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Ref. # 10CFR50.34(b)

William J. Cahill, Jr.  
Group Vice President

December 14, 1992

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)  
DOCKET NOS. 50-446 AND 50-446  
ADVANCE FSAR SUBMITTAL, FSAR SECTION 3.8,  
LOADINGS AND STRESSES IN CATEGORY I STRUCTURES

Gentlemen:

The attachment to this letter provides an advance CPSES FSAR submittal to facilitate NRC Staff review of the subject area in support of licensing Unit 2. The attachment is organized as follows:

1. A description/justification of each change.
2. A copy of the revised FSAR pages (changes are indicated in the margin by a revision bar and "87").

The attached material will be incorporated in CPSES FSAR Amendment 87 which is currently scheduled for December, 1992. If you have any questions regarding this submittal, please contact Mr. Carl Corbin at (214) 812-8859.

Sincerely,

William J. Cahill, Jr.

By: D. R. Woodlan  
D. R. Woodlan  
Docket Licensing Manager

CBC  
Attachment

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Prefix Page  
(as amended)

Group Description

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|-------------|---|---|
| 3.8-121     | 2 | <p>Clarifies the discussion (3.8.4.3.3(2)) of allowable increase in local strength capacities.</p> <p>Clarification :</p> <p>This change is consistent with a similar change submitted for Section 3.8.4.3.2(2) in FSAR Amendment 68. For load combination 2.5.2) of Section 3.8.4.3.3, local stresses caused by concentrated load Wt (design tornado load) may exceed the allowables when there is no loss of function of any safety-related system. This change is consistent with the wording in the Standard Review Plan (NUREG-0800).</p> <p>Change Request Number : SA-92-825.1</p> <p>Commitment Register Number :</p> <p>Related SER : 3.8.3 SSER :</p> <p>SER/SSER Impact : No</p>                         |
| Table 3.8-1 | 2 | <p>See Sheet No(s) :1, 2, 3 and 4</p> <p>Corrects the summary of loading combinations and stresses at key locations in the Category I Structures (Table 3.8-1, "Summary Table for Category 'I' Structures").</p> <p>Correction :</p> <p>The table is revised to correct typographic errors and an error in calculating the allowable and actual stresses in Unit 1. The table is also updated with Unit 2 information. The changes have no impact on available margins of existing structures.</p> <p>Change Request Number : SA-92-825.2</p> <p>Commitment Register Number :</p> <p>Related SER : 3.8 SSER :23 3.8.3</p> <p>SER/SSER Impact : No</p>   |
| Q&R 130-45  | 2 | <p>Updates response to discuss the changes in design criteria of Unit 2 in contrast with the criteria of Unit 1. Adds note to the response of Q130.34 indicating that the response will not be incorporated into the FSAR text as part of the updated FSAR (USAR).</p> <p>Q&amp;R Incorporation :</p> <p>There is no change in design criteria between Unit 1 and Unit 2. The design criteria for Units 1 and 2 is contained in the Section 3.8 of the FSAK text. The editorial note is added to prepare the Q&amp;R section for deletion when the USAR is prepared.</p> <p>Change Request Number : SA-92-825.3</p> <p>Commitment Register Number :</p> <p>Related SER : 3.8 SSER :</p> <p>SER/SSER Impact : No</p> |

$$4) \quad .90 Y = D + L + T_a + R_a + 1.25 P_a \\ + 1.0 (Y_j + Y_r + Y_m) + 1.25 F_{eqo}$$

$$5) \quad .90 Y = D + L + T_a + R_a + 1.0 P_a \\ + 1.0 (Y_j + Y_r + Y_m) + 1.0 F_{eqs}$$

In these combinations, thermal loads are neglected when they are secondary and self-limiting in nature and when the material is ductile.

In combinations shown in Items 2.a.3), 4), and 5), and in Items 2.b.3), 4), and 5) the maximum values of  $P_a$ ,  $T_a$ ,  $R_a$ ,  $Y_j$ ,  $Y_r$ , and  $Y_m$ , including an appropriate dynamic factor, are used, unless a time history analysis is performed to justify otherwise. For combinations shown in Items 2.b.2), 4), and 5), local stresses caused by concentrated loads  $Y_r$ ,  $Y_j$ ,  $Y_m$ , and  $W_t$  may exceed the allowables when there is no loss of function of any safety-related system. Furthermore, in computing the required section strength, the plastic section modulus of steel shapes is used.

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#### 3.8.4.3.4 Variable Loads

For loads which may vary, the values (within the possible range) which produce the most critical combination of loading are used in design.

#### 3.8.4.3.5 Time Dependent Loads

Time dependent loads, such as the effects of creep, shrinkage, and other related effects, are included with dead load effects, as described in Section 9.3.7 of ACI 318-71 building code, where such loads affect design.

CPSES/FSAR  
TABLE 3.8-1  
(Sheet 1 of 4)

SUMMARY TABLE FOR CATEGORY "I" STRUCTURES

TYPE OF STRUCTURE	KEY LOCATIONS (4)	CRITICAL LOADING COMBINATION	TYPE OF STRESS	ACTUAL STRESS (KSI)	ALLOW STRESS (KSI)
CONTAINMENT BLDG.	Bottom of Containment Wall @ EL.805'-6"	D+L+1.25 Pa+To+Ta+1.25E+ Ra+Yr+Yj+Ym	Tension Shear	49.3 13.6	54.0 50.0(2)
	Top of Containment Wall @ EL.1000'-6"	D+L+1.25 Pa+To+Ta+1.25E+ Ra+Yr+Yj+Ym	Tension	54.0	54.0
	Inside Face of Equipment Hatch at = 225° for Unit 1, 315° for Unit 2	D+L+1.5 Pa+To+Ta+Ra	Tension	54.0	54.0
REACTOR BLDG.	Steam Generator Compartment #1 West Cavity Wall EL 863	D+L+Ta+Ra+Pa+(Yr+Yj+Ym)+ Feqs	Axial Tension and Flexure Transverse Shear	54.0 0.087	54.0 0.101(3)
	Steam Generator Upper Lateral Support Beam (Struct. Stl.)	D+L+Ta+Ra+Pa+(Yr+Yj+Ym)+ Feqs	Axial Compression & Flexure Shear	20.6 6.72	45.0 20.0

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CPSES/FSAR  
TABLE 3.8-1  
(Sheet 2)

SUMMARY TABLE FOR CATEGORY 'I' STRUCTURES

TYPE OF STRUCTURE	KEY LOCATIONS	CRITICAL LOADING COMBINATION	TYPE OF STRESS	ACTUAL STRESS (KSI)	ALLOW STRESS (KSI)	
AUXILIARY BLDG.	5-A Wall East of F-A Above EL 790'-6"	0.75[1.4D+1.7L+1.9F <sub>eqo</sub> + 1.7T <sub>o</sub> +1.7R <sub>o</sub> ]	Flexure	54	54	87
			Shear(1)	25.5	51	87
FUEL BLDG.	C-F Wall Above EL 860'-0" South of col. Line 1-F	D+L+T <sub>o</sub> +R <sub>o</sub> +W <sub>t</sub>	Flexure	37.8	54	
			Shear(1)	37.2	51	87
	Bottom of A-F Wall Between 4-F and 2-F	0.75[1.4D+1.7L+1.9F <sub>eqo</sub> + 1.7 T <sub>o</sub> (W)] D+L+T <sub>o</sub> (W)+W <sub>w</sub>	Flexure	35.1	54	
			Shear	.047	.103(3)	
SAFEGUARDS BLDG.	4-S Wall Below EL 810'-6" for Unit 1, 13-S Wall Below EL 810'-6" for Unit 2	0.75[1.4D+1.7L+1.9F <sub>eqo</sub> + 1.7T <sub>o</sub> +1.7R <sub>o</sub> ]	Flexure	48.6(U1)	54	87
				38.9(U2)		87
			Shear(1)	20.6(U1)	51	87
				29.2(U2)		87
	8-S Wall EL 810'-6" for Unit 1, 9-S Wall Between EL 773'-0" and 790'-6" for Unit 2	0.75[1.4D+1.7L+1.9F <sub>eqo</sub> + 1.7T <sub>o</sub> + 1.7R <sub>o</sub> ] 1.4D+1.7L+1.9 F <sub>eqo</sub>	Flexure	54 (U1)	54	87
				44.3(U2)		87
			Shear(1)	39.0(U1)	51	87
				41.8(U2)		87

Amendment 87

December 18, 1992

CPSES/FSAR  
TABLE 3.8-1  
(Sheet 3)

Attachment to TXX-92601  
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SUMMARY TABLE FOR CATEGORY 'I' STRUCTURES

TYPE OF STRUCTURE	KEY LOCATIONS	CRITICAL LOADING COMBINATION	TYPE OF STRESS	ACTUAL STRESS (KSI)	ALLOW STRESS (KSI)	
SERVICE WATER INTAKE STRUCTURE	Bottom of North Exterior Wall EL .755'-0"	1.4D+1.7L+1.9Feqo	Flexure	53.2	54.0	
	Bottom of West Exterior Wall EL 755'-0"			53.7		
REFUELING WATER STOR. TANKS & CONDENSATE STOR. TANKS	Base of the Circumferential Exterior Wall	1.4D+1.7L+1.7+Hydro+ 1.9Feqo	Flexure	52.4	54	77
			Shear	.122	.126(3)	78
						77
						77



CPSES/FSAR  
TABLE 3.8-1  
(Sheet 4)

SUMMARY TABLE FOR CATEGORY "I" STRUCTURES

TYPE OF STRUCTURE	KEY LOCATIONS	CRITICAL LOADING COMBINATION	TYPE OF STRESS	ACTUAL STRESS (KSI)	ALLOW STRESS (KSI)	
REACTOR	Base of the Circumferential	0.75[1.4D+1.7L+1.9F <sub>eqo</sub> + 1.7T <sub>o</sub> +1.7R <sub>o</sub> ]	Flexure	50.0	54	77
MAKE-UP WATER STOR. TANK	Exterior Wall		Shear	.068	.090(3)	87 77 77
NOTES:						77
(1) Stress shown is for shear reinforcing steel.						77
(2) 1" x 4" Bar Stock						87
(3) Concrete Shear Stress						77
(4) Unit 2 stresses are the same as Unit 1 stresses except as noted.						87

CPSES/FSAR

Amend the appropriate sections of the FSAR to reflect the change in design criteria for Unit 2 in contrast with the criteria used for Unit 1.

R130.34	There is no change in design criteria between Units 1 and 2.	87
Note:	The above response will not be incorporated into the FSAR text as part of the Q&R relocation for the Updated Safety Analysis Report (USAR).	87