50.55(e) Report

Docket Nos. 50-361/362

Southern California Edison Company

P. O. BOX 800

2244 WALNUT GROVE AVENUE

ROSEMEAD, CALIFORNIA 91770

L. T. PAPAY
VICE PRESIDENT

TELEPHONE
213-572-1474

July 20, 1981

Mr. R. H. Engelken, Director
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Region V
Suite 202, Walnut Creek Plaza
1990 North California Boulevard
Walnut Creek, California 94596

Dear Mr. Engelken:

Subject: Docket Nos. 50-361 and 50-362
San Onofre Nuclear Generating Station, Units 2 and 3

In a letter to your office dated June 22, 1981 we identified a condition which we consider reportable in accordance with 10CFR50.55(e). The condition involves the use of non-self locking stem threads or gear sets in valve operators manufactured by Limitorque. This configuration resulted in a hammering action on seating the valves.

Enclosed in accordance with 10CFR50.55(e) are twenty-five (25) copies of a Final Report entitled, "FINAL REPORT ON THE USE OF NON-SELF LOCKING STEM THREADS OR GEAR SETS IN LIMITORQUE VALVE OPERATORS, San Onofre Nuclear Generating Station, Units 2 and 3."

If you have any questions regarding this report, we would be pleased to discuss this matter with you at your convenience.

Very truly yours,

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Enclosures
cc: Victor Stello (NRC, Director I&E)
R. J. Pate (NRC, San Onofre Units 2 and 3)

81-124

FINAL REPORT ON THE USE OF NON-SELF LOCKING STEM THREADS OR GEAR SETS IN LIMITORQUE VALVE OPERATORS

San Onofre Nuclear Generating Station, Units 2 and 3

INTRODUCTION

This report is submitted pursuant to 10CFR50.55(e)(3). It describes a condition discovered in construction involving the use of non-self locking stem threads and gear sets in certain Limitorque operators supplied by W-K-M Industries. This report includes a description of the condition, an analysis of the safety implications, and a summary of corrective actions taken. By letter dated June 22, 1981, Edison confirmed notification to the NRC of this potentially reportable condition.

BACKGROUND

During the startup test program it was determined that the torque switch did not operate properly on motor operated valve HV-9217. The cause was determined to be the sustained containment isolation signal on the valve which contained a non-self locking gear set. The sustained signal induced a hammering effect on the valve. A review of all Limitorque actuators was performed and six valves were discovered to have been supplied with non-self locking gear sets (2&3HV-9217, 2&3HV-7512 and 2&3HV-5803).

DISCUSSION

The following discussion is responsive to 10CFR50.55(e)(3).

Description of Deficiency

After the torque switch is opened, disconnecting power to the motor, actuators containing non-self locking gear sets can relax and return to their neutral position relieving the force exerted on the torque switch. The torque switch recloses and power is reapplied to the motor, resulting in the hammering phenomenon. Review of gear sets for all Limitorque operators by Limitorque Corporation identified non-self locking gear sets in the operators for 2&3HV-5803, 7512 and 9217. W-K-M review of stem threads in the same valves identified non-self locking stem threads for 2&3HV-5803 and 7512. If both the stem threads and gear sets are non-self locking, valve seat leakage can occur whether hammering is or is not avoided.

FINAL REPORT ON THE USE OF NON-SELF LOCKING
STEM THREADS OR GEAR SETS IN LIMITORQUE VALVE OPERATORS
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Analysis of Safety Implications

The valves identified with non-self locking gear sets are part of the containment isolation boundary. The deficiency could result in a loss of redundancy for containment isolation.

CORRECTIVE ACTION

Design Change Package 94J was issued to change the logic for the actuation signal to these valves. This modification is designed to prevent the valve hammering phenomenon. Self locking gear sets will be installed in the Limitorque actuators on valves HV-5803 and -7512 to avoid valve seat leakage. Valve HV-9217 has self locking stem threads and does not require further modification.