

PACIFIC GAS AND ELECTRIC COMPANY

PG&E

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J. O. SCHUYLER
VICE PRESIDENT
NUCLEAR POWER GENERATION

June 18, 1984

PGandE Letter No.: DCL-84-231

Mr. John B. Martin, Regional Administrator
U. S. Nuclear Regulatory Commission, Region V
1450 Maria Lane, Suite 210
Walnut Creek, CA 94596-5368

Re: Docket No. 50-275, OL-DPR-76
Docket No. 50-323
Diablo Canyon Units 1 and 2
Pullman Welding Inspectors

DESIGNATED ORIGINAL
Certified by *Dot Noack*

Dear Mr. Martin:

NRC Inspection Report 50-275/83-37 and 50-323/83-25, dated February 29, 1984, included a notice for a Severity Level IV violation. PGandE responded to this notice on April 11, 1984 (PGandE Letter No. DCL-84-140).

PGandE stated that a final report would be submitted for Unit 1 and Unit 2 after completion of all corrective actions. Corrective actions were completed by May 11, 1984 for both units. This submittal is a final report which details the results of all inspection activities and the disposition of suspect welds.

Kindly acknowledge receipt of this material on the enclosed copy of this letter and return it in the enclosed addressed envelope.

Sincerely,

J. O. Schuyler
J. O. Schuyler

Enclosure

cc: Service List

ENCLOSURE

FINAL REPORT DETAILING RESULTS OF THE
REINSPECTION PROGRAM FOR PULLMAN WELDING INSPECTORS

Background

On February 29, 1984, PGandE received a Notice of Violation ("Notice"), Severity Level IV, as part of NRC Inspection Report Numbers 50-275/83-37 and 50-323/83-25. The Notice cited twenty-eight Pullman Power Products (PPP) employees who began inspecting and accepting weldments prior to completion of required training and certification as welding inspectors. This had previously been identified in a 1977 audit of PPP by Nuclear Services Corporation (NSC).

In letters to the NRC dated March 23, 1984 (DCL-84-115), March 29, 1984 (DCL-84-124) and April 11, 1984 (DCL-84-140) PGandE:

1. Noted that 11 of the 28 individuals identified in the NSC Audit were non-destructive (ND) test inspectors who were fully qualified to perform ND testing prior to beginning those activities.
2. Described the causes and background of the Violation regarding the remaining 17 inspectors.
3. Outlined a program requiring reinspection of all or a portion of those welds originally accepted by the 17 inspectors.
4. Committed to providing a final report detailing the results of all reinspection activities and the disposition of all welds identified as suspect during the reinspection program.

Results

Attachments A and B provide a summary of the reinspection program. A comparison of this summary and those provided in previous submittals will reveal minor differences resulting from increases in sample size and correction of tabulation errors.

Of the 2,996 welds originally examined and accepted by the 17 inspectors, 1,269 were reinspected by PPP as part of PGandE's corrective action program. Fifty-eight of these welds were identified as suspect and reported to PGandE on PPP Discrepancy Reports DR No. 5872 (Unit 1) and DR No. 8321 (Unit 2) dated April 7, 1984. Although 39 suspect socket welds were discovered, 35 were found acceptable by applying tolerances supplied by Project Engineering. The remaining four socket welds and 19 other welds, either butt or attachment welds, required Engineering evaluation and/or analysis. All of these welds were found acceptable by Engineering for their intended application. A listing of the suspect welds, and a brief summary of the basis for their acceptance are contained in Attachment C.

Most suspect welds are attributed to the weld gauge used and the inspector's interpretation of the results during the original inspections. The reinspection used state-of-the-art weld measurement gauges which provide more accuracy and require less interpretation. This greater accuracy resulted in small differences in the measured size of socket welds when compared with the original inspection. Suspect welds exhibited minor variations from acceptance criteria. Such variations are of the type that any weld reinspection program of this scope would reveal and do not represent a failure of the original inspectors to verify the acceptance criteria. In identifying a low percentage of suspect welds and finding no requirements to have welds repaired, the reinspection program verified that the original inspectors followed existing plant procedures.

Based on the acceptance of all welds sampled during the reinspection program, no further action is planned.

Attachment A

REINSPECTION PROGRAM FOR
PROVISIONALLY QUALIFIED INSPECTORS (1)

<u>Name</u>	<u>No. of Inspections (2)</u>	<u>Minimum No. to be Reinspected (3)</u>	<u>No. Reinspected (4)</u>	<u>Suspect (5)</u>
Allmendinger	69	14	31	1
Bloom	2	2	2	0
Bowlby	385	78	176	7
Boyd	193	39	51	1
Finch	299	59	114	4
Jennings	396	80	96	4
Kaz	3	3	1	0
Kincade	83	17	23	2
Page	149	30	42	2
Pennie	274	55	80	2
O'Brien	42	9	16	0
Sarvatari	294	59	74	1
Silver	47	10	11	0
Thomas	17	10	10	0
Willard	<u>420</u>	<u>84</u>	<u>268</u>	<u>18</u>
	2673	551	995	42

NOTES:

1. Provisionally qualified inspectors were identified in the April 11, 1984 submittal (DCL-84-140) as individuals who were knowledgeable to inspect welds based on previous work experience and education but who did not meet the requirements of Engineering Standard Diablo (ESD) No. 237.
2. No. of Inspections - Number of weld inspections prior to meeting the requirements of ESD-237.
3. Minimum No. to be Reinspected - 20% (or all if less than 10) of accessible welds which are to be reinspected.
4. No. Reinspected - The minimum number of reinspections were accomplished for all inspectors with the exception of Kaz. Two welds were inaccessible.
5. Suspect - Welds which were identified as suspect and were evaluated or analyzed by Project Engineering and found acceptable.

Attachment B

REINSPECTION PROGRAM FOR
UNQUALIFIED INSPECTIONS (1)

<u>Name</u>	<u>No. of Inspections (2)</u>	<u>Minimum No. to be Reinspected (3)</u>	<u>No. Reinspected (4)</u>	<u>Suspect (5)</u>
Guy	300	300	263	15
Cabbage	<u>23</u>	<u>23</u>	<u>11</u>	<u>1</u>
	323	323	274	16

NOTES:

1. Unqualified inspectors were identified in the April 11, 1984 submittal (DCL-84-140) as individuals who were not knowledgeable to inspect welds based on previous work experience and education until they met the requirements of ESD-237.
2. No. of Inspections - Number of weld inspections prior to meeting the requirements of ESD-237.
3. Minimum No. to be Reinspected - Number of welds to be reinspected, provided they are all accessible.
4. No. Reinspected. (Remainder are inaccessible).
5. Suspect - Welds which were identified as suspect and were evaluated or analyzed by project engineering and found acceptable.

Attachment C

DISPOSITION OF SUSPECT WELDS

<u>Isometric Number</u>	<u>Field Weld Number</u>	<u>Disposition</u>
<u>UNIT 1 WELDS</u>		
8-285	776A	By application of tolerance this is acceptable.
	779B	" " " " " " "
14-204	32C	" " " " " " "
	34A	" " " " " " "
	34D	" " " " " " "
	1405	No Code requirement for profile; therefore acceptable.
14-207	65B	By application of tolerance this is acceptable.
8-349	3498	" " " " " " "
14-258	1001	" " " " " " "
	1010	" " " " " " "
19-266	505C	" " " " " " "
	505G	" " " " " " "
8-5	2101	Acceptable, review indicates this is not a reject.
19-266	503G	By application of tolerance this is acceptable.
19-250	309F	" " " " " " "
		Lack of fusion noted has been rechecked, it is actually a crease. Therefore, weld is acceptable.

The following are acceptable based on review by stress or pipe support groups, as applicable.

8-24	582	Acceptable, weld is on Code Class E portion of the line. Weld size is acceptable - no stress analysis is required. Design wall thickness for line is 0.009"; therefore acceptable.
8-50	322B	Acceptable, same reason as for 582 above.
8-54	266A	Acceptable, same reason as for 582 above, except design wall thickness for line is .002"
14-14	207E	Excess reinforcement reviewed by stress group. There is no significant effect on analysis. Therefore, it is acceptable.
9-240	352	Acceptable, analyzed by OPEG stress. Stress levels low. Therefore, increase in stress intensification factor (SIF) would have no adverse effect.

19-303	849B	Acceptable by review/analysis by pipe support group.
14-207	65E	Acceptable. New SIF = 2.7. This is a 29% increase. Since analyzed by simplified method, this increase is lower than margin in DCM M-40. Therefore, it is acceptable.
24-220	170	Acceptable. Same reason as for weld 65E above.
	170A	" " " " " " " "
	171	" " " " " " " "
21-224	582	Acceptable, new SIF = 2.9. This is a 38% increase. Since analyzed by simplified method, this increase is lower than margin in DCM M-40. Therefore, it is acceptable.
24-202	315	Axial restraint not required on Code Class E lines. Line was originally Code Class C but subsequently downgraded. Therefore, weld size is acceptable.
24-202	315A	Acceptable. Same reason as for weld 315.
9-254	987A	Acceptable. Weld length is sufficient.
9-26	X401	Acceptable, reviewed by pipe support group. Attachment weld size acceptable for loads.

UNIT 2 WELDS

9-403	61	By application of tolerance this is acceptable.
	62	" " " " " " " "
	62A	" " " " " " " "
14-217	127	" " " " " " " "
14-425	481	" " " " " " " "
	485	" " " " " " " "
21-404	10	No Code requirement for profile. Acceptable.
21-406	98	No Code requirement for excess socket weld size. Acceptable.
21-407	106	By application of tolerance this is acceptable.
	276	" " " " " " " "
	277	" " " " " " " "
21-409	119	No Code requirement for profile. Acceptable.
	123	" " " " " " " "
	283	" " " " " " " "
		Also, by application of tolerance this is acceptable.
	290	Acceptable. Same as weld 283 above.
21-419	236	By application of tolerance this is acceptable.
	237	" " " " " " " "
	275	" " " " " " " "
24-412	104E	No Code requirement for profile. Acceptable.
8-519	1101	" " " " " " " "
21-407	104	Acceptable, undercut within Code allowable.

The following are acceptable based on review by stress or pipe support groups, as applicable.

9-2	9	Acceptable by review/analysis by stress group.
12-10	105	" " " " " "
14-425	496	" " " " " "
21-406	268	" " " " " "
21-409	284	" " " " " "
8-490	2110B	Acceptable by review/analysis by pipe support group.
14-223	2192	" " " " " "
21-1	23A	" " " " " "