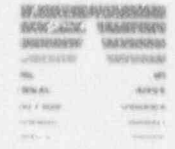

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TU ELECTRIC

William J. Cahill, Jr.
Group Vice President

March 6, 1992

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES) - UNITS 1 AND 2
DOCKET NOS. 50-445 AND 50-446
REQUEST FOR ADDITIONAL INFORMATION
FSAR SECTION 3.10

REF: 1) NUREG-0797, Supplement No. 22, "Safety Evaluation Report related to the Operation of Comanche Peak Steam Electric Station, Units 1 and 2," January 1990
2) NUREG-0797, Supplement No. 24, "Safety Evaluation Report related to the Operation of Comanche Peak Steam Electric Station, Units 1 and 2," April 1990
3) NUREG-0797, Supplement No. 23, "Safety Evaluation Report related to the Operation of Comanche Peak Steam Electric Station, Units 1 and 2," February 1990

Gentlemen:

In August 1989, the NRC conducted the Seismic Qualification Review Team (SQRT) audit and the Pump and Valve Operability Review Team (PVORT) audit at CPSES. Based on those audits, it was determined that the programs at CPSES were appropriate, as discussed in Section 3.10.2 of Reference 1 and Section 3.10 of Reference 2. As a result of subsequent discussions with the NRC staff regarding the status of the Seismic Qualification (SQ) and Pump and Valve Operability (PVO) programs for Unit 2, the following additional information is provided as requested.

Seismic Qualification

Section 3.10 of Reference 2 concluded that "....an appropriate qualification program has been defined and implemented for the seismic Category I mechanical and electrical equipment, which will provide reasonable assurance that such equipment will function properly during and after the excitation due to the vibratory forces imposed by a safe shutdown earthquake." The program description and conclusions reached in Reference 2 remain valid.

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The Unit 2 SQ program is essentially the same as the Unit 1 program. The Unit 2 procedures utilize the same technical/analytical methods as the Unit 1 procedures. There are some minor administrative changes to outline the process for incorporating the Unit 2 equipment, and any other pertinent information, in revised Unit 1 and 2 Seismic Equipment Qualification Summary Packages. The majority of the CPSES equipment was procured concurrently for both Unit 1 and Unit 2 using the same technical requirements.

Hence, with the exception of minor differences in field conditions and limited part replacements in some cases, the equipment in both units is identical. Differences are being assessed using the same technical/analytical methods as the Unit 1 procedures.

The organization and personnel who were responsible for implementation of the Unit 1 program are also responsible for implementation of the Unit 2 program. Also, personnel directly involved in supervision of the Unit 1 SQ program have participated in audits of the Unit 2 SQ program.

Pump and Valve Operability

Reference 1 concluded that "The continuous implementation of this overall program at Unit 1 and a similar program at Unit 2 should provide adequate assurance that all pumps and valves important to safety will perform their safety-related functions as required for the life of the plant." The program description and conclusions in Section 3.10.2 of Reference 1 remain valid except as clarified below (note, per Section 3.9.6 of Reference 3, a final safety evaluation for CPSES Unit 1 Pump and Valve Inservice Testing (IST) program has not been issued):

1. Issue No. 8, Section 3.10.2, Reference 1 - REI-505 was never issued. Procedure STA-750 "Check Valve Reliability Program," was issued instead. The purpose of the program addressed by the procedure is to "...ensure that key check valves perform as designed." SOER 86-3 was used in the development of STA-750.

2. Issue No. 12, Section 3.10.2, Reference 1 - TU Electric's response to NRC Bulletin 88-04 identified no adverse interaction between Unit 1 pumps, however the potential for adverse interaction between the Boric Acid Transfer Pumps of Unit 1 and 2 was identified. TU Electric has committed to mitigate this interaction prior to Unit 2 fuel load. Pump interaction resulting in mini-flow degradation does not exist for other safety-related pumps.

3. Issue No. 13, Section 3.10.2, Reference 1 - This section states that "...the applicant is testing safety-related MOV's against design-basis flow or pressure, as applicable. These tests have been or will be performed in situ or on prototype valves." This statement should be clarified to state that in order to ensure safety-related MOV's are operable and the concerns presented in Information Notice 89-61 are addressed, the applicant will include all safety-related MOV's within the program which addresses Generic Letter (GL) 89-10.

   GL 89-10 expanded the scope of IE Bulletin No. 85-03 to include all safety-related MOV's. The GL allows licensees to test MOV's using diagnostic techniques, along with in situ tests conducted at conditions less severe than design-basis conditions.

   The SSER statement referenced above should be clarified to recognize that not all safety-related motor operated valves are tested in situ or on prototype valves against design-basis flow or pressure.

For items 1, 2 and 3 above the applicable pages from Reference 1 are attached.

As stated above, the majority of the CPSES equipment was procured concurrently for both Unit 1 and Unit 2 using the same technical requirements. Hence, with the exception of minor differences in field conditions and limited part replacements in some cases, the equipment in both units is identical. Differences are being assessed using the same technical/analytical methods as the Unit 1 procedures. Although specific individuals may have changed, the same engineering organizations and management philosophies are in place.

Should you have any questions regarding these programs, please contact Mr. Carl Corbin at (214) 812-8859.

Sincerely,

William J. Cahill, Jr.

William J. Cahill, Jr.

By: Roger D. Walker

Roger D. Walker
Manager of
Nuclear Licensing

CBC/cbc
Attachment

cc: R. D. Martin, Region IV
Regional Inspectors, CPSES (2)
M. B. Fields, NRR

(8) Concerning check valve operability, the applicant should provide a description of methods to prevent check valve chatter, blockage, or disc failure, particularly with respect to the main feedwater system. The applicant was asked to describe the programs developed to incorporate recommendations of INPO Significant Operating Event Report (SOER) 86-3, "Check Valve Failures or Degradation," and the associated EPRI Applications Guideline (EPRI NP-5479).

The applicant has begun development of procedure REI-505, "Preventive Maintenance Evaluation," which addresses the CPSES check valve preventive maintenance program, including the main feedwater check valves. The documentation exists in draft form and does address recommendations of SOER 86-3. The applicant's response is acceptable.

(9) The applicant should provide justification for use of 2.1-g accelerations in the horizontal (2D) and vertical directions for equipment seismic qualification testing. The applicant should justify the loading combinations identified in the FSAR (Tables 3.9N-2, 3.9N-4, and 3.9B-1A) by comparison to those loading combination requirements stated in RG 1.48, May 1973.

The values used for acceleration were determined to be Westinghouse generic values utilized for qualifications at several plants of the same vintage as CPSES (with similar low seismic response). During the seismic qualification process, a comparison was made between the generic accelerations and the specific accelerations from piping analysis to determine that plant-specific loads were enveloped by the generic accelerations. If the plant-specific loads were not enveloped by the generic accelerations, further testing and analysis were conducted, the results of which were found to be acceptable. The loading combinations used in the FSAR were found to correlate to those used in RG 1.48 and SRP Section 3.9.3. Therefore, the loading combinations used by the applicant are acceptable.

(10) The applicant needs to correct discrepancies noted between the active valve and pump lists (Tables 3.9N-9, 3.9N-10, 3.9B-8, and 3.9B-10) and the valves and pumps listed in the inservice testing (IST) program.

A comparison was performed between the inservice testing program, Revision 3, dated August 21, 1989, and FSAR Table 3.9B-10, Amendments 68, 71, and 76. The comparison indicated that the valves in the table that follows are indicated as safety related in the FSAR table but are not reflected as being tested in the IST program. In a letter dated December 12, 1989, the applicant stated that it has resolved these discrepancies by adding these valves to the IST Program Plan or by changing valve numbers in the IST program to match the numbers assigned to the identical valves listed in the FSAR, as appropriate. The applicant's actions are acceptable, and therefore, the staff considers this issue to be resolved.

System	Valve number	Function
Auxiliary feedwater	1AF-009	Condensate storage tank fill path
Component cooling	1PV-4552/4553	Safety chiller condenser component cooling water regulating valves
Demineralized water and reactor water makeup	1DD-064/066	Reactor makeup water storage tank makeup flow path
Process sampling	1PS-500/501 502/503	Pressure relief during containment isolation

(11) The applicant needs to provide information describing the methodology for ensuring AFW system isolation and, specifically, AFW check valve operability, including: (a) analysis to determine the amount of check valve backleakage that the AFW system could tolerate without affecting AFW system operability; (b) maintenance or testing program for the AFW check valves; and (c) administrative controls in place to determine if and when back leakage occurs.

As a result of the recent events concerning backleakage problems caused by improper disc seating at CPSES, the applicant provided specific references to address the issue. In its letter dated August 18, 1989, the applicant makes specific commitments to ensure check valve operability. Although no commitment has been made to perform additional check valve testing to determine the maximum backleakage possible without exceeding design requirements (particularly temperature limits), a commitment was made to modify the AFW pump surveillance procedures to include a temperature check of piping to ensure no backleakage at 30 minutes after the test completion. In addition, several items have been incorporated to ensure steam binding of the AFW pumps due to backleakage does not occur (reference NRC Generic Letter 88-03). These are: (1) temperature sensors feeding control room alarms have been installed on discharge piping, (2) operator rounds have incorporated instructions to check discharge piping temperature by touch on a routine basis each shift, and (3) ASME Section XI testing conducts full flow test (via CPSES procedure OPT-206A) and divergent flow test (via CPSES procedure ECT-328A) to ensure the check valves perform in both the open and closed direction. This is acceptable; however, the determination of the maximum tolerable backleakage for these valves was an open item for the applicant per item E.3 of the CPSES Unit 1 Pump and Valve Inservice Testing Program Working Meeting held July 19 and 20, 1989. This issue will be resolved as part of the CPSES inservice testing safety evaluation.

(12) The applicant should provide information showing the impact of dead head operation of safety-related pumps for those pumps with common mini-flow/recirculation lines. This issue arises from NRC Information Notice 87-59, dated November 17, 1987.

Review of documentation (Westinghouse letters WPT-9460 and WPT-10449) provided for the response to the NRC information notice (and detailed in Westinghouse letter WPT-9459) and for the response to NRC Bulletin 88-04, May 5, 1988, show that adequate mini-flow capability exists. Pump interaction resulting in mini-flow degradation does not exist for the safety-related pumps. Westinghouse originally reported that the reactor makeup water transfer (RMWT) pumps had a minimum flow recirculation flow rate of 26 gpm (for continuous operation), while the Westinghouse-calculated minimum flow requirement for mechanical purposes (to prevent hydraulic phenomena described in Bulletin 88-04 from occurring) is 30 gpm. The applicant recently retested the lines and the results indicated that the actual line flow exceeded the acceptance criteria of 30 gpm, which is satisfactory. The applicant has documented the test results in a May 26, 1989 letter to the NRC, and the response is considered to be acceptable.

(13) The applicant was questioned about the applicability to CPSES of NRC Information Notice 89-61: "Failure of Borg-Warner Gate Valves To Close Against Differential Pressure," dated August 30, 1989. The PVORT was also interested in what actions the applicant might be taking, assuming that the information notice is applicable. This issue was not discussed during the site audit because the information notice was not published at that time. The applicant's representatives were contacted by telephone following the audit and asked to respond.

The applicant responded informally and stated that there were several Borg-Warner power-operated gate valves at CPSES. In order to ensure that safety-related MOVs are operable, the applicant is testing safety-related MOVs against design-basis flow or pressure, as applicable. These tests have been or will be performed in situ or on prototype valves. The response is acceptable and was documented by the applicant in a letter dated December 12, 1989.

Evaluation of Onsite Audit

The onsite audit, which was conducted August 22-25, 1989, consisted of field observations of the equipment configuration and installation for a representative sample of plant equipment. The PVORT evaluated five NSSS and five BOP pump and valve assemblies (four pumps and six valves). Table 3.1 summarizes the status of each assembly that was audited and inspected. The field observations were followed by a review of the design and purchase specifications, test/analysis documents, and other documents related to equipment operability, which the applicant maintains in its central files. In addition to reviewing information concerning the selected assemblies, the PVORT also reviewed other information concerning the plant's overall equipment qualification program. Included within this broad evaluation were those programs and procedures necessary to ensure that equipment qualification issues and concerns will continue to be addressed for the life of the plant.

The PVORT resolved all specific operability concerns that were identified by the close of the audit. This was, in part, attributable to the advanced stage of construction completion of CPSES. Installation of the equipment was complete, operational testing of this equipment was approximately 80 percent complete (the remainder of testing to be completed during the startup phase after Unit 1 fuel load), and the equipment qualification was about 97 percent complete.