

DMB

SNUPPS

Standardized Nuclear Unit  
Power Plant System

5 Choke Cherry Road  
Rockville, Maryland 20850  
(301) 869-8010

May 9, 1984

SLNRC 84-078 FILE: 0491.10.2  
SUBJ: Final Significant Deficiency Report  
(SDR 84-05): Limitorque Operators  
- Sheared Motor Pinion Keys

Mr. James G. Keppler  
Regional Administrator, Region III  
U.S. Nuclear Regulatory Commission  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137

Mr. John T. Collins  
Regional Administrator, Region IV  
U.S. Nuclear Regulatory Commission  
Suite 1000, Parkway Central Plaza  
Arlington, Texas 76012

Docket Nos. STN 50-482 and STN 50-483

Reference: IE Information Notice 81-08, March 20, 1981: Motor-to-Shaft  
Keys in Limitorque Model SMB-4 Operators

Gentlemen:

IE Information Notice 81-08 provided notification of the potential for valve operator motor pinion gear key failure due to improper materials in certain Limitorque motor operators. Investigation by the SNUPPS Project revealed that the reported problem was potentially applicable to pinion gear keys in Limitorque Models SMB-3 and -4, SB-3 and -4, and SBD-3 and -4 equipped with motors that develop 150 foot-pounds torque or greater, and to all Limitorque Model SMB-5 operators.

As followup to the Information Notice 81-08, it had been determined that 150 foot-pound torque Model SBD-3 operators are used generically in both SNUPPS units in conjunction with seven (7) safety-related NSSS valves supplied by Westinghouse Electromotive Division (WEMD). In addition, six (6) 150 foot-pound torque Model SMB-4 operators and one Model SMB-5 operator are used in conjunction with nonsafety-related, balance of plant valves supplied by the Crane Company. These latter seven (7) operators are also used generically on the SNUPPS plants.

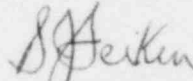
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The supplier of the operators, Limatorque, indicated the inability to confirm from their records which of these operators, if any, contained pinion gear keys manufactured from the incorrect material. Consequently, it was decided to replace the motor pinion gear keys in all affected operators at both SNUPPS plants with keys manufactured from the correct, A. 4140 steel, material. In the course of replacing the suspect keys in the WEMD valves at the SNUPPS Callaway plant, physical damage to motor pinion keys, pinion keyways, gear set screws, and motor shafts were observed in two operators. Had the damage to these two operators gone uncorrected, the valves would not have been able to perform their intended safety functions. Consequently, these damaged actuators are considered reportable to NRC pursuant to the requirements of 10CFR50.55(e). Since the potential exists for inadequate materials in the remaining SDB-3 and SMB-4 and -5 operator units, this matter is being treated as a deficiency generic to the two SNUPPS plants. [Note: The two damaged Limatorque operators identified at Callaway were reported to NRC Region III by Union Electric Co. (J. Laux and S. Shepley) on April 18, 1984.] No damage has been observed in the process of pinion gear key changeout for the seven (7) nonsafety-related operators at Callaway, nor in any of the fourteen (14) operators at Wolf Creek. Replacement of all affected motor pinion gear keys and correction of any damaged components have been completed at Callaway and Wolf Creek.

This report should be considered the final report on this issue. The NRC will be notified should there be any significant developments concerning this Significant Deficiency Report. Should further questions arise on this subject, please do not hesitate to contact the undersigned or Mr. White of my Staff.

Very truly yours,



S. J. Seiken  
QA Manager

RPW/dck/14a5

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|-------------------|-------------|
| cc: D. F. Schnell | UE          |
| G. L. Koester     | KGE         |
| D. T. McPhee      | KCPL        |
| W. S. Schum       | NRC/WC      |
| J. H. Neisler     | NRC/CAL     |
| B. H. Little      | NRC/CAL     |
| R. C. DeYoung     | NRC/IE: HQ  |
| J. E. Konklin     | NRC/IE: III |
| Record            |             |