

DMB

SNUPPS

Standardized Nuclear Unit
Power Plant System

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July 20, 1984

SLNRC 84-106 FILE: 0491.10.2
SUBJ: interim Significant Deficiency
report (SDR 84-04): Limitorque
SB-2-80 Actuators

Mr. James G. Keppler
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U. S. Nuclear Regulatory Commission
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Mr. John T. Collins
Regional Administrator, Region IV
U. S. Nuclear Regulatory Commission
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Docket Nos. STN 50-482 and STN 50-483

- References:
- 1) ULNRC-828, dated 5/17/84; Final 10CFR 50.55(e) Part 21 Report: Limitorque Operator Motor Pinion/Worm Shaft Clutch Gear Failure, U-64
 - 2) SLNRC 84-90, dated 6/1/84; Interim Significant Deficiency Report (SDR 84-04)

Gentlemen:

In Ref. 1) Union Electric reported on the actions taken at Callaway Plant to resolve deficiencies with Limitorque Model SB-2-80 high torque actuators used with valves BN-HV-8812 A & B and EJ-HV-8811 A & B installed in the Bored Refueling Water Storage and Residual Heat Removal Systems, respectively. Ref. 1) also advised that testing of the failed SB-2-80 operators at the Limitorque factory failed to reproduce the failures that had occurred at Callaway and that a review of Westinghouse and Limitorque records revealed no problems similar to those found at Callaway. In view of the fact that testing of the SB-2-80 units was not conclusive in establishing the cause(s) of failure, Union Electric elected to replace the model SB-2-80 actuators with qualified model SB-1-60 actuators. Installation checkout and testing of the replacement units confirmed satisfactory performance; no indication of failure or difficulties such as that experienced with the SB-2-80 units was indicated. On the basis of this testing, the Ref. 1) report was furnished to NRC as a final report although it was indicated that the failures raised generic questions and concerns requiring follow-up attention. It was further noted that such generic concerns would be followed up by SNUPPS. Ref. 2) confirmed that the failure of the model SB-2-80 units at Callaway has potential for occurrence at Wolf Creek and that SNUPPS would pursue this matter in conjunction with Kansas Gas and Electric and Westinghouse.

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The purpose of this letter is to provide an update to the Ref. 1) and 2) reports and to outline a course of action being taken to address the generic implications associated with the reported failures. These actions consist of a comprehensive test and evaluation program prepared in conjunction with Westinghouse and Limitorque reflecting the following milestone events:

1. Limitorque will conduct cycle testing of the SB-2-80 valve operators at their research laboratory. This testing will include the capability to apply simulated valve stem load conditions for the full length of travel. Previous tests, due to test fixture limitations in the production test facility at Limitorque, had not included this type loading. This testing is scheduled to begin in late July and should be completed in August.
2. Westinghouse will assemble an SB-2-80 operator and valve at its Electro-Mechanical Division (EMD) facility with sufficient instrumentation to evaluate valve and operator loads. Cycle testing and visual inspections will be accomplished at EMD to provide insight into potential failure mechanisms. This phase of the testing is to begin the week of July 23, 1984 and should be completed in August.
3. Westinghouse is to conduct metallurgical tests on the failed parts from the Callaway units at EMD and also will determine the feasibility of using a Scanning Electron Microscope at their Research and Development Center in Churchill, Pa. to assist in failure evaluation. The scope of this effort is presently being established.
4. The SB-2-80 operators presently at Wolf Creek at HV-8811 A & B and HV-8812 A & B valve locations will be inspected either during or upon completion of Hot Functional Testing currently in process at that site. One valve will be cycled several times (20-25 cycles) and reinspected. It is noted that Wolf Creek has had no reported problems or failures during the conduct of previous start-up testing.

It is expected that the testing effort described above, with the possible exception of the Scanning Electron Microscope tests, will be completed by mid-September. The inspection of units installed at Wolf Creek will be accomplished at the earliest reasonable opportunity dependent upon overall plant activity. The results of these tests and the need for additional testing and analysis will be determined at that time. A follow-up report highlighting the results of this activity will be made by September 30, 1984.

Should there be any questions concerning this report, please do not hesitate to call the undersigned or Bob Kosky of the SNUPPS Staff.

Very truly yours,


S. J. Seiken
QA Manager

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