



Donald F. Schnell
Senior Vice President
Nuclear

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U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
Washington, D.C. 20555-0001

ULNRC-3263

Gentlemen:

DOCKET NO. 50-483
CALLAWAY PLANT
SAFETY-RELATED MOTOR-OPERATED
VALVE TESTING AND SURVEILLANCE

- References:
- 1) NRC Generic Letter No. 89-10, dated June 28, 1989
 - 2) ULNRC-3003, dated April 21, 1994
 - 3) ULNRC-2964, dated February 18, 1994

This letter provides information on differential pressure (DP) testing to fulfill the commitment made in Callaway's Generic Letter 89-10 Close-Out Supplemental Submittal, Reference 2. This letter also provides clarification regarding the disposition of intended work to be accomplished on one specific valve to achieve 25% margin, as identified in Callaway's initial Generic Letter Close-Out Submittal, Reference 3.

The results of DP tests conducted during and just prior to the spring 1995 refueling outage, on motor operated valves previously DP tested, have been analyzed. These re-DP tests were performed as a means to determine the magnitude of any performance degradation (i.e. increased torque/thrust requirements) that might occur over time. The intent was: (1) to confirm that a 25% margin on rising stem valves appropriately compensates for age-related degradation; and (2) to determine a margin for quarter-turn butterfly valves that would appropriately compensate for age-related degradation.

The re-DP tests on rising stem valves show that no degradation occurred over intervals ranging from 35 to 54 months, during which only regularly scheduled preventative maintenance activities were performed. Only one test indicated any increase in required thrust, and the amount of this increase was less than the measurement error uncertainty associated with the test equipment. Accordingly, the DP testing confirmed that a 25% margin for rising stem valves is completely adequate to compensate for age-related degradation effects.

The re-DP tests on butterfly valves showed that no significant degradation occurred over intervals of 14 to 15 months, during which no maintenance activities were performed. Only one test indicated an increase in required torque, and the amount of this increase was right at the level of measurement error uncertainty associated with the test equipment. Accordingly, it was decided that butterfly valves at Callaway would be handled in a manner that is commensurate with that applied to rising stem valves. This decision was made with recognition that the lack of longer term experience on butterfly valves is more than offset by the fact that they do not incur the primary identified factor associated with age-related degradation on rising stem valves, namely variation in valve disk factor. A target margin of 25% is established, and those valves which cannot be shown to have the target margin will utilize periodic differential pressure testing to verify acceptable performance. Eighteen month trend testing of butterfly valves with less than 25% margin will not be performed since the predominate mode of performance variation associated with the stem-to-stem nut interface on rising stem valves is not applicable. Butterfly valve target margin is defined, in a manner analogous to that used for rising stem valves, as the difference between the measured available torque and the adjusted required torque (adjusted for errors) divided by the adjusted required torque. The re-DP testing confirmed that a 25% margin for butterfly valves is completely adequate to compensate for age-related degradation effects.

It is noted that Table 3 of Reference 3 indicates that valve EGHV0071 will be modified during the spring 1995 outage to achieve 25% margin. After further consideration, EGHV0071 was determined to have no active safety function in the open or close direction. Based on this, the planned work to adjust the torque switch was withdrawn. All other work identified in Table 3 was accomplished as indicated.

If you have any questions concerning this letter, please contact us.

Very truly yours,



Donald F. Schnell

WAW
CDN/WAW/REC/RCK/cs
cc: Distribution attached

cc distribution for ULNRC-3263

H. J. Miller
Regional Administrator
U.S. Nuclear Regulatory Commission
Region III
801 Warrenville Road
Lisle, IL 60532-4351

NRC Resident Inspectors, Callaway Plant
Callaway Resident Office
U.S. Nuclear Regulatory Commission
8201 NRC Road
Steedman, MO 65077-1302

L. R. Wharton (2 copies)
Licensing Project Manager, Callaway Plant
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Mail Stop 13-E-21
Washington, D.C. 20555

M. J. Farber
Chief, Reactor Projects Section III A
U.S. Nuclear Regulatory Commission
Region III
801 Warrenville Road
Lisle, IL 60532-4351

Manager, Electric Department
Missouri Public Service Commission
P.O. Box 360
Jefferson City, MO 65102

Thomas A. Baxter
Shaw, Pittman, Potts and Trowbridge
2300 N. Street, N.W.
Washington, D.C. 20137