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Executive Vice President

February 1, 1991

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NO. 50-446
POTENTIAL FOR ELECTRICAL PENETRATION
ASSEMBLIES OVERPRESSURIZATION
SDAR: CP-91-01 (INTERIM REPORT)

Gentlemen:

On January 3, 1991, we orally notified the NRC Region IV office of a deficiency involving the potential for electrical penetration assembly overpressurization. This deficiency has been evaluated and determined to be reportable pursuant to 10CFR50.55(e). This condition was reported for Unit 1 via LER-90-039.

Description Of The Deficiency

CPSES Electrical Penetration Assemblies (EPAs), supplied by Conax, consist of electric conductors, conductor seals, module seals, and aperture seals that allow for the passage of electric conductors through a single aperture in the nuclear containment structure, while providing a pressure barrier between the inside and outside of the containment structure.

The EPAs are designed in conformance with Regulatory Guide 1.63 and IEEE 317-1976. Each EPA has double aperture seals with the inboard to Containment seals providing the Containment pressure boundary. Each EPA has porting interconnecting the volume between three sets of double seals that allows monitoring and or testing of the seal for integrity.

Except for the Airlock EPAs, Containment EPAs are connected to a dedicated non-safety related Nitrogen Pressurization System. The Nitrogen Pressurization System was originally provided in accordance with Bunker Ramo recommendations to facilitate the maintenance of the penetrations with a N₂ blanket to prevent moisture ingress or condensation which could eventually result in equipment degradation. Conax has indicated that the Nitrogen Pressurization System is not required during normal or accident conditions and is therefore not required for the Containment EPAs to perform their safety function.

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As a result of the condition discovered in Unit 1 described in LER-90-039, Nitrogen Pressurization System non-compliance with FSAR design basis, an applicability review was done for Unit 2 and determined that the Nitrogen Pressurization System design is similar to that of Unit 1. On December 3, 1990, a TUE form was generated to document the potential for overpressurization of the EPAs with a resulting potential for loss of Containment integrity for Unit 2.

Safety Implications

Primary containment integrity ensures that the release of radioactive materials from the containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the safety analysis. This restriction, in conjunction with the leakage rate limitation, will limit the exclusion area boundary radiation doses to within the dose guideline values of 10CFR100 during accident conditions.

Had this deficiency remained uncorrected, the potential failure of EPAs existed due to overpressurization from the Nitrogen Pressurization System. Failure of the EPAs could have resulted in potential leakage paths and associated leak rates in excess of those assumed in the safety analyses. As a result, the potential for exceeding 10CFR100 limits could have existed.

The described condition represents a deficiency in final design as released for construction and is considered reportable under 10CFR50.55(e).

Corrective Action

Due to the construction status of Unit 2, no immediate corrective actions were required. Unit 2 Engineering is closely monitoring the corrective actions of Unit 1. Upon completion of design validation of the EPA Nitrogen Pressurization System and related corrective actions by Unit 1, Unit 2 Engineering will review the results and determine specific corrective actions required for Unit 2. We anticipate this action to be complete by July 31, 1991.

Sincerely,

William J. Cahill, Jr.

By: 

D. R. Woodlan
Docket Licensing Manager

JLR/bm

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