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Mr. B. J. Youngblood
Chief, Licensing Branch No. 1
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION
INDEPENDENT ASSESSMENT PROGRAM PERFORMED
BY CYGNA

Dear Mr. Youngblood:

Texas Utilities has reviewed your concern regarding the containment sump isolation valves and the two recommendations made in the CYGNA IAP Report regarding: (1) that a standard instruction be prepared for the design, revision and review of cable tray supports and, (2) that the anchor bolt embedment lengths be deleted from the support drawing. In addition, Texas Utilities is presently reviewing the CYGNA IAP Report and any formal comments will be submitted to the NRC Staff and to CYGNA in the near future.

Containment Sump Isolation Valves

The NRC Staff requested that Texas Utilities review the control and interlock mechanisms of the containment sump isolation valves (1-8811A/B). In the CYGNA IAP Report Appendix H, Checklist Number EE-02 reviews the control circuitry of the containment sump isolation valves for compliance to FSAR Chapter 7. Although the valve 1-8811B is not directly interlocked to a RCS pressure setpoint of 425 psig, CYGNA indicates that such and interlock exists.

During the injection mode, the RWST/RHR pump suction isolation valves are open and allow flow to the RCS. These valves can only be opened if the containment sump isolation valves are closed. The containment sump isolation valves open automatically when two of four refueling water storage tank level signals are less than the lo-lo-1 level setpoint, coincident with an engineered safety feature actuation signal (S signal). Furthermore, the design allows for automatic switchover from the ECCS injection mode to the recirculation mode during an accident. Operator action is required to close RWST/RHR pump suction isolation valves 8812A/B immediately following the opening of the containment sump isolation valves (cold leg recirculation mode).

In addition, the containment sump isolation valves must be closed before the RHR system can be aligned to the RCS hot leg during a normal cooldown. The RCS pressure must be below approximately 425 psig before the RHR isolation valves will open. Thus, the containment sump isolation valves are interlocked so that they must be closed before the following valves can be opened:

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1. RWST/RHR pump suction isolation valves (8812A/B);

2. RHR inner or outer isolation valves 8701A, 8701B, 8702A and 8702B. (below 364 psig RCS pressure setpoint)

FSAR Section 7.6.2.1 describes the control logic of the inner and outer RHR isolation valves (8702A/B and 8701A/B). These valves are normally closed and can only be opened after the RCS pressure is reduced below approximately 425 psig and the containment sump isolation valves are closed. Additionally, the RHR system is only used for conditions below approximately 425 psig and 350°F. Thus, the design of the RHR system precludes the exposure to high pressure.

The CYGNA comment regarding a direct interlock between the containment sump isolation valve and RC pressure is not clear and should be clarified or reworded. The design of the control and interlock circuitry for the recirculation sump isolation valves, RHR isolation valves and RWST/RHR pump suction isolation valves is correct and there is not a 425 psig RCS pressure permissive required to open the recirculation sump isolation valves.

Standard Instructions - Cable Tray Supports

A standard set of instructions for the design, revisions and review of cable tray supports as suggested by CYGNA is being prepared and will be provided to CYGNA prior to May 1.

Anchor Bolt Embedment Lengths

CYGNA suggested that anchor bolt embedment lengths should be removed from pipe support drawings. This suggestion was made to ensure that there would be no confusion between the embedment length shown on the drawing and the embedment length used for design calculations.

Installation procedure CEI-20 (Rev. 9, 12/16/83), "Installation of 'Hilti' Drilled-in Bolts" requires that anchor bolts be embedded to a minimum depth below the surface of the 4000 psi (28-day strength) structural concrete prior to setting (torquing). A table in the procedure provides the anchor bolt diameter and the minimum embedment length for Hilti-Kwik and Super Kwik-Bolts. (The minimum embedment length is approximately 4½ times the diameter of the bolt for Kwik-Bolts and 6½ times the diameter of the bolt for Super Kwik-Bolts).

The instruction has been revised to state that the minimum embedment length shall be that specified in the anchor bolt installation procedure and that specified on the drawing. Quality control procedures ensure compliance to these instructions.

Original design calculations to ensure adequate qualification of the anchor bolt design assumes the minimum anchor bolt embedment lengths required based on the CEI-20 procedure. If, for an initial calculation, a greater embedment depth is necessary than required by the CEI-20 procedure, the required depth is indicated on the design drawing.

Furthermore, if for any reason (re-analysis, "as-built" verification, etc.) loads are high and a deeper embedment length is necessary than provided by the initial calculation using the minimum embedment lengths in the CEI-20 procedure or on the design drawing, then a calculation can be made to determine the minimum installed embedment length based on the actual bolt length. This calculation is done by knowing the actual length of the bolt and subtracting the thickness of the concrete topping (if any), steel plates, washers, and assuming the nut is fully torqued at the bottom of the threaded run of the bolt. This provides a conservative estimate of the installed embedment depth. This depth can then be used in load calculations to determine the adequacy of the pipe support design. The engineer can also have a field verification made to determine the actual embedment depth, if necessary.

Although the design support drawings and Installation Procedure CEI-20 provides a minimum embedment length required, the design calculations can be based on a conservative estimate of the actual embedment length. Therefore, there may be differences between the drawing minimum embedment length and the embedment length used in the calculations, but, as CYGNA rightly states, the differences has no design impact. We feel that no further changes are required.

Summary

Texas Utilities will provide formal comments regarding the CYGNA IAP Report. In addition, a standard set of instructions for cable tray support design, review and revision will be provided to CYGNA prior to May 1.

If there are any questions regarding the remaining concerns or those discussed above, please contact us.

Very truly yours,

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HCS/grr

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