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William G. Counsil
Executive Vice President

February 5, 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
BOLTED CONNECTIONS IN SHEAR PLANES
SDAR: CP-86-78 (FINAL REPORT)

Gentlemen:

On November 7, 1986, we verbally notified your Mr. T. Westerman of deviations in the structural steel bolting in the cable spreading room. We have conservatively concluded this condition is reportable under the provisions of 10CFR50.55(e). The required information follows.

DESCRIPTION

Specification 2323-SS-16B, "Structural Steel (Category I)," Section 9.5, stated that all field connections shall be made with high strength steel bolts in bearing type connections with threads excluded from the shear planes except where otherwise stated or shown on engineering drawings. Instances of bolted connections with threads in the shear plane which were not stated or shown on engineering drawings have been discovered in the Unit 1 Cable Spreading Room. In addition, QC inspection procedures (with the exception of QI-QP-11.10-7) for structural inspections based on Specification 2323-SS-16B, Revision 0, did not address this requirement.

This deficiency was apparently due to the lack of adequate specified inspection attributes in specifications which resulted in inadequate inspection procedures. Quality Inspection Procedure (QI-QP-11.14-1, Rev. 0 thru 24) did not identify the attribute to inspect bolts for exclusion of threads from the shear plane. Revision 25 of this procedure (dated October 30, 1986) incorporated this attribute.

This condition is potentially applicable to all structural steel installations utilizing high strength bolted connections which were governed by Specification 2323-SS-16B, Rev. 0. This issue also has limited applicability to cable tray, conduit, and HVAC duct supports because these support connections were normally welded.

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SAFETY IMPLICATION

This condition represents a significant deficiency in construction which, because of the large number of installations with potentially unacceptable bolted connections, requires extensive evaluation and review to establish the adequacy of these structures to perform intended functions. Therefore, in the event this condition had remained uncorrected, the safe operation of the plant could have been adversely affected.

CORRECTIVE ACTION

Specification 2323-SS-16B has been revised to allow threads in the shear planes for bearing type of connections unless specifically excluded on the design documents. A DCA has been prepared to identify structures/connections where threads must be excluded from the shear plane. For the Cable Spreading Room steel support structures ECE 9.04-05, "Post Construction Hardware Validation Program Engineering Evaluations," is being used during the Post Construction Hardware Validation Program (PCHVP) to determine acceptability of the connections in accordance with the design criteria specified in Design Basis Documents DBD-CS-081 and 085. All connections which must have bolt threads excluded from the shear plane will be verified in accordance with ECE 9.04-05.

In cable tray, conduit, HVAC duct supports where bolted mechanical joints used high strength bolts, as-built data is being used to recalculate the acceptability of these connections. These calculations are being performed with the assumption that the bolted connections have threads in the shear plane. Any unacceptable connections will be corrected using appropriate project procedures.

The schedule for completion of this activity will be commensurate with the schedule for the Post Construction Hardware Validation Program.

Very truly yours,

W.G. Council

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By: *D.R. Woodlan*

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