



Lug # TXX-88598
File # 10110
909.5
Ref. # 10CFR50.55(e)

William G. Council
Executive Vice President

August 31, 1988

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION
DOCKET NOS. 50-445 AND 50-446
INSTRUMENTATION INSTALLATIONS
SDAR: CP-86-19 (SUPPLEMENTAL REPORT)

REF: SDAR CP-86-16, "Fire Effects on Instrument Tubing"

Gentlemen:

On January 21, 1987, TU Electric notified you via TXX-6230 of a reportable deficiency pursuant to 10CFR50.55(e), involving the potential for zinc embrittlement of stainless steel instrument tubing during a fire. TU Electric subsequently elected to discuss corrective actions for this SDAR under SDAR 86-19 INSTRUMENT INSTALLATIONS. The evaluations conducted to determine corrective action for this issue have identified no fire zones requiring modification. As a result, TU Electric is reversing the determination of reportability for SDAR CP-86-16, and the purpose of this report is to discuss the basis for this decision.

The conditions under which zinc embrittlement of stainless steel tubing can occur are complex, and have not been precisely defined (quantitatively) by the industry. However on the basis of independent reviews conducted following events in which zinc embrittlement has occurred, it is generally accepted that failures require the existence of high temperatures and stresses in the stainless tubing concurrently with physical contact by molten zinc.

As a conservative approach to reviewing this issue, TU Electric identified those plant fire zones in which the combustible loading could be sufficient to result in bulk room temperatures during a fire which exceed the melting point of zinc. These areas were then given additional evaluation taking into consideration the fire protection features implemented for these areas. These fire protection features represent a defense-in-depth concept consisting of:

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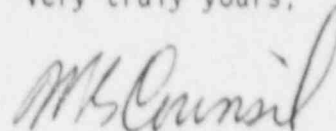
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- a. Preventing fires from occurring,
- b. Rapidly detecting and extinguishing those fires which do occur, and
- c. Ensuring that plant fires that could burn uncontrolled would not prevent safe shutdown capability.

As a result of this defense-in-depth approach, the majority of safety-related fire zones in the plant have sufficiently low combustible loading to preclude room temperatures during a fire which exceed the melting of zinc. In fire zones where significant combustibles are present, all but two areas contain fire alarm and fire suppression systems that will ensure timely control of any fires. The other two areas are the Battery Rooms and Uninterruptable Power Supply Rooms, and do not contain instrument tubing of concern.

In summary we have concluded that implementation of the CPSES defense-in-depth fire protection program provides adequate confidence that a zinc embrittlement mechanism will not result in failure of instrument tubing. Had this condition remained uncorrected, no condition adverse to the safety of plant operations would have existed, and this issue is not reportable under the provisions of 10CFR50.55(e).

Very truly yours,



W. G. Council

GLB/grr

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