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William G. Council
Executive Vice President

January 11, 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
CLASS 1E AC ELECTRICAL SYSTEM
SDAR: CP-87-134 (FINAL REPORT)

Gentlemen:

On December 18, 1987, we verbally notified your Mr. R. F. Warnick of a deficiency involving cable ampacity ratings, voltage ratings, and Class 1E separation criteria. We are reporting this issue under the provisions of 10CFR50.55(e). The required information follows.

DESCRIPTION

During design validation of calculations associated with the Class 1E AC Electrical System, the following deficiencies were discovered:

- a) 11 Class 1E cables exceed calculated allowable ampacities (3 distribution panel feeders, 1 lighting transformer secondary and 7 branch circuit cables).
- b) 21 Class 1E circuits, consisting of 32 Class 1E cables, provide less than required voltages for associated branch circuit loads.
- c) 6 Class 1E circuits have non-Class 1E utility receptacles and/or lights included in the circuit loads.
- d) 17 Class 1E circuits receive source power from oversized circuit breakers, permitting the associated cables to exceed allowable ampacities.
- e) 2 Class 1E cables exceed allowable ampacities according to existing circuit breaker sizes (the circuit breakers are sized correctly according to existing circuit loading).
- f) Approximately 56 Class 1E branch equipment feeder cables are undersized, thus delivering less than required ampacities to associated loads.

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- g) Approximately 103 Class 1E branch circuit breakers are inadequately sized (oversized or undersized).
- h) 7 Class 1E MCC feeder cables are not afforded proper protection by the feeder switchgear circuit breaker.
- i) Class 1E MCC XEB2-2 feeder cable is undersized.

These deficiencies are apparently due to a misapplication of cable protective device sizing, and separation criteria. These deficiencies are assumed to apply to the entire Class 1E AC Electrical System.

SAFETY IMPLICATIONS

Failure to adequately size the cables, protect the load, and failure to adequately address cable separation criteria in the original design of Class 1E circuits could result in the inoperability of the affected Class 1E circuits and equipment.

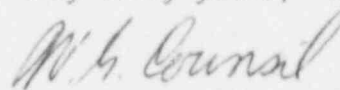
This issue represents a significant final design deficiency as approved and released for construction such that the design does not meet the criteria in the FSAR.

CORRECTIVE ACTION

The design criteria for cable sizing has been established and documented in design basis document DBD-EE-052 "Cable Philosophy and Sizing Criteria". Circuit breaker design criteria has been established in Design Basis Document DBD-EE-051 "Protection Philosophy". Electrical separation design criteria has been established and documented in Design Basis Document DBD-EE-057 "Separation Criteria."

Cables and circuit breakers will be replaced such that the applicable Class 1E circuits can perform intended safety functions. The non-Class 1E loads described in item (c) will be disconnected from Class 1E power and reconnected to Non-Class 1E power sources. A Class 1E power source will also be provided for the two Class 1E loads presently powered from a Non-Class 1E lighting panel. These actions will be completed no later than June 15, 1988.

Very truly yours,


W. G. Council

WJH/grr

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