

NUCLEAR UTILITY GROUP
ON EQUIPMENT QUALIFICATION

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September 30, 1987

Mr. Ledyard B. Marsh
Chief, Mechanical Engineering
Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Qualification of PORV Control Circuitry
under NUREG-0737, Item II.D.1.

Dear Mr. Marsh:

On May 13 and June 15, 1987, representatives of the NRC Staff and the Nuclear Utility Group on Equipment Qualification ("Group") met to discuss the requirements for qualification of PORV control circuitry. During the meeting it was agreed that the Group would provide the following summary of the information exchanged during the meeting. This summary, however, was delayed pending issuance of Staff correspondence to licensees setting forth related positions addressed during discussions with the Group.^{1/}

NUREG-0737, Item II.D.1 provides that PORV control circuitry be qualified for design-basis transients and accidents. The Staff agreed that meeting the environmental qualification requirements of 10 C.F.R. §50.49 as they may apply to PORV control circuitry is satisfactory to address Item II.D.1 and that specific qualification under Item II.D.1 is not required. The operative sections of 10 C.F.R. §50.49 for determining the need to qualify PORV control circuitry are (b)(1) and (b)(2). Basically, qualification of the PORV control circuitry would be required under Section 50.49(b)(1) if the PORV performs a safety function, and would be required under Section 50.49(b)(2) if failure of the PORV under postulated environmental conditions could degrade a safety function of safety-related equipment.

^{1/} See, e.g., Letter from R. Dudley, NRC, to K.P. Baskin, Southern California Edison Company, dated July 8, 1987.

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If the PORV control circuitry has been qualified under Section 50.49, this will satisfy the provisions of NUREG-0737, Item II.D.1. If this equipment has not been qualified under Section 50.49, Item II.D.1 is still satisfied if the licensee shows that qualification is not required because the equipment meets one of the conditions of Regulatory Guide 1.89, App. E.

Thus, in general, the applicable provisions of NUREG-0737, Item II.D.1, are satisfied without specific qualification of the PORV control circuitry if one or more of the following conditions, as described in the above-referenced Staff correspondence, apply:

1. The PORVs are not required to perform a safety function to mitigate the effects of any design basis event in the harsh environment, and failure in the harsh environment will not adversely impact safety functions or mislead the operator (PORVs will not experience any spurious actuations and, if emergency operating procedures do not specifically prohibit use of PORVs in accident mitigation, it must be ascertained that PORVs can be closed under harsh environment conditions).2/
2. The PORVs are required to perform a safety function to mitigate the effects of a specific event, but are not subjected to a harsh environment as a result of that event.
3. The PORVs perform their function before being exposed to the harsh environment, and the adequacy of the time margin provided is justifi-

2/ Spurious actuation may occur through lack of qualification, or inadvertent actuation either by automatic signals or by operator action. Spurious actuation of the PORV will generally not be considered to adversely impact, i.e., degrade, a safety function, if (1) the plant's safety system capability and accident analyses bound conditions associated with a stuck-open PORV, (2) subsequent operator action could close, if necessary, a stuck-open PORV in a timely manner, or (3) other qualified means are available to terminate flow (e.g., a qualified block valve). It was also noted in the discussions between the Group and the Staff that if the block valve is qualified and there is adequate time for operator activation of the block valve, a single-failure need not be assumed. Actions have been taken by most licensees under NUREG-0737, Items II.K.3.1 and 2 to ensure the capability to use the block valve to isolate a stuck-open PORV.

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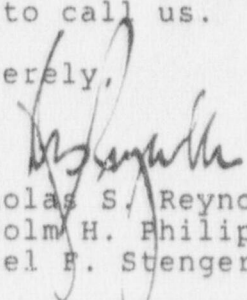
fied; subsequent failure of the PORVs as a result of the harsh environment will not degrade other safety functions or mislead the operator (PORVs will not experience any spurious actuations and, if emergency operating procedures do not specifically prohibit use of PORVs in accident mitigation, it must be ascertained that PORVs can be closed under harsh environment conditions).3/

4. The safety function can be accomplished by some other designated equipment that has been adequately qualified and satisfies the single-failure criterion.4/

Licensees should address whichever of the four conditions may apply, with supporting technical information and discussion. These factors are essentially those used to determine whether equipment requires qualification under I&E Bulletin 79-01B or Section 50.49(b)(1) or (b)(2). See Regulatory Guide 1.89, App. E, paragraphs 3(a), (c) and (d). The technical bases for not qualifying the PORV control circuitry under I&E Bulletin 79-01B or Section 50.49 should be sufficient to satisfy this test.

We appreciated the opportunity to meet with you and exchange information on this issue. If you would like to discuss the issue further, please do not hesitate to call us.

Sincerely,


Nicholas S. Reynolds
Malcolm H. Philips, Jr.
Daniel F. Stenger

Counsel for Nuclear Utility
Group on Equipment
Qualification

3/ See the same clarification as with Item 1 above.

4/ Item 4 applies only if the PORV performs a safety function.