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'84 JUN 21 110:48

My name is Richard D. Parks. I work as an investigator for the Government Accountability Project (GAP) in the Diablo Canyon Power Plant (DCPP) Investigation. I am providing this sworn statement to evidence concerns over a problem at DCPP.

Recently a packet of documents came into my possession from a series of anonymous sources. These documents included Design Change #DC-2-E-P-10544, Deficient Condition Notice (DCN) #1350-011, PSA Snubber Checklist, Field Support Process Sheets, Pipe Support Design Tolerance Clarification Forms (Quick Fixes) #QF-2-6916, QF-2-5168, QF-2-5156, QF-2-2011], Minor Variation Report #M-4490, PG&E DCPP-Environmental Qualification (EQ) Maintenance Training Course #MA050, and HP Foley Valve Maintenance Report #1845. They are enclosed in a packet identified as Attachment 1.

These documents relate to Residual Heat Removal (RHR) Pump #1 Recirculation Valve (FCV-641A- Unit 2), and its associated hanger #413-143 SL. On page 40 of Attachment 1, this valve is listed as being Environmentally Qualified. Attachment 1, pages 37-41 explain the significance of this qualification.

After receiving and reviewing this packet of documents, I reviewed the documents with several past/present Quality Control (QC) inspectors from DCPP. Each of these individuals are aware of the problem contained in the DCN and confirmed that the problem still exists in the plant. I also reviewed NUREG-0588 to complete my familiarization with the Qualification requirements.

B4C6250231 B40621
PDR ADOCK 05000275
PDR
G

140

rf

A review of the attached documents reveals the following problems with the Environmental Qualification Program practices at DCPD:

Problem #1: During the "As-built Inspection", the responsible QC Inspector identified that the 5/8" studs holding the valve motor to the seismic valve support plate (piece # 1, Attachment 1 page 9) had never been replaced. These studs were required to be changed by the original Design Change #DC-2-E-P-10544, (refer to Note #2 Attachment #1, page 7). This deficient condition was documented on a DCN (Attachment 1 page 16) and identified that a Deviation Report should be submitted to PG&E. This should have resolved the problem; however, the original inspector was over ridden and his DCN changed by A. Weinstein on 2/27/84. A. Weinstein's justification for his action is described on page 17 of Attachment 1.

The individuals that I reviewed this problem with informed me that the reason the studs had to be replaced was 1) due to the addition of a 1/2" support plate being bolted to the motor housing, it was necessary to ensure sufficient projection of threads, and 2) the existing old studs had visible indication of damaged threads. Apparently the craft, when disassembling the valve to make the modification, had used vise-grips to back the studs out of the motor. Thus to ensure adequate strength with respect to fastening/torque requirements the studs should have been replaced. They were not.

Conclusion: If the threads on the studs in question were in fact damaged, they should have been replaced. Paragraph 3 on page 38, Attachment 1 identifies that if any doubt existed on the studs, "good maintenance practice" would have been to replace them. Unfortunately, they were not.

Problem #2: The uncontrolled disassembly of an EQ Nuclear Safety Related Valve without use of a controlled procedure resulted in damage to the valve and discharge of personnel involved. This is documented on pages 35 and 36 of Attachment 1. This incident resulted in the generation of an MVR; that was deemed to be only a violation of Project Instruction #8 (Tagout Procedure) and a "PPP in-house Non-Compliance Report". However, the MVR was marked as "not reportable" and "not a Non-Conformance", despite its relevance for NUREG-0588 compliance.

Conclusion: Due to the significance of the valve and the conflicting statements on reportability, it should have been deemed "reportable" and reported to the NRC.

Problem #3: Attachment 1 page 38, "EQ Effects On Maintenance" states in part "...provide detailed descriptions of maintenance work performed as input for failure analysis (trend) study."

rf

124

However, a review of Valve Maintenance Report (#MVR-1845), Attachment 1 page 41, does not include a listing of "what damaged parts were repaired or how they were repaired."

Problem #4: A letter from D.A. Rockwell to P. Stieger (Attachment 1 page 34) identifies that the practice of installing seismic valve supports to EQ valves could be violating EQ requirements. The letter requires Pullman Power Products (PPP) to respond and provide "a list of all seismic valve supports completed or presently being worked" by March 5, 1984. This is a problem because valves that have already been disassembled to install the seismic supports may have already violated EQ Nuclear Safety Related Requirements and have gone unreported. In the instance of FCV-641A, the violation occurred 10 months before the problem was officially "flagged" to PPP for EQ compliance.

Conclusion: There is an apparent deficiency in PG&E's training program to acquaint personnel with the requirements of EQ and Nuclear Safety Related Equipment.

The problems identified in the review of the attached documents reveal significant deficiencies in the QA/QC and EQ compliance requirement practices of the Nuclear Safety Related Equipment at Diablo Canyon Unit 2. Even though the documents are restricted to Unit 2, the witnesses informed me that the problems they address are generic to both Units with respect to training and familiarity with specialized requirements. The same people perform the same type of work in both units. If the practices discussed in this statement exist in Unit 1 or Unit 2, the reliability of any EQ valve similarly disassembled is indeterminate. Unfortunately, the reliability of these valves is taken for granted by both the NRC and the operators of the plant.

I will further discuss these issues with NRC good faith efforts to address these issues.

I have read the above -4- page statement and attached documents, and swear under penalty of perjury, this statement is true

and accurate to the best of my belief.

Witnessed at San Luis Obispo, California

Richard D. Parks
Richard D. Parks

Subscribed and sworn to before me this 22 th day of May, 1984.



Lisa R. Wenter
Notary Public in and for
the County of San Luis
Obispo, State of
California

1-3-84

43
143/4



RL: BKW

CHECKED BY: JIM

ITEM NO.	1	2	3	4	5	6	7	8	9								
CALLOUTS	✓	✓	✓	✓	✓	✓	✓	✓	✓								
EOM.	✓	✓	✓	✓	✓	X	X	✓	X								
LOCATING DIMENSIONS	✓	X	✓	✓	✓	✓	✓	X	✓								
ORIENTATION	✓	✓	✓	✓	✓	✓	✓	✓	✓								
WELDS	X	✓	✓	✓	✓	✓	✓	✓	✓								

MISC:

NOTES:

- ✓ PEG STAMPED
- ✓ DESIGN # CODE CLASS
- ✓ FOR DATA SEE FILE...
- ✓ ISO. #
- X REF. HERS.
- ✓ END OF PIPE DIM.
- ✓ VIEW TITLES
- X REF. ELEVATIONS
- ✓ NORTH ARROWS
- ✓ KNEE BRACE DIM.
- ✓ VIEW ORIENTATION
- ✓ DELETED 4 CLARITY
- ✓ CUT AS SHOWN, ETC.
- ✓ NO. OF ASSEMBLES
- ✓ WELD NOTE
- ✓ VENT HOLES

- ~~DOES IT. ② & ③ HAVE WASHERS? NO~~
- ~~EXTENSION PIPE IS DELETED ON AFL, ON R/L IT IS STILL THERE. WHICH IS IT?~~
- ~~ARE ② & ③ CENTERED ON SET (ELEV. WAS SOUTH)~~
- ~~IS IT WELDED 2 PLCS? YES~~
- ~~NOTE REF. HRS 413-1415L ON COVER SHEET~~
- ~~GIVE REF. PIPE ELEV.~~

61'-6" REF

SNUBBERS:

- ✓ PIN TO PIN DIM.
- ✓ OFFSETS
- ✓ NF OR PRENF
- ✓ ROTATION END FOR END
- ✓ S.N./MARK #
- ✓ REDUCED CLAMP #
- ✓ NPS T.T. IDENT. #
- ✓ ACTUAL OLD SETTING
- ✓ PIPE END VENT HOLE

FOR INFORMATION ONLY

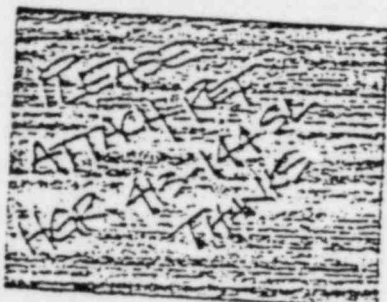
LINE TWO
SYSTEM 10

AREA H
ELEVATION 60'-0"

DATE PREPARED 3-30-84
BY BRAD WHITAKER

SUBMITTED TO PG&E FOR REVIEW AND DISPOSITION

Reason this As-Built is issued:



To close DCN # 1350-011

DR # _____

Exception list request # _____

PG&E work request # _____

Other _____

REPLICATE FOR HANGER SYMBOL 413-143 51

ORIGINAL DRAWING NO.'S/SERIES/REVISION SK 413-143 51 / 147, 147A, 147B, 147X / REV. 0

VARIED TO DRAWING NO.'S/SERIES/REVISION SAME

DRAWING NO., FOR REFERENCE ONLY: QF-2-5155 QF-2-2011 QF-2-5162

REASON FOR CHANGE QF-2-6916 413-144
REFERENCES OF ESD - 228 REV. 11-28-83

- 1) WELD CLARIFICATION PER QF-2-5155
- 2) ANCHOR BOLT SUBSTITUTION PER QF-2-2011
- 3) PIN TO PIN CLARIFICATION PER QF-2-5162
- 4) BOLT HOLE LOCATIONS PER QF-2-6916



FOR INFORMATION ONLY

3.0.4.2. COMMENTS:

76-1483(4-82)

AREA <u>2-H</u>	LINE <u>2-91-930-3 III</u>	HANGER SYMBOL <u>DP 222</u> <u>VER 3222</u> <u>11-10-83</u> <u>SKW</u>	
EL <u>60'-0"</u>	<u>RHR SYSTEM</u>	LOC ON DWG <u>500922</u>	

REV	ISSUE DATE	DESCRIPTION OF CHANGES	PREPARATION			APPROVAL		
			DSGN	DWN	CHKD	DUS	ENGR	SUPV ENGR

<u>1</u>		SUPPORT ADDED PER STRESS PROB G-003-08 BY GPD ON 3-23-83	<u>U.D</u>	<u>SKW</u>	<u>VKM</u>	<u>12</u>	<u>-</u>	<u>BT</u>
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FOR INFORMATION ONLY

10 RHR

P.P.P. AS BUILT DRAWING

DATE	P.P.P. REVIEWED
11-10-83	SKW

"APPROVED WITH CONDITION THAT NO REBAR BE CUT"

NOTES:
 1. THE RING IS IN TWO HALVES AND IS TO BE WELDED ON UNDERSIDE AFTER BOLTING TO THE VALVE FLANGE
 2. FIELD TO REPLACE EXISTING 5/8" O STUDS WITH LONGER STUDS OF SAME SPECIFICATION: ASTM A307 GR. 57

DC-2-E-P10544 25/0
 SK-413/235 REV. 0

SHEETS ASSIGNED TO THIS HANGER SYMBOL (TOTAL 4 SHEETS)

147	142	143	142																	
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CONTROLLED COPY

DSGN <u>U.D</u>	DRAWING NO
DWN <u>SKW</u>	
CHKD <u>VKM</u>	

PROJECT: DIABLO CANYON UNIT: 2 147 X OF 385 P G & E CO

76-1463 (11-80)

A-1
Pg 4

SHEET 5 OF 7

AREA 2-7 LINE 2-51-930-3
EL 60'-0" RHR SYSTEM


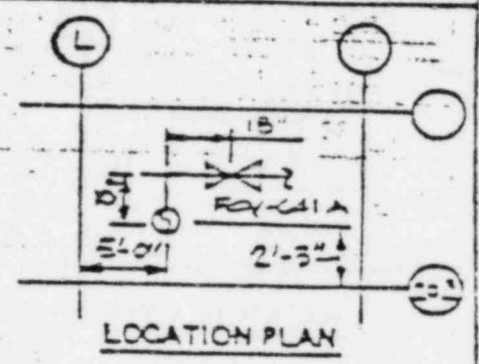
HANGER SYMBOL
 $\frac{D}{A} \frac{P}{S} \frac{2}{2} \frac{2}{2}$
 VERT. - SKEW
 10-10-83
 1437
 LOC ON DWG 500422

P.P.P. AS BUILT DRAWING

DATE	P.P.P. VERIFIED
11-10-83	BKW

10
RHR

DESIGN CLASS 1
 CODE CLASS 3
 CALLED NORTH

NO. OF ASSEMBLIES REQUIRED

NO	REQ'D	MATERIALS PER ASSEMBLY
1	1	2 1/2" x 10' x 0'-10" (SEE DETAIL SECTION A-A)
2	1	BAR 1/2" x 2' x 0'-2"
3	1	PSX 1/2" WF WITH TRANSITION TUBE KIT GS-138 H.S. = 1 3/16" (NOTE ONE REAR BRACKET INCLUDED IN ASSY) STROKE = 2 1/2"
4	1	W 6 x 13 x 1'-7" LG.
5	1	2 1/2" x 10' x 0'-10" BW / 4-1 1/2" HOLES PER DETAIL SHOWN
6	2	3/8" x 6" LG HILT KWIK BOLT, MIN EMBED = 2 3/4"
7	1	EXTENSION PIPE 1.05 O.D. x 1.13 N.A. L.T.K (LENGT - BY FIELD)
8	1	REAR BRACKET FOR PSX 1/2" AD 75
9	1	AD 71 5/16" 14 W/AD 76 TT. & AD 75 R.B. CS = 1 3/8" H.S. = 1 3/16"
9	2	3/8" x 4 1/2" LG. HILT KWIK BOLT MIN. EMBED = 2 3/4"

APPROVED WITH
 CONDITION THAT
 NO REBAR BE CUT

FOR INFORMATION ONLY

CONTROLLED COPY

DC-2-E-P10544 2E/0

SK-413/REV. 0

PROJECT: DIABLO CANYON	UNIT: 2	DRGK 4/0	DRAWING NO	
		CHKD 2/2/83	25142	
		SAT 10 OF 815	P G & E CO	ISSUE REV

(MICROFILM)

A-1
185

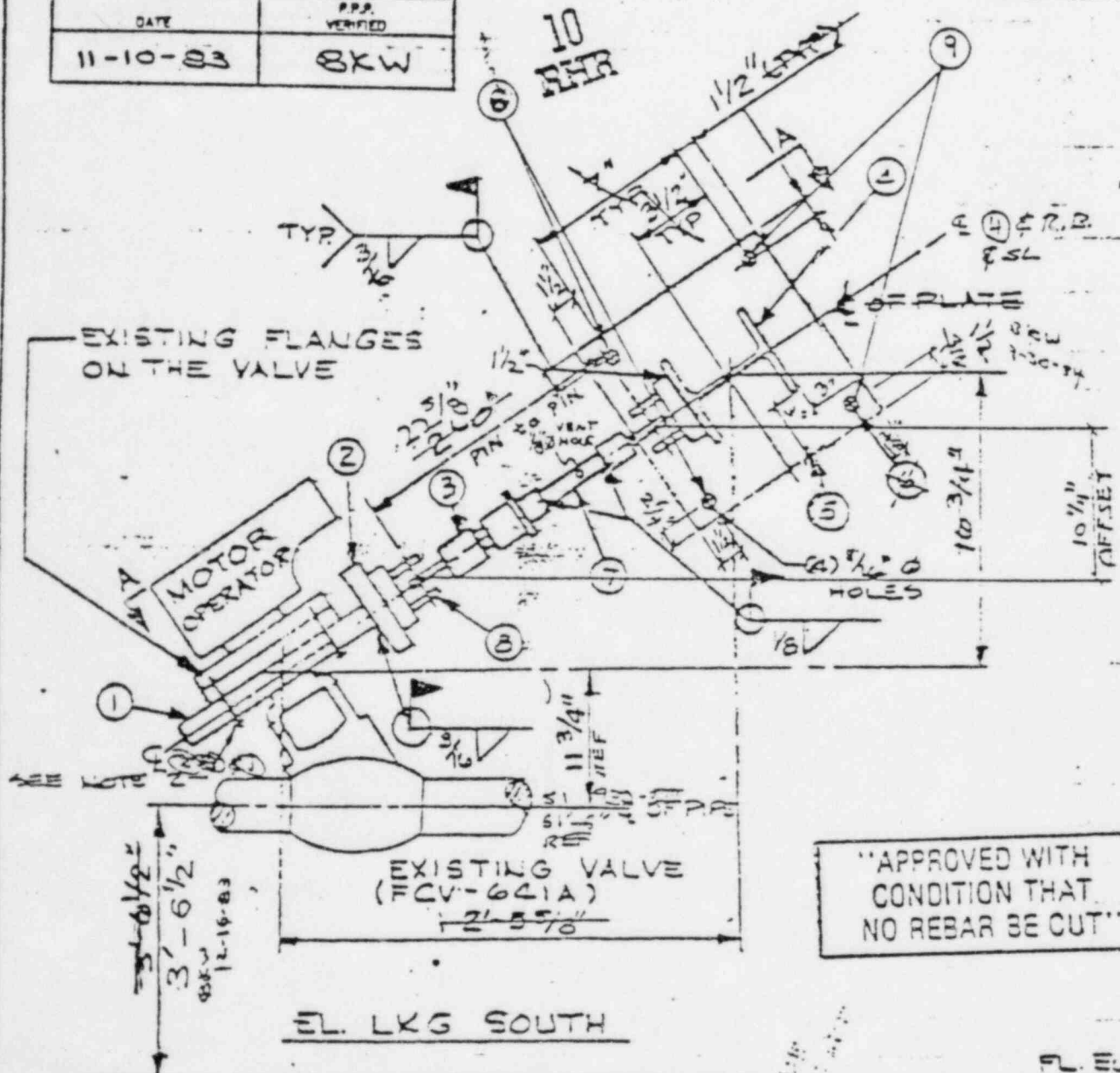
SHEET 6 OF 7

76-1117 Rev 3-75

AREA <u>2-H</u>	LINE <u>2-SI-930-3I</u>	HANGER SYMBOL DIP 222 11-10-83 WEST-SREW 222	413 1435L
EL <u>60'-0"</u>	<u>RIR SYSTEM</u>	LOG ON DWG <u>504922</u>	

P.P.P. AS BUILT DRAWING

DATE	P.P.P. VERIFIED
11-10-83	8KW



"APPROVED WITH
CONDITION THAT
NO REBAR BE CUT"

DC-2-E-P10544 RSL
 SK. 413/1435L REV. CONTROLLED COPY (REF)
 FL. EL. 55'-0"

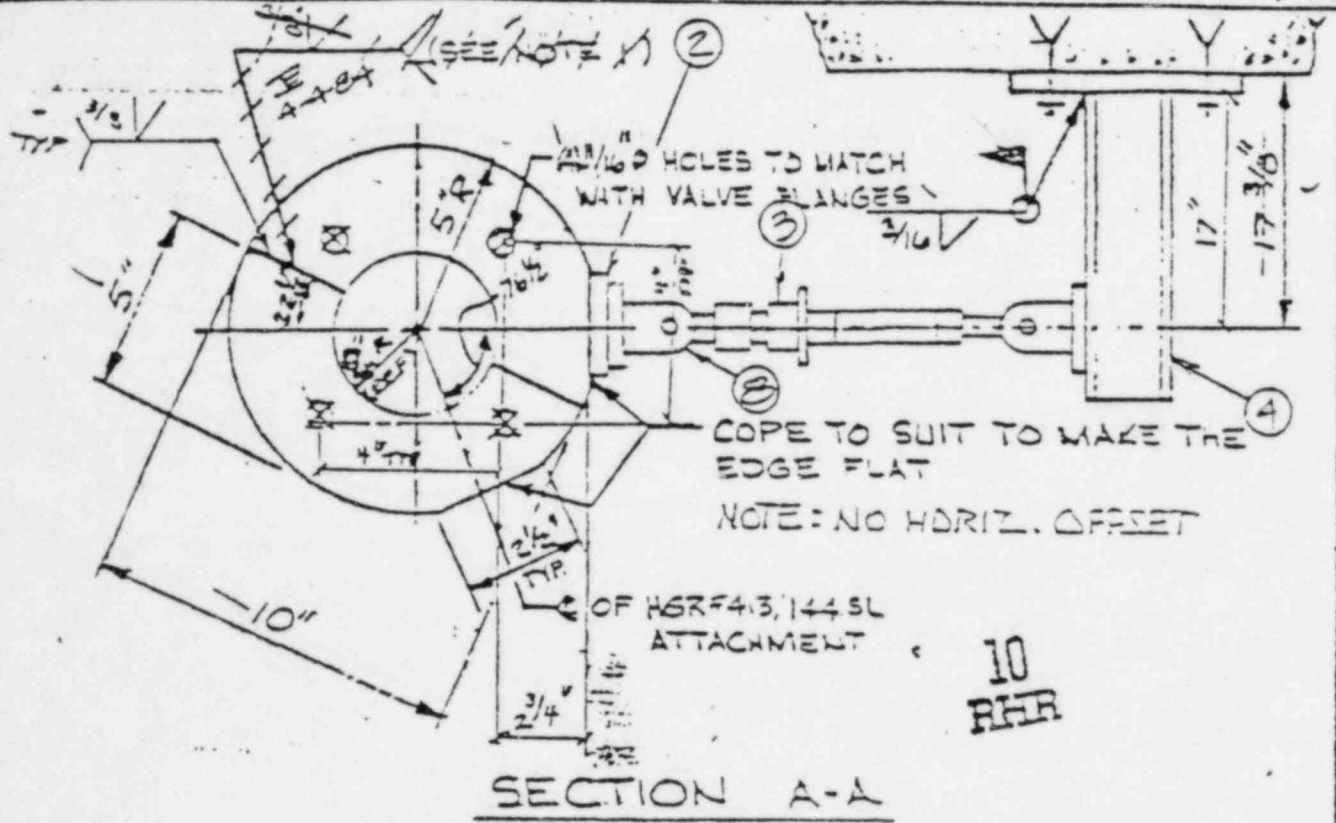
PROJECT: <u>DIABLO CANYON</u>	UNIT: <u>2</u>	DSGN <u>L.S.</u>	DRAWING NO. <u>504922</u>
		CHKD <u>VLM</u>	
		SHT <u>14</u> OF <u>1</u>	SHTS <u>P G & E CO</u>
			ISSUE <u>1</u> REV <u>1</u>

A-1
Pg 6

SHEET 7 OF 7

76-1117 Rev 3-76

AREA <u>2-H</u>	LINE <u>2-SI-930-3</u>	HANGER SYMBOL <u>DD 222</u>	<u>43</u>
EL <u>60'-0"</u>	<u>RHR SYSTEM</u>	VERT. SREW <u>1/2"</u>	<u>H35L</u>
		LOC ON DWG <u>500922</u>	



FOR INFORMATION ONLY

"APPROVED WITH
CONDITION THAT
NO REBAR BE CUT"

P.P.P. AS BUILT DRAWING

DATE	PP.P. VERIFIED
11-10-83	BKW


CONTROLLED COPY

DC-2-E-P 10544 REV. 0
SK. 413 / H35L REV. 0

PROJECT: <u>DIABLOS</u>	UNIT: <u>2</u>	DSGN <u>L.D.</u>	DRAWING NO <u>0503</u>
<u>DRYVOLS</u>		DWGR <u>B.K.W.</u>	
		CHKD <u>V.K.M.</u>	
		SHT. <u>1</u> OF <u>3</u> SHTS	P G & E CO
			ISSUE <u>1</u> REV

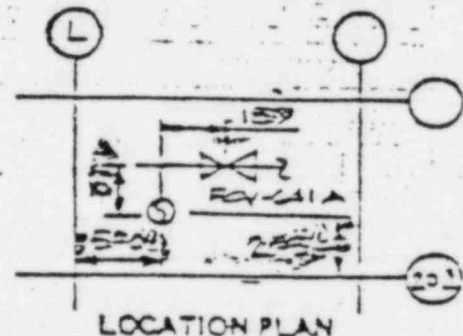
MICROFILM

76-1463 (11-80)

AREA <u>2-H</u>	LINE <u>2-51-930-3</u>	HANGER SYMBOL <u>DP 222</u>	
EL <u>60'-0"</u>	<u>RHR SYSTEM</u>	VERT. - SKEW <u>5N13</u>	LOC ON DWG <u>500422</u>

DESIGN CLASS II
CODE CLASS B

CALLED NORTH



APPROVED FOR
CONSTRUCTION

DATE 5/17/33
ENGR [Signature]

10
RHR

NO. OF ASSEMBLIES REQUIRED

NO	REQ'D	MATERIALS PER ASSEMBLY
1	1 ✓	PL. 1/2" x 10' x 0'-10" (SEE DETAIL SECTION A-A)
2	1 ✓	BAR 1/2" x 2' x 0'-2" <small>SEE A/D 76 25-B0223 250.6 10.8 07-483</small>
3	1 ✓	PSX ^{10/11} 10/11 WE, WITH TRANSITION TUBE KIT C.S = 13.8 WS. = 1.3/16 (NOTE: ONE REAR BRACKET INCLUDED IN ASSY)
4	1 ✓	W 6 x 13 x 1'-7" LG
5	1 ✓	PL 1/2" x 10' x 0'-10" W/ 4 - 1/2" HOLES PER DETAIL SHOWN
6	2 ✓	5/8" x 6" LG HILTI KWIK BOLTS, MIN EMBED = 2 3/4"
7	1 ✓	EXTENSION PIPE 105 DIX 113 1/2" LG
8	1 ✓	REAR BRACKET FOR PSX ^{10/11} 10/11 A/D 71 <small>42 5/17/33</small>
9	2 ✓	5/8" x 4 1/2" LG. HILTI KWIK BOLT, MIN EMBED = 2 3/4"

FOR INFORMATION ONLY

"APPROVED WITH
CONDITION THAT
NO REBAR BE CUT

CONTROLLED COPY

DC-2-E-P 10544 25/0

SK-413/422 REV. 0

PROJECT: DIABLO CANYON

UNIT: 2

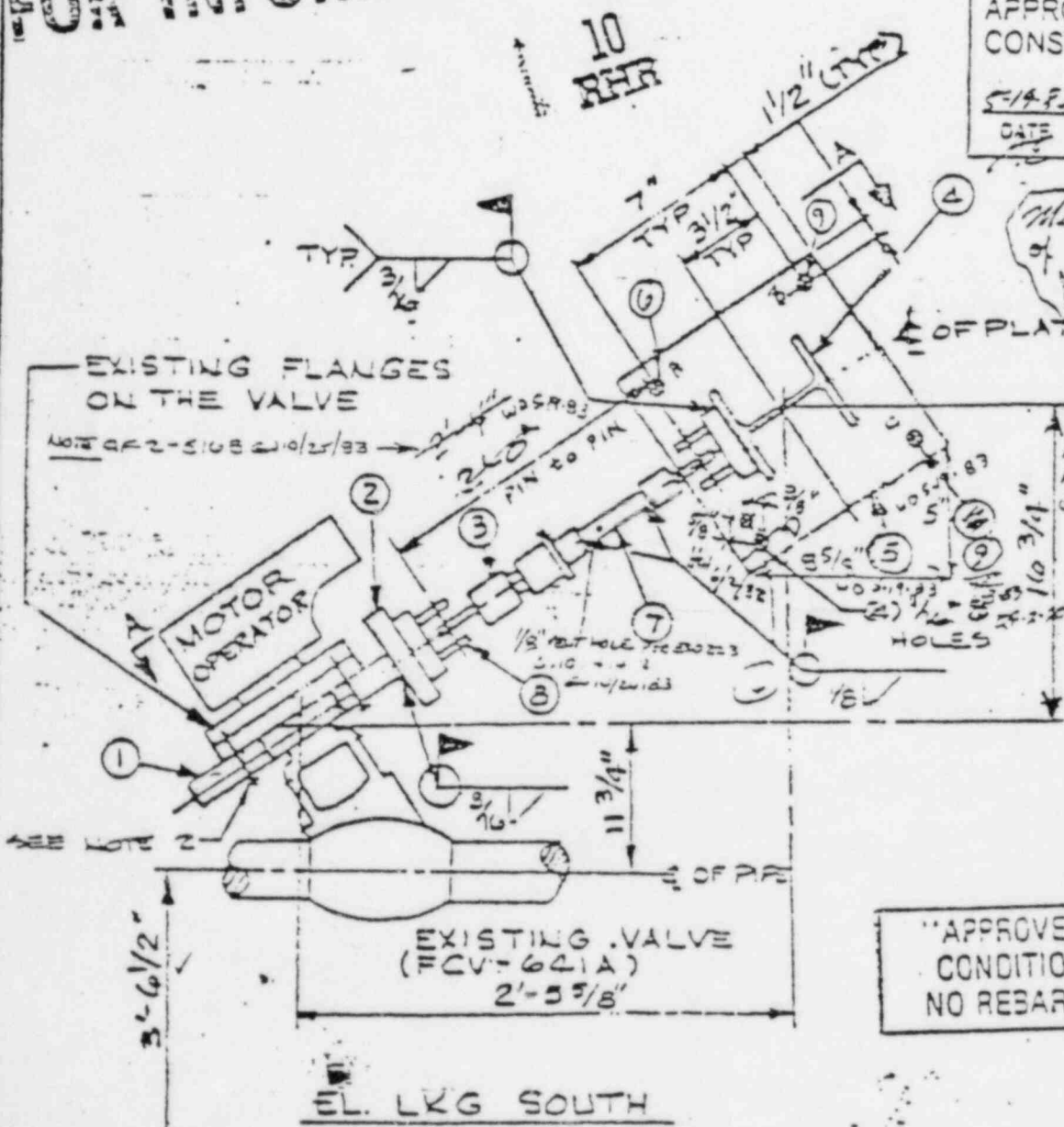
DESIGN <u>LD</u>	DRAWING NO	
CHKD <u>LD</u>		
ISSUE REV		

76-1117 Rev 3-76

AREA <u>2-H</u>	LINE <u>2-SI-936-3 II</u>	HANGER SYMBOL <u>DP 222</u>	413 435L
EL <u>60'-0"</u>	<u>RHR SYSTEM</u>	VERT-SKEW SUB.	
		LOC ON DWG <u>506922</u>	

FOR INFORMATION ONLY

APPROVED FOR CONSTRUCTION
5-19-83
DATE 5-16-83
ENGR



DC-2-E-P10544 RSL0
SK. 413/435L REV. 0

CONTROLLED COPY

DESIGN	LD	DRAWING NO.	
DWY	2/23/83		
CHKD	VLM		
PROJECT:	VIABLE CONTROL	UNIT:	2
SHT	147 OF 2	SHTS	P G & E CO
			ISSUE REV

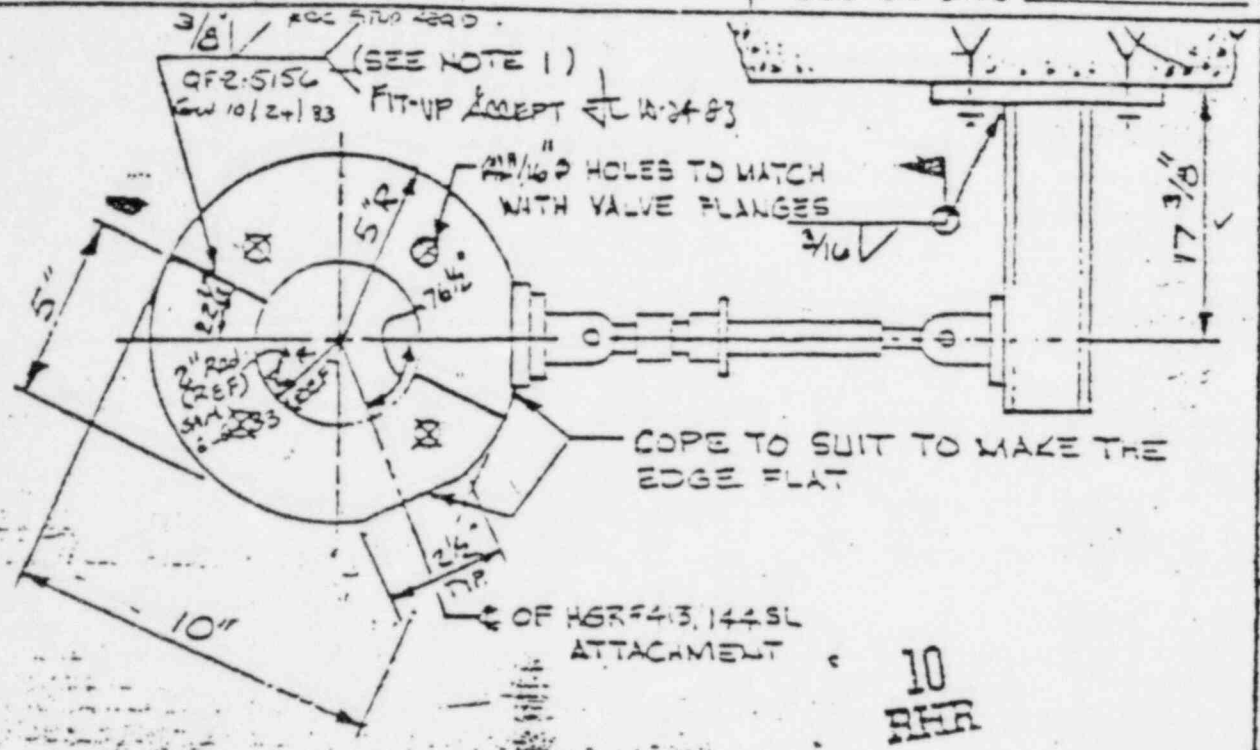
MICROFILM

A-1
Pg 10

SHEET 7 OF 7

76-1117 Rev 3-76

AREA <u>Z-H</u>	LINE <u>Z-51-930-3 II</u>	HANGER SYMBOL <u>DP 222</u>
EL <u>60'-0"</u>	<u>RHR SYSTEM</u>	VERT-SKEW <u>45°</u>
		LOC ON DWG <u>500-22</u>



SECTION A-A

FOR INFORMATION ONLY

APPROVED FOR
CONSTRUCTION
549-12
DATE 5-10-83

"APPROVED WITH
CONDITION THAT
NO REBAR BE CUT"

DC-2-E-P 10544 23/10
SK. 4137 10 Rev EUT

PROJECT: <u>DIABLO DAK VOL</u>	UNIT: <u>2</u>	DSGN <u>L.D.</u>	DRAWING NO	
		CHKD <u>V.K.M.</u>	<u>05-10-83</u>	
SHT. <u>1</u> OF <u>1</u> SHTS		P G & E CO		ISSUE <u>1</u> REV

MICROFILM

INSTRUCTION NO. 12
ATTACHMENT A

PIPE SUPPORT DESIGN TOLERANCE CLARIFICATION FORM

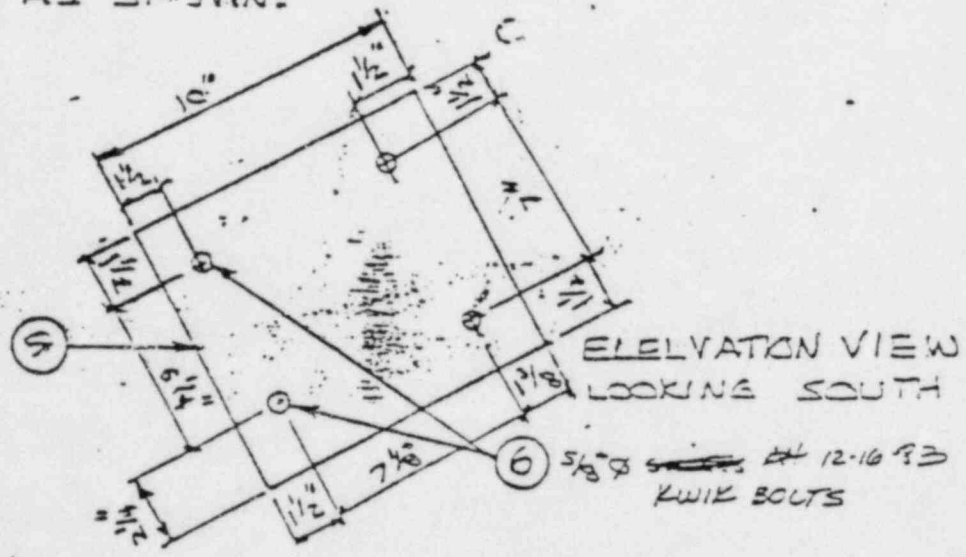
SUBJECT 413-143SL REV 0 SEQUENCE NUMBER QF-2-6916
CLASS 1-B

LOCATION AREA: 2-H ELEV: 60'-0"

FOR INFORMATION ONLY

- pre-inspect
- post pre-inspect
- during installation
- after installation
- other

DESCRIPTION: BOLTHOLE LOCATION ON BASE R 5
AS SHOWN:



IS THIS ACCEPTABLE?

THIS IS ACCEPTABLE

P.P.P. F.E. 12/16/83
G.C. F.E. MF 12.16.83

REFERENCE DRAWING SK-413-143SLSH 147

ATTACHMENTS YES (NO) PAGES (INC. THIS SHEET) 1

AREA ENGINEER:

CONSTRUCTION MAY PROCEED

Ruth Liberman

DATE 12-16-83

CONSTRUCTION S.P. REC'D

CONTRACTOR RECEIVED

[Signature] 12.16.83

PIPE SUPPORT DESIGN TOLERANCE CLARIFICATION FORM

SUBJECT 413-143SL REV (DC) 0 SEQUENCE NUMBER DF-2-5/68 CLASS I/B

LOCATION AREA: 2-H ELEV: 60'

- pre-inspect
- past pre-inspect
- during installation
- after installation
- other

DESCRIPTION: AS INSTALLED, THE PIN TO PIN DIMENSION FOR THE A/D SWUBBER IS 22 1/16" WHICH IS 5/16" SHORTER THAN THE CURRENT ESD 223 ALLOWS AS TOLERANCE.

10-26-83

IS THIS ACCEPTABLE?

FOR INFORMATION ONLY

THIS IS ACCEPTABLE!

DC-2-EP - 10544 REV. 0

P.P.P. F.E. SW
S.C. F.E. T.C
REGG.

REFERENCE DRAWING SK-413/143SL SH _____

ATTACHMENTS YES (NO) PAGES (INC. THIS SHEET) 1

AREA ENGINEER: D B Pelt

CONSTRUCTION MAY PROCEED DATE 10/25/83

CONTRACTOR RECEIVED: Allen Young DATE 10/25/83

PIPE SUPPORT DESIGN TOLERANCE CLARIFICATION FORM

SEQUENCE NUMBER OP-2-5156

SUBJECT 413-143 SL REV(DC) 0 CLASS I / B

LOCATION AREA: Z-4 ELEV: 60

- pre-inspect
- post pre-inspect
- during installation
- after installation
- other

DESCRIPTION: THE FULL PENETRATION WELD JOINING ITEM ① WILL ATTACH ITSELF TO THE VALVE FLANGE WHEN WELDING IN PLACE.

SOLUTION: CHANGE THE WELD SYMBOL TO A 3/8" PARTIAL PENETRATION.

FOR INFORMATION ONLY

DC-Z-E-P 10544 REV. 0

REFERENCE DRAWING SK-413/143 SL REV. 0

P. E. GD
S. E. ROBERTS
50200

ATTACHMENTS YES NO PAGES (INC. THIS SHEET) 1

AREA ENGINEER:

CONSTRUCTION MAY PROCEED R. C. Cole DATE 10/21/83

CONSTRUCTION S.P. RECD:

CONTRACTOR RECEIVED M. J. W... DATE 10/21/83

PIPE SUPPORT DESIGN TOLERANCE CLARIFICATION FORM

SUBJECT 413-143 SL REV 0 SEQUENCE NUMBER 01-25 2011 CLASS 1-B

LOCATION AREA: 2-H ELEV: 60 pre-inspect

in-work

past work

~~TO~~ ITEM: DESIGN DWG CALLS OUT 5/8" φ X 6" LG. HILTI KWIK BOLT DR #

DESCRIPTION: - CRAFTS DRILLING BOLT HOLES ENCOUNTER
OR REBAR (2) LOGS, AT 3/4" DEPTH (MIN. EMBED IS 2 3/4")
- THE STUD WILL PROJECT TOO FAR FROM FACE OF
PLATE WITH UNTHREADED PORTION OF ~~THE~~ STUD
EXPOSED.

SOLUTION: CHANGE ITEM ⑥ TO (2) QTY. - ADD ITEM ⑦
5/8" φ X 4 1/2" HILTI KWIK BOLT, MIN EMBED 2 3/4"
- USE 3/4" DEPTH HOLES AS DRILLED.

FOR INFORMATION ONLY

RESOLUTION: DECREASE HILTI KWIK BOLT LENGTH CALL OUT
TO 5/8" φ X 4 1/2" LG. . MIN EMBED LENGTH WILL
BE ACHIEVED W/ 4 1/2" LG. (ONLY AS REQUIRED)
PROVIDED

DC-2-E.P. 10544

O.P.P. P.E. R. LERRY, 6383

G.C. P.E. _____

REFERENCE DRAWING SK-413-143 SL 147X, A, B

ATTACHMENTS YES (1) PAGES (INC. THIS SHEET) 1

AREA ENGINEER: M.K. TEHRANI

CONSTRUCTION MAY PROCEED Mojan-Karimigud Tehrani

DATE 6-7-83

CONSTRUCTION O.P. REC'D _____

CONTRACTOR RECEIVED R. LERRY DATE 6-8-83

PIPE SUPPORT INSTALLATION WORKLIST ^{A-1} Pg 15

ORDER NO 413-143^{SL} SYSTEM 10 PRIORITY 35

EV: 60 AREA: H DWG. NO. SK SHT. 147

Y NO. _____ REV. DCO NO QA ACCEPT

OLD ENGINEER: [Signature] DATE: 3/14/84

VIEWED BY: _____ DATE: _____

INSTRUCTIONS TO CRAFT

THE FOLLOWING WORK IS REQUIRED TO COMPLETE THIS PIPE SUPPORT:

REWORK TO DCN 1350-011
!! RESET HILTI KWIK BOLT TO
ACHIEVE PROPER EMBEDMENT.

~~CONFIDENTIAL~~

NLS

SEE HOLD PER DCN 1350-011 3/13 DCN IN PACKAGE

2/27/84

AREA H	ELEV. 605	NOTICE NO. 1350-011
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DEFICIENT CONDITION: During Inspection of Final AS-Built Hanger = 413-143-84 Rev 0, Line = 2-51-930-3 sys 10 R/R. It was found to have several violations. 1) Anchor violation per ESD. 223 p. 4123. Lower Right 5/8" x 4 1/2" Rivet has a min. emb. of 2 1/16". Note = 2 on sh-147, still has existing 5/8" studs. "New studs must be installed". 1) Not loose on 5/8" studs. See Note 2 on sh-147.

ORIGINATOR'S SIGNATURE:
John Paul [Signature]

HOLD TAG APPLIED: Yes	TAG # 1350-011	INITIALS [Signature]	DATE 1-15-84
-----------------------	----------------	----------------------	--------------

RECOMMENDED DISPOSITION:
1) Re Work Hanger 1) Reset HKB. to correct embedment.
2) SEE ATTACHED MEMO TO PDC. NUTS WILL BE TIGHTENED BY NPD - NO NEED FOR WAGER.

Replace 5" studs with new studs per note #7 on X sheet.

2-27-84

FIELD ENGINEER <i>J. N. [Signature]</i> 2-27-84
FIELD QC INSPECTOR <i>[Signature]</i> 1/350
CHIEF ENGINEER <i>[Signature]</i>
LEVEL III <i>[Signature]</i> 3-13-84
FIELD QA/QC MANAGER <i>[Signature]</i> 2-27-84

FIELD QA/QC MANAGERS EVALUATION: APPROVED AS RECOMMENDED OTHER

NON-COMFORMANCE - D.R.# _____

REPAIR ORDER

REWORK/REINSPECT

INTERNAL AUDIT

OTHER THIS DCN Z FAS
SEE COMMENTS SECTION

COMMENTS: If this hanger and valve is to be reworked, request that a N.P.O. Line Clearance be attached to protect craft from injury for construction.

CAUSE CODE 3

CONTROLLED COPY

DATE 3/11/84 FIELD QA/QC MANAGER *[Signature]*

CORRECTIVE ACTION REQUIRED BY: ENGRG OC CRAFT SUPV NOT LATER THAN: ASAP

STEPS TO PREVENT RECURRENCE: NOT APPLICABLE
Instruct Personal of Applicable Requirements N/A TO ENGINEERING. Adam C. [Signature] 2-27-84

FOR INFORMATION ONLY

RESPONSIBLE SUPERVISOR _____ DATE _____ FIELD QA/QC MANAGER _____

DEFICIENT CONDITION CLOSED: _____ DATE _____ SIGNATURE: _____

FULLMAN POWER PRODUCTS CORPORATION

122 37177
AVILA BEACH, CALIFORNIA 93424 (805) 595-2356

M. MICHAELS

DATE 2-27-84

PTGC AREA LEAD

SUBJECT DCU 641A

REV. ϕ (DC-2-EP-10544) OF SUPPORT
413-143SL CALLS FOR "LONGER STUDS"
TO BE USED TO CONNECT ITEM ①
TO THE MOTOR HOUSING. QC INSPECTION
NOTED THAT EXISTING STUDS ARE OLD
AND ONE HAS A LOOSE NUT. EXISTING
STUDS HAVE ADEQUATE PROJECTION TO
ACCOMMODATE ITEM ①. PLEASE HAVE THE
NUTS CONNECTING ITEM ① TO MOTOR
HOUSING TIGHTENED. BY Adam C. Weinstein

DATE

RECEIVED BY Howard Goethen P.T.G.C.
WILL SEND TO PROPER GROUP.

FOR INFORMATION ONLY

SIGNED



Form: F-107

R-1 7-11-76
R-2 6-16-80

PSA SHUBBER CHECK LIST

DATE: 5-14-83 INSPECTOR: [Signature] 10-26-83

LINE NO: 930 SYS: 10 DRWG. NO: SK413-143 SHT: 147

✓ INDICATES ACCEPTABILITY

SNUBBER AXIS WITHIN 10° OF OPTIMUM (NO INTERFERENCE AT REAR BRACKET OR FORWARD ADAPTER)	✓
COLD SETTING WITHIN FIELD TOLERANCE ($\pm 1/4$ ") OS $1 1/3$ <i>AK</i> *	✓
Transition Tube bolts/cap screws tightened, Torque sealed, and Safety Wired (if applicable) at final inspection	✓
Bolt/cap screw lock washers installed (if applicable)	N/A
REAR BALL JOINT NOT LOOSE OR PUSHED OUT	✓
REAR BRACKET COTTER PINS SPREAD	✓
REAR BRACKET WASHERS INSTALLED CORRECTLY	✓
PSA SHUBBER CLAMP INSTALLED	N/A
CLAMP LINED IF REQUIRED	N/A
CLAMP SHORTENED INSPECTION ONLY	N/A
GRADE 5 BOLT INSTALLED IN PROPER HOLE	N/A
LOCK NUT INSTALLED ON GRADE 5 BOLT	N/A
1-3 BOLT THREADS EXPOSED BEYOND NUT ON ALL CLAMP BOLTS	N/A
ALL CLAMP NUTS TIGHTENED	N/A
NEW-STYLE LOCK NUT NOT BACKED OFF OR REMOVED ONCE TIGHTENED	N/A
SPACER INSTALLED IN PROPER LOCATION	N/A
FORWARD ADAPTER BALL JOINT NOT LOOSE OR PUSHED OUT	✓
WASHERS INSTALLED EACH SIDE OF FORWARD ADAPTER	✓
EXTRA REAR BRACKET WASHERS INSTALLED CORRECTLY	NA
EXTRA REAR BRACKET COTTER PINS SPREAD	N/A
SNUBBER NOT DAMAGED INTERNALLY	✓
PROTECTIVE BOOT INSTALLED	N/A

NOTE: IF THERE IS MORE THAN A SMALL AMOUNT OF PLAY WHEN ONE END OF THE SHUBBER IS TWISTED WITH RESPECT TO THE OTHER, THE SHUBBER IS BROKEN INTERNALLY AND MUST BE REPLACED.

*N/A - HOLD POSITION DURING BOOT INSTALLATION ONLY.

1. WORKER OF SERVICE IDENTIFY THE NUMBER.		1160/3465	✓	10-93
2. WORKER IDENTIFY THE NO. OF WORKERS UNDER THE WORKER'S NO.		1160/3465	✓	
3. WORKER IDENTIFY THE NUMBER OF P.O.		1160/3465	✓	88
4. INSTALLATION POINT TO TOLERANCE		TYPE: 4112/PHILLIPS	✓	1-9-93
See back of page	5. THE SIZE INSTALLER	SIZE	NO. OF	TYPE: 4112/PHILLIPS
TORQUE TO 45-68 FT/LB		5/8"Ø	23/24	1160/3465
6. ADDRESS TORQUE		SIZE	TORQUE	1160/3465
		5/8"Ø	15.68	1160/3465
7. TORQUE VALUE NOT RECORDED				1160/3465
8. END OF BOLT WITH NO RECORD OF DATE PLACED		Bondwood 10-10-93		
9. FIT-UPS: A. Plate attachment installation:		(1) Bolt No:	N/A	N/A
		(2) P.O. No:	N/A	N/A
B. Support Members:		TYPE	SPECIAL INSTRUCTIONS	
(1) Groove & Bolt Pin Value			NO VERIFY FIT-UP OF	10-10-93
			ITEM # 2	10-24-93
C. Parts Established Value Required				N/A
10. THE FITTING VALUE OF FACT, %		1160		BACKLOG
11. NUMBER OF THE WORKER (THE NUMBER UNDER THE WORKER'S NO.)				N/A
12. NUMBER OF BOLT UNDER WORKER'S NO.				
13. THE WORKER'S IDENTIFICATION NUMBER:		1160	690	10-26-93
TORQUE RUBBER CAPSCREWS TO 22 INCH 22 INCH		1160/3465	✓	10-26-93
QC to verify hole size in plate		1160/3465	✓	10-26-93
14. THE WORKER'S IDENTIFICATION NUMBER:				
A. Bolt Surface Class		2412	✓	10-26-93
B. All Surfaces Covered/Insulated		3413	✓	10-26-93
C. Bolt Size Classifies Were Inspected		680	✓	10-26-93
15. THE WORKER'S IDENTIFICATION NUMBER AND IDENTIFICATION:				
A. IDENTIFICATION AND IDENTIFICATION NUMBER (TYPE & NO.)		TR 10/26/93	✓	
B. THE WORKER'S IDENTIFICATION NUMBER		N/A	✓	N/A
		N/A	✓	N/A
		TR 10/26/93	✓	10-26-93
		TR 10/26/93	✓	10-26-93
C. THE WORKER'S IDENTIFICATION NUMBER				
D. THE WORKER'S IDENTIFICATION NUMBER				
E. THE WORKER'S IDENTIFICATION NUMBER				
F. THE WORKER'S IDENTIFICATION NUMBER				
G. THE WORKER'S IDENTIFICATION NUMBER				
H. THE WORKER'S IDENTIFICATION NUMBER				
I. THE WORKER'S IDENTIFICATION NUMBER				
J. THE WORKER'S IDENTIFICATION NUMBER				
K. THE WORKER'S IDENTIFICATION NUMBER				
L. THE WORKER'S IDENTIFICATION NUMBER				
M. THE WORKER'S IDENTIFICATION NUMBER				
N. THE WORKER'S IDENTIFICATION NUMBER				
O. THE WORKER'S IDENTIFICATION NUMBER				
P. THE WORKER'S IDENTIFICATION NUMBER				
Q. THE WORKER'S IDENTIFICATION NUMBER				
R. THE WORKER'S IDENTIFICATION NUMBER				
S. THE WORKER'S IDENTIFICATION NUMBER				
T. THE WORKER'S IDENTIFICATION NUMBER				
U. THE WORKER'S IDENTIFICATION NUMBER				
V. THE WORKER'S IDENTIFICATION NUMBER				
W. THE WORKER'S IDENTIFICATION NUMBER				
X. THE WORKER'S IDENTIFICATION NUMBER				
Y. THE WORKER'S IDENTIFICATION NUMBER				
Z. THE WORKER'S IDENTIFICATION NUMBER				

PAGE 1 of 2

1. TITLE OF PROJECT		3413	✓	A
2. PROJECT NUMBER			✓	
3. PROJECT STATUS			✓	
4. PROJECT TYPE			✓	
5. PROJECT LOCATION			✓	
6. PROJECT DESCRIPTION			✓	
7. PROJECT OBJECTIVES			✓	
8. PROJECT BUDGET			✓	
9. PROJECT RISK			✓	
10. PROJECT IMPACT			✓	
11. PROJECT SCHEDULE			✓	
12. PROJECT TEAM			✓	
13. PROJECT DOCUMENTATION			✓	
14. PROJECT COMMUNICATION			✓	
15. PROJECT EVALUATION			✓	
16. PROJECT CLOSURE			✓	
17. PROJECT ARCHIVE			✓	
18. PROJECT LEGAL			✓	
19. PROJECT ETHICS			✓	
20. PROJECT SECURITY			✓	
21. PROJECT COMPLIANCE			✓	
22. PROJECT INCLUSION			✓	
23. PROJECT TRANSPARENCY			✓	
24. PROJECT ACCOUNTABILITY			✓	
25. PROJECT INTEGRITY			✓	
26. PROJECT RESPECT			✓	
27. PROJECT RESPONSIBILITY			✓	
28. PROJECT ETHICS			✓	
29. PROJECT COMPLIANCE			✓	
30. PROJECT SECURITY			✓	
31. PROJECT LEGAL			✓	
32. PROJECT ETHICS			✓	
33. PROJECT COMPLIANCE			✓	
34. PROJECT SECURITY			✓	
35. PROJECT LEGAL			✓	
36. PROJECT ETHICS			✓	
37. PROJECT COMPLIANCE			✓	
38. PROJECT SECURITY			✓	
39. PROJECT LEGAL			✓	
40. PROJECT ETHICS			✓	
41. PROJECT COMPLIANCE			✓	
42. PROJECT SECURITY			✓	
43. PROJECT LEGAL			✓	
44. PROJECT ETHICS			✓	
45. PROJECT COMPLIANCE			✓	
46. PROJECT SECURITY			✓	
47. PROJECT LEGAL			✓	
48. PROJECT ETHICS			✓	
49. PROJECT COMPLIANCE			✓	
50. PROJECT SECURITY			✓	
51. PROJECT LEGAL			✓	
52. PROJECT ETHICS			✓	
53. PROJECT COMPLIANCE			✓	
54. PROJECT SECURITY			✓	
55. PROJECT LEGAL			✓	
56. PROJECT ETHICS			✓	
57. PROJECT COMPLIANCE			✓	
58. PROJECT SECURITY			✓	
59. PROJECT LEGAL			✓	
60. PROJECT ETHICS			✓	
61. PROJECT COMPLIANCE			✓	
62. PROJECT SECURITY			✓	
63. PROJECT LEGAL			✓	
64. PROJECT ETHICS			✓	
65. PROJECT COMPLIANCE			✓	
66. PROJECT SECURITY			✓	
67. PROJECT LEGAL			✓	
68. PROJECT ETHICS			✓	
69. PROJECT COMPLIANCE			✓	
70. PROJECT SECURITY			✓	
71. PROJECT LEGAL			✓	
72. PROJECT ETHICS			✓	
73. PROJECT COMPLIANCE			✓	
74. PROJECT SECURITY			✓	
75. PROJECT LEGAL			✓	
76. PROJECT ETHICS			✓	
77. PROJECT COMPLIANCE			✓	
78. PROJECT SECURITY			✓	
79. PROJECT LEGAL			✓	
80. PROJECT ETHICS			✓	
81. PROJECT COMPLIANCE			✓	
82. PROJECT SECURITY			✓	
83. PROJECT LEGAL			✓	
84. PROJECT ETHICS			✓	
85. PROJECT COMPLIANCE			✓	
86. PROJECT SECURITY			✓	
87. PROJECT LEGAL			✓	
88. PROJECT ETHICS			✓	
89. PROJECT COMPLIANCE			✓	
90. PROJECT SECURITY			✓	
91. PROJECT LEGAL			✓	
92. PROJECT ETHICS			✓	
93. PROJECT COMPLIANCE			✓	
94. PROJECT SECURITY			✓	
95. PROJECT LEGAL			✓	
96. PROJECT ETHICS			✓	
97. PROJECT COMPLIANCE			✓	
98. PROJECT SECURITY			✓	
99. PROJECT LEGAL			✓	
100. PROJECT ETHICS			✓	

Page 2 of 2

SEE PAGE 1 OP 2

Work

ONLY WORK MEDIA IS TO CODE ITEM ①
TO SUIT 413-1443L



80

REVISION HISTORY

1/11/11

old

new

new

new

new

275-1432 SK - 0

1. LOCATION OF SERVICE UNIT: 9450 W 116th St

2. SERVICE UNIT MODEL AND MANUFACTURER: 3450 A

3. ACCESS REQUIRED AND PROVIDED BY A.C. TYPE: MITCH/PHILLIPS

4. PANEL/PLUG COVER TO TELEPHONE TYPE: MITCH/PHILLIPS NA * NA

5. TYPE OF WIRE: 5/8" 23/4" WIRE: MITCH/PHILLIPS

6. ACCESS REQUIRED: 5/8" 55" 3450 * 116th St

7. WIRE COLOR BY PAGES: 999-89 dec 3-10-84

8. EACH SET BONES FROM TO NUMBER OF BONE PAGES: NA * NA

9. FIT-UPS: A. PADS ATTACHMENTS INSTALLATION: (1) East NA NA * NA (2) P.C. Co: NA * NA

10. SUPPORT MEMBERS: (1) Groove & Pull Pin Toler: NA * NA

11. PUMP ESTABLISHED WIRE TOLER: NA * NA

12. WIRE FROM BONES FROM TO PAGES: NA * NA

13. NUMBER OF PUMP ATTACHMENTS (FOR SEPARATE PAGES FROM) 7.1.1

14. NUMBER OF BONE SUPPORT MEMBERS: NA * NA

15. SPECIAL WIRE INSTALLATION: 15/01 15/01 15/01 15/01

16. WIRE DESCRIPTION: 15/01

17. TOTAL WIRE SUPPORT-MEMBERS: A. WIRE SURFACE CLEAN B. WIRE SURFACE REPAIRED C. WIRE SURFACE COATED

18. NOTES FOR WIRE SUPPORT AND INSTALLATION: 15 22 21

19. SUPPORT MEMBERS: A. SUPPORT MEMBERS INSTALLED AND TIGHT B. SUPPORT MEMBERS INSTALLED AND TIGHT C. SUPPORT MEMBERS INSTALLED AND TIGHT

20. WIRE & CABLE PLACES SHOWN WHERE NECESSARY: 15 22 21

21. WIRE SUPPORT MEMBERS: 15 22 21

22. WIRE SUPPORT MEMBERS: 15 22 21

23. WIRE SUPPORT MEMBERS: 15 22 21

24. WIRE SUPPORT MEMBERS: 15 22 21

25. WIRE SUPPORT MEMBERS: 15 22 21

26. WIRE SUPPORT MEMBERS: 15 22 21

27. WIRE SUPPORT MEMBERS: 15 22 21

28. WIRE SUPPORT MEMBERS: 15 22 21

29. WIRE SUPPORT MEMBERS: 15 22 21

30. WIRE SUPPORT MEMBERS: 15 22 21

DW 1350-011

DC-2-E-P-10544 REV. C

SHEET 2 OF 7

Does this change affect any additional documents? If yes, list drawings and specifications on Design Document list and attach. If any of the following, list below:

NRC Licensing Submittal: No Yes _____

Design Classification: No Yes 10
RHR

Design Criteria Memorandum: No Yes _____

Design Calculations: No Yes _____

Design Verification: No Yes _____

Others: No Yes _____

R
E
V
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O
N

If the above is yes, the appropriate licensing engineer (NRC) has been notified to initiate revisions.

FOR INFORMATION

[Signature] 5/4/83
Engineer Date

[Signature] 5-4-83
Group Supervisor Date

Coordination Required: Yes No

Coordinated With:

Dept.	Engineer (Signature)	Date
ORIG	STATUS COORDINATION	
STRESS	SEE 3.2	
CIVIL	[Signature]	5/4/83

COORDINATION

CONTROLLED COPY

PACIFIC GAS AND ELECTRIC CO.
ENGINEERING DEPARTMENT
SAN NO. 524

NUCLEAR PROJECT
DESIGN CHANGE
Diablo Canyon #2
(PLANT)
From: B. TJCA

DATE: 4-11-83
NO. DC-2-E-P-10544 REV. 0
Sheet 1 of 7

To: V.P. MERCADO
PLANT DESIGN GROUP SUPERVISOR

PIPE SUPPORT GROUP

Description of Change: ADD PIPE SUPPORT NUMBER: 413/143SL
ON LINE NO. 2-SI-930-II [B] ISO NO. 449287
SYSTEM: RESIDUAL HT REM PP=1 RECIRC.
AS SHOWN IN THE ATTACHED DRAWING(S).
THIS NEW SUPPORT IS REQUIRED AS A RESULT OF PIPING STRESS ANALYSIS
NO. G-003-08 REV. 0 NODE POINT: 222

Estimated Total Costs: \$ 2,500.00 10
RHR

Effect on Project Schedules: None Other (Explain)

Construction Status: Not Started Partially Complete Completed

Documents affected by change: ISO NO. 449287
AREA DWG. NO. 500922

List of Attachments: SKETCH NO. SK-413/143SL REV. NO. 0
SECRET NOS. 147X, 147A, 147B
CITY/EX/SUE/MEC/CIV_ELC_INSTR/ES/VIC
2-5 PPS.

REQUEST

Requested Change is:

Approved at the site by _____ per telecon with _____ on _____

Approved FIELD TO ISSUE AS-BUILT WITHIN 30 DAYS AFTER INSTALLATION.

Noted, document change not required

Rejected (explain)

Work is is not authorized to proceed prior to design document revisions in accordance with this Design Change Notice.

Safety-Related Work: Yes No Additional documents attached: Yes No

Reviewed By: [Signature] Date: 5/4/83

Approved By: [Signature] Date: 5-4-83

Discipline Engineer Group Leader/Supervisor

Nuclear Project Engineer Review Required. Signature: [Signature]

By: [List of Names]

RECEIVED ENGINEERING	RECEIVED DESIGN DRAFTING	RECEIVED A/Z-CONSULTANT	REVISIONS COMPLETED	REVISIONS APPROVED
By _____	By _____	By _____	By _____	By _____
Date _____	Date _____	Date _____	Date _____	Date _____

PULLMAN POWER PRODUCTS
ACCOUNTING REQUIREMENTS (A-1)

ATTN: COST ROOM

Write the following code on the time sheet in the "Manager No. or Job No." section of Manager Time Sheets or in the "Place No./Weld No." section of Worker Time Sheets when working on the attached work authorization:

413-14351-4001
2-62/19-10
P265913-1663

Additional or additional work authorizations pertaining to this work authorization were received in the field request meeting. No other work authorization information is required in this section of the time sheet.

The following pertains to the Pullman Accounting Office only:

DOI NO. 10544

WORK REQUEST NO. _____

DRAWING NO. _____

DATE ISSUED 9-13-83

FOR INFORMATION ONLY

A-1
Pg 26

ENGINEERING



SPECIFICATION

SPEC. NO.
3711

ENGINEERING DEPARTMENT

ES 1000

WELDING PROCEDURE RECOMMENDATIONS

CODE CLASSES	LINE SPEC.	ACCEPTABLE PROCEDURE	WALL THICKNESS LIMITS	USE OF PROCEDURE
A & B SEC. I	J, K, K2, K5, K6, K12, K13, K14, K15	4/5	3/16" to 3.020"	BUTT WELDS, GTAW ROOT, SPAW WELDOUT
		92/93	1/16" to 0.50"	FILLET & SOCKET WELDS - SPAW
		201	1/16" to 0.50"	BUTT, FILLET, SOCKET WELDS - SPAW
		202(1)	1/16" to 0.50"	OPEN BUTT WELDS ONLY - GTAW
		203(1)	1/16" to 0.75"	OPEN BUTT WELDS ONLY - GTAW
		200(2)	3/16" to 1.5"	BUTT WELDS, GTAW ROOT, E6016 WELDOUT
		204(2)	3/16" to 1.5"	OPEN BUTT, GTAW ROOT, E6016 WELDOUT
C & E	J, K, K2, K5, K6, K12, K13, K14, K15	SAME AS ABOVE AND INCLUDING		
		7/8	3/16" to 3.020"	BUTT WELDS, BACKING RING, SPAW WELDOUT
E SPECIAL	K14, K15	4/5	3/16" to 3.020"	BUTT WELDS, GTAW ROOT, SPAW WELDOUT
		92/93	1/16" to 0.50"	FILLET & SOCKET WELDS - SPAW
		201	1/16" to 0.50"	BUTT, FILLET & SOCKET - SPAW
		203(1)	1/16" to 0.75"	OPEN BUTT WELDS - GTAW
		80/89(1)	3/16" to 3.020"	OPEN BUTT, GTAW ROOT, SPAW WELDOUT
A & B C & E SEC. I	S, S1, S2, S3, S5, S6 S8	15/16	1/4" to 1.4"	BUTT WELDS (GTAW ROOT, SPAW WELDOUT) HEAVY WALL SOCKET & FILLET WELDS
		79/80	1/16" to 1.0"	BUTT WELDS, 1/16" to 1/4" WALL INSERT, GTAW
		129	1/16" to 0.50"	OPEN BUTT, FILLET & SOCKET WELDS

- Notes: 1) Requires Q.A. Managers approval before using on Mainsteam and Feedwater Systems
 2) Requires Q.A. Managers approval before using anywhere on the site.

FOR INFORMATION ONLY

PART BY R.S. FINK

DATE OF ISSUE 6/20/78

PAGE 1 OF 1

DATE OF REV. 7/7/78

[Handwritten signature]
10/10/78

[Handwritten signature]
10/10/78

DRINKING WATER



QUALITY CONNECTION

SPEC. NO.
3711

DRINKING WATER

3711

Carbon Steel (F1) to Carbon Steel (F1)

PROCEDURE CODE NO.	POSITION AND WALL THICKNESS LIMITS 1/16" to 1.5"	BACKING PINKLE	BACKING	BUFF FIT-UP	MOOT	WELDING METHOD	POST-WELD HEAT TREATMENT	USAGE AND TYPES OF WELD
0	up to 2" O.D. OIRY 1/16" to 1.125"	None	Solar Argon Flux None	Open Butt Open	GTAW E705-2 or -6 SMAW E7015	SMAW E7015 16 or 10 SMAW E7015	As-welded or Heat Treated	Butt welds only
00	26 only 3/16" to 1.125"	None	None	Open	SMAW E7015	SMAW E7015 16 or 10	None	Class 900 Flare Beatas
1/5	56 only 3/16" to 3.625"	Argon or None	None	Butt Insert E705-2	GTAW E705-2 or -6	SMAW E7015 16 or 10	As-welded or Heat Treated	Class 900 Flare Beatas Flare Beatas Butt Welds Only
1/0	1/16" to 3.625"	None	Backing Argon or None	3/16" to 1-1/2" Butt Open	SMAW E7015 16 or 10	SMAW E7015 16 or 10	As-welded or Heat Treated	Class 900 or 904 Butt Welds and Structural Steel
22/53	1/16" to 0.50" (26) 1/16" to 0.812" (56) 1/16" to 3.625" (5)	None	None	Open Butt	SMAW E7015 16 or 10	SMAW E7015 16 or 10	As-welded or Heat Treated	Butt welds only Structural Steel Fllets, sockets, & couplings only
200/205	3/16" to 3.625"	Argon or None	None	Open Butt Insert E705-2	GTAW E705-2 or -6 SMAW E7015	SMAW E7015 16 or 10	As-welded or Heat Treated	Butt welds only Haloctams, Fuelwater and Steam Generator
201	3/16" to 1.5"	Argon	None	Insert E705-2	GTAW E705-2 or -6	GTAW E705-2 or -6	As-welded or Heat Treated	Molds Only Butt, Fllets, socket and couplings
202	1/16" to 0.416"	Argon	None	Open Butt	GTAW E705-2 or -6	GTAW E705-2 or -6	As-welded or Heat Treated	Butt, Fllets, sockets and couplings
203	1/16" to 0.416"	None	None	Open Butt	GTAW E705-2 or -6	GTAW E705-2 or -6	As-welded or Heat Treated	Butt, Fllets, sockets and couplings
204	3/16" to 1.5"	None	None	Open Butt	GTAW E705-2 or -6	SMAW E7015 16 or 10	Heat Treated Heat Treated Only	Butt welds only Haloctams, Fuelwater and Steam Generator

Notes: 1) Requires O.A. Buyer's approval before using Argon and Fuelwater Systems.

2) Requires O.A. Buyer's approval before using Argon on the 201.

3) For Fllets, sockets, and couplings delete Insert and post pay and follow with balance of pass.

4) Argon backing purge required on the GTAW part of the process only

5) Wall thickness limits applies to material requiring heat treatment

FOR INFORMATION ONLY

A-1
Pg 29

ENGINEERING



SPECIFICATION

SPEC. NO.
8711

ENGINEERING DEPARTMENT

ES 2-227

WELDING PROCEDURES

This procedure is a reference guide for approved welding procedures. Although the welding procedure may be qualified for more than this procedure recommends, the recommendations of this procedure shall apply unless the Welding Engineer gives permission to deviate from this procedure. No deviations from the approved welding procedures shall be permitted.

FOR INFORMATION ONLY

DATE OF ISSUE	DATE OF REVISION
<i>12/11</i>	<i>12/11</i>

SHEET 5 OF 7

76-1463 (11-80)

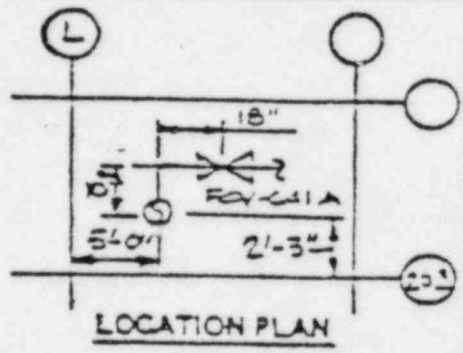
AREA <u>2-H</u>	LINE <u>2-S-930-3-15</u>	HANGER SYMBOL <u>DP 222</u>
EL <u>60'-0"</u>	<u>RUR SYSTEM</u>	VERT.-SKEW <u>SUB.</u>
		LOC ON DWG <u>500422</u>

DESIGN CLASS I
CODE CLASS B

CALLED NORTH



10
RHR



NO. OF ASSEMBLIES REQUIRED

NO	REQ'D	MATERIALS PER ASSEMBLY
1	1	R 1/2" x 10' x 0'-10" (SEE DETAIL SECTION A-A)
2	1	BAR 1/2" x 2' x 0'-2"
3	1	PSA-1/2, NF, WITH TRANSITION TUBE KIT C.S = 13.8 HS. = 1 3/16 (NOTE ONE REAR BRACKET INCLUDED IN ASSY) STROKE = 2 1/2"
4	1	W 4 x 13 x 1'-7" LG.
5	1	R 1/2" x 10' x 0'-10" W/ 4 - 1 1/8" HOLES PER DETAIL SHOWN
6	4	5/8" S x 6" LG HILT KWIK BOLTS, MIN EMBED = 2 3/4"
7	1	EXTENSION PIPE 1.05 O.D x .113 WALL THK (LENGTH BY FIELD)
8	1	REAR BRACKET FOR PSA-1/2.

ORIGINAL
DRAWING

APPROVED WITH
CONDITION THAT
NO REBAR BE CUT

FOR REFERENCE

DC-2-E-P 10544 2/10

SK-413/435 REV. 0

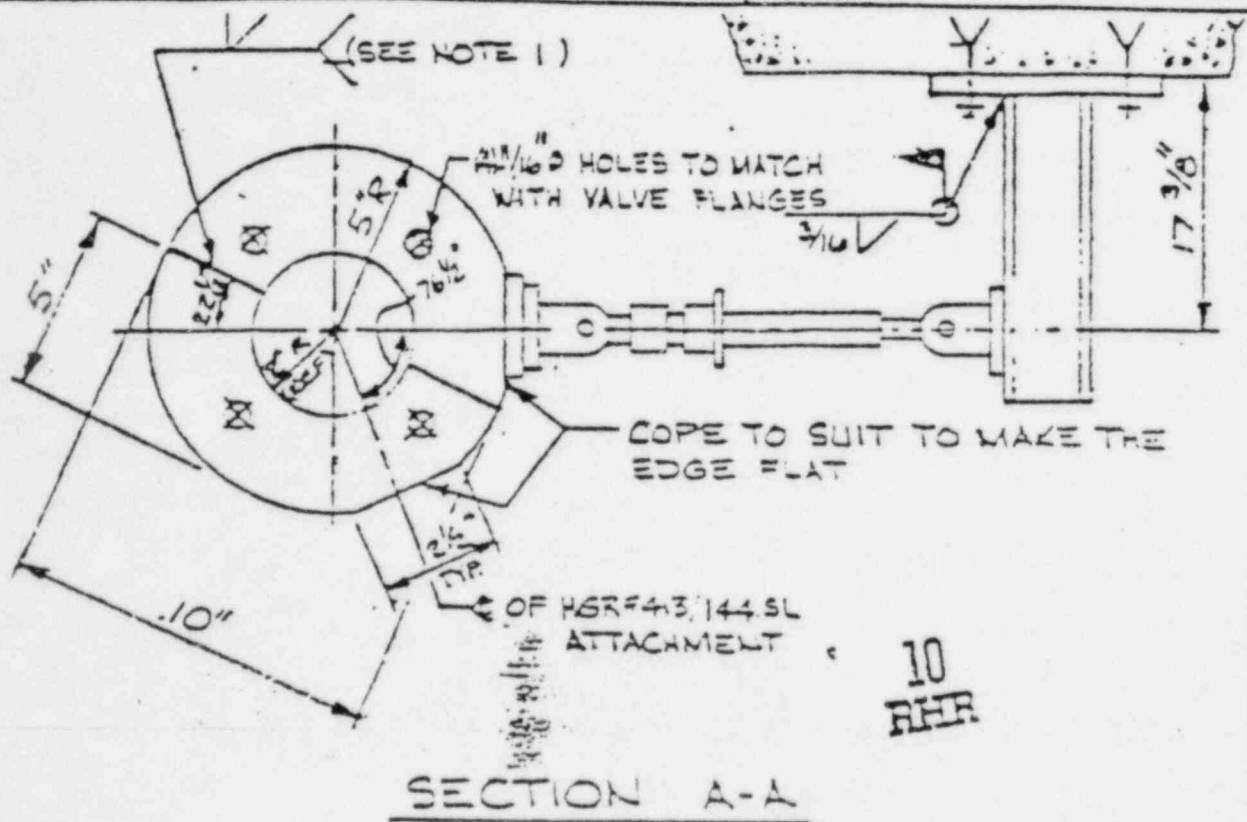
DESIGN W/D	DRAWING NO	
CHECKED	DATE	

PROJECT: <u>DIABLO CANYON</u>	UNIT: <u>2</u>	SHT. <u>127</u> OF <u>175</u> SHTS	P G & E CO	
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SHEET 7 OF 7

76-1117 Rev 3-76

AREA <u>2-H</u>	LINE <u>2-51-930-3 II</u>	HANGER SYMBOL <u>DP 222</u>	
EL <u>60'-0"</u>	<u>RHR SYSTEM</u>	VERT-SKEW <u>SLUR.</u>	
		LOC ON DWG <u>500922</u>	



INFORMATION ONLY

ORIGINAL DRAWING


"APPROVED WITH CONDITION THAT NO REBAR BE CUT"

FOR REFERENCE

DC-2-E-P 10544 2810
SK. 473/439 REV. 0

PROJECT: <u>DIAGNOSTIC</u>	UNIT: <u>2</u>	SHT. <u>1</u> OF <u>1</u>	SATS	P G & E CO	ISSUE: REV
		DESIGN: <u>M.D.</u>	DRAWING NO: <u>0544</u>		
		CHECK: <u>M.D.</u>			
				MICROFILM	

SHEET 4 OF 7

AREA <u>2-H</u>	LINE <u>2-91-930-3</u>	HANGER SYMBOL <u>DP222</u>	
EL <u>60'-0"</u>	<u>RHR SYSTEM</u>	WEST-SYEN ENCL.	
		LOC ON DWG <u>500922-</u>	

76-1483(4-82)

REV	ISSUE DATE	DESCRIPTION OF CHANGES	PREPARATION			APPROVAL		
			DSGN	OWN	CHKD	DUS	ENGR	SUPV ENGR

<u>1</u>		SUPPORT ADDED PER STRESS PROB G-003-08 BY GPD ON 3-23-83	<u>U.D</u>	<u>K.M</u>	<u>V.K.H</u>	<u>R</u>	<u>-</u>	<u>BT</u>
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10
RHR

FOR REFERENCE

ORIGINAL DRAWING

"APPROVED WITH CONDITION THAT NO REBAR BE CUT"

FOR INFORMATION ONLY

NOTES:
 1. THE RING IS IN TWO HALVES AND IS TO BE WELDED ON UNDERSIDE AFTER BOLTING TO THE VALVE FLANGE
 2. FIELD TO REPLACE EXISTING 5/8" Ø STUDS WITH LONGER STUDS OF SAME SPECIFICATION: ASTM 193 GR 57

DC-2-E-P10544 22/0
 SK-413/439 REV. 0

SHEETS ASSIGNED TO THIS HANGER SYMBOL (TOTAL 4 SHEETS)

147	142	147	142																	
-----	-----	-----	-----	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
											DSGN	U.D	DRAWING NO						
											OWN	K.M							
											CHKD	V.K.H							

PROJECT: ... UNIT: 2 147 X OF ... SHS P G & E CO

ISSUE	REV
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A-1
pg 34

PACIFIC GAS AND ELECTRIC COMPANY

PG&E +

DIABLO CANYON PROJECT • GENERAL CONSTRUCTION
P.O. BOX 117 • AVILA BEACH, CALIFORNIA 93424 • (805) 595-2324

February 29, 1984

P. Stieger
Pullman Power Products
P.O. Box 357
Avila Beach, California 93424

Dear Mr. Stieger:

Pullman Power Products is presently installing seismic valve supports per various DCN's. However, no notification is being given to J. Arnold, Mechanical Department - Attention: Valve Maintenance, prior to installation of the supports. This could cause violation of valve Environmental Qualification Procedures.

Written notification for each seismic valve support shall be given to Miscellaneous Mechanical prior to start of work.

Valve Maintenance will issue a Valve Maintenance Report and order parts as required, to allow installation of the support. In this manner all valve QA/QC and Environmental Qualification Procedures can be complied with.

Please supply a list of all Unit 2 seismic valve supports completed or presently being worked.

ORIGINAL SIGNED BY
D.A. ROCKWELL

D. A. Rockwell
Project Field Engineer

Reply Requested: Yes
Due Date: March 5, 1984
JArnold/RT:cb

- cc: G. V. Cranston
- R. O. Etzler
- H. B. Friend
- J. B. Hoch
- J. R. Manning
- G. H. Moore
- E. Rosetta
- R. Lieber
- J. Macias
- R. Toomire

FOR INFORMATION ONLY

DCC

12276

MINOR VARIATION REPORT

Identification: Location Diablo Canyon Unit No. 2 Reference Spec. No. 9711 Page 1 of 2
 Contract: Pullman Power Products Contractor: W/A Report No. 11-4490
 Date sent to Contractor: Yes No Name: PULLMAN POWER PRODUCTS MVR No.

DESCRIPTION OF DISCREPANCY

Violation of Project Instruction # 6
 Location: See Page 2 WEB HAMILTON
RODENHORN FILE PELOUSE
FLEDERMAN KARWEL MADSON
LANKES FULL DALLS
GURLEY MURPHY C. ROBERT
ANDERSON MCGREW CORNISH
 Date: 5/11/83 WIS
 Location: See Page 2

Date of Completion: 6/14/83
 City Representative: [Signature]
 This minor variation report (1) is Not Reported as: (2) is Not a Nonconformance May be Reportable Per Title 10 CFR, Part 211
 Date of Report: 6/22/83
 Date of Disposition: 6/14/83
 Disposition Accomplished:

FOR INFORMATION ONLY

Approved By: _____ Date: _____
 Date: _____
 Attachments: _____

EXPLANATION:

During construction of pipe support 412-143SL, 4 bolts were removed from the motor drive support, PCV-641-A, by Pullman craft. The process sheet in the Special Remarks section stated before installing Item 1, contact engineering with all contact N.P.O. for clearance. Pullman Power failed to do this. On 5/10/93, at 12:10 P.M., N.P.O. activated the motor drive from the Control Room causing it to unscrew itself, damaging the valve stem and valve stem drive gear. Craft did have the motor drive suspended with slings and a chain fall, preventing motor drive from falling to the floor and causing more damage.

DISPOSITION:

- 1) Those hangers that will require clearances will be highlighted in red, on 3-week schedule.
- 2) "Clearance Required" will be stamped in red on cover and process sheet.
- 3) A memo to all project team members and contractor personnel will be generated noting that Unit 2 will be treated similar to Unit 1, where clearances are required.
- 4) Training Sessions will be held to reinforce the necessity of clearances on operating systems. The Sessions will be given by the Residents and Contractor supervision.
- 5) Personnel coverage will be increased in the field by P.T.G.C. and Contractor supervision.
- 6) The three individuals involved in the disassembly have been terminated.
- 7) Valve to be repaired according to approved Procedures per H.P. Foley Co. Valve Maintenance Report # 1845.
- 8) P.P.P. to document this on in-house Non-Compliance Report and provide steps to prevent recurrence.

FOR INFORMATION ONLY

PACIFIC GAS & ELECTRIC COMPANY
DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT

DCPP MAINTENANCE TRAINING MANUAL
COURSE NO. MA050

ENVIRONMENTAL QUALIFICATION
MAINTENANCE TRAINING

REVISION 0
JUNE 16, 1982

PREPARED BY

Bauer / Lewis

APPROVED BY

A. J. Barkens

FOR INFORMATION ONLY

Environmental Qualification Training Outline

FOR INFORMATION ON

SCOPE

The purpose of this training outline is to familiarize Maintenance Department personnel with requirements and responsibilities of the Environmental Qualification Program.

INTRODUCTION

A major category addressed in assuring safe operation of nuclear power plants deals with equipment operation under various environmental conditions. Simply stated, if the equipment is required to operate during and after a worst case accident, we must prove that the equipment can operate in an environment similar to the one caused by such an accident. To verify operability, equipment identified as being potentially exposed to accident environments must be Environmentally Qualified through laboratory tests and/or engineering analysis.

DEFINITION OF ENVIRONMENTAL QUALIFICATION

Environmentally Qualified (E.Q.) equipment is a special category of Safety Related, Vital equipment. This equipment is not only required for safe control of the plant but may also be required to operate in extreme environments of adverse temperature, pressure, humidity, chemistry and radiation that could occur during and following a Loss of Coolant Accident (LOCA) or a Main Steam Line Break (MSLB). Basically, this means that the equipment must not fail under severe environmental conditions resulting from a major plant accident. Another E.Q. consideration identifies equipment which must fail in a safe mode during an accident or which must survive for only a short period after an accident. We will generally address the first requirement since it is most demanding. Currently, E.Q. has been directed toward electrical equipment; however, in the future this attention will expand to most other equipment including seismic considerations. A formal description of E.Q., taken from NRC requirements and used as the basis for our Administrative Procedure D-756 states that,

"...electrical equipment shall have been environmentally qualified for the environment in which it has to operate and for the environment in which it would operate during or following an accident."

"...measures are required to ensure that the environmental qualification of this equipment be maintained as it ages and after repair or replacement."

Now, reread and understand the second statement since it introduces the requirements of E.Q. which generally affect our daily maintenance activities.

E.Q. AFFECTS ON MAINTENANCE

In addition to the maintenance documentation prepared for safety related equipment, we must, on E.Q. equipment, provide detailed descriptions of maintenance work performed as input for failure analysis (tracing) study. We sure to note visual signs of aging or degradation of E.Q. components listed in the applicable maintenance procedure. Second, insure that replacement parts are identical to the parts assemblies in the equipment originally tested and/or analyzed to verify

E.Q. Comparable part numbers will usually satisfy this requirement but, also, always be certain that the parts look alike. It's important to understand that a manufacturer's suggested "equal replacement" is NOT acceptable in this application unless E.Q. is specifically addressed. NRC requirements specify that any material change must be in accordance with the original design requirements and its environmental qualification.

Materials considered susceptible to postulated worst case environment are all from non-metallic groups. Examples which we will encounter are: motor and cable insulations, lubricants, seals, molded switch materials, gasket materials and special conductor terminations.

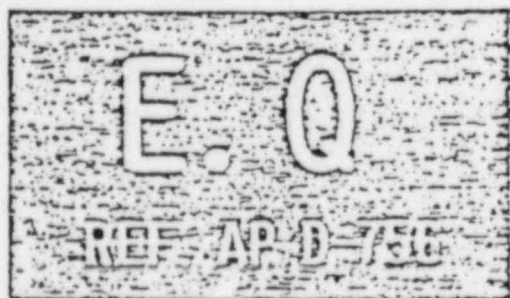
Beyond the additional maintenance documentation needs and the extra care necessary in parts identification and replacement, normal "good maintenance practices" should ensure operable equipment under all environmental conditions. Attention to supplier assembly instructions (when provided), careful gasket preparation and placement, proper connector torquing and strict adherence to the applicable maintenance procedure will guarantee a successful program.

REQUIREMENTS FOR E.Q.

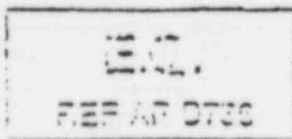
Guidelines for establishment of an E.Q. program are contained in the NRC document NUREG-0588. PG&E management directive to OCPP requiring implementation of an E.Q. program was issued as Administrative Procedure NPAP C-41 and the detailed methods and instructions by which we actually accomplish E.Q. are shown in AP D-755. Questions not answered in this E.Q. training outline should be covered in the latter procedure.

RECAP

When you repair or maintain equipment identified with a bright orange plastic tag, like this:



or are assigned NPPR's, Shop Work Followers or any work directing form stamped in orange ink, like this:



You must first review the applicable maintenance procedure. Give special attention to the special E.Q. components, replace E.Q. parts with identical items only and carefully document what maintenance or repair was performed. Note all unusual material appearances and if E.Q. components fail, save them for examination and testing.

CONCLUSIONS

1. Environmentally Qualified equipment helps us maintain plant safety during normal operations and in accident conditions.
2. The Environmental Qualification Program provides the organization and guidance necessary to maintain qualified equipment in design condition for the life of the plant.
3. Aherence to the E.Q. Program assures compliance with NRC guidelines and regulations.

FOR INFORMATION ONLY

FOR INFORMATION ONLY

A-1
B 40

DIABLO CANYON POWER PLANT ENVIRONMENTALLY QUALIFIED EQUIPMENT

List includes only those currently designated E.Q. devices assigned as Electrical/Mechanical Maintenance responsibility. I&C associated devices are not listed separately. Refer to "controlled listing" of E.Q. devices if up-to-date accuracy is required.

ITEM	"IH" FILE NO.	ITEM	"IH" FILE NO.
EHR5-1	20	8801A	15
EHR5-2	20	8801B	15
FCV-355 Rotork MOV	28	8802A	16
FCV-363 " "	28	8802B	16
FCV-357 Limitorque MOV	16	8803A	16
FCV-440 " "	16	8803B	16
FCV-441 " "	16	8804A	16
FCV-641A " "	16	8804B	16
FCV-641B " "	16	8805A	16
FCV-749 " "	7a	8805B	16
FCV-750 " "	7a	8807A	16
LCV-106 " "	12	8807B	16
LCV-107 " "	12	8809A	16
LCV-108 " "	12	8809B	16
LCV-109 " "	12	8821A	16
LCV-110 ITT Gen. Cntls. EHOV	14	8821B	16
LCV-111 " " " "	14	8835	16
LCV-113 " " " "	14	8976	16
LCV-115 " " " "	14	8980	16
8000A Limitorque MOV	7b	9003A	16
8000B " "	7b	9003B	16
8000C " "	7b		
8072A Target Rock SOV	15		
8072B " " "	15		
8072C " " "	15		
8072D " " "	15		
8105 Limitorque MOV	16	S11-S15 RCFC Motors	5
8106 " "	16	SI Pump 1-1 & 1-2	13
8107 " "	16	RHR Pump 1-1 & 1-2	14
8112 " "	7b	CC Pump 1-1 & 1-2	14
8701 " "	7a	Cont. Elect. Pen.	1
8702 " "	7a	Special Cables-Inside Cont.	2-10,16
8716A " "	16	LOCA Seals - OZ Gedney	13
8716B " "	16	LOCA Splices - Raychem	11

PM Procedures, NPPR's, Shop Work Followers, receipt, storage and inspection documents, M&S action documents and/or other records relating to above equipment should be stamped "E.Q." and forwarded to the on-site E.Q. Coordinator along with a completed Record Management System input form. For inclusion in RMS (legible copies acceptable).

valve
Tony 3549

A-1
B541

THE HOWARD F. FOLEY COMPANY
VALVE MAINTENANCE REPORT

Class I
 Class II

VMR # 1945

* Q.C. Verification is is not required.

ISO # 10-7 Rev. # _____ Ref. DWG. # 9510 34 x 010

Line # 930 Valve Insn # _____ Valve Spec. 9800 Valve # FCV-641A

Area H Elevation 60' Valve MFG. VELAN Unit I _____

4/13/83 (1/1/1983) Unit II _____

REASON FOR MAINTENANCE OR REPAIR:

VALVE WAS DAMAGED DURING HANGER INSTALLATION BY P.P.P., SEE VMR # 4490 ✓
FOR REFERENCE.

THE ENVIRONMENTAL QUALIFICATION OF THIS VALVE SHALL BE PRESERVED AS OUT-
LINED IN PGSE OF NUCLEAR PLANT OPERATIONS PROCEDURE D-756 AND MP-51.3.

RECOMMENDED DISPOSITION:

1. ALL WORK PER HPF QCPM-5.
2. REFER TO LIMITORQUE MANUAL DC-663219-629-1.
3. DISASSEMBLE ACTUATOR & INSPECT INTERNALS FOR DAMAGE. CC Bd Miller II 6-17-83.
4. VISUALLY INSPECT STEM & VALVE INTERNALS. CC Bd Miller II 6-17-83
5. REPAIR OR REPLACE DAMAGED PARTS TO ACTUATOR, STEM & VALVE AS NEEDED. CC Bd Miller II
6. ADD EXXON NEBULA EPO GREASE AS NEEDED TO MAINTAIN APPROX. 4 LBS.
CC Bd Miller II 6-23-83
7. REPLACE ANY DAMAGED GASKETS W/ANCHORITE #425 MATERIAL OF EQUAL THICKNESS.
REPLACED GASKET #107 W/ANCHORITE #425
CC Bd Miller II 6-23-83

COMPLETE AS NOTED Ralph Gourea 6/29/83

DATE:

REF. FOR INFORMATION ONLY

E.O.

IS AUTHORIZED BY FOLEY _____ DATE 6-2-83

POSITION ACCOMPLISHED _____ DATE 5-24-83

DATE 6-22-83

Fullmer Power Products Corporation

MADE IN U.S.A.

OF

CO. INCORPORATED

DCN 1350-011

This description of material is intended to be used as a guide only.

FOR INFORMATION ONLY

Order No: D. Mares Date: _____

SECTION OF PARTS IN ABOVE

- 1. THERE IS NO :: UNIT 2 3/4" DIEPSE
- 2. VIOLATION OF ANCHOR :: DELETE THIS CON-
- 3. EMBEDMENT PER :: DITION FROM DCN
- 4. ESO 223 (DAP) :: 1350-011
- 5. L. U.I.D. 3. AC-BUILT :: Buyer Order #1398
- 6. INJECTOR IS DEFS- :: 3/22/84
- 7. UPRING EMBEDMENT :: THESE MEASUREMENTS WERE
- 8. DEPTH FROM THE :: BE VERIFIED BY D. MARES
- 9. TOP OF BOLT TO :: DEPENDING WHICH PORTION
- 10. THE CONCRETE SURF- :: OF THE ADJACENT CONCRETE
- 11. ACE ADJACENT TO :: IS USED AS A BASIS
- 12. THE R.P. DURING :: D. Mares 322-21
- 13. CONSTRUCTION OF ::
- 14. UCR & AFTER FINAL ::
- 15. MARGUE EMBEDMENT ::
- 16. DEPTH WAS MEASURED ::
- 17. BY LENGTH OF BOLT ::
- 18. THICKNESS OF UNIT & ::
- 19. G.P. & 1/2" GAP BETWEEN ::
- 20. EA & CONCRETE SURF- ::
- 21. EDGE. MEASURING DEPTH ::

