

ENCLOSURE

MECHANICAL ENGINEERING BRANCH SUPPLEMENT  
TO SAFETY EVALUATION REPORT SECTION 3.9.6  
FOR COMANCHE PEAK, UNIT NO. 1

3.9.6 In-Service Testing (IST) of Pumps and Valves

In supplement No. 1 to NUREG-0797 the staff granted interim relief pending review of the IST program for pumps and valves. That review is now completed. A detailed safety evaluation, which includes endorsement as well as other comments, is forwarded as an enclosure to this SER section. The contents of the enclosure are summarized below.

By a letter dated October 27, 1983 the applicant forwarded an IST program for pumps and valves for staff review and acceptance. That submittal, along with the evaluations and comments contained in the enclosure to this SER section constitutes the IST program for pumps and valves for Comanche Peak, Unit 1. The IST program should not be modified without the approval of the NRC.

The staff concludes that the applicant's pump and valves test program is acceptable and meets the requirements of 10 CFR Part 50, Appendix A, General Design Criteria 37, 40, 43, 46, 54, and §50.55a(g). This conclusion is based on the applicant having provided a test program to ensure that safety-related pumps and valves will be in a state of operational readiness to perform necessary safety functions throughout the life of the plant. This program includes baseline preservice testing and periodic inservice testing. The program provides for both functional testing of the components in the operating state and for visual inspection for leaks and other signs of distress. Applicant has also formulated his inservice test program to include all safety related Code Class 1, 2, and 3 pumps and valves and to include those pumps and valves which are not Code Class 1, 2, and 3 but are considered to be safety related.

The following relief requests were denied for the reasons summarized below. (Relief request numbers, where noted, are from the applicants submittal of October 27, 1983. Section numbers are those stated in the enclosure.)

In section 3.2.1.1, permission was denied to commence cold shutdown testing within 48 hours of reaching cold shutdown only if the shutdown period is scheduled to be longer than 72 hours. Normally, cold shutdown testing is required to begin within 48 hours of achieving cold shutdown, regardless of the length of the outage. No basis was provided by the applicant and thus relief was denied.

In section 3.2.4, relief request V-1 was denied to ignore the provisions of ASME Code paragraph IWV-3426 and 3427 regarding analysis of leakage rates and corrective action respectively. Adequate corrective actions and controls for reducing excessive leakage are not contained in 10CFR50 Appendix J for individual valves as the applicant has stated.

In section 3.4.2.1, relief request 6.2 was denied to exercise valves 1POV-455A and 456 only every 18 months. No basis was provided by the applicant.

In section 3.6.1.1, relief request 13.1 was denied to part stroke exercise valves 1 CT-142 and 145 every 5 years. Partial disassembly of the valves at refueling outages is required as a substitute procedure.

In section 3.6.2.1, relief request 13.2 was denied to not test valves 1CT-148 and 149. Partial disassembly of the valves at refueling outages is required as a substitute procedure.

In section 3.7.1.2, relief request 15.12 was denied to exercise valves 1-8811A and B only at refueling outages because the facilities exist to stroke-exercise these valves quarterly.

In section 3.7.1.3, relief request 15.4 was denied to not exercise test valves 1-8956 A, B, C and D. Partial disassembly of the valves at refueling outages is required as a substitute procedure.

In section 3.7.1.5, relief request 15.6 was denied to stroke-exercise valves 1-8818 A, B, C and D at refueling outages because exercising can be accomplished at cold shutdowns.

In section 3.7.1.6, relief request 15.4 was denied to not exercise test valves 1-8948 A, B, C and D. These valves can be part-stroke exercised at cold shutdown and full-stroke exercised at refueling outages.

In section 3.2.3.1 the applicant proposed that stroke time for rapid acting valves be a maximum of 5 seconds. The staff requirement is 2 seconds.

The applicant has omitted a number of valves from the IST program as outlined in Appendix C, Item 1 of the enclosure as well as in Appendix E Items 3., 4., and 7. of the enclosure. These valves must be included in the program. All safety related pumps and valves must be included in the IST program, whether they are tested or not.

The applicant has categorized pressure isolation valves as listed in section 3.1.7 as Category A or AC to meet the staff requirements. The allowable leakage rate must be specified not to exceed 1/2gpm per nominal inch of valve size up to 5gpm maximum for each valve as will be stated in the Technical Specifications.

The applicant has categorized a number of containment isolation valves other than A or A/C as would normally be required of valves whose seat leakage is limited. (See item 2 of Appendix C of the enclosure). Explanations and/or relief requests are required for the valves listed.

The NRC staff finds that it is impractical within the limitations of the Comanche Peak plant design, geometry, and accessibility for the applicant to meet certain requirements of Subsection IWP and IWV of Section XI of the ASME Code. Imposing these requirements would result in hardships or unusual difficulties without a compensating increase in the level of quality or safety.

Therefore, pursuant to 10CFR50.55a, the relief requested from the pump and valve testing requirements of 10CFR50.55a(g)(2) and 10CFR50.55a(g)(4)(1) is discussed in detail in the enclosure and is granted as noted in the enclosure or denied, as applicable for the initial 120 month period of the IST program. With these stipulations, the NRC staff finds the Commanche Peak Unit 1 IST program for pumps and valves acceptable and in conformance with the Commission's regulations.