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WILLIAM D. HARRINGTON
SENIOR VICE PRESIDENT
NUCLEAR

June 28, 1984
BECo. #84-093

Mr. Domenic B. Vassallo, Chief
Operating Reactors Branch #2
Division of Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

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

Generic Letter 83-28, Section 4.5: Functional Testing of Backup Scram Valves

Dear Sir:

Generic Letter 83-28, Section 4.5 recommends on-line functional testing of the backup scram valves at GE plants. This recommendation seems to imply that the backup scram valves are "diverse trip features" similar to the breaker shunt trip features on PWR's.

Scram designs for PWR's, which we believe prompted the backup scram valve testing recommendation, generally include only two redundant trip breakers, one of which is required to successfully function to scram the reactor. Each of these breakers has an undervoltage actuation device and a diverse, functionally redundant shunt activation device.

One of these four actuation devices must operate for the system to scram. If AC power is lost immediately prior to breaker failure (a single active failure), the shunts will not function as designed The scram thereupon depends on the remaining actuation device. Improper functioning of diverse safety related trip devices in the above described system would obviously result in reduced RTS reliability.

This is not the case with BWR RPS designs. The addition of backup scram valves to the BWR scram system was made by GE on the basis that such an addition was desirable though not essential. The backup scram valves are not required to meet any transients, and credit for them is not taken in Pilgrim's FSAR. The system is intended to provide an alternate source of rod insertion in cases where individual rods fail to insert. The probability of enough rods independently failing in quantities sufficient to prevent shutdown is negligible; therefore the use of backup scram valves is not considered essential to the safe shutdown of the plant, and provides no increase in the safety margin.

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Boston Edison does not routinely conduct a specific surveillance test for the backup scram valves, nor do we feel that specific testing is required. However, valve operability is indirectly demonstrated by PNPS Procedure No. 2.1.5, "Controlled Shutdown from Power". This procedure requires that the scram pilot valve air header alarm clear before certain other activities proceed. This demonstrates backup scram valve operability because the alarm sensing circuit is configured such that no alarm will be received if the backup scram valves fail to exhaust. If the valves then fail to return to their normal position, the air header will not repressurize and the alarm will not clear. This verification of valve operability is performed in the interest of equipment reliability and not plant safety.

Also, we believe scram diversity is enhanced at Pilgrim by the Alternate Rod Insertion (ARI) function of the Recirculation Pump Trip System (RPT). This system is not redundant to the Reactor Protection System (RPS), but does share some common parameters with the RPS logic. ARI/RPT is intended to scram the reactor for certain undesirable transients which were not covered by the RPS. The RPT/ARI system is surveilled in accordance with Table 4.2-G and 3/4.2G of Pilgrim's Technical Specifications.

Boston Edison plans no further action concerning the testing of backup scram valves. Should you wish further information concerning this submittal, please contact us.

Very truly yours,

W D Harrington

PMK/kmc

Commonwealth of Massachusetts)
County of Suffolk )

Then personally appeared before me W. D. Harrington, who, being duly sworn, did state that he is Senior Vice President - Nuclear of the Boston Edison Company, the applicant herein, and that he is duly authorized to execute and file the submittal contained herein in the name and on behalf of the Boston Edison Company and that the statements in said submittal are true to the best of his knowledge and belief.

My Commission expires: October 21, 1988

Peter M. Kahler
Notary Public