipment and procedures.

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 this amendment will not result in any significant environmental impact and that pursuant to 10 CFR Section 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.

For further details with respect to this action, see (1) the application for amendment dated February 26, 1982, (2) Amendment No. 61 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 28th day of May 1982.

FOR THE NUCLEAR REGULATORY COMMISSION

D B Vassallo

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