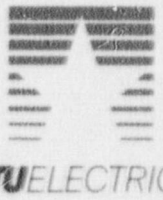

Log # TXX-89573
File # 10110
910.4
Ref. # 10CFR50.55(e)

August 23, 1989

William J. Cahill, Jr.
Executive Vice President

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NOS. 50-445 AND 50-446
AUXILIARY FEEDWATER FLOW ORIFICE
SDAR: CP-89-004 (FINAL REPORT)

Gentlemen:

On February 17, 1989, TU Electric verbally notified the NRC of a potential deficiency involving the Auxiliary Feedwater Flow Orifice Assembly. Specifically, flow testing of auxiliary feedwater pump CP1-AFAPMD-02 indicated that the minimum flow orifice CP1-AFORBO-02 was passing greater than design flow. The last report on this issue was logged TXX-89240 dated May 2, 1989. After further evaluation it has been concluded that this deficiency meets the criteria for reportability pursuant to 10CFR50.55(e) and the required information follows.

Description

As part of component testing for motor driven auxiliary feedwater pump CP1-AFAPMD-02, a flow test was done on minimum flow orifice CP1-AFORBO-02. This testing indicated the orifice was passing well over the design flow rate of 100 gpm at 1558 psid.

The flow orifice consists of an assembly of round plates, each plate containing an off-center hole, separated by sleeves within a pipe section shell. A designed interference fit within the assembly was relied upon to maintain the plates in a staggered orientation. Engineering evaluation of this deficiency disclosed that the orifice design does not ensure an adequate interference fit, permitting rotation and alignment of individual plates to a less restrictive orientation. The cause of this deficiency is inadequate vendor design.

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Safety Implications

The auxiliary feedwater system consists of two motor driven pumps and one turbine driven pump. The minimum flow orifice for each pump ensures adequate bypass flow for pump cooling when operating near shutoff conditions. However, excessive bypass flow beyond design limits could result in reduced flow to the steam generators. The bypass lines for the two motor driven pumps are provided with automatic air operated isolation valves supplied with air from safety related accumulators. As a result, this deficiency is not safety significant for the motor driven pumps. The turbine driven pump bypass line is not provided with an isolation valve. Failure of the orifice to maintain bypass flow within design limits could result in less flow being delivered to the steam generators than was assumed in the accident analysis.

For the turbine driven auxiliary feedwater pump, this deficiency may have adversely affected the safety of plant operations and represents a significant deficiency in final design as approved and released for construction such that the design does not conform to the criteria and bases stated in the safety analysis report. As a result, this deficiency is being reported pursuant to 10CFR50.55(e).

Corrective Action

The deficient orifices for the motor and turbine driven pumps are being reworked and flow tested by the orifice vendor. The vendor has also revised the orifice design to prevent orifice plate rotation.

This action will be completed by Unit 1 fuel load for Unit 1 and by Unit 2 fuel load for Unit 2.

Sincerely,

William J. Cahill, Jr.

MCP/vld

c - Mr. R. D. Martin, Region IV
Resident Inspectors, CPSES (3)