

JAN 25 1984

Mr. Murray R. Edelman  
Vice President - Nuclear Group  
The Cleveland Electric Illuminating Company  
P. O. Box 5000  
Cleveland, Ohio 44101

Dear Mr. Edelman:

Subject: Request for Information Pertaining to Pressure Isolation Valves  
Leak Testing for the Perry Nuclear Power Plant (Units 1 and 2)

In Section 3.9.6 of the Perry SER, the staff identified an open item regarding the leak testing of pressure isolation valves (PIV). This concern was previously identified in the Draft SER, Question DSER 3.9-20. Your response to DSER 3.9-20 was provided in Amendment 8 to the FSAR which stated that the leak testing of PIV's would be included in the Inservice Testing Program for Pumps and Valves and is a part of Outstanding Issue (5) listed in Section 1.9 of the SER.

The Inservice Testing Program for Pumps and Valves was forwarded by your letter to me dated June 15, 1983. The staff is currently reviewing the Program and has noted that its concern regarding the leak testing of the PIV's is not adequately addressed. It is accordingly requested that you provide this information so that the staff may complete its review. A copy of the staff's position on PIV leak testing is enclosed for your information.

Please advise the Perry project manager (John Stefano) when we may expect to receive your response, within 5 days after receipt of this letter.

Sincerely,

ORIGINAL SIGNED BY:

B. J. Youngblood, Chief  
Licensing Branch No. 1  
Division of Licensing

Enclosure: As stated

cc: See next page

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There are several safety systems connected to the reactor coolant pressure boundary that have design pressure below the rated reactor coolant system (RCS) pressure. There are also some systems which are rated at full reactor pressure on the discharge side of pumps but have pump suction below RCS pressure. In order to protect these systems from RCS pressure, two or more isolation valves are placed in series to form the interface between the high pressure RCS and the low pressure systems. The leak tight integrity of these valves must be ensured by periodic leak testing to prevent exceeding the design pressure of the low pressure systems thus causing an inter-system LOCA.

Pressure isolation valves are required to be category A or AC per IWV-2000 and to meet the appropriate requirements of IWV-3420 of Section XI of the ASME Code except as discussed below.

Limiting Conditions for Operation (LCO) are required to be added to the technical specifications which will require corrective action i.e., shutdown or system isolation when the final approved leakage limits are not met. Also surveillance requirements, which will state the acceptable leak rate testing frequency, shall be provided in the technical specifications.

Periodic leak testing of each pressure isolation valve is required to be performed at least once per each refueling outage, after valve maintenance prior to return to service, and for systems rated at less than 50% of RCS design pressure each time the valve has moved from its fully closed position unless justification is given. The testing interval should average to be approximately one year. Leak testing should also be performed after all disturbances to the valves are complete, prior to reaching power operation following a refueling outage, maintenance and etc.

The staff's present position on leak rate limiting conditions for operation must be equal to or less than 1 gallon per minute for each valve (GPM) to ensure the integrity of the valve, demonstrate the adequacy of the redundant pressure isolation function and give an indication of valve degradation over a finite period of time. Significant increases over this limiting valve would be an indication of valve degradation from one test to another.

Leak rates higher than 1 GPM will be considered if the leak rate changes are below 1 GPM above the previous test leak rate or system design precludes measuring 1 GPM with sufficient accuracy. These items will be reviewed on a case by case basis.

The Class 1 to Class 2 boundary will be considered the isolation point which must be protected by redundant isolation valves.

In cases where pressure isolation is provided by two valves, both will be independently leak tested. When three or more valves provide isolation, only two of the valves need to be leak tested.

Provide a list of all pressure isolation valves included in your testing program along with four sets of Piping and Instrument Diagrams which describe your reactor coolant system pressure isolation valves. Also discuss in detail how your leak testing program will conform to the above staff position.