BOSTON EDISON
Pilgrim Nuclear Power Station
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Ralph G. Bird
Senior Vice President — Nuclear

February 9, 1990
BECo Ltr #90-22

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

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

Subject: REQUEST FOR RELIEF FROM TECHNICAL SPECIFICATION 4.7.A.2.b.1.d LIMITING CONDITION FOR OPERATION

Dear Sir:

Boston Edison Company hereby requests a temporary relief from the requirements of Pilgrim Nuclear Power Station Technical Specification 4.7.A.2.b.1.d until the mid-cycle outage scheduled to begin on March 9, 1990. Plant operation subsequent to the granting of this request would not create a significant hazard to the public health and safety and is justified on technical merit. We have also concluded that a request for an emergency change to the Pilgrim Technical Specifications would not be appropriate in this case since the nature of the requested relief is temporary and non-recurring.

Background

Technical Specification 3/4.7.A.2.b.1.d requires that the operability of the reactor coolant system instrument line flow check valves be verified once per operating cycle. During the October, 1989 outage, excess flow check valves 2-CK125 A&B had their test aborted because sufficient actuation flow was unattainable due to the instrument line configuration.

The inability to verify operability conflicts with Technical Specification 3/4.7.A.2.b.1.d because the surveillance interval and its 25% "grace period" expired for these two valves.

Justification

The excess flow check valves serve two purposes: that of a passive component of the pressure boundary, similar to a spool piece; and that of an active component in reducing coolant flow in the event an instrument line sustains a catastrophic break i.e, a "double guillotine" break.

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Its passive "spool piece" role is not specifically a part of Technical Specifications because the failure of the check valve internals in the open position does not affect the process instrument associated with it. Failure of the valve internals in the closed position will be detected by a response time differential between process instruments downstream of the failed valve and similar redundant process instruments associated with open valves.

The excess flow check valve's active function is to reduce flow into secondary containment if there is a line break downstream of the valve. The FSAR safety analysis of a potential instrument line break is provided in Section 5.2.3.5.3. This section describes the instrument line containment boundary as an upstream orifice located inside primary containment and a downstream instrument flow check valve located outside primary containment. As stated in the FSAR:

> "The combination of orifice and excess flowcheck [sic] valve will reduce leakage to as low a value as practicable in the unlikely event of line failure."

The subsequent analysis of instrument line failure is based on a guillotine line failure of the instrument line <u>upstream</u> of the excess flow check valve. This failure results in a leak of 20 gpm to the secondary containment; the flow limitation being strictly due to the upstream flow orifice. This leak rate is "well within the capability of the Reactor Coolant Makeup System" and, therefore, does not present a safety hazard to the reactor core. This flow does not endanger the integrity of the Reactor Building as there "would not be any significant pressure rise due to the relatively high Reactor Building ventilation exhaust rates" and "the operation of one standby gas treatment filter train will prevent Reactor Building pressure from exceeding its design value." Finally a leak rate of 20 gpm results in a site boundary exposure "which is substantially below the guidelines of 10CFR100."

The flow reduction contribution of the excess flow check valve is not a contributor to the instrument line break analysis. In addition, the active function of the excess flow check valves, to reduce flow in the event of a line break downstream of the check valve, is not required to protect the core or the health and safety of the public. In effect, the safety function of the excess flow check valves is reduced to maintaining a pressure boundary and an open flow path to the associated instruments.

The surveillance requirement given in Technical Specification 3/4.7.A.2.b.1.d addresses only the active function of the check valves to reduce leakage "to as low a value as practicable" and this function is not required to meet the design of the plant. This is the only function that has not been "verified" for valves 2-CK125 A&B within the prescribed surveillance interval. Noting that the flow orifices and valves are new and not subjected to a fluid flow environment other than that required for surveillance testing it is reasonable to assume that these orifices and valves have not eroded or degraded in any way which could result in an increase of their critical/limiting flows. Also, all other excess flow check valves which were tested during the October mini-outage passed their test.

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Compensatory Measures

Until the excess flow check valves (2-CK125 A&B) are replaced during the March 9, 1990 mid-cycle outage, the following additional compensatory actions are being taken:

- Control access to the vicinity of the lines from the check valves to the instrument racks.
- Control work and maintenance in the area of lines from check valves to instrument racks.
- A standing Radiation Work Permit will be prepared to allow operations personnel to isolate root valves if required by a line break downstream of the check valve.
- Operations personnel will conduct tours each watch to inspect the affected lines for leakage.

Given the evidence of the ability of the orifice and check valve combination to meet the safety requirements described in the FSAR, and the compensatory measures discussed above, we believe there is no adverse impact to the public health and safety by continued operation until the scheduled outage. Continued operation is the better course of action than subjecting the plant to an unnecessary shutdown.

Please do not hesitate to contact me if you have questions or comments regarding this request.

K. L. Highfill

K. L. Highfill, Acting
Senior Vice President - Nuclear

Boston Edison Company
Pilgrim Nuclear Power Station

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