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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION '84 JUN 15 A11:09

BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL BOARD

In the Matter of	)	
PACIFIC GAS AND ELECTRIC COMPANY	)	Docket Nos. 50-275 O.L. 50-323 O.L.
(Diablo Canyon Nuclear Power Plant, Units 1 and 2)	)	

ERRATA TO JUNE 11, 1984 REPLY

In the Joint Intervenors' Reply to PGandE and NRC Staff Responses to Motions Regarding Design Quality Assurance, Construction Quality Assurance, and Licensee Character and Competence, filed yesterday, please note the following corrections:

1. At p. 11, after line 12, insert:

(.1) Attachment 2 -- Harold Hudson -- Reply to NRC Inspection Report No. 83-37 and PGandE responses concerning the adequacy of Pullman's quality assurance program, compliance with Appendix B for pipe supports and rupture restraints, audits, training of personnel, welder certification, welding quality, intimidation and harassment, and minimum valve wall thickness deficiencies.

D503

2. At Exhibit 2 (Stokes Affidavit), add the attachments enclosed herewith.

Dated: June 12, 1984

Respectfully submitted,

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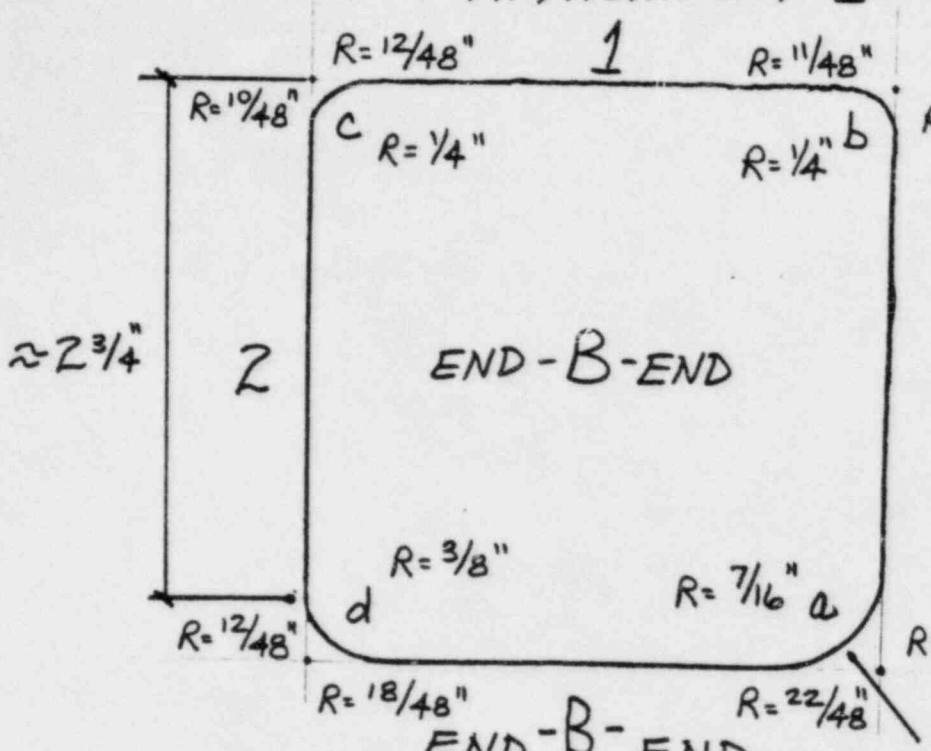
ATTACHMENT 1



VISUAL CRACK ON SIDES 1, 4 AND 2 3/4" ON 2 ENDS IN RADIUS 3 to 4

END-B-END

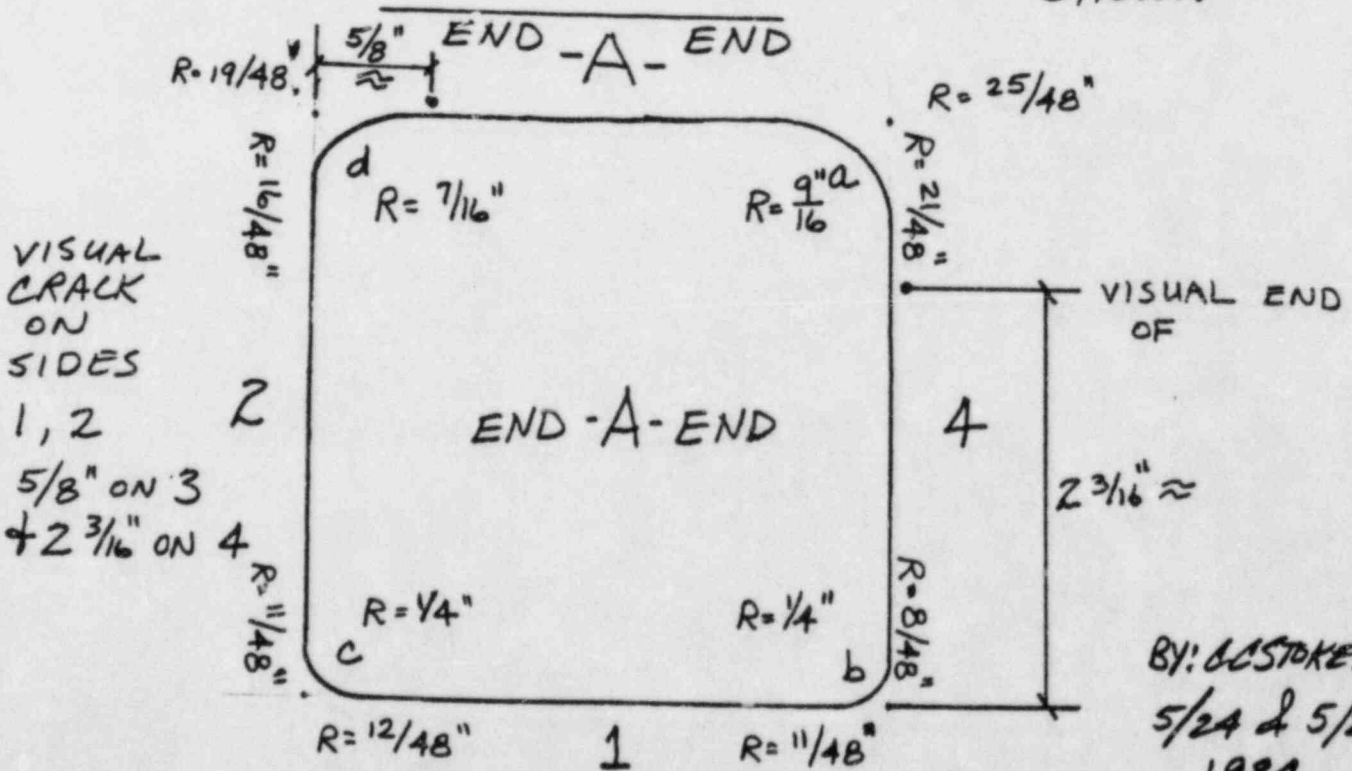
R - INSIDE MEASURED W/ FILLET GAUGES

IF $R = 2t = 2(\frac{1}{4}) = \frac{1}{2}"$
$= 24/48"$

NO.
PO 14817
ON TS 3"X3"X 1/4"

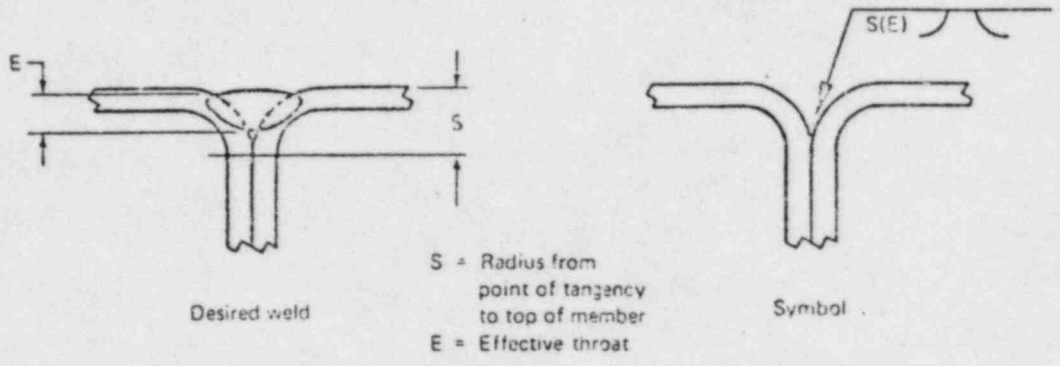
SIDE 3

OUTSIDE OF TUBE SHOWN

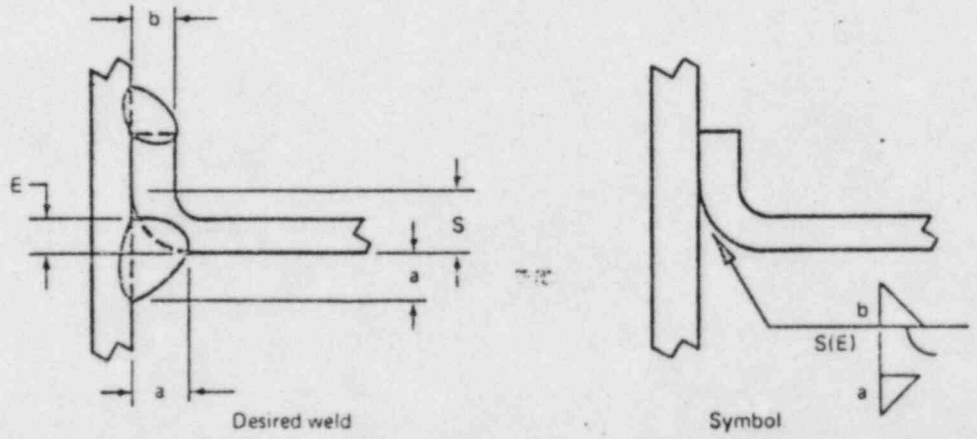


BY: GCSTOKES
5/24 & 5/25
1984

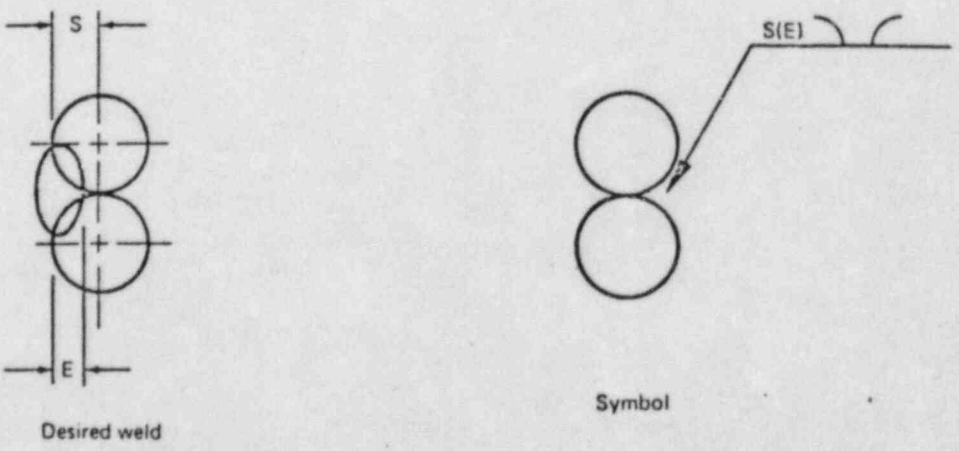
ATTACHMENT 2.a



(A) Flare-V-groove weld with specified partial joint penetration



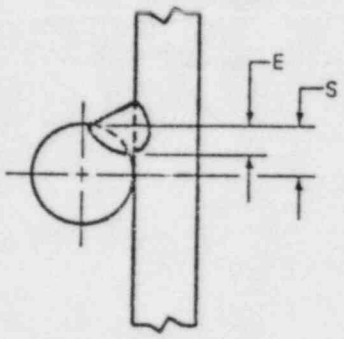
(B) Flare-bevel-groove weld with specified partial joint penetration and fillet weld



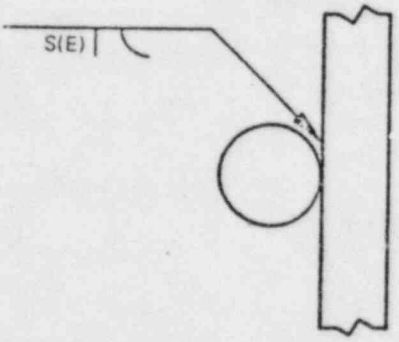
(C) Single-flare-V-groove weld

Fig. 32—Application of flare-bevel- and flare-V-groove weld symbols

ATTACHMENT 2,b

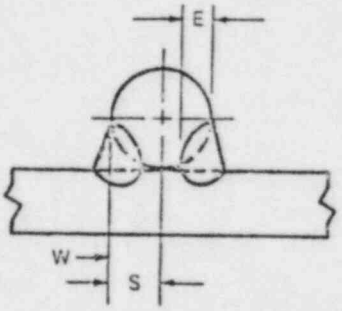


Desired weld

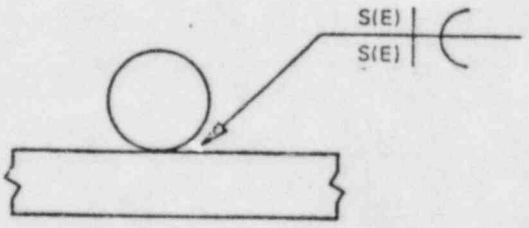


Symbol

(D) Single-flare-bevel-groove weld

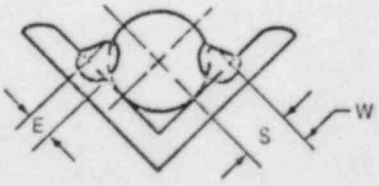


Desired weld

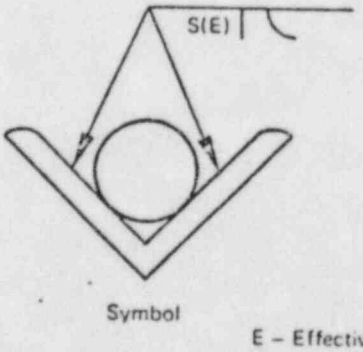


Symbol

(E) Double-flare-bevel-groove weld



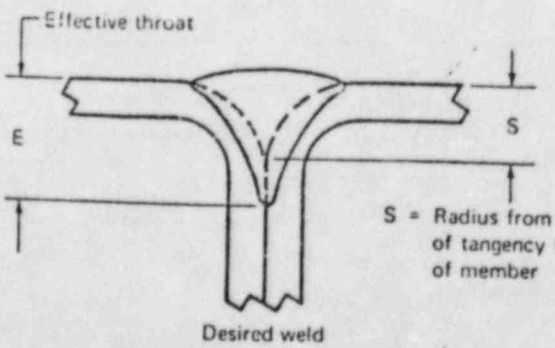
Desired weld



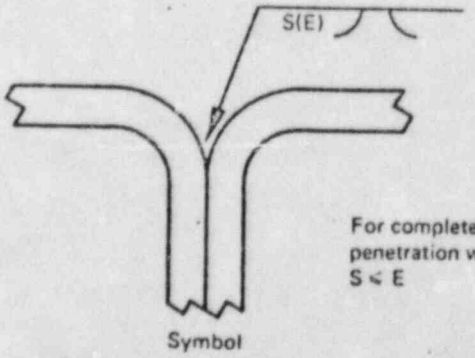
Symbol

E – Effective throat
S – Radius of bar

(F) Two single-flare-bevel-groove welds



Desired weld



Symbol

(G) Flare-V-groove weld with complete penetration

Fig. 32 (cont.)—Application of flare-bevel- and flare-V-groove weld symbols

ATTACHMENT 3A

PACIFIC GAS AND ELECTRIC COMPANY

SHEET NO. ____ OF ____ SHEETS

JOB / FILE NO. ____

LOCATION ____

GENERAL COMPUTATION SHEET

SUBJECT LOADING CASES FOR HGR. No.
DIABLO CANYON UNIT

MADE BY ____ DATE ____ CHECKED BY ____ APPROVED BY ____

HANGER No. ____ REV. ____

LINE No. ____

ANALYSIS No. ____ REV. ____

DATA POINT ____

SEQ	SET
SH	OF

LOAD CASES	FX (lb.)	FY (lb.)	FZ (lb)	MX (IN-lb.)	MY (IN-lb.)	MZ (IN-lb.)
1 A						
1 B						
2 A						
2 B						
3 A						
3 B						
4 A						
4 B						
5 A						
5 B						

CASE LOADING

1. A & B : $\overline{TH}+DL+FL$
2. A : $TH+DL+FV+RVOT+(DE^2+SAM^2)^{1/2}$
2. B : $TH+DL+FV+RVOT-(DE^2+SAM^2)^{1/2}$
3. A : $TH+DL+FV+RVOT+(DDE^2+SAM^2)^{1/2}$
3. B : $TH+DL+FV+RVOT-(DDE^2+SAM^2)^{1/2}$
4. A : $DL+(HOS^2+SAM^2)^{1/2}$
4. B : $DL-(HOS^2+SAM^2)^{1/2}$
5. A : $TH+DL+(HOS^2+SAM^2)^{1/2}$
5. B : $TH-DL-(HOS^2+SAM^2)^{1/2}$

NOTE

1. FRICTION LOADS REF. DCM-M9 (4.2H)
2. THE DIRECTION OF THE THERMAL FORCE SHALL NOT BE USED TO REDUCE THE MAGNITUDE OF THE COMBINED LOADS.
3. FOR LOAD CASES 3 AND 5 USE THE GREATER OF TH OR THA.
4. CASE 5 FOR ANCHOR BOLTS ONLY.

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PACIFIC GAS AND ELECTRIC COMPAN

GENERAL COMPUTATION 36

SHEET NO. ___ OF ___ SHEETS

JOB FILE NO. ___

LOCATION AREA: ___

SUBJECT HGR. No. - Iso. No. - ELEV.:
DIABLO CANYON UNIT NO.

MADE BY ___ DATE 1/83 CHECKED BY ___ APPROVED BY ___

LOAD CASE DETERMINATION PER M-9

LOADS ☐ GLOBAL ☐ LOCAL

SEQ ___ REV ___
SH ___ OF ___

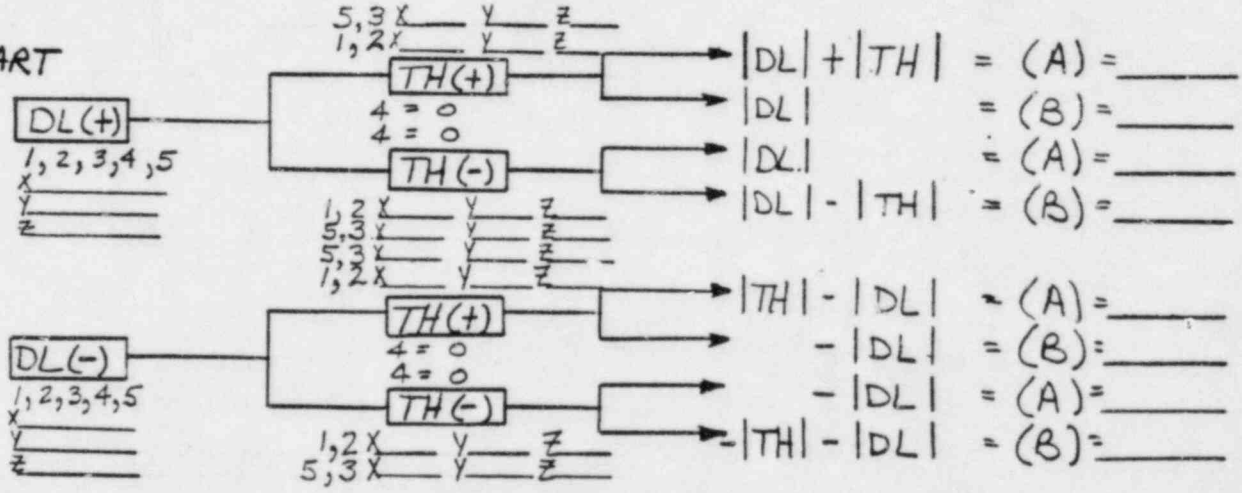
LINE NO. ___

ANALYSIS NO. ___ DATA POINT ___ REV. ___ DATE 1 1

ACCELERATION VALUES ☐ PEAK ☐ 15 Hz ☐ ME 101 ☐ M-40 CALC

UNITS -- FORCE ___ MOMENT ___

FLOW CHART FOR HANDLING DL + TH LOADS



LOAD CASES	Fx	FY	Fz	Mx	MY	MZ
1.a. (A) + |FL|						
1.b. (B) - |FL|						
2.a. (A) + |Fv| + |RvoT| + (DE)						
2.b. (B) - |FV| - |RvoT| - (DE)						
* 3.a. (A) + |FV| + |RvoT| + (DDE)						
* 3.b. (B) - |FV| - |RvoT| - (DDE)						
** 4.a. (A) + (HOS)						
** 4.b (B) - (HOS)						
* 5.a. (A) + (HOS)						
* 5.b. (B) - (HOS)						

$(DE) = (DE^2 + SAM_{DE}^2)^{1/2}$

$(DDE) = (DDE^2 + SAM_{DE}^2)^{1/2}$

$(HOS) = (HOS^2 + SAM_{HOS}^2)^{1/2}$

FL = ((A) OR (B)) MAX ({ .3 STEEL / .07 TEFLON }) IF MOVEMENT > .0625 IN.

* USE (TH OR THA) MAX IN FLOW CHART TO OBTAIN (A), (B)

** USE TH = 0 ZERO THIS CASE ONLY

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PACIFIC GAS AND ELECTRIC COMPA

SHEET NO. ____ OF ____ SHEETS

GENERAL COMPUTATION 3C

JOB FILE NO. ____

LOCATION AREA: ____

ELEV. :

SUBJECT HGR. NO. -
DIABLO CANYON UNIT NO.

MADE BY ____ DATE / / CHECKED BY ____ APPROVED BY ____

MAX. LOAD COMBINATION CALC. PER M-9 ☐ GLOBAL LDS. ☐ LOCAL LDS.

SEQ ____ REV ____
SH ____ OF ____

LINE NO. ____

ANALYSIS NO. ____ DATA POINT ____ REV. ____ DATE ____/____/____

ACCELERATION VALUES ☐ PEAK ☐ 15HZ ☐ ME 101... ☐ M-40 CALC.

UNIT FORCE ____ MOMENT ____

LOAD COMBINATION		FX	FY	FZ	MX	MY	MZ
1. TH+DL+FL	A						
	B						
2. TH+DL+FV+Rvot $+(DE^2 + SAMDE^2)^{\frac{1}{2}}$	A						
	B						
3. TH or THA +DL+FV+Rvot $+(DDE^2 + SAMDE^2)^{\frac{1}{2}}$	A						
	B						
4. DL+$(HOS^2 + SAMHOS^2)^{\frac{1}{2}}$	A						
	B						
5. ANCHOR BOLT CALC.	A						
TH or THA + CASE 4	B						
6. ADJ. FACTOR K= COMB 3 or 4 (LAR.) / COMB 1 or 2 (LAR.)	K=						
IF K > 1.33 ADJ.LOAD=(3 or 4)	A						
IF K < 1.33 ADJ.LOAD= 1 or $\frac{1.33}{2}$	K=						
	B						
7. STRUCT. WT.							
8. ADJ. FACTOR L=ACC.DDE or HOS (LAR) / ACC. DE	L=	L=	L=		X-ACC:	Y-ACC:	Z-ACC:
IF L > 1.33 ADJ.ACC.=(DDE or HOS) / 1.33	ADJ. ACC.:	ADJ. ACC.:	ADJ. ACC.:		DE ____	DE ____	DE ____
IF L < 1.33 ADJ.ACC.= DE					DDE ____	DDE ____	DDE ____
					HOS ____	HOS ____	HOS ____
9. STRUCT. WT. x ADJ. ACC. (8)							
10. TRIB. or EFF. WT.							
11. FRAME DESIGN	A						
LOAD = 6 + 9 + 7-Y ONLY	B						
12. FREQ. DESIGN	A						
LOAD = 7 + 10	B						
13. ANCHOR BOLT DESIGN	A						
LOAD =(5 OR 6) MAX. + 9 + 7-Y ONLY	B						

FL = FRICTION FRIC. COEFF. = .3 STEEL ; .07 TEFLON

USE ALLOW. STRESS FOR CASE 1 or 2 Fb 1-DIR. PL. = 23.9 ksi

AISC STEEL - Fa, Fb, Fb 2-DIR. PL = 19.1 ksi Fv = 12.8 ksi WELD = 18.0 ksi

PACIFIC GAS AND ELECTRIC COMPANY

DIABLO CANYON NUCLEAR POWER PLANT UNIT _____ HANGER NO. _____

MADE BY: _____ DATE _____ CALC. SEQ. NO. _____ REV. _____

CHECKED BY: _____ DATE _____ ATTACHMENT 4A

APPROVED BY: _____ DATE _____

CHECKLIST FOR STRUDL FRAME ANALYSIS

1. MEMBERS

	YES	NO	N/A	PAGE
DOES THIS FRAME INCLUDE ANGLES	☐	☐		
ANGLE PROPERTIES INCORPORATE PRINCIPAL AXES	☐	☐		
ANGLE PROPERTIES INCORPORATE ORTHOGONAL AXES	☐	☐		
L/t FOR ANGLES HAS BEEN REVIEWED	☐	☐		___
SLENDERNESS RATIOS HAVE BEEN REVIEWED	☐	☐		___
LENGTHS MODIFIED FOR COMPRESSION MEMBERS WITH INTERMEDIATE JOINTS	☐	☐		
TORSION MEBERS ARE ACCEPTABLE BY ENGINEERING JUDGEMENT, OR FOR CALCULATIONS SEE	☐	☐	☐	___

2. NATURAL FREQUENCY

DIRECTION	f_n	ALLOWABLE	RESTRAINED	UNRESTRAINED
X	= _____ cps	_____ cps	☐	☐
Y	= _____ cps	_____ cps	☐	☐
Z	= _____ cps	_____ cps	☐	☐

ATTACHMENT 4B

PACIFIC GAS AND ELECTRIC COMPANY

GENERAL COMPUTATION SHEET

HGR. NO. SEQ. NO.- Rev.

DIABLO CANYON UNIT NO. ISO. NO.-

DATE / / CHECKED BY APPROVED

Check combined stress and deflection

Units: Lbs., In.

☐ Installed support
☐ Not installed support

Support Loading Condition
☐ A/B ☐ C/D ☐ T ☐ C/D 1.33 ☐ T 1.33

Ref.	Description	Line No.	Span No. / Joint No.				
	Stress bending MY/SM	(1)					
	Stress bending MZ/SM	(2)					
	Stress axial P/A	(3)					
	Force local FY	(4)					
	Force local FZ	(5)					
	Span length L	(6)					
Shear 1	Stress Tors. & warp. shear	(7)					
	Warping normal stress	(8)					
	Column ratio K	(9)					
	Radius of gyr. r	(10)					
	Shear area. Local Ay	(11)					
	Shear area. Local Az	(12)					
AISC	$\frac{(9)x(6)}{(10)}$	(13)					
	Allow. compr. stress Fa	(14)					
	Allow bend. stress Fby	(15)					
	Allow bend. stress Fbz	(16)					
	Allow shear stress Fv	(17)					
Shear	$\frac{(4)}{(11)} + \frac{(5)}{(12)} + (7)$	(18)					
Compr. Ratio	$\frac{(3)}{(14)}$	(19)					
Enter O.K. if	18 ≤ 17 < .6	(20)					
Axial & Bending	$\frac{(1)}{(15)} + \frac{(2)}{(16)} + \frac{(8)}{(16)} + (19)$	(21)					
Enter O.K. if	ϕ Allow * (21) ≤ ϕ Allow						
Max.	Max. deflection at joint _____ in the restrained direction is _____ ≤ _____ ∴ ok.						

If (19)> .15 resolve on separate calc. sheet using AISC formulas 1.6-1a & b.
If (20)> .6, prorate (15) and (16) per AISC section 1.10.7

SERVICE LIST

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