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IR 87-22

William G. Counsil  
*Executive Vice President*

March 11, 1988

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)  
DOCKET NO. 50-445  
RESPONSE TO NRC INSPECTION REPORT NO. 50-445/87-22

Gentlemen:

TU Electric has reviewed your letter dated January 12, 1988, concerning the inspection conducted by Messrs. A. Singh and D. Kelley and NRC consultants during the period October 19, 1987 through October 23, 1987. This inspection covered activities authorized by the NRC Construction Permit CPPR-126 for CPSES Unit 1. Included in your inspection report were nine open items and four unresolved issues.

Per your request, we hereby respond to the Open Items and Unresolved Issues in Attachment 1 to this letter. Additionally, we have included in Attachment 2 clarifications to statements made in the inspection report.

Very truly yours,

*W. G. Counsil*

W. G. Counsil

By: *D. R. Woodlan*

*D. R. Woodlan*  
Docket Licensing Manager

JDS/grr  
Attachment

c-Mr. R. D. Martin, Region IV  
Resident Inspectors, CPSES (3)

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Q DCD

IEol  
400 North Olive Street LB 81 Dallas, Texas 75201

OPEN ITEM  
(445/8722-0-01)

An inspector reviewed the installation of the RCP oil collection system. The inspector looked at two of the four RCPs and verified that all external potential leakage areas were adequately covered and would drain oil into a separate collection tank. The design drawings were reviewed and the inspector confirmed that each collection tank was designed to hold all of the oil inventory from its associated pump. During the inspection the applicant stated that seismic analysis for the RCPs had not been completed to verify that the system was seismically qualified. This item is considered open pending completion of the analysis by TU Electric (445/8722-0-01).

RESPONSE  
(445/8722-0-01)

Seismic qualification of the Reactor Coolant Pump Lube Oil System is in progress. Westinghouse is seismically qualifying the internal portions of the Reactor Coolant Pump Lubricating Oil Collection System. Impell is addressing the seismic qualification of the remaining portions of the Reactor Coolant Pump Lube Oil System and Lube Oil Collection Pans and determining their adequacy using Calculation 0210-063-0069. The analysis determining the adequacy of the piping and collection tanks is being performed by SWEC using calculation 16345-ME(S)-014. SWEC PSE is preparing the pipe stress analysis calculations required for the seismic qualification of the piping and collection tanks using Calculations 15454-NP(S)-RC-1-349 through 352. All engineering portions of the Reactor Coolant Pump Lube Oil Collection System are scheduled for completion by July 31, 1988. Any design modifications necessary to support the seismic qualification of the Reactor Coolant Pump Lube Oil Collection System and Lube Oil Collection Pans are scheduled for completion by October 1, 1988.

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OPEN ITEM  
(445/8722-0-02)

During this inspection several barriers separating redundant trains of safe shutdown equipment were identified by the inspector as not being three-hour-rated. Specifically, unrated steel hatches were located in fire area boundaries. The applicant presented an analysis which stated that due to low combustible loading on either side of the hatches, automatic suppression on at least one side of the hatch and a one hour fire resistive coating on both sides of the hatch, it was not likely that a fire would propagate through the hatch. The inspector reviewed the analysis and found it acceptable. However, it was identified that this was a deviation from Section D.1.j of Appendix A to BTP APCSB 9.5-1 and must be identified as such in the FSAR. The applicant committed to identify these unrated steel hatches in a future FSAR amendment. This item is considered open pending submittal by the applicant of an FSAR amendment addressing this deviation (445/8722-0-02).

RESPONSE  
(445/8722-0-02)

An upcoming amendment to the CPSES FSAR will identify these unrated steel hatches as a deviation to Section D.1.j of Appendix A to BTP APCSB 9.5-1. This discussion will be in FSAR Section 9.5.1.6.2.

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OPEN ITEM  
(445/8722-0-03)

Appendix A to APCSB 9.5-1 Section D.1(j) states that "Penetrations in fire barriers, including conduits and piping, should be sealed or closed to provide a fire resistive rating at least equal to that of the fire barrier itself. Door openings should be protected with equivalent rated door frames and hardware that have been tested and approved by a nationally recognized laboratory." During the inspection, the inspector expressed concern that the method of sealing conduits four inches in diameter and smaller was not in accordance with rated configurations and had not been identified as a deviation from staff guidance. The applicant stated that conduits with either suppression or detection on both sides of the penetration would only be sealed on one side while conduits with no detection or suppression on at least one side would be sealed on both sides at the first opening. The inspector was concerned that this plan would allow for only one seal outside of the barrier in locations where there was only detection on both sides on the barrier with no suppression on either side. The applicant agreed to revise their position and committed to seal conduits four inches and smaller on both sides at the first opening regardless of the presence of detection or suppression. This item is considered open pending the completion of the seal installation (445/8722-0-03).

RESPONSE  
(445/8722-0-03)

The commitment to seal conduits four inches and smaller was not recognized by TU Electric as having occurred during the Fire Protection Program inspection in October, 1987. TU Electric is reviewing this commitment and will provide a response by April 29, 1988.

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OPEN ITEM  
(445/8722-0-04)

During this inspection a number of modifications to fire doors, primarily for security hardware, were observed. Although the doors and frames contained labels which demonstrated compliance with testing criteria for Underwriter's Laboratory, the inspector was concerned that these modifications would degrade the performance of the door under fire conditions. The applicant presented documentation from Underwriter's Laboratory concerning how security modifications could be made without jeopardizing the rating of the door. However, these guidelines may not have been implemented during modification of the plant fire doors. The applicant committed to review all fire doors presently installed to determine if modifications comply with guidance provided by Underwriter's Laboratory. Where compliance cannot be established, the applicant committed to bring the door into compliance or replace the door with one that conforms to the guidelines. The applicant also committed to ensure that all future modifications will conform to the guidance established by Underwriter's Laboratory. This item is considered open pending the completion of applicant's review of this issue. (445/8722-0-04)

RESPONSE  
(445/8722-0-04)

The guidelines provided in Underwriter's Laboratories, Inc. letter dated September 7, 1984, have been implemented. Inspection attributes have been provided and added to specifications for fire barriers per DCA 67,208 as part of the "Post Construction Hardware Validation Program" to assure compliance to the guidelines in safety related buildings. This is implemented through Field Verification Method CPE-SWEC-FVM-EE/ME/IC/CS/086.

OPEN ITEM  
(445/8722-0-05)

The areas identified in the 84-44 inspection as lacking lights had been provided with lights and therefore open item 445/8444-0-04 is considered closed. New areas requiring lights had been identified by the applicant resulting from changes in the safe shutdown analyses. As noted in Section 6.1.2 of this report, areas were identified by inspectors where additional emergency lights may be required. Pending completion of TU Electric's evaluation identifying locations requiring additional lights, including resolution of the emergency lighting issues discussed in Section 6.1.2 of this report, this item is considered open (445/8722-0-05).

RESPONSE  
(445/8722-0-05)

Impell Calculation 0210-063-0034 will be revised by May 27, 1988, to address additional lighting required as a result of the revision of the Safe Shutdown Analysis. Required changes in lighting design will be identified in Deficiency Reports.

Deficiency Report # P87-05230 was issued to identify a need for an 8-hour battery pack emergency lighting unit at valve 1-HV-8112, discussed in Section 6.1.2 of NRC inspection report 87-22. Other valves discussed in Section 6.1.2 (1-8808D, 1-FCV-618, 1-HCV-606, ICI-650, and ICI-651) are valves necessary to achieve during Cold Shutdown. Equipment required to attain cold shutdown does not require emergency lighting, since cold shutdown procedures are less time critical and may be accomplished using onsite capability such as additional manpower, battery powered portable hand lights or establishing onsite power.

DCA 64,191, Revision 1, will include required new lighting. Implementation of this DCA is scheduled for July 31, 1988.

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OPEN ITEM  
(445/8722-0-06)

Section E.4 of Appendix A to BTP APCSB 9.5-1 states that "The use of halon fire extinguishing agents should as a minimum comply with the requirements of NFPA 12A and 12B, Halogenated Fire Extinguishing Agent Systems - Halon 1301 and Halon 1211." During this inspection, the inspector was concerned that the Halon system provided in the Cable Spreading Room may not be in compliance with NFPA 12A. The applicant indicated that the review of the system against the requirements of NFPA 12A had not been performed. Therefore, the applicant needs to perform a review of the Cable Spreading Room Halon system against the requirements of NFPA 12A. Any deviations identified in this review will be required to be submitted to the staff for evaluation. The NRC considers this item open pending applicant completion of the evaluation and NRC review of the results (445/8722-0-06).

RESPONSE  
(445/8722-0-06)

NCR-87-00748 was initiated on October 14, 1987 to identify a nonconformance of the Cable Spreading Room Halon System. A design modification (DMRC-87-0231) has been issued to upgrade the Cable Spreading Room Halon System to comply with applicable specifications and sections of NFPA 12A. This work is scheduled for construction completion by July 15, 1988. Following the modification a full functional concentration test will be conducted to ensure concentrations are within guidance criteria established by NFPA 12A. Impell's NFPA 12A Code Compliance Review is scheduled for completion August 5, 1988.

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OPEN ITEM  
(445/8722-0-07)

Regarding the section in the procedure involving repairs, attachment 6 for the emergency air supply hook up to RHR valves 1-FCV-618 and 1-HCV-606 referenced actions to close instrument air valves ICI-650 and ICI-651 which were difficult to locate and poorly labeled. There also did not appear to be 8-hour emergency lights in the area. The need for TUEC to complete their assessment of locations where emergency lighting is required is addressed in Section 4.3 of this report. The issue of the poorly labeled valves is considered an open item pending further review by the staff (445/8722-0-07).

RESPONSE  
(445/8722-0-07)

TU Electric Operations has initiated a new sign for these valves on an "Identification Aid Installation Request". Permanent "Identification Aids" for valves ICI-650 and ICI-651 will be prepared and installed by April 29, 1988. Procedure STA-618, "Installation and Control of Permanent and Temporary Signs and Identification Aids" is used to provide identification of equipment in the plant.

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OPEN ITEM  
(445/8722-0-08)

The applicant has developed modifications which will enable local operation of the diesel generators. These are the subject of Design Change Authorization DCA 61,447. DCA 61,447 was initiated to resolve the consequences of uncoordinated 125 VDC circuits EG 104509, EG 145211, and EG 130661. This DCA, when implemented, will require the installation of branch circuit fuses or the installation of Thermo-Lag protection. Pending completion of the modification and review by the NRC, this item is considered open (445/8722-0-08).

RESPONSE  
(445/8722-0-08)

NCR 87-02812 was initiated on November 16, 1987. This NCR identified that the installed Gould A25X30 fuses did not comply with the design which required Bussman BAN-30A fuses. As the Gould A25X30 fuses installed are the desired branch circuit fuses discussed in the audit open issue to resolve the problem, the NCR has been dispositioned "Use As Is". DCA 61,447, originally issued to implement installation of Gould A25X30 fuses will be cancelled. Design documents will be revised per procedure to include the use of Gould A25X30 fuses.

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OPEN ITEM  
(445/8722-0-09)

- a. The applicant analysis of protection of associated circuits related to safe shutdown was found to be substantially completed. The analysis resulted in the need for a number of modifications, many of which have not been completed. One area where a significant amount of work remained to be done was installation of Thermo-Lag. Until the analysis is completed and the staff reviews the results, this item is considered open (445/8722-0-09).
- b. The applicant identified circuits which were not completely analyzed to account for ampacity effects due to the increased operating temperature resulting from the Thermo-Lag wrap. The applicant indicated that Revision 4 of the CPSES FSSA Calculation No. 152 will address this issue and could result in further circuit modifications or Thermo-Lag changes. The common bus concern cannot be satisfactorily resolved until Revision 4 of the FSSA and the final Thermo-Lag report, ECF-M1700, have been completed. The issue of ampacity effects due to increased operating temperatures resulting from Thermo-Lag wrap will remain open subject to completion of TU Electric's analysis. This item is considered part of Open Item (445/8722-0-09).

RESPONSE  
(445/8722-0-09)

- a. The revision of the analysis is scheduled to be available for NRC review by May 1, 1988. Applicable DCAs will be initiated by June 1, 1988 to implement any identified modifications.
- b. The Thermo-Lag Removal Program at CPSES has addressed cables identified to have ampacity problems due to Thermo-Lag wrap. Impell Calculation 0210-142-C102 "Thermo-Lag Removal Detailed Analysis" identified sections of Thermo-Lagged raceways which were potential candidates for Thermo-Lag removal. Impell Calculations 0210-063-0077, 0210-053-0079 and EPM Calculation P257-169 reviewed the 66 cables which originally had been identified as ampacity issues and through Thermo-Lag reduction, decreased the list to 21 ampacity cables requiring analysis. SWEC Electrical is currently completing analysis of ampacity effects due to Thermo-Lag wrap (E.C.D. April 30, 1988). Following completion of this analysis DMRC 190, TU Electric will complete the necessary plant modifications by October 23, 1988.

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UNRESOLVED ISSUE  
(445/8722-U-01)

A number of stairwell walls were identified during the inspection where the inspector considered the justification was not adequate to support two hour rated construction. The applicant presented an evaluation which was conducted to determine the rating of fire area and stairwell boundaries. This evaluation was used to justify the fire rating of those boundaries which were not built specifically to the specifications of an independent testing organization. Where specific installation criteria of a recognized approval agency was not followed, the evaluation was used to determine if criteria were met or exceeded in such items as wall thickness and material type. The inspector identified six stairwell walls that could not be directly related to the installation criteria established by a recognized approval agency. The applicant has committed to take actions to resolve this issue. Pending actions taken by the applicant to resolve this issue and NRC review of those actions, this item is considered unresolved (445/8722-U-01).

RESPONSE  
(445/8722-U-01)

DR # C-87-414 was initiated on October 14, 1987 by SWEC Civil/Structural identifying the six stairwell walls requiring field verification of construction by opening the walls. Impell Fire Protection has identified the requirements necessary to adequately disposition the Deficiency Report. Verification of hidden construction attributes and dispositioning of the deficiency report will be performed by SWEC Civil/Structural. This information will be reflected in a revision to Impell Calculation 0210-063-0043 which will establish an equivalent rating for these fire area boundary walls. The CPSES FSAR Section 9.5.1.6.2 will be revised in an upcoming amendment to identify these walls as deviations to BTP APCSB 9.5-1 Appendix A.

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UNRESOLVED ISSUE  
(445/8722-U-02)

"...The applicant presented a revised listing of manual actions... The list indicated that some revisions to Table 2 were necessary and that some actions had been deleted. The new listing of actions would be presented in a previously planned Revision 4 of Calculation No. 152.

The issue of the adequacy of manual actions which must be taken in the same area as the postulated fire remains unresolved pending TU Electric's revision to Calculation No. 152 and NRC review of the document (445/8722-U-02).

RESPONSE  
(445/8722-U-02)

Calculation No. 152, Revision 4 is scheduled to be available for NRC review by May 1, 1988. It will contain a revised listing of manual actions by fire area, which will easily identify actions required in the same area as the fire. Justifications for the adequacy of these actions will be provided.

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UNRESOLVED ISSUE  
(445/8722-U-03)

The applicant attempted to address the concern raised by the team regarding the feasibility of the manual actions inside containment by preparing, during the inspection, a calculation (ref. Appendix A, A.6) intended to show that time for rupture of the PRT rupture was overly conservative and that the rupture disk would not burst at all. The team did not have time to review this calculation as it was presented on the evening prior to the exit meeting and because the actual Westinghouse calculations are not provided in the WCAP. This item remains unresolved pending the NRC review of the calculation (445/8722-U-03).

RESPONSE  
(445/8722-U-03)

A clarification to the information given the audit team on the subject of spurious Safety Injection is required. Since the inspection, the calculation has been revised. The revised calculation will be available for review March 17, 1988. The results of the revised calculation indicate the following:

- Time for rupture of the PRT rupture disk, as given in WCAP-11331, remains overly conservative,
- Per the revised calculation, the PRT rupture disk still does not rupture prior to blowdown,
- The pressurizer could now go water solid during the transient, assuming no additional mitigating operator actions are taken, and
- Operator actions inside containment required in current procedures, can still be completed prior to the postulated PRT rupture during final depressurization of the primary system to RHR cut-in. The pressurizer level conditions and swell due to the steam generator dry-out are major factors contributing to the phenomenon.

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UNRESOLVED ISSUE  
(445/8722-U-04)

The control circuit for the accumulator isolation valves 1-8808A, B, C and D are not electrically isolated from the control room. The applicant intends to utilize jumpers to maintain control or manually operate the valves during hot shutdown. The inspection team considers this action a hot shutdown repair which is not consistent with staff guidelines. Further information is needed to resolve this concern (445/8722-U-04).

RESPONSE  
(445/8722-U-04)

The CPSES procedure ABN-803A provides for manual actions to close these valves. The manual actions are completed prior to RHR cut-in. Jumpers are not used to close these valves for achieving and maintaining hot shutdown.

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IR 87-22 Section	Description	Discussion	Clarification/Comments
Section 4.1 page 5	"... or are constructed of 8-inch-thick reinforced concrete in accordance with the Uniform Building Code ..."	Actual Uniform Building Code requirements are for 6-inch-thick reinforced concrete.	The Actual Uniform Building Code requirements reflect the design criteria used at CPSES.
Section 4.1 page 7	The previously approved deviation associated with the remaining dampers still applies since they cannot be mounted completely inside the barrier due to interference with tornado pressure relief dampers.	The previously approved deviation included HVAC fire dampers. A program to replace HVAC fire dampers has been instituted. TU Electric has determined through analyses that fire dampers mounted adjacent to tornado pressure relief dampers provide protection equivalent to the fire barrier in which they are installed. These analyses were reviewed during the inspection.	The previously approved deviation is no longer necessary.
Section 4.4	"...all sprinkler systems are in compliance with NFPA 13."	NFPA 13 upgrade applies to safety related areas of CPSES where the Fire Hazards Analysis identifies a requirement for suppression.	
Section 6.3 page 19 and 20	The inspection report indicated a listing of equipment on the Hot Shutdown Panel as being required for alternate shutdown.	The following is a list of major devices controlled from the Hot Shutdown Panel. Those devices designated with an "(A)" are associated with alternate shutdown.	See CPSES FSAR Section 7.4 Table 7.4-1
		<ul style="list-style-type: none"> <li>(A) Main Steam Isoiation Valve 1HV2333A</li> <li>(A) Main Steam Isolation Valve 1HV2334A</li> <li>(A) Main Steam Isolation Valve 1HV2335A</li> <li>(A) Main Steam Isolation Valve 1HV2336A</li> <li>Turbine Driven Auxiliary Feedwater Pump</li> <li>(A) Motor Driven Auxiliary Feedwater Pump 1</li> <li>Motor Driven Auxiliary Feedwater Pump 2</li> </ul>	

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IR 87-22 Section	Description	Discussion	Clarification/Comments
Section 6.3 (continued)			
	(A) Steam Generator 1 PORV		1PV2325
	(A) Steam Generator 2 PORV		1PV2326
	(A) Steam Generator 3 PORV		1PV2327
	(A) Steam Generator 4 PORV		1PV2328
	(A) Service Water Pump 1		
	Service Water Pump 2		
	(A) Diesel Generator 1		
	Diesel Generator 2		
	(A) Centrifugal Charging Pump 1		
	Centrifugal Charging Pump 2		
	(A) Pressurizer Level Control Valve		IFCV121
	(A) Letdown Orifice Isolation Valve		1-8149A
	(A) Letdown Orifice Isolation Valve		1-8149B
	(A) Letdown Orifice Isolation Valve		1-8149C
	Backup Heater Group A		
	Backup Heater Group B		
	(A) Component Cooling Water Pump 1		
	Component Cooling Water Pump 2		
	(A) RHR Pump 1		
	RHR Pump 2		
	Charging Pump Isolation Valve		1-8106
	(A) Pressurizer PORV PCV455A		IPCV445A
	(A) Steam Generator Blowdown Heat Exchanger Isolation Valve		1PV5180

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IR 87-22 Section	Description	Discussion	Clarification/Comments
Section 6.3 (continued)		The following valves are not controlled from the Hot Shutdown Panel. As noted before, those valves associated with alternate shutdown are designated with an "(A)".	

(A) Main Steam Isolation Bypass Valve                   IHV2333B

(A) Main Steam Isolation Bypass Valve                   IHV2334B

(A) Main Steam Isolation Bypass Valve                   IHV2335B

(A) Main Steam Isolation Bypass Valve                   IHV2336B

(A) Letdown Isolation Valve                           ILCV359  
Letdown Isolation Valve                           ILCV460  
Control room Manual Reactor Trip

Backup Heater Group C

(A) Pressurizer Block Valve                           1-8000A  
Pressurizer Block Valve                           1-8000B

(A) Accumulator Isolation Valve                   1-8808A

(A) Accumulator Isolation Valve                   1-8808B

(A) Accumulator Isolation Valve                   1-8808C

(A) Accumulator Isolation Valve                   1-8808D

(A) Charging Pump Isolation Valve                   1-8105