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 Ref: # 10CFR50.55(e)

May 15, 1992

William J. Cahill, Jr.
 Group Vice President

U. S. Nuclear Regulatory Commission
 Attn: Document Control Desk
 Washington, DC 20555

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES) - UNIT 2
 DOCKET NO. 50-446
 POTENTIAL FAILURE OF LIMITORQUE MOTOR OPERATOR
 DURING DESIGN BASIS CONDITIONS
 SDAR: CP-91-006 (FINAL REPORT)

REF: Telephone conversation between Larry Yandell (NRC RIV) and
 Roger Walker (TUE) on May 1, 1992.

Gentlemen:

On September 26, 1991, TU Electric orally notified your Mr. C. Johnson of a deficiency involving the potential failure of motors on 80 ft-lb limitorque valve operators to meet rated capacity during valve operation at maximum expected differential pressure. The last report was logged TXX-91456 dated December 16, 1991. In the referenced conversation, TU Electric notified the NRC that the evaluation of this issue was continuing and would be submitted by May 15, 1992. TU Electric has conservatively determined that this deficiency is reportable pursuant to 10CFR50-55(e). The required information is provided below.

Description of Condition

During the dynamometer tests of model SB-2-80 motor operators, manufactured by Limitorque and supplied by Westinghouse, two failures were encountered. Both of these motor operators are for Residual Heat Removal suction valves (2-8812A and 2-8812B) from the Reactor Water Storage Tank. The first failure occurred on the motor operator for 2-8812A when test personnel noticed smoke emitting from the motor lead inlet opening and the second occurred when the motor for 2-8812B stalled before reaching the 60% of rated start torque.

Model SB-2-80 motor operators are installed on two other safety-related motor operated valves, (2-8811A and 2-8811B) and three non-safety related motor operated valves (2-HV-2611/12, 2-LV-2033A and 2-LV-2034A).

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The exact root cause of the motor failures (i.e., overheating and the inability of the second motor to reach the required torque speed) is not known. However, a potential contributor to the failures is the duration of time during the dynamometer testing which was required to obtain the torque-speed data and the lack of sufficient cooldown time between torque speed tests. The method for controlling the test load and data recording at each increment was manual and caused the test duration to be extended at high loads and amperages. The source of the smoke emission was possibly surface volatiles on the insulation finish coat being overheated due to the imposed loading conditions. One effect of running a motor for an extended period of time under high-load conditions is that the motor may overheat and lose efficiency resulting in a loss of output torque.

The population of 80 ft-lb Limitorque motor operators consist of four safety-related and three non-safety related operators. The data for the four safety-related motor operators has been reviewed and no additional occurrences have been identified to date. TU Electric has not identified this problem with any other limitorque motor model.

The method used to obtain motor torque-speed data conservatively demonstrates the torque-speed rated capacity of the motor operator and is therefore acceptable. The test data gathering method has been improved to substantially decrease the test duration.

Safety Implications:

TU Electric believes that if the degraded motor had remained uncorrected, it may have adversely affected the ability of the plant to maintain a safe shutdown condition. Therefore, this deficiency is reportable pursuant to 10CFR50.55(e).

Corrective Action

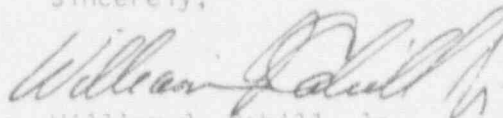
- A review was performed to identify other model SB-2-80 motor operators.
- The deficient motors have been removed and replaced with new motors.
- Interface hardware was installed to directly input the dynamometer transducer data into the Data Acquisition System. Thus, the test data gathering method has been improved to substantially decrease the test duration.
- The dynamometer testing procedure has been revised to add the following caution:

If the motor stalls during testing, the motor must be deenergized immediately and allowed to cool (by touch) prior to continuing the test. Sufficient time must be allowed for the motor to adequately cool down.

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The appropriate personnel have been instructed on the above change to the test procedure.

Sincerely,



William J. Cahill, Jr.

JLR/ds

c - Mr. R. D. Martin, Region IV
Resident Inspectors, CPSES (2)
Mr. B. E. Holian, NRR