BOSTON EDISON
Pilgrim Nuclear Power Station
Rocky Hill Road
Plymouth, Massachusetts 02360

George W. Davis
Senior Vice President – Nuclear

March 27, 1991
BECo Ltr 91-051

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Docket No. 50-293
License No. DPR-35

Subject: REVISED REQUEST FOR WAIVER OF COMPLIANCE FROM TECHNICAL SPECIFICATION LIMITING CONDITION(S) FOR OPERATION AND LICENSE CONDITION 3.E

Dear Sir:

The purpose of this letter is to revise Boston Edison Company's request for a Waiver of Compliance submitted on March 26, 1991 to include Waiver of License Condition 3.E. Although License Condition 3.E was included in the verbal request and identified on Attachment 1 to the written request, the license condition was inadvertantly omitted from the body of the request letter. The following is a revision to Boston Edison Company's written request.

At approximately 6:00 PM on March 25, 1991, the NRC verbally approved Boston Edison Company's request for temporary relief from the requirements of Pilgrim Nuclear Power Station Technical Specifications and the License Condition listed in Attachment 1. This request was made by Boston Edison Company to the NRC at approximately 5:00 pm, March 25, 1991. Relief was requested from the requirements to be in a hot or cold shutdown condition in 24 hours if the LCO action statement conditions and License Condition 3.E could not be met; specifically, Pilgrim would either rectify the problems that led to entering the 24 hour LCOs by 12:00 noon, March 26, 1991, or commence a plant shutdown. Technical Specification and License Condition 3.E relief would enable continued system troubleshooting and repair in the existing operational mode, and preparation and implementation of a temporary modification if needed.

BECo concluded that plant operation in accordance with this request would not create a significant hazard to public health and safety and was justified based on operational circumstances. We also concluded that a request for an emergency change to the Pilgrim Technical Specifications or License was not appropriate in this case since the nature of the requested relief was temporary and non-recurring.

A001
1/1

Boston Edison Company
Pilgrim Nuclear Power Station

Docket No. 50-293
License No. DPR-35

Background

At approximately 2300 hours on March 24, 1991 operation of relays for the 23 KV Shutdown Transformer caused breakers 152-802 and 152-600 to open, apparently due to system perturbations outside of the PNPS. During the subsequent compensatory Emergency Diesel Generator testing, the "B" Diesel Generator tripped, 4160 volt Bus A-6 locked out, "B" Recirculation Pump tripped, and the plant experienced partial Group 5 and Group 6 isolations, Reactor Building isolation, and loss of Buses B2, B18, B14, and B28. Following these events, power was reduced to approximately 30%.

Loss of the 4160V Bus A6 resulted in the inoperability of B Control Rod Drive pump (CRD), B Core Spray pump, and B and D Residual Heat Removal (RHR) pumps.

Loss of the 480V Bus B2 resulted directly in the loss of B TBCCW pump, Buses B14, B18, and B28 and also resulted in a loss of the alternate power supply to the Swing Bus B6.

Loss of 480V Bus B14 resulted in the loss of the following equipment:

- 125V DC battery charger D12
- 250V DC battery charger D13
- SGTS filter heater 201B
- SGTS exhaust fan 210B
- CRHEAF heater BCRF 101B
- HPCI turbine exhaust vacuum breaker valve MO 2301-34
- RBCCW pumps D, E, and F
- SSW pumps D and E
- Aux oil pump for RFP B
- Battery room B exhaust fan
- Air compressor K104 B
- RBCCW HX SSW discharge line MOV 3806
- TBCCW HX SSW discharge line MOV 3805
- Intake structure exhaust fan VEX 104B
- Other less significant equipment

Loss of 480v Bus B18 resulted in the loss of the following equipment:

- Drywell Unit Coolers 205 A2 through F2, and 206 A2 and B2
- HPCI unit coolers VAC201 A and B
- CRD unit cooler VAC 203B
- RHR unit coolers VAC 204 C and D
- Core Spray injection valves MO1400-24 and 25 B
- RHR pump B and D suction valves MO1001-7B and D
- Containment spray valves MO1001-23B and 26B
- RCIC steam supply isolation valve MO1301-16
- Suppression chamber cooling valves MO1001-34B, 36B, and 37B
- Shutdown Cooling valves MO1001-43B and 43D
- RBCCW to RHR heat exchanger B valve MO4010A and MO4010B
- RBCCW nonessential loop isolation valves MO4009A and B
- Drywell cooler line isolation valve MO4002

- RWCU pump B
- Standby Liquid Control Pump B
- Power supply for panel Y4 (resulting in a partial RWCU System isolation, a loss of open permissive for Shutdown Cooling isolation valves MO1001-47 and 50, and a "half isolation" on the outboard MSIVs)
- Other less significant equipment

Loss of 480V Bus B28 resulted in the loss of the main stack dilution fan VSF-206A and associated auxiliaries.

Activities to restore electrical power included MEGGER testing and sequenced restoration of buses and loads. The requested waiver of compliance enabled this testing to continue without subjecting Pilgrim to the potentially elevated risk associated with shutting down without the previously discussed auxiliary electrical equipment. We also prepared a temporary modification package for use should these actions not result in restoration of the various out-of-service buses. This temporary modification provided an alternate 120V AC power supply for use in energizing the shutdown cooling isolation logic. Re-establishing RHR isolation logic would restore normal operation to the shut down cooling system for use during the transition to the cold shutdown condition.

Justification

During a normal shutdown, operators control reactor water level using the startup feedwater regulating valve in manual with RWCU available for letdown. Since RWCU was unavailable, level control would be more difficult than normal and the potential for a high reactor level Group 1 isolation would be increased. A Group 1 isolation closes the MSIVs and removes the condenser as a potential heat sink and necessitates use of HPCI and RCIC for Reactor pressure and level control. However, HPCI and RCIC would not be available if the Group 1 isolation were the result of high reactor water level. By remaining at power, normal three-element automatic feedwater level control would be available.

During normal shutdown, the shutdown cooling system is placed in service at approximately 50 psig, to reduce reactor water temperature to less than 212° F. With the abnormal configuration that existed on March 25, 1991, a temporary modification would be required to restore the shutdown cooling isolation logic to service. Implementation of the temporary modification would allow the operators to open the shutdown cooling valves and allow reactor cooldown in a controlled manner. These actions would have precluded the need to defeat PCIS logic and invoke 10 CFR 50.54(x) during shutdown.

During power operation, the following power supplies are available to the safety related buses: the unit auxiliary transformer, startup transformer, shutdown transformer, and emergency diesel generators. The station black out diesel can be connected to one 4160V safety bus if all other power supplies are lost. With the shutdown transformer out of service, only the startup transformer was available as an offsite power source. Proceeding to cold shutdown would require all emergency loads be transferred to the startup transformer. The unit auxiliary transformer would not be immediately available since it is fed by the main generator and requires configuring the unit for backfeed through the main transformer. By remaining at power, increased redundancy would be achieved.

Significant Hazards Consideration

Boston Edison evaluated this request and determined the request would not involve a significant increase in the probability or consequences of an accident previously evaluated and would not create the possibility of a new or different kind of accident from any accident previously evaluated because the proposed relief would not impose modifications of the plant equipment or operating procedures.

In addition, the request would not involve a significant reduction in a margin of safety. This conclusion was based on a probabilistic model developed for the Pilgrim Station Safety Enhancement Program. Using this model, the probabilities of failure for components and systems were altered to reflect the existing plant status. The relative impact on core damage of maintaining the plant at power versus initiating a manual shutdown was assessed. The core damage frequency associated with continued plant operation was less than the core damage frequency associated with immediate manual plant shutdown to cold conditions given the existing plant configuration. This situation would remain true for a continued operation duration of approximately 2 days at which time the core damage frequency associated with continued operation would then exceed that associated with immediate manual plant shutdown. Thus the margin of safety associated with continued plant operation up to 12 noon on March 26, would not be significantly less than that associated with plant shutdown as called for by the Technical Specifications and License Condition 3.E, and the request would not constitute a significant reduction in a margin of safety.

Therefore, Boston Edison concluded the request would not involve a significant hazards consideration.

Compensatory Actions

No specific compensatory actions were implemented as a direct result of this waiver request. However, at the inception of the event the Control Room staff stabilized the plant, were briefed on possible transients that could result from the existing plant conditions, and on the proper responses to such transients. In addition, they were directed to increase monitoring of drywell and secondary containment parameters (temperature, pressure, and humidity).

Boston Edison Company
Pilgrim Nuclear Power Station

Docket No. 50-293
License No. DPR-35

Conclusion

The requested Waiver of Compliance to the LCOs and License Condition listed in Attachment 1 was needed until such time as troubleshooting and repairs could be completed and power restored to the B2 bus and associated loads, or 12:00 noon on March 26, 1991 whichever occurred first. The plant's Operations Review Committee reviewed this request and recommended it be approved by the Station Director.

Power was restored to the A6 and B2 buses and their associated loads and the LCOs listed in Attachment 1 were closed by 0415 hours on March 26, 1991. All 24 hour LCOs were closed in less than the time required by Technical Specifications. The requirements of License Condition 3.E were met at 0056 hours on March 26, 1991.

Please do not hesitate to contact me if you have questions regarding this issue.

G. W. Davis

RLC/bal

cc: Mr. Thomas Martin, Regional Administrator
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Mr. Jon Johnson, Branch Chief
Division of Reactor Projects
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 406

Mr. R. B. Eaton, Project Manager
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation
Mail Stop: 14D1
U.S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, MD 02852

Senior NRC Resident Inspector - Pilgrim Nuclear Power Station

ATTACHMENT 1

SYSTEM/INOP CONDITION	TECH SPEC SECTION	ACTION	EXITED
B Recirc Pump	License Condition 3.E	24 hr. hot S/D	3/26/91 0056 hrs.
Loss of Core Spray B, RHR B, D/G B	3.5.A.5	24 hr. cold S/D	3/25/91 2115 hrs.
RHR System Loop B	3.5.B.3	24 hr. cold S/D	3/25/91 2250 hrs.
LPCI - Coolers Inop (RBCCW B)	3.5.C.3	Be less than 150# within 24 hrs.	3/25/91 2208 hrs.
LPCI System	3.5.A.5	24 hr. cold S/D	3/25/91 2122 hrs.
Drywell Sumps and Air Sampling System (valves isolated)	3.6.C.3, 3.2.E	24 hr. cold S/D	3/25/91 2125 hrs.
Emergency Bus A6	3.9.B.4	Per 3.5.F 24 hr cold S/D	3/25/91 2248 hrs.
Primary Containment Isolation Valves	3.7.A.2.b, 3.7.A.6	Isolate at least one valve in line, if not 24 hr. cold S/D	3/25/91 2206 hrs.
Reactor Water Sampling	3.6.B, 4.6.B.3.b	Daily sampling or hot S/D within 24 hrs cold S/D next 8 hrs.	3/26/91 0415 hrs.
Drywell 02 Concentration	3.7.A.5, 3.7.A.6	Initiate Orderly S/D 24 hr. cold S/D	3/25/91 2129 hrs.