

MAY 13 1975

Yankee Atomic Electric Company  
ATTN: Mr. G. Carl Andagnini, Assistant  
to the Vice President  
20 Turnpike Road  
Westboro, Massachusetts 01581

Gentlemen:

Adverse operating experience concerning main steam isolation valves (MSIVs) has been reported to the Office of Inspection and Enforcement (OI&E) following operational tests and spurious closures at various PWR stations. In an effort to gain a better understanding of these events, Information Request No. 74-2 was sent to all PWR stations by OI&E. The information thus obtained was used as input to a generic review conducted by the Division of Reactor Licensing. During our review, we had the benefit of discussions with personnel representing various valve manufacturers and also with utility representatives whose facilities were affected.

We have reviewed the ability of the swing-check type MSIVs to withstand the dynamic forces associated with rapid closure of such valves in the event of a steam line rupture. As a result of this study, it was determined that in some cases there may be a need to upgrade both the materials and the design of the larger swing-check MSIVs in order to prevent degradation during normal service and to assure performance of all designed safety functions. Whereas we believe that adequate remedial measures have been identified by the manufacturers of the swing-check type MSIVs, we require assurance from licensees that appropriate remedial measures have been or will be taken in a timely manner for those facilities in which swing-check type MSIVs are installed. In addition, we require summary information on the analyses or tests that have been performed to confirm the integrity of these valves under accident conditions.

During the course of our generic review another type of MSIV (a Y-pattern globe design) experienced failure during a routine plant startup. Our review of this occurrence indicates that the ability of Y-pattern designs to tolerate the dynamic forces associated with postulated steam line break conditions without significant mechanical damage must be similarly reviewed. Therefore, for Y-pattern globe valves, we require that analyses or test data to substantiate the performance of each design under postulated accident conditions be submitted to us for review.

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For the Yankee Rowe plant, please provide by not later than June 23, 1975, the information requested in the enclosure to this letter. Three signed originals and thirty-seven copies are required.

This request for generic information was approved by GAO under a blanket clearance number E-180225 (R0072); this clearance expires July 31, 1977.

Sincerely,

Original signed by:  
Robert A. Purple

Robert A. Purple, Chief  
Operating Reactors Branch #1  
Division of Reactor Licensing

Enclosure:  
Request for Additional  
Information

cc w/enclosure:  
see next page

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REQUEST FOR ADDITIONAL INFORMATION

Y-PATTERN GLOBE AND SWING-CHECK MAIN STEAM ISOLATION VALVES

1. Provide a summary of the analyses employed to confirm the integrity of the main steam isolation valves (MSIVs) under the dynamic loads associated with the postulated steam line breaks. Include the following:

- (a) The maximum calculated impact energy that will be sustained by valve internal elements and seating surfaces under the conditions imposed by postulated main steam line breaks for your station. For Y-pattern globe MSIVs, this response should address both forward and reverse flow.
- (b) A summary of the methods employed to calculate the energy levels given in response to (a) above.
- (c) A summary of the maximum stress or strain calculated to occur in the principle elements of the valve assembly when subject to the impact forces characterized in (a) above.
- (d) A summary of any other methods or criteria employed in conjunction with or in lieu of the information requested in (a), (b), and (c) above to provide assurance that the valve is adequately designed to perform the specified safety functions.

If the analysis has been performed by the valve manufacturer or other party, reference to this document is satisfactory provided that the document is on file with the staff.

2. Describe any modifications incorporated in or to be incorporated in the main steam isolation valves at your station. Provide the present schedule for completion of this work.

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