TU ELECTRIC

Log # TXX-89350
File # 10110
907.5
Ref. # 10CFR50.55(e)

June 21, 1989

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Attn: Document Control Desk
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SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NOS. 50-445 AND 50-446
ELECTRICAL ISOLATION BETWEEN CLASS 1E AND
NON-CLASS 1E EQUIPMENT
SDAR: CP-87-040 (SUPPLEMENTAL REPORT)

Gentlemen:

On January 11, 1988, TU Electric notified the NRC via report logged TXX-88060, of a reportable deficiency involving electrical isolation between Class 1E and non-Class 1E equipment. The specific deficiencies identified involve two Class 1E radiation monitoring devices and the Class 1E Atmospheric Cleanup Unit Fire Protection Panels. The last report was logged TXX-88600, dated August 3, 1988. This report is submitted to revise the corrective action and update the corrective action schedule for this issue.

In TXX-88060, TU Electric stated that appropriate isolation devices would be installed to adequately separate non-Class 1E from Class 1E circuits to ensure that the Class 1E integrity is not degraded.

For the Class 1E radiation monitoring devices, isolation devices have been provided.

For the Class 1E Atmospheric Cleanup Unit Fire Protection Panels, TU Electric has further evaluated the separation which presently exists. Associated circuits originate from normally-open contacts of Class 1E relays located in the Class 1E panels and actuate alarm relays located in non-Class 1E local panels. After entering the non-Class 1E panels, the subject associated circuits are bundled with non-Class 1E circuits, including 120V power supply wires.

The evaluation concluded that the lack of separation between the associated circuits and the non-Class 1E circuits does not jeopardize the Class 1E equipment for the following reasons:

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a. The associated circuits link normally open contacts of Class 1E auxiliary relays with the non-Class 1E alarm relays. The alarm relays and the alarm functions for CPSES are non-safety. Degradation of the associated circuits due to their proximity with the 120Vac non-Class 1E circuits can occur due to a hot short, or a line-to-ground fault of the 120Vac power supply wires. Since contacts of the Class 1E relays in the local fire detection panels are normally open and are required to close only during a fire in the respective fire detection zone, no current is expected to flow through these contacts under a non fire condition.

Occurrence of an electrical fault coincident with an external fire in two different plant areas is not credible because the 120V cables (1) are rated for 600V (i.e. no dielectric failure hazard); (2) carry low current for their size (less than 5 amps; no thermal hazards); and (3) conduit entrances in the fire detection panel are sealed with fire stop material.

B. The intra-panel non-Class 1E circuits are 24/28Vdc circuits energized by a low capacity 120Vac to 24Vdc transformer-rectifier system. The internal wires are rated 600V and are used for low energy level circuits. The low-level power supply and the printed electronic circuit cards cannot supply significant fault current to a dead short. A current flow of three amps will cause an open circuit on the circuit cards. This magnitude of fault current is considered too small to jeopardize the associated circuits and the associated Class 1E equipment.

Based on the above analysis, the present installation configuration is considered acceptable. The recommended addition of isolation devices is no longer required. The above circuits/equipment description is consistent with Amendment 76 (dated May 1, 1989) of the CPSES FSAR, Section 8.3.1.4, Item 5.

Corrective actions for Unit 1 for this issue are complete. Unit 2 corrective actions will be completed prior to Unit 2 fuel load.

Sincerely,

William J. Cahill, Jr.

VPC/ddm

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