

**TEXAS UTILITIES GENERATING COMPANY**  
SKYWAY TOWER \* 400 NORTH OLIVE STREET, L.B. 81 \* DALLAS, TEXAS 75201

Log # TXX-4341  
File # 10010  
903.10

November 6, 1984

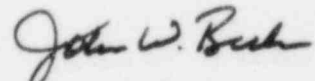
Director of Nuclear Reactor Regulation  
Attention: Mr. B. J. Youngblood, Chief  
Licensing Branch No. 1  
Division of Licensing  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION  
DOCKET NOS. 50-445 AND 50-446  
SEISMIC AND DYNAMIC QUALIFICATION  
CONFIRMATORY ACTIONS

Dear Mr. Youngblood:

Several items that relate to the seismic and dynamic qualification of safety related equipment at the Comanche Peak Steam Electric Station (CPSES) required additional information for closure or confirmation that previous commitments have been completed. The required information is provided in Attachments (1) through (6).

Respectfully,

  
John W. Beck  
Manager, Licensing

DRW/grr  
Attachments

Distribution: Original plus 40 copies

B411140224 B41106  
PDR ADOCK 05000445  
A PDR

*A048*

ATTACHMENT 1 TO TXX-4341

MSIV OPERABILITY CONSIDERING THE IMPACT  
LOADING DUE TO SUDDEN VALVE CLOSURE

During the Seismic and Dynamic Qualification Review for Comanche Peak Steam Electric Station (CPSES), the operability of the Main Steam Isolation Valves (MSIVs) was questioned when the impact loading due to sudden valve closure is considered. Discussion with the Equipment Qualification Branch (EQB) expanded the question to include the operability of the MSIVs when the loading due to the sudden closure of the Turbine Stop Valves (TSVs) is considered.

The TSVs are rapid closure valves (about 0.15 seconds). By comparison, the MSIVs are slow closure valves (2.5 seconds). Based on the physical layout and the design parameters at CPSES, conservative calculations show that the rapid closure of the TSVs will yield a maximum steam-hammer of 100 psi while the closure of an MSIV will yield a maximum steam-hammer of 6.8 psi.

The steam-hammer from the TSV closure has two effects that must be considered. This steam-hammer creates a dynamic effect due to the interaction between bends in the piping and the pressure wave. The second effect is the overpressure itself. The first effect (the piping dynamics) does not affect the MSIVs. The MSIVs are located in a short section of straight pipe with a rigid anchor on the upstream side and a 5 way restraint on the downstream side of the valve. The overpressure condition is enveloped by the seismic qualification already completed for the MSIVs. The normal operating pressure will be less than 1200 psi, the overpressure will be less than 100 psi and the seismic qualification of the valves was based on 1500 psi.

The effects of MSIV closure are much smaller. As evidenced by the much slower closing time and the much lower steam-hammer overpressure, the effects of MSIV closure are nearly negligible and are certainly enveloped by the margin in the MSIV seismic qualification. The MSIV

seismic qualification includes the margin in pressure as described above and also includes margin in the seismic levels. The seismic qualification assumed seismic levels of 4g in each direction while the as built calculations reveal that the true conservative seismic levels are below 2g in each direction.

In conclusion, the existing seismic qualification for the MSIVs has adequate margin to show operability of the MSIVs when considering the loading from either rapid TSV closure or MSIV closure.

ATTACHMENT 2 TO TXX-4341

Generic Item (1) - Equipment Installation

"Most of the equipment inspected were not in a state ready for plant operation, for example temporary supports and straps, missing supports from accumulator line, missing nuts from U-bolts for charging pumps, spring mounted platform for compressor bottomed out. The deficiencies observed by the SQRT were compared against the check list that is maintained by the applicant to improve quality assurance (QA). However, the SQRT items did not appear in the QA check list."

"The applicant should perform an independent inspection of the installation and supporting arrangement for seismic Category I equipment using personnel familiar with seismic qualification requirements, modify any deficiencies found, and provide a written report to the NRC staff on the inspection activity and the findings."

CPSES Response:

The applicant performed an inspection of installation and supporting arrangement for equipment classified at CPSES as seismic Category I. This inspection has been completed and all deficiencies have been corrected.

A summary report was submitted on the CPSES dockets via transmittal TXX-4050 dated September 16, 1983. This submittal resolves this issue.

ATTACHMENT 3 TO TXX-4341

Generic Item (7) - Qualification Status

"Although the applicant indicated that 85% of equipment is qualified, the qualification file is approved and established, and the equipment is properly installed; upon detailed examination of two items selected at random from the fully qualified and installed list, it was determined that the items were not installed and had incomplete documentation for example electric hydrogen recombiner and nuclear instrumentation system."

"Greater emphasis is needed to keep track of the qualification status of all safety-related equipment."

CPSES Response:

A general description of the methods used to keep track of the qualification status of all safety-related equipment was submitted on the CPSES dockets by TXX-3678 of June 10, 1983 (Attachment 7). This process is essentially complete.

The safety related equipment required for the operation of CPSES Unit 1 has been installed and inspected. For each piece of safety related equipment, all identified deficiencies (if any) that could affect the seismic operability of that equipment are being tracked via nonconformance reports. The deficiencies, except those deferred by an approved JIO, will be adequately resolved prior to fuel load.

ATTACHMENT 4 TO TXX-4341

A Justification for Interim Operation (JIO) was submitted for the Source Range Pre-amplifier by TXX-4208 of June 29, 1984. In that JIO, a commitment was made to replace the triaxial connector that failed during seismic testing with an older style connector that passed subsequent seismic testing. It is the purpose of this attachment to report that the connectors have been replaced with the qualified connectors on CPSES Unit 1.

ATTACHMENT 5 TO TXX-4341

A Justification for Interim Operation (JIO) was submitted on the NSSS Auxiliary Relay Racks by TXX-4304 dated September 20, 1984. As part of that JIO, a commitment was made to complete certain wiring changes prior to fuel load. These wiring changes were scheduled to ensure compliance with the separation plan for these racks.

It is the purpose of this attachment to report that these wiring changes are scheduled to be completed by November 30, 1984.

ATTACHMENT 6 TO TXX-4341

Specific Items (8), (9), (10) and (31) - Verification of design g-load against the as-built piping analysis

16 INCH 150 LB GATE VALVE WITH MOTOR OPERATOR (NVD Part No. 75800-2)

"Based on our review of reports, field installations, and responses from the applicant, we conclude that this equipment is qualified for the Comanche Peak site. However, as with all pipe mounted equipment, the final as-built piping analysis results for the g-loads at the valve center of gravity should be verified against the qualified g-load indicated in the SQRT forms."

18 INCH 900 LB FEEDWATER ISOLATION VALVE WITH BORG-WARNER PNEUMATIC HYDRAULIC OPERATOR (NVD Part Nos. 38991 & 75830)

"Since the equipment is pipe mounted, the qualification g-level is established by the company prior to the piping analysis. Hence, the final as-built calculations still need to be verified to assure that the g-loads at the valve from the piping analysis do not exceed the qualified g-levels.

Based on our review of reports, field installations, and the clarifications provided by applicant, this equipment is qualified except for final verification of design g-load against the piping as-built analysis results."

24 INCH MOTOR OPERATED BUTTERFLY VALVE (1 HV-4512)

"...the valve design g-values should be further verified for the as-built piping analysis g-loads since this is required for all pipe-mounted equipment."



CPSES Response:

The g-loads at the valve center of gravity for the valves described above have been calculated based on the as-built piping design. These g-loads are enveloped by the design g-loads that were used to seismically qualify the valves. This verification of g-loads completes the last confirmatory action required to close these specific items.