



Log # TXX-92059
File # 10110
903.7
Ref. # 10CFR50.55(e)

January 31, 1992

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Group Vice President

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

Subject: COMANCHE PEAK STEAM ELECTRIC STATION - UNIT 2
DOCKET NO. 50-446
CORRODED HILTI BOLTS
SDAR CP-91-003 (FINAL REPORT)

Gentlemen:

On June 11, 1991 TU Electric orally notified the NRC of a deficiency involving the corrosion of installed Hilti Kwik Bolts (HKB). We have completed our review of this issue and have concluded, based on conservative calculations, that a safety significant issue at CPSES did not result from this deficiency and that the existence of conditions determined to cause the corrosion did not represent, or originate from, a significant breakdown in the Quality Assurance Program. As a result this deficiency is not reportable. A discussion of this issue is provided below.

DISCUSSION

This deficiency involves the potential for galvanic and crevice corrosion in HKBs that are utilized to anchor component support base plates in areas that may subject the base plates to water submergence. The deficiency was identified when a HKB on a floor mounted pipe support base plate broke during a retorquing activity. Examination of the broken bolt identified a significant reduction in cross sectional area due to corrosion. Further investigation of Unit 2 rooms/areas where baseplates could have been submerged, revealed additional instances of corroded HKBs on floor mounted base plates in seven plant areas.

TU Electric arranged for a metallurgical examination of these HKBs by an independent laboratory. Based on this examination it was concluded that the corrosion mechanisms were galvanic corrosion and crevice corrosion resulting from exposure of the installed HKBs and base plate assembly to water submergence.

Pipe and equipment support base plate assemblies involve the use of several different metal components in various configurations. Submersion of these assemblies in water could establish conditions favorable for galvanic corrosion. In the total population of HKBs found to be affected at CPSES, there was no indication that certain base plate configurations were more susceptible than others.

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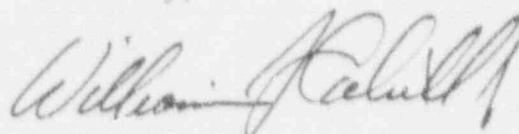
Our review has concluded that the corroded HKBs resulted from water submergence of the base plate assemblies. The water submergence was determined to have occurred between the time Unit 2 construction was suspended in December 1987 and resumed in June 1990.

CORRECTIVE ACTION

All of the corroded HKBs identified during the investigation are being replaced. Concerns related to this deficiency can be eliminated by promptly correcting conditions (either permanent or temporary) that can result in water submergence in plant areas with base plate assemblies. Therefore, the Unit 2 construction housekeeping procedure has been enhanced to emphasize that water submergence of base plates in construction areas is not permitted and that sump pumps located in construction areas to prevent this should remain operational. In addition, base plate assemblies in areas subject to rain-water submergence (e.g. roof areas) will be provided, where required, with temporary protection after installation to prevent corrosion until permanent protection is installed.

This is our final report on this issue. Corroded HKBs identified during review will be replaced prior to Unit 2 fuel load.

Sincerely,



William J. Cahill, Jr.

JAA/CLW/fds

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