Portland General Electric Company

Bart D. Withers Vice President

July 12, 1985

Trojan Nuclear Plant
Docket 50-344
License NPF-1

Director of Nuclear Reactor Regulation
ATTN: Mr. E. J. Butcher, Jr., Acting Chief
Operating Reactors Branch No. 3
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington DC 20555

Dear Mr. Butcher:

Valve MO-8812 Test Program

In response to your letter of June 13, 1985, the additional information requested concerning leak testing of valve MO-8812 is provided in the attachment. We have revised the minimum test pressure to 33.6 psig.

Sincerely,

B D Withers

Bart D. Withers
Vice President
Nuclear

Attachment

c: Mr. Lynn Frank, Director
State of Oregon
Department of Energy

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121 S.W. Salmon Street, Portland, Oregon 97204

NRC Request

1. Regarding your request to reduce the valve test pressure from 60 psid to 22.5 psid, we note this request is based on the estimated Containment pressure at the beginning of the recirculation phase following a LOCA, plus an allowance of 0.5 psi for calculational uncertainties. According to the Trojan FSAR (Page 6.3-22), however, recirculation is automatically initiated when the Refueling Water Storage Tank (RWST) reaches its low-level setpoint corresponding to 145,000 gallons of water remaining in the RWST. In addition, FSAR Table 6.3-4 indicates the minimum capacity of the RWST is 428,000 gallons and FSAR Page 6.3-22 indicates the runout flow of the ECCS is 19,000 gpm. Based on these numbers, it appears the recirculation phase could start as early as 14.9 minutes (894 seconds) after the beginning of the LOCA. Based on initiation of recirculation at this time, FSAR Figure 6.2-91 indicates the Containment pressure would be about 33 psig instead of the 22 psid you have proposed. Based on these considerations, please change your proposed basic test pressure (not including allowance for uncertainties) to 33 psid or explain why this base test pressure is not appropriate and fully justify some other test pressure.

Response to Item 1

Given the premise that the test pressure for MO-8812 should be the pressure existing at the earliest possible time recirculation could begin, further analysis has been performed as discussed below.

Switchover from injection to recirculation is auto-initiated only from the standpoint that the RHR pumps are stopped automatically at the low-level setpoint in the RWST. The remaining steps are performed manually.

The low-level setpoint in the RWST corresponds to 223,000 gallons of water remaining in the tank. This represents 145,000 gallons of usable water plus 78,000 gallons of unusable water remaining in the RWST (FSAR Pages 6.3-22 and -23). The minimum RWST capacity is 428,000 gallons and the ECCS runout flow is 19,000 gpm. Therefore, the RWST low-level setpoint could be reached in 10.8 minutes (647 seconds).

Because MO-8812 is closed early in the switchover sequence from injection to recirculation, no additional delay for onset of recirculation due to valve stroke time was considered, which is conservative. Therefore, using Figure 6.2-91 at T = 647 seconds, the Containment pressure would be 39 psig.

Another consideration which reduces the test pressure for MO-8812 is the difference in elevational head between the RWST and Containment at the

start of recirculation. The low-level setpoint in the RWST is 64' 5" MSL. The Containment sump water level is about 51' 0" MSL. This differential head reduces the pressure across MO-8812 by 6.4 psi or a total differential pressure of 32.6 psid.

NRC Request

2. Regarding the uncertainty allowance of 0.5 psig you have proposed for this pressure test value, we note this represents an uncertainty of about 2.5 percent. We doubt the ability of the present state-of-the-art to predict Containment pressures to this accuracy. We also note from Figure 6.2-91 that at a time of 1,000 seconds into the postulated accident, the descending curve has its steepest slope and thus its greatest uncertainty. It would appear to be prudent engineering to have the percentage uncertainty in the test value comparable to the percentage of uncertainty in the calculation. Please address this concern in your response and amend your proposal appropriately.

Response to Item 2

The uncertainties associated with the calculation used to generate Figure 6.2-91 are already included in the figure. The only remaining uncertainty is in reading Figure 6.2-91. We are confident of the engineering judgement which assumed an uncertainty of 0.5 psig. However, for further conservatism, we will assume an uncertainty of 1.0 psig.

Therefore, we propose a revised minimum test pressure for MO-8812 of 33.6 psig.

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