



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JUN 20 1985

*Check of July 6
is complete
for review*

*V.S. [Signature]
J.S.
M.T.
W.S. (15 copies for CRGR)
I plan to add this
matter to CRGR
meeting agenda for
July 6 (briefing 12:30-1:00,
Wall 5.*

MEMORANDUM FOR: Victor Stello, Deputy Executive Director for
Regional Operations and Generic Requirements

FROM: Harold Denton, Director
Office of Nuclear Reactor Regulation

SUBJECT: GENERIC TECHNICAL SPECIFICATIONS REGARDING ACCEPTABLE
PRESSURE ISOLATION VALVE (PIV) IN-SERVICE TEST LEAK RATES

There is an urgent administrative need to discuss the PIV test requirements that are appropriate for several plants about to be licensed. The reviews for these plants have been completed based on our current position on PIV testing which is described in the attachment to this memorandum. If modifications to the position are in order I feel we should move quickly in the interest of an orderly licensing process.

We propose to discuss this issue immediately. Based on the discussion, and if you agree, our current policy towards leak rate testing requirements for NTOLs and ORs will be continued until detailed regulatory analyses are prepared. These regulatory analyses could be done as part of the resolution of one or more generic issues, which have been or will be established to address the question of intersystem LOCAs.

[Signature]
Harold Denton, Director
Office of Nuclear Reactor Regulation

Attachment: As stated

cc: See page 2.

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Victor Stello

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ATTACHMENT

GENERIC TECHNICAL SPECIFICATIONS REGARDING ACCEPTABLE PRESSURE ISOLATION VALVE (PIV) IN-SERVICE TEST LEAK RATES

By memorandum of February 14, 1985, from Harold R. Denton to Victor Stello, NRR forwarded for CRGR review a proposed change to the standard technical specifications that would provide a substantial relaxation to pressure isolation valve (PIV) leak rate test acceptance criteria which NRR has concluded is overly restrictive and an unnecessary burden on licensees.

CRGR responded by memoranda dated February 25, 1985, and March 1, 1985 from Victor Stello to Harold Denton. These responses, indicated that more formal review by CRGR should be performed with respect to review of which specific PIVs should be leak tested.

Operating reactors can be separated into two distinct groups in terms of which PIVs are leak tested. The two groups consist of the plants that received an Operating License (OL) prior to the TMI-2 accident and those that have received an OL since the accident. All plants reviewed since the TMI-2 accident (NTOLs), have been required to test two PIVs at each interface of a low pressure system with the reactor coolant system down to a minimum size of 1.5 inches. The frequency of testing varies depending on valve type, with the very few motor operated gate valves in this category being tested much more infrequently than check valves.

Most plants that were licensed prior to the TMI-2 accident have been required to leak test two PIVs that are installed at low pressure interfaces with the reactor coolant system in a check valve configuration which, should gross valve failure occur, would result in a loss of coolant accident outside containment, i.e., identified as the Event V sequence in WASH-1400. Thus, in general, at the present time, plants in this group are testing far fewer PIVs than plants in the NTOL group. However, since the resumption of licensing after the TMI-2 accident, it has been NRR policy to gradually backfit the NTOL test requirement to the older plants. The increased PIV test requirements are being issued in conjunction with the Safety Evaluation Reports prepared in response to licensee requests for relief from ASME code valve inservice test requirements pursuant to 10 CFR 50.55a(g).

The scope of the current PIV testing position was established in late 1980 by the Division of Engineering with substantial technical input from other NRR divisions, most notably, the Division of Systems Integration. It was made in the context of the TMI-2 accident and several severe Event V PIV failures that occurred at operating plants at about that time. In addition, it has been generally established that the failure rates for the valve types that are commonly used for PIVs is higher than what was believed at the time the current testing position was established.

NRR will be prepared for further discussion of the safety rationale for the current PIV leak test position, but some key elements are as follows. For both PWRs and BWRs, failure of two in-series PIVs could result in an intersystem LOCA event. It is true, of course, that whether or not the LOCA bypasses containment or results in core melt depends on a number of factors. We believe we have considered these factors appropriately and will be prepared for further discussion on this point. A large majority of the PIVs that NRR has required be leak tested are check valves. For most of these valves there are no other requirements to verify the closed position of the valves. Thus, if the current NRR test requirements are eliminated these valves will not be individually tested to verify the closure function for the life of the plant. Data from operating reactor experience indicates a check valve failure rate which may result in an unacceptable probability of intersystem LOCA, from a risk perspective, if the valves remain untested over the plant lifetime, even if the LOCA occurs within the Containment Building.

Nevertheless, the spectrum of non-Event V PIV configurations in both PWRs and BWRs is large. In addition, there are differences in valve types from plant to plant. The basis for the current NRR testing position has been discussed. Testing of these many and varied configurations has not, however, received a rigorous regulatory analysis. We believe if such analyses were performed for each non-Event V configuration, the results could be used to refine the current testing requirement so that only testing at a frequency specifically shown to be cost effective for a given valve configuration would be performed. NRR believes it would be highly beneficial to perform these analyses and will be prepared to arrive at a mutually agreeable schedule with CRGR for completing this work.

In the interim period required to complete the analyses, we believe it preferable to continue to implement our long standing position on PIV testing. We believe it would be less confusing to the industry to move from our present practice to one in which we have an optimized testing schedule than to move now to the minimum Event V valve position, and then find it necessary again to revise that to agree with the results of our regulatory analyses.