

DCD-016

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

Dear Mr. Morisi:

Subject: NUREG-0737 Item II.K.3.15 "Isolation of HPCI and RCIC Modification"

Re: Pilgrim Nuclear Power Station

We have completed our review of your proposed method for implementing the guidance of NUREG-0737 Item II.K.3.15, "Isolation of HPCI and RCIC", as described in your letters dated December 15, 1980 and January 7, 1982. The enclosed Safety Evaluation supports our conclusion that your proposed method is acceptable. Therefore, we consider II.K.3.15 resolved for Pilgrim.

Full implementation of your acceptable method may require a revision to your Technical Specifications (TS). Further guidance on the need for TS revisions and the form of those revisions will be forthcoming.

Sincerely,

Original signed by

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

Enclosure:  
Safety Evaluation

cc w/enclosure:  
See next page

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SURNAME							
DATE	7/27/82	7/27/82 :cb	7/27/82	7/27/82			

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

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

Plymouth Public Library  
North Street  
Plymouth, Massachusetts 02360

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

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

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

SAFETY EVALUATION ON PLANT MODIFICATIONS

IMPLEMENTED IN RESPONSE TO ITEM II.K.3.15 OF NUREG-0737

"SPURIOUS ISOLATION OF HPCI/RCIC"

Requirement as Stated in NUREG-0737

The high-pressure coolant injection (HPCI) and reactor core isolation cooling (RCIC) systems use differential pressure sensors on elbow taps in the steam lines to their turbine drives to detect and isolate pipe breaks in the systems. The pipe break detection circuitry has resulted in spurious isolation of the HPCI and RCIC systems due to the pressure spike which accompanies startup of the systems. The pipe-break-detection circuitry should be modified so that pressure spikes resulting from HPCI and RCIC system initiation will not cause inadvertent system isolation.

Evaluation of Modifications

The purpose of this item was to eliminate spurious isolations which occur as a result of pressure spikes in the startup transients for HPCI and RCIC systems. The BWR Owners' Group proposed a modification consisting of installing a time delay relay in the isolation logic for HPCI and RCIC. The time delays chosen by the utilities adopting this approach range from three to seven seconds.

Tests of the installed relay at the plants using the time delay relays have shown that a three second delay is sufficient to prevent spurious isolation. Delay times up to thirteen seconds could be allowed without violating the design bases for the HPCI/RCIC isolation systems. This is because the design bases assume that the DC power isolation valve fails and that no offsite AC power is available to the AC valve. The diesel-generator start and emergency bus loading sequence is assumed to require 13 seconds. Therefore, the nominal time delay of three seconds proposed by Boston Edison is acceptable.

Dated: July 28, 1982